# CINCINNATI TECHNICAL COLLEGE

CATALOG 1992 - 93

# 1992 - 1993
# Cincinnati Technical College
# Catalog/Handbook

Contents


Directory ..... 5
General Information ..... 11
Admissions & Fees ..... 17
Academics, Policies & Procedures ..... 23
Student Services ..... 33
Academic Divisions,
Degree & Certificate Programs ..... 45
Course Descriptions ..... 85
Faculty & Staff ..... 139
1992-1993 Calendar ..... 153
Index ..... 157



All statements in this publication are announcements of present policy only and are subject to change at any time without prior notice. They are not to be regarded as offers to contract.

Cincinnati Technical College does not discriminate on the basis of race, age, color, handicap, national origin or sex in the admission of students or in any activity conducted by the Cincinnati Technical College.

Cincinnati Technical College, a State of Ohio public-supported college, is an equal opportunity institution.



**Cincinnati Technical College**
**3520 Central Parkway**
**Cincinnati, Ohio 45223**
**(513) 569-1500**
**Admissions Office 861-7700**

DIRECTORY
ONE DOLLAR
CINCINNATI TECHNICAL COLLEGE

**Board of Trustees**

Herbert R. Brown ..... Insurance Executive
J. Roger Erwin ..... Customs Administrator
John J. Geiger ..... Retired Educator & Salesperson
William Hoeb ..... Media Services Manager
Lavatus V. Powell, Jr. ..... Public Affairs Administrator
Ernest Robinson ..... Retired Research Aquatic Biologist
Nancy Schellhous ..... Human Resources Executive

**Emeritus Trustees**

Floyd Black ..... Attorney
Ruth M. Edwards ..... Attorney
Ora Gordon ..... Real Estate Salesperson
Jean Inkrot ..... Retired Business Owner
Rev. Herman Kenning ..... Council on the Aging & Retired
Wayne F. Wilke ..... Judge

**President's Cabinet**

James P. Long ..... President
Paul R. Callahan ..... Dean, Business Technologies
William F. Deitzer ..... Vice President for Finance
Gordon M. Fooks ..... Vice President for Student Services
Terrence J. Glenn ..... Vice President for Administrative Services
Thomas E. Kober ..... Dean, Health Technologies
Larry A. Morris ..... Dean, Engineering Technologies
Catherine R. Rahmes ..... Dean, Humanities and Sciences

**Office of the President**

President ..... James P. Long
Executive Assistant ..... Clarke J. Robinson
Executive Assistant, Academics ..... Theresa K. Johnson

**Office of Advancement**

Director .....
Executive Assistant ..... Theresa K. Johnson
Director, Minority Affairs ..... William F. Bowen
Director, Public Information & Publications
..... Michele M. Imhoff
Publishing Production Specialist ..... Elizabeth Bradley
Graphic Arts Center Supervisor ..... Lucius Jenkins

**Administrative Services**

Vice President ..... Terrence J. Glenn
Executive Assistant ..... Angela C. Moss
Management Information Services
Director ..... John Listermann
Analyst ..... James Knapke
Analyst ..... Robert Lindeman
Programmer/Analysts ..... Kevin Longshore
..... Russell Mowry
..... Annise Pruitt-Anderson
Programmer .....Richard Gajus
Acting Computer Operations Supervisor .....Jeldean Huff
Computer Operators..... Paula Rosenburg
..... Joy Sunderman
Auxiliary Services Manager ..... Paul Kremer
Switchboard Operations ..... Sue Harley
..... Carolyn LaRose
..... Ihsan Rahman
Human Resource Services
Director ..... Carolyn L. Nellon
Assistant to the Director .....
Personnel Specialist ..... Davie Cooper
Clerical Assistant .....Terri Reynolds

**Student Services**

Vice President ..... Gordon M. Fooks
Executive Assistant ..... Stephanie L. Johnson
Student Activities and Athletics
Director ..... John E. Hurley
Clerical Assistant ..... Ronna Rollins
Women's Basketball Coach .....
Golf Coach ..... Tom Woody
Student Financial Aid
Director ..... Betty Bayete
Associate Director ..... Janice Lewis
Executive Assistant .....
Clerical Assistant (Data Entry) ..... Deneen Ward
Receptionist ..... Brenda Beatty
Financial Aid Advisor/State Grants Coordinator
..... Naomi Cain
Student Employment Counselor ..... Sandra Siebert
Financial Aid Advisor ..... Martha Geiger
Financial Aid Advisor/Student Loan Coordinator
..... Patricia Bosley
Admissions and Counseling
Dean ..... John Wagner
Executive Assistant ..... Lana Teetor
Admission Records
Records Supervisor ..... Wanda Lindquist
Clerical Assistant ..... Marsha Kiefer
Educational Relations Coordinator ..... Gabriele Boeckermann
College Representative ..... Victoria McCarty
College Representative .....
Jobs Ohio Work Program Advisor .....
Clerical Assistant ..... Kimberly Young
Counselors ..... Eleanor Bonner
..... Sharon Davis
..... Claudette McCarty
..... Linda Meador
..... Diane Stump
Veterans Coordinator and International Student Advisor
..... Yolanda Lawrence
Handicapped Services Counselor ..... David Cover
Clerical Assistants ..... Gretchen Lee
.....Thomas Gans
..... Donna Scofield
Registrar ..... David Ballinger
Executive Assistant ..... Karen Magness-Lewe
Clerical Assistant ..... Tammy Kelly
Clerical Assistant ..... Sandra Etheredge
Academic Records Supervisor ..... Carolyn Robinson
Records Retrieval Clerk ..... Marion Strait
Scheduling Supervisor ..... Sue Burns

**Office of Finance and Plant Operations & Maintenance**

Vice President & Treasurer ..... William F. Deitzer
Purchasing Manager .....
Purchasing Assistant/Receptionist ..... Susan Flanagan
Controller ..... Don Gammon
General Accounting Manager ..... Bill Rollins
Accounts Payable Specialist ..... Charlie Johnson
Accounts Receivable Accountant ..... Harry Bradley
Budget Accountant ..... Bill Ouattrone
Coordinator of Student Loans, Billing & Collections
..... Jackie Peters
Payroll Accountant ..... Jim Rettig
Property Accountant ..... Herb Bom
Reporting and Grant Accountant ..... Judy Shanks

Assistant Treasurer ..... Dan Ramsey
Lead Cashier ..... Linda Cole
Assistant Lead Cashier ..... Nancy Niemeyer
Cashier ..... Marge Faulhaber

Facilities
Director of Facilities .....
Facilities Services Manager ..... Leonard "Bird" Bidwell
Facilities Services Mechanics ..... Gary Cole
..... Delbert Kingery
..... Donnie Long
Custodial Supervisor ..... Andrew Coffee
Custodians ..... Robert Cotton
..... Willis Gaddis
..... William Harcourt
..... Jerome Howard
..... Andy Schmerr
..... Joseph Smith
..... Mark Smith
..... Sam Streety
Shipping & Receiving Clerk ..... Jimmy Turner
Grounds Superintendent ..... Ray Mirizzi
Groundskeepers ..... Dominic Iacobucci
..... Boyd Miller
Plant Engineer ..... Ed Kempf
Steam Firemen ..... Denim Bledsoe
..... Lewis Graham
..... Eugene Thrasher
Security Supervisor ..... Randy Little
Campus Security Officers ..... Jeffrey Bley
..... Richard Braley
..... Shawn Dorsey
..... Donald Elsaesser
..... Robert Schwab
..... Jimmy Trotter

**Business Technologies**

Dean ..... Paul Callahan
Executive Assistant ..... Peggy McCann
Clerical Assistants ..... Jacquie Farley
..... Debra Kyle Shelburne
Assistant Dean, Academic Affairs .....
Assistant Dean, Cooperative Education ..... Paul Davis
Assistant Dean, Industrial Relations & Extended Services.....
Coordinator, Industrial Relations ..... Greg Goold
Coordinator, Academic Computing ..... Mike Nakoff
Academic Computing Lab Technician ..... Curt Bolin

Administrative Services Technologies
Program Chair ..... Connie Campbell
..... Sharon Brown
..... Jill Haft
..... Katye Mindhardt
..... Rick Sefton
..... Swanya Smith

Automotive Service Management Technology
Program Chair ..... Joe Keenan
..... Keith Mains
..... Russell Sprinkle
..... Robert Van Horn
..... Karl von Kampen
..... Phil Vossmeyer

Business Computer Sciences Technologies
Program Chair ..... Verale Phillips
..... Marc Baskind
..... Richard Brown
..... Karen Camm
..... Bob Coil
..... Elizabeth Sullivan
..... Jeff Vetter
..... Sharon White

Business Management, Financial Management, International Trade Commerce, Marketing Management/ Industrial Marketing Technologies
Program Chair ..... Peggy Harrier
..... Stewart Bonem
..... Carolyn Davidson
..... Clyde Kobberdahl
..... Jim Macke
..... Lloyd Pitman
..... Walt Wyatt

Chef & Hotel-Restaurant Technologies
Program Chair ..... Rich Hendrix
..... Patricia Huller
..... John Kinsella
..... Jim Myatt

Graphic Communications & Flexographic Communications Technologies
Program Chair ..... Al Leicht
..... Gary Walton
..... Jack Wilson

Landscape Horticulture Technology
Program Chair ..... Claire Ehrlinger
..... Ben Wright

Managerial Accounting Technology
Program Chair ..... Linda Schaffeld
..... Dan Cayse
..... Michele Cooney
..... Leonard Penn

Pre-Tech, Business Technologies Division
Program Chair ..... TaFrinda Bates

Property Management & Real Estate Technologies
.....Peggy Harrier

Continuing Education
Director .....
Clerical Assistant ..... Cynthia Harvill

**Engineering Technologies**

Dean ..... Larry A. Morris, P.E.
Executive Assistant ..... Julie Webster
Clerical Assistants ..... Linda Gibbons
..... Pat Robbins
..... Carla Wermuth
Assistant Dean, Academic Affairs..... Donal L. Hay, Ph.D.
Student Development/Retention Specialist
..... Andrea Feld-Brockett
Assistant Dean, Cooperative Education & Graduate Placement .....
Assistant Dean, Facilities & Extended Services ..... Gary Graff
Senior Lab Technician ..... Wayne Herbers

Aviation Maintenance Technology
Program Chair ..... James Schmid
Co-op & Graduate Placement ..... Sue Dolan
Instructors ..... Vince DeVol
..... Eric Kornau
..... Ed Weichold

Biomedical Electronics Engineering Technology
Program Chair ..... Steve Yelton, P.E.
Co-op & Graduate Placement ..... Roger Schaller

Civil Engineering Technology
Program Chair ..... Greg Sketch, P.E., P.S.
Co-op & Graduate Placement ..... J. Terry Brown

Instructors ..... Tom Burns, P.E.
..... John Buttelwerth
..... James Decker, P.S.
..... Elias Feghali

Computer Engineering Technology
Program Chair ..... Gary Webster, P.E.
Co-op & Graduate Placement ..... Sue Dolan
Instructor ..... Bob McLain, P.E.

Electro-Mechanical Engineering Technology
Program Chair ..... Ray DiPilla
Co-op & Graduate Placement ..... Roger Schaller
Instructors ..... Fred E. Besco Jr., P.E.
..... Paul Weingartner

Electronics Engineering Technology
Program Chair ..... Steve Yelton, P.E.
Co-op & Graduate Placement ..... Sue Dolan
Instructors ..... Mike Carroll
..... Robert Lamey
..... Billy Mullins

Laser Electro-Optics Engineering Technology
Program Chair ..... Prem Batra
Co-op & Graduate Placement ..... Roger Schaller
Lab Technician ..... Tim Saluga

Manufacturing Engineering Technology
Program Chair ..... Judd James
Co-op & Graduate Placement ..... Jerri Thomas
Instructor ..... Robert Romano

Mechanical Engineering Technology
Program Chair ..... Don Youngpeter, P.E.
Co-op & Graduate Placement ..... Jerri Thomas
Instructors ..... Mike DeVore
..... David Smith

Pre-Technology Studies-Engineering Technologies
Program Chair ..... Eileen English

Productivity Improvement Center
Coordinator of Industry Training ..... Chuck Jonas
Instructor ..... Clifford Schulte, P.E., P.S.

Learning Resource Center
Director ..... Pat Ventrone
Information Services ..... Debbie Bogenschutz
..... Thelma Barnes
..... Duane Gardner
..... Sharon McKibben
Technical Services .....
Media Services ..... Jon McKamey
..... Marcia Caulton
..... Judy Hughes
..... William Shaw

**Health Technologies**

Dean ..... Thomas Kober
Executive Assistant ..... Cheri Furlong
Assistant Dean ..... Marianne Krismer
Assistant Dean, Nursing Program ..... Brenda Heck
Clerical Assistants ..... Valerie Anderson
..... Karen Dill
..... Kelly McCreadie
..... Juanalda Nakoff
HCOP Counselor ..... Ralph Powers
HCOP Coordinator ..... Bessie Pitts
Pre-Tech Advisors ..... Athealia Bell
..... Susan Marcotte

Central Service Technology ..... Wanda Dantzler
Dietary Management Certificate ..... Eileen Coffe-Findlay

Dietetic Technology
Program Chair ..... Sharman Willmore
Instructor ..... Charalee Allen

Electrocardiography Technology ..... Tom Stormer
Health Unit Coordinator ..... Daphne Robinson

Medical Assistant Technology
Program Chair ..... Olivia Watts
Instructor ..... Nancy Walters

Medical Laboratory Technology
Program Chair ..... Carolyn Laemmle
Instructors ..... Janelle Gohn
..... Larry Suddendorf

Health Information Management
(formerly Medical Record Technology)
Program Chair ..... Gail Smith
Instructors ..... Sherri Mallett
..... Sandy Speller

Nursing Program
Instructors ..... Mary Burns
..... Janice Curry
..... Florence Donohue
..... Judith Faessler
..... Sue Guntzelman
..... Jerry Hancox
..... Christopher Heather
..... Roberta Hochmuth
..... Debra Hying
..... Joanne Johnson
..... Pat Morganroth
..... Alice Palmer
..... Patricia Schultz
..... Margaret Swinford
..... Dorthy Varchol
..... Elizabeth von Volborth
..... Jill Yust
..... Suzanne Zellner

Occupational Therapy Asst. Technology
Program Chair ..... Sandra Prantl
Instructor ..... Cindy Kief

Respiratory Care Technology
Program Chair ..... Debra Lierl
Instructors ..... David Skopin
..... Tom Stormer

Surgical Technology
Program Chair ..... Judith Spraley
Instructor ..... Wanda Dantzler

Life Science Instructors
Program Chair ..... Robert Eveslage
Instructors ..... Ron Davidson
..... Bev Evert
..... Jude Norton
Lab Manager ..... John Szasz

**Pre-Technical Studies**

Dean ..... Catherine Rahmes
Assistant Dean ..... James Marcotte
Clerical Assistant ..... Annette Dismukes
Para-Professional ..... Debbie Greenlee
Funded Programs Specialist ..... Soni Hill
Instructors ..... Laura Attenborough
..... Joan Brand
..... Cheryl Cummings
..... Linda Knepp
..... Hope Lieberman

..... James Marcotte
..... Paul Olubas

**Humanities Division**

Dean ..... Catherine Rahmes
Assistant Dean ..... Marcus Green
Assistant Dean ..... James Marcotte
Executive Assistant ..... Faye McCreadie
Clerical Assistant ..... Donna Fath
Coordinator, Industry Training ..... Samuel Rowe
Writing Center Manager ..... John Battistone
Laboratory Technician ..... Patricia Kean

Technical Writing and Editing Technology
Program Director ..... Pam Ecker

English Composition and Oral Communications
Chair ..... Joyce Kindle
Faculty ..... John Battistone
..... Pam Ecker
..... Marcus Green
..... Mary Lee Howes
..... Michael Jones
..... Daniel Mellinger
..... Alyce Rieck
..... Kim Ziegel

Social Sciences
Chair ..... Marcha Hunley-Belanger
Faculty ..... Mary C. Boswell
..... Pamela Chaney-Land
..... James Hassan
..... Timothy Nolan
..... Lawrence Ziegler

**Sciences Division**

Dean ..... Catherine Rahmes
Assistant Dean ..... Marcus Green
Assistant Dean ..... James Marcotte
Executive Assistant ..... Faye McCreadie
Clerical Assistant ..... Donna Fath
Laboratory Technician ..... Gail Quinlan

Scientific Laboratory Technology
Program Chair ..... Martha Brosz

Chemistry
Chair ..... James Bronstrup
Faculty ..... Martha Brosz
..... Robert Moon

Mathematics and Computer Programming
Chair ..... William Tulloss
Faculty ..... James Farrer
..... Jan Hoeweler
..... Terrence Huge, CQE, CRE
..... Joan Jackson
..... Lawrence Pucke
..... Richard Swanson
..... William Wunderlich

Physics
Chair ..... Rodney Rupp
Instructors ..... Debra Barrett
..... Thomas Stark
..... Edward Sunderhaus

GENERAL INFORMATION
ONE DOLLAR
CINCINNATI TECHNICAL COLLEGE

# Philosophy and Mission of Cincinnati Technical College

We believe that Cincinnati Technical College makes an important contribution to the technical status, economic growth, and social well-being of the Tri-State Area. We believe that to continue to serve the community the College must be willing to modify, adapt, and create technical programs that meet the ever-changing needs of students, business, industry and the professional community. We believe that it is the College's role to help students to learn to think independently, to value logical and tested conclusions, to develop problem solving abilities, to communicate well, and to function effectively with other people. We believe in the dignity and worth of the individual and therefore provide educational opportunities for students regardless of age, economic or social background, or enrollment status. We believe that for continued growth we must display the ability to be creative, to look to the future as well as the past, to strive for excellence, and to exhibit leadership in the expansion of technical knowledge and skills through the achievements of the faculty and the students. We hope to develop in our students the desire to continue their education throughout their lives.

The College has a vital and distinctive mission to perform in addressing the educational and economic needs of the Tri-State Area. The College seeks to implement its philosophy by providing:

A. Education featuring a combination of theory and practice primarily through appropriate classroom, laboratory, and cooperative/clinical education experiences.
B. Technical associate degree education programs that lead to entry or advanced level employment for graduates.
C. Certificate programs, specialized training, and adult continuing education opportunities of less than one-year duration.
D. Services and educational experiences to assist students in determining and reaching their educational objectives.
E. Opportunities for students to develop the skills needed to enter and succeed in technical education programs.
F. Technical, science, and general education courses that can be applied toward four-year degree programs.

The College endeavors to provide leadership and services in the promotion of technical and cooperative education.

## Technical Education

A scientific revolution, underway the last several decades, has quickened the pace of change in all the professions and transformed the occupational role and the educational requirements of the professionally trained employee. In the past, the professional, the product of four or more years of college, had the time, the training and the duty to perform many practical functions in work. New scientific discoveries and technological advances have so enlarged the body of theoretical knowledge underlying many of the professions that now there is little time in the professional curricula to develop practical skills. The mastery of theory has become the first priority of the professional.

As a consequence, the professional needs the assistance of a new member of the employment team, the technician or para-professional. To prepare this para-professional to work with the scientist, the engineer or the medical specialist, the technician requires a new type of college education.

The technician must master, to some extent, the theoretical principles relating to a specialized technology and must develop the practical abilities the specialty requires. Such educational preparation is above the high school level, but does not require the four or more years of college needed by the professional. An intensive program, usually of two years duration and designed to prepare the student for immediate and effective employment upon graduation, suffices. Such a program is technical education.

Technical education, to be effective, requires a special educational environment: a faculty dedicated to practical education; laboratory equipment adequate to make such education possible; a governing body and administration dedicated to the philosophy of this education; a close working relationship with business and industry. The technical college provides that special environment.

Ohio has a network of thirteen technical colleges, all created since 1966 as a result of federal, state and local initiatives. Nine community colleges that provide technical education as a major portion of their mission join the technical colleges in comprising Ohio's state-supported two-year college system.

## Board of Trustees

Cincinnati Technical College is governed by a seven-member board of trustees. Two members are appointed by the Governor of the State of Ohio, and five members are appointed by the Cincinnati Board of Education.

The Cincinnati Technical College Board of Trustees normally meets on the fourth Tuesday of the month at 7:30 p.m. Traditionally, no meetings are held in July or December. Special meetings may be called as situations dictate.

# Cooperative Education

Cincinnati Technical College's distinctive plan of cooperative education offers the soundest possible approach to technical education. The objective of each associate degree program is to prepare the graduate for immediate employment as a technician and for career advancement. The classroom can provide valuable theory and laboratory experience, but it cannot duplicate an actual work environment. However, many Cincinnati Technical College students participate in cooperative employment at regular intervals. The practical training they receive through cooperative education enriches their academic experience.

In 1991-92, the College will offer 42 associate degree programs and majors and thirteen certificate programs. Each program was developed to meet a specific need in local business or industry. The need was demonstrated through formal or informal feasibility studies, and is supported by the counsel of an advisory committee which represents the potential employers of these trained technicians.

## Benefits of Cincinnati Technical College's Cooperative Education Plan

Cincinnati Technical College has developed a cooperative education program that combines academic and technical education with regular intervals of meaningful work experience. The program has these benefits for the student, the College and the community.

**Benefits for the Student**

1. Educational Growth - Students supplement what they learn in class with "real life" work experience. These two learn-

ing situations complement each other.

2. Career Clarification - The technical class work and on-the-job experience help students focus on particular career areas and decide if those areas are appropriate for them.
3. Social and Emotional Growth - Students develop maturity by taking responsible positions in the business world, with support and guidance to ensure that learning takes place.
4. Financial Gain - Students are able to earn money while they gain work experience. The money earned helps many students to finance their education. Also, the work experience the student receives leads to opportunities for promotions and pay increases after graduation.

**Benefits for the College**

1. Understanding area employment needs - As College personnel work to establish cooperative education jobs and place graduates, the College becomes more aware of the area's employment needs.
2. Utilization of the college facilities - Because students alternate terms spent on-campus, the College is able to increase its student capacity and make more efficient year-round use of the college facilities.
3. Employer involvement - Employers become directly involved in the educational process of the College through cooperative education. They also share in the cost of education by providing on-the-job training.
4. Faculty awareness - Faculty members keep informed about activities in their fields through their contacts with business and industry.

**Benefits for the Community**

1. Trained technicians - The College's programs provide a work force of trained, experienced technicians for the community. This helps make the community more attractive for business development.
2. Employment screening - Employers have the opportunity to observe students and to evaluate their suitability for full-time employment before they make the commitment to hire full-time personnel.
3. Economic gain - The increased earning potential of the College's graduates benefits the community through productivity increased, taxes paid and contributions made.
4. Citizen productivity - Graduates enter the work force with well-clarified career goals and experience which allow them to be more productive and motivated workers.

# History of Cincinnati Technical College

Because a shortage of technicians existed in the area, the Cincinnati Board of Education established the Cincinnati Cooperative School of Technology, a two-year institute for high school graduates, in 1966. The function of the school was to train technicians in a program combining college-level classroom instruction and cooperative work experience.

Since all technical education programs in Ohio were to come under the authority of the Board of Regents, the Cincinnati Board of Education proposed in April, 1969 that the Regents establish a Cincinnati Technical Institute District and approve CCST as the nucleus of the technical institute to serve that district. These proposals were approved by the Regents in May, 1969.

The Board of Trustees of the new district — two appointed by the Governor and five elected by the Cincinnati Board of Education — held their organizational meeting on September 15, 1969. At that meeting they appointed the President of the Institute, and approved the Institute operating plan and associate degree programs. They also changed the name of the school to Cincinnati Technical Institute, to conform with the designations of other institutes in the state.

In June, 1970, the Board of Trustees of the Institute entered into a contract with the Cincinnati Board of Education to purchase the Courter Technical High School property, where the College is located, for $8.4 million.

In 1972 the name of the Institute was changed to Cincinnati Technical College, in accordance with state statute. On June 27, 1974, the phase-out of the high school was completed and the College made the final payment to the Cincinnati Public Schools.

In its twenty-six years CTC has experienced tremendous growth. The first year, 1966-67, saw an enrollment of 115 students in four degree programs, a seven member staff and 37 co-op employers. Last year the College enrolled 5500 students in 46 degree and certificate programs and options, had a staff of 290 plus over 150 part-time instructors, and had 600 co-op employers.

While the College has experienced a high growth rate, efforts have also been made to offer the highest quality of instruction available. Many awards and citations have been received attesting to the excellence of the College faculty and students. The College has been honored by the Ohio Board of Regents through its Program Excellence Awards. This state-wide competition is open to all undergraduate programs offered at public colleges and universities. The College received awards for the Civil Engineering Technology Program in 1984, the Electro-Mechanical Engineering Technology Program in 1986, the Dietetics Program in 1988, and the Laser Electro-Optics Program in 1990.

## Accreditations & Memberships

Ohio Board of Regents
Division of Vocational Education, State Department of Education
North Central Association of Colleges and Schools
Ohio Technical and Community College Association
FAA - Approved Aircraft Maintenance Technician School
Member of the American Society of Allied Health Professions
Member of Cooperative Education Association
Member of American Technical Education Association
Member of American Association of Community and Junior Colleges
Member of National Junior College Athletic Association
American Culinary Federation

# Greater Cincinnati Consortium of Colleges and Universities

Thirteen institutions of higher learning in the Cincinnati area, including Cincinnati Technical College, are members of the Greater Cincinnati Consortium of Colleges and Universities. Among the benefits of the Consortium are that regularly enrolled full-time students of one institution, under certain conditions, may register for credit in courses offered by other Consortium institutions in which no instruction is available at their own institution. Contact the Registrar's Office for information.

Members of the Consortium are the Art Academy of Cincinnati,

The Athenaeum of Ohio, Chatfield College, Cincinnati Bible College & Seminary, Cincinnati Technical College, College of Mount St. Joseph, Hebrew Union College — Jewish Institute of Religion, Miami University, Northern Kentucky University, Thomas More College, University of Cincinnati, Wilmington College, and Xavier University.

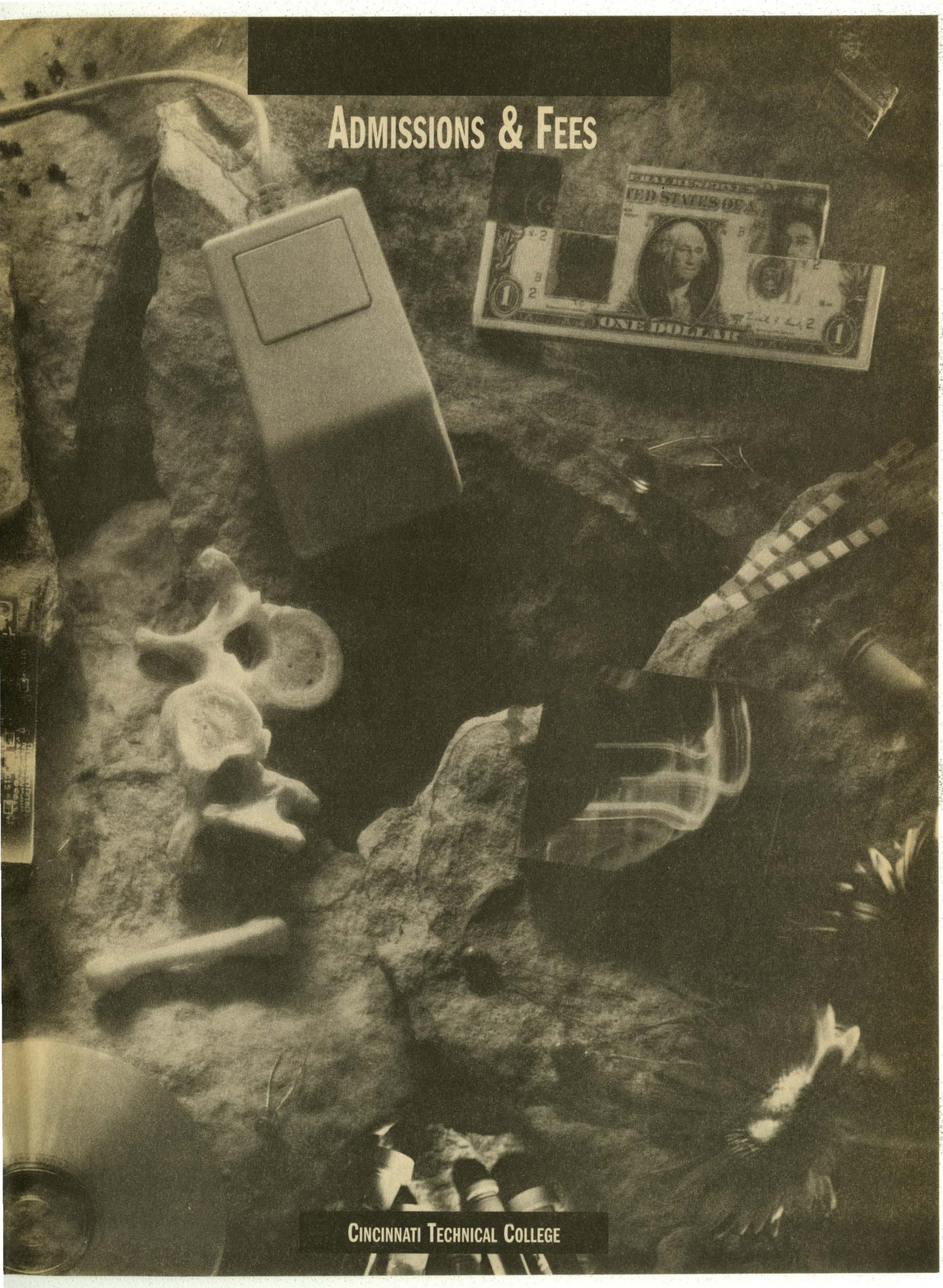
## Reserve Officers Training Corps

Cincinnati Technical College has a cross-enrollment agreement with the Army and Air Force ROTC at the University of Cincinnati.

Army and Air Force personnel teach the General Military Training (GMT) course classes. Enrollment in these classes entails no service obligation. Books for these courses and uniforms are provided free to the student.

The student attends ROTC classes and drill periods on the University of Cincinnati campus while attending academic classes at Cincinnati Technical College.

Details may be obtained from the Veterans Affairs Office, room 157 at Cincinnati Technical College.


ADMISSIONS & FEES
ONE DOLLAR
CINCINNATI TECHNICAL COLLEGE

# Admissions Information

Students who are high school graduates or have a high school equivalence (GED) are eligible for admission to Cincinnati Technical College. Students must submit an application for admission and a $20.00 fee, submit high school or GED transcripts (and college transcripts if applicable), attend a Success Seminar, and complete the ASSET placement test.

Students will then be admitted into a degree program. Some admitted students may be required to participate in pre-technology courses. All placements are based on a review of ASSET placement test scores and high school (or GED) and college transcripts. All admissions placements will lead to an associate degree or certificate.

Pre-technology courses enable the student to develop or strengthen important academic skills by taking prescribed classes. A pre-technology class prescription is designed to enhance the student's academic success and is based on the student's goal, a review of placement test scores, high school and/or college transcripts, and an academic advising session. Students must complete all pre-technology courses in five terms or one calendar year.

It has always been the policy to consider students admitted into degree programs as regular students enrolled in an eligible program for the purpose of receiving a degree or certificate.

## Application for Admission

Apply early! Each year some programs are filled by early spring. (Applicants for these filled programs may be placed on a waiting list.)

To apply, follow these steps carefully:

1. The applicant should complete an application and return it with the $20 application fee to Cincinnati Technical College.
2. Applicants should have a copy of their high school transcript and college transcript, if applicable, sent directly to the College's Admission Records Office. (With a GED, the applicant should submit a copy of scores.)
3. All applicants are required to attend a Success Seminar, which includes the ASSET test. (See schedule below.)

**NOTE:**

- Apply early! Some programs are filled by March 1 each year.
- Both the $20 application fee and the $30 matriculation fee are non-refundable.
- For admission to Cincinnati Technical College certificate and degree programs, applicants must have a high school diploma or GED.
- Admitted students who have not enrolled for 5 consecutive terms must reapply for admissions and pay the $20 fee. Students who have been out for 5 years or more will need to resubmit transcripts and retest.
- Admissions applications are valid for one year.
- Admitted students will have one year to register for classes as admitted students.

## Matriculation Fee

A $30 matriculation fee is payable at the time of the first registration after the program major has been approved. The fee covers all subsequent registration fees and drop/add fees while a degree/certificate student and graduation. The fee will not be refunded.

## International Applications

International applicants must follow the prescribed application procedures as set forth on this page. In addition, all applicants not in the United States must submit TOEFL examination results.

A Declaration and Certification of Finances must be submitted to the College before a Certificate of Eligibility (Form I-20) will be authorized. Likewise, an international student must submit a $3500 deposit prior to the issuance of the I-20 form. This deposit will be credited to the individual's account and used for the payment of tuition, fees and books only. All other expenses—room, board, transportation and incidental expenses—must be provided by the student. In order to facilitate enrollment, an international student should contact the International Student Advisor.

## Success Seminars

All applicants for admission to certificate or degree programs at Cincinnati Technical College must attend a Success Seminar. The Success Seminar consists of an orientation to the College, assessment of skills, and advisement on courses and services needed by students to begin their college careers successfully.

The ASSET orientation, assessment and advising system developed by the American College Testing Service (ACT) is used in the Success Seminar.

## Success Seminar Schedule

| | |
|---|---|
| Tuesday | 12:30 p.m. - 3:30 p.m. |
| Wednesday | 6:30 p.m. - 9:30 p.m |
| First Saturday of Each Month | 9:00 a.m. - 12:00 Noon |

Excludes: December 29 & 30, 1992

**NOTE:**

On Tuesdays, a student can attend the College Information Session at 9:00 a.m., the Success Seminar from 12:30 to 3:30 p.m. and continue with the Financial Aid Seminar at 3:45 p.m. In just one day you can successfully begin your college career and have lunch on us in the Cincinnati Technical College cafeteria.

## Cincinnati Technical College High School Junior-Senior Student Post-Secondary Enrollment Options Program

**Guidelines**

The purpose of the Post-Secondary Enrollment Options Program is to provide high school juniors and seniors who are intellectually and socially capable of doing college work with an additional education option. The program is intended to complement rather than replace the high school curriculum designed for collegiate preparation. These guidelines shall relate to students identified by high school counselors as potential participants in the program.

I. High school counselors must advise students and parents of the advantages and disadvantages of participation in the program prior to a student's application for entry into the program. In addition, high school counselors are responsible for explaining the equivalency, or lack of equivalency, of a given course at Cincinnati Technical College for meeting high school graduation requirements.

II. Any eligible student who wishes to enter Cincinnati Technical College for college and/or high school credit must:

1. Submit a High School Options Program application to the college. This must be accompanied by a letter of recommendation from the high school counselor attesting to the student's academic and social readiness to enter college courses.

2. Take the ASSET test and place at college level in all areas.
3. Attend a mandatory orientation and enrollment session the Wednesday before the start of the term in which the student wishes to enroll. Parents are encouraged to attend with the student.
4. Agree to adhere to the college-wide discipline policy as well as the individual policies of each instructor.

III. Courses normally available to the student at the student's high school, i.e., English, Basic Chemistry, Basic Biology, or Basic Physics may not be taken for high school credit at Cincinnati Technical College during the regular high school year.

IV. Admission to technologies will follow the same process as required of all applicants. In the case of high draw programs, the high school student will be placed on the waiting list in the same manner as all other applicants.

V. Students who are taking courses for college credit will be accommodated in classes at the time they register and pay for the class. All course prerequisites must be met.

VI. Students taking courses for high school Carnegie units credit may be enrolled only after all other students have been given priority. These students will be accommodated as space is available.

VII. High school students will be held to the same academic standards and must maintain the same grade point average as any other student at Cincinnati Technical College.

**For additional information and/or application contact Gabriele Boeckermann, (513) 569-1550.**

# Financial Information

## Student Expenses

The Ohio Board of Regents provides a student subsidy to the Cincinnati Technical College for each Ohio resident enrolled. The amount received from the Regents is less than one-half of the College's operating costs. An additional nine percent is provided by the State Department of Education, Division of Vocational Education. The balance must come from tuition payments and other sources. Out-of-state residents pay the highest amount of tuition since the College receives no Regents' subsidy for their instruction. (See the end of this section for complete explanation of residency determination.)

## Schedule of Fees*

Cincinnati Technical College continues to maintain affordable tuition rates in both the Greater Cincinnati area and in the State of Ohio.

**Tuition Fees (per term)**

| | Ohio Resident | Non-resident |
|---|---|---|
| Tuition fee per credit hour (1 to 13 hours inclusive and each hour in excess of 17 hours) | $53 | $94 |
| Comprehensive tuition fee for credit hour load of 14 to 17 hours inclusive | $742 | $1,316 |

Tuition fee includes instructional fee, general fee, and other non-instructional services to the students.

**Miscellaneous Fees**

| | |
|---|---|
| Application Fee | $20 |
| Matriculation Fee | $30 |
| Advanced Standing Credit Fee | $25 |
| Late Registration Fees: | |
| (first day of the term) | $10 |
| (second day of the term) | $20 |
| (third day of the term and thereafter) | $30 |
| Tuition Installment Payment Plan (TIPP) Fee | $30 |
| Laboratory Fee | varies per course |
| Student I.D. Card | $ 1 |
| Part-time Registration Fee | $ 5 |
| Transcript Fee | $ 3 |
| Returned Check Fee | $20 |

**Parking Fees**

| | |
|---|---|
| Upper Lot Vehicle Parking Permit (per term, daytime) | $55 |
| Lower Lot Vehicle Parking Permit (daytime) | $.90 |
| Evening Parking Permit Upper & Lower Lots (per term) | $10 |
| Handicap Student Parking Permit (per term): | |
| (full-time student, daytime) | $35 |
| (part-time student, daytime) | $17 |
| (evenings) | $10 |
| Replacement Permit | $ 5 |

* Subject to change at the discretion of the College.

**Fees are non-refundable other than the Instructional Fee.**

## Cooperative Education Employment

Please refer to the specific curriculum to determine exact co-op credits required. Charges for co-op credit must be paid in advance on the established registration date.

## Books and Supplies

The cost of books and supplies can vary greatly from term to term. Also, different programs have different requirements. Students in the engineering technologies, for example, generally will spend more on supplies and equipment than the business oriented programs.

The first school term usually is the most expensive one as students purchase books and supplies at that time that they also use in later terms. The average expense for books and supplies is $250 per term.

## Senior Citizens

Senior citizens may register tuition free to audit courses as space is available. Senior citizens must pay the registration, lab and out-of-state fees, if applicable. Regular tuition will be charged to those senior citizens who wish to receive credit for the courses. They must pay tuition as well as fees for all non-credit courses. (An eligible senior citizen is one who is sixty years of age or older.)

## Tuition Installment Payment Plan (T.I.P.P.)

The T.I.P.P. program is a partial payment plan that allows full-time students to pay their tuition/registration expenses in two installments. The T.I.P.P. guidelines are as follows:

- full-time registration (minimum of 12 credit hours or co-op registration).
- minimum downpayment of one-half of the registration bill due prior to the start of the term (cash, check, or credit card, financial aid are acceptable forms of downpayment).
- payment of T.I.P.P. processing fee (by cash, check, or credit card) in addition to the downpayment.
- promissory note is signed by the student at the Cashier window for the unpaid portion of the registration bill.
- picture I.D. is required.
- the unpaid T.I.P.P. balance is due in-full by the fifth week

of the term it is financing. Future registrations are disallowed until the T.I.P.P. balance is fully paid.

## Refund of Tuition Charges

Students withdrawing from (dropping) classes for any reason may receive a refund for the amount of academic fees attributable to the dropped class. The amount of the refund is based upon the date of withdrawal (drop) and calculated according to the College's published refund schedule. Refunds are disbursed to the student or/and a third party payor. Refund checks are mailed to students during the third week of the term.

1. Requests for refunds will be considered only if the student completes and signs the official College drop/add class form. The student shall deliver the completed form to the Registrar Office. The official date of withdrawal (drop) is the date of entry of the form by the Registrar Office.
2. The following fees are not refundable:
   Application fee
   Matriculation fee
3. The following fees are not refundable unless the College cancels all classes the student registers for:
   Registration fee
   T.I.P.P. fee
   Late registration/payment fee
4. Laboratory fees associated with a class are refundable only if the class is dropped prior to the first day of the term.
5. The College's refund schedule is as follows:
   Refunds for dropped classes processed in the Registrar Office before the first day of the term are calculated at a rate of 100% refund of the in or out-of-state tuition fee and lab fee for the dropped class.
   Refunds for dropped classes processed in the Registrar Office from the first day of the term through the seventh calendar day of the term will be calculated at a rate of 80% refund of the in or out-of-state tuition fee only for the dropped class.
   Refunds for dropped classes processed in the Registrar Office within eight to fourteen calendar days from the first day of the term are calculated at a rate of 60% refund of the in or out-of-state tuition fee only for the dropped class.
   Exact dates are posted at the College Cashier window.
6. Refunds for students whose registration bill was paid by third-party funding (financial aid, agency, T.I.P.P.) are applied toward reimbursing the third-party before any disbursement to the student.
7. If a student owes a financial obligation to the College, the refund will be applied toward payment of the balance due before any disbursement to the student.
8. Students who do not follow the established dropped-class procedures of the College will not be eligible for a refund.
9. Students who have questions concerning refunds may direct those questions to the College Cashier Office.

**CINCINNATI TECHNICAL COLLEGE RESERVES THE RIGHT TO REVISE THIS STATEMENT OF TUITION REFUNDS AT ANY TIME.**

# Ohio Residency

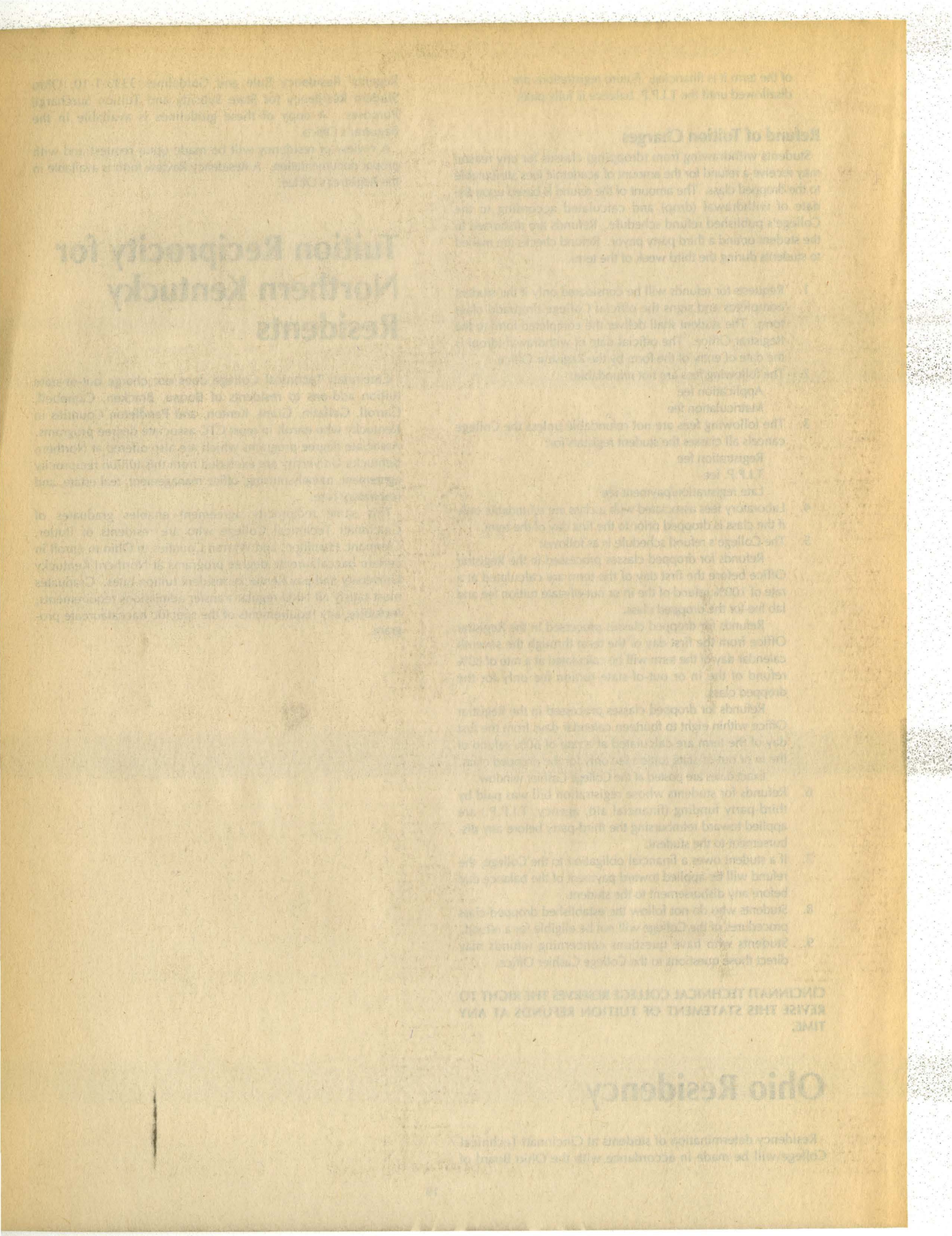
Residency determination of students at Cincinnati Technical College will be made in accordance with the Ohio Board of Regents' Residency Rule and Guidelines 3333-1-10, Ohio Student Residency for State Subsidy and Tuition Surcharge Purposes. A copy of these guidelines is available in the Registrar's Office.

A review of residency will be made upon request and with proper documentation. A Residency Review form is available in the Registrar's Office.

# Tuition Reciprocity for Northern Kentucky Residents

Cincinnati Technical College does not charge out-of-state tuition add-ons to residents of Boone, Bracken, Campbell, Carroll, Gallatin, Grant, Kenton, and Pendleton Counties in Kentucky who enroll in most CTC associate degree programs. Associate degree programs which are also offered at Northern Kentucky University are excluded from this tuition reciprocity agreement, namely nursing, office management, real estate, and respiratory care.

This same reciprocity agreement enables graduates of Cincinnati Technical College who are residents of Butler, Clermont, Hamilton, and Warren Counties in Ohio to enroll in certain baccalaureate degree programs at Northern Kentucky University and pay Kentucky resident tuition rates. Graduates must satisfy all NKU regular transfer admissions requirements, including any requirements of the specific baccalaureate program.



ACADEMICS, POLICIES & PROCEDURES
ONE DOLLAR
CINCINNATI TECHNICAL COLLEGE

# Policies & Procedures

## Equal Opportunity

Cincinnati Technical College is committed to a policy of equal educational opportunities for all persons regardless of race, sex, age, handicap, or national origin. This policy is adopted as a matter of law and as a matter of educational policy consistent with the goals and purposes of the College.

The College also adheres to a policy of equal employment opportunity and affirmative action to end any illegal pattern of discrimination and to overcome the effects of past discrimination.

## Registration

Students must complete their enrollment and pay tuition and fees to be registered. This should be completed before the first day of classes to avoid a late fee. The schedule of registration dates is available in the Registrar's Office.

Students who wish to add or register for a course which has met must have written approval of the instructor and the division dean.

# Cooperative Education Program

The cooperative education program is an integral part of Cincinnati Technical College's past growth, current strength, and continued success. The College's commitment to cooperative education is reflected in the curriculums of many technologies.

## Cooperative Education Requirements

Cincinnati Technical College values the cooperative education experience, but each division establishes its own policies regarding how the student may fulfill co-op requirements.

Students should refer to the academic division sections of this catalog for specific information on how the divisions expect students to meet cooperative education requirements.

## Meeting Academic Eligibility Requirements

To be eligible for placement in cooperative education employment (or clinical experience/directed practice), a student must maintain the required grade point average as stated in the College catalog (see "Academic Probation and Dismissal"). The student must also demonstrate satisfactory proficiency in core or other required courses.

A student who does not maintain the required GPA will not be eligible for cooperative education or clinical experience/directed practice without the permission of the program coordinator.

Any student registered for cooperative education credit will be considered a full-time student during that term, regardless of the total number of credit hours being taken.

Refer to the division sections of the catalog for additional requirements.

## Obtaining Cooperative Education Assignments

The College has been quite successful in placing most students in cooperative education jobs; however, there is no absolute guarantee of initial or continuing employment. The employer is solely responsible for decisions about hiring, retention, dismissal, promotion or demotion of a cooperative education student. Initial and continuing employment depends on the skills, aptitudes, and behaviors the individual student offers to each potential employer.

## Co-op Registration Policy

1. No student may report to his or her co-op job until he or she has registered and paid for co-op.
2. A student failing to register for co-op will not be eligible to receive co-op credit for that term.
3. Employers of co-op students who fail to register for co-op will be notified by the coordinator that the student no longer has co-op status. It will be the employer's decision as to whether to allow the student to continue working for them as a full time employee or the employer may choose to terminate the student at that time. This decision will be made by the employer.

# Student Information

## I.D. Cards

Each student is required to obtain a card identifying him or her as a student of Cincinnati Technical College. The card is extremely valuable and should be carried at all times. It may be used for admission to certain social functions, the library, pool, gymnasium, voting in campus elections, and for other purposes designated by the administration, or various College departments and organizations. I.D. cards are not transferable and are to be presented to any College official upon request. The cost of the card is $1.00.

## Scheduling of Classes

Weekday classes are scheduled to begin any time from 7:00 a.m. to 8:30 p.m. Some courses are regularly offered on Saturday morning and occasionally a course will be offered on Sunday.

In the event of adverse conditions, it may be necessary to cancel some classes. The College will rarely close completely.

Local radio and television stations may begin announcing CTC's operating status as early as 6:15 a.m. on the day involved.

The status of the evening classes will be handled by a separate announcement in the afternoon.

## Absences

Each student is expected to attend all classes as scheduled.

On cooperative education and clinical placements, the employer or supervisor may have specific guidelines regarding absences which the student must follow.

## Make-Up

The privilege of making up missed assignments, quizzes, tests, exams, etc. is not automatic.

An instructor does not have to permit or grant make-up privileges.

## Faculty Office Hours

All full-time College faculty maintain office hours. Students should check with each instructor, or the secretary in the instructor's office area, for appointments.

# Grades and Credit Earned

## Grading System

The following system is used to record student achievement or status in courses:

| Grade | Explanation | Grade Point Value Per Credit Hour |
|---|---|---|
| A | Superior | 4 |
| B | Good | 3 |
| C | Average | 2 |
| D | Poor | 1 |
| F | Failing | 0 |
| V | Unofficial Withdrawal | 0 |
| W | Withdrawal (Official) | 0 |
| AC | Advanced Placement Program Credit | Not Computed |
| CL | CLEP Credit | Not Computed |
| EC | CTC Proficiency Examination Credit | Not Computed |
| EX | Work Experience Credit | Not Computed |
| I | Incomplete | Not Computed |
| IP | In Progress | Not Computed |
| K | Transfer Credit | Not Computed |
| N | No Grade Reported | Not Computed |
| S | Satisfactory | Not Computed |
| U | Unsatisfactory | Not Computed |
| UX | Audit Unsatisfactory | Not Computed |
| VO | Vocational Teacher Referral Credit | Not Computed |
| W | Withdrawal (Official) | Not Computed |
| X | Audit | Not Computed |

## Repeated Course

If a course is repeated, only the highest grade is computed in the calculation of the GPA. If a student earns the same grade upon repeating a course, only one grade will be computed in the calculation of the GPA. The original course grade will continue to be shown on the transcript even though it is not calculated in the GPA.

## Incomplete (I)

When unusual circumstances prevent a student from completing course requirements during the term in which the student is enrolled, the student may contract with the instructor to record a grade of "I" (Incomplete) until the final grade may be established. A grade of "I" is awarded at the discretion of the instructor; timetables and requirements for the completion of the course are the instructor's prerogatives. If a final grade has not been established by the last day of the fifth week of the following term, a grade of "F" will be automatically recorded.

## In Progress (IP)

When unusual circumstances prevent a student of an individualized course or another IP-approved course from completing course requirements during the term in which the student is enrolled, the student may contract with the instructor to record a grade of "IP" (In Progress) until the final grade may be established. A grade of "IP" is awarded at the discretion of the instructor; timetables and requirements for the completion of the course are the instructor's prerogatives. If a final grade has not been established by the last day of the following term, a grade of "F" will be automatically recorded.

## No Grade Reported (N)

An "N" grade is administratively assigned in those instances in which no final grades have been reported for the courses to the Registrar's Office.

## Course Withdrawal (W) and (V)

A student who wishes to withdraw from a course may do so at any time up to the last two weeks of classes of a term and will receive a grade of "W" for the course. The student must complete a withdrawal form in the Registrar's Office. The date of the withdrawal will be the time/date stamped in the Registrar's Office. A grade of "F" or an unofficial withdrawal represented by "V" may be assigned as the final grade in a course if a student discontinues attendance without officially withdrawing from the course.

## Audit (X)

Students who are interested in taking a course solely for the value of the instruction may register to audit the course. No college credit may be earned or later claimed for an audited course. Regular tuition is charged for courses being audited. Requirements for attendance, completion of assignments, and examinations are the prerogatives of the instructor of the course.

A student may not request a transfer from "credit" to "audit" or vice versa after completion of the second week of the term.

## Unsatisfactory Audit (UX)

A grade of UX may be given if the student has not fulfilled predetermined requirements for attendance and completion of assignments as established by the instructor of the course.

## Transfer of Credit (K)

Any accepted and enrolled student desiring transfer of credit from other colleges must request any colleges previously attended to forward directly to the Director of Admissions a transcript of academic record and an explanation sheet. Courses equivalent to those at Cincinnati Technical College in which the student has received a grade of "C" or better will be considered for credit provided they were earned at an accredited institution of postsecondary education listed by the American Council of Education and if they are evaluated as current by the student's program Chairperson.

Any accepted and enrolled student should apply for credit transfer with the program chairperson before the end of the first term at Cincinnati Technical College. If transfer credit is to be applied to the first term, the student must make the request to the program chairperson before the end of the first week of the term. After the Transfer of Credit Form is completed and is approved by the division dean, it will be processed and the student will receive a copy of the approved credits.

## Advanced Standing Credit

Advanced standing credit is available to students who have been admitted into a program. The following advanced standing methods allow the student to earn credit for various prior academic and/or work experiences:

**Credit Through Proficiency Examinations**

1. External Exams (AP or CL)

   Proficiency examinations are offered by national testing services such as the Advanced Placement Program. (APP) of the College Entrance Examination Board and the College Level Examination Program (CLEP). Only courses which can be substituted for courses in the curriculum to be followed at CTC can be accepted. A score of "3" or better must have been earned in each such course. No fee is charged at CTC for this service.
2. Proficiency Exam (EC)

   Proficiency examinations are offered in certain courses by each of the academic divisions to any student who has been admitted in a degree/certificate program at Cincinnati Technical College. A student may take a proficiency examination for a course either before or after enrolling in that course. In either case, the student must obtain a

Request Form in the Registrar's Office and submit it to the appropriate division where the examination will then be scheduled.

If a student has already enrolled in a course and wishes to take a proficiency exam to receive credit, the student must submit the Request Form to the appropriate division. The examination must be taken within a period of seven calendar days of the beginning of the term and scores submitted to the Registrar's Office. The tuition payment will cover the cost of the examination.

If the student requests to take a proficiency examination prior to enrolling in the course, the student must contact the respective division dean. If the request is granted, the student must pay an examination fee (see Schedule of Fees) at the Cashier window. The student then obtains the Request Form from the Registrar's Office and submits it to the appropriate division where the examination will be scheduled.

If a student wishes to take the proficiency exam prior to enrolling in a course, the student must contact the respective division dean. A $25 non-refundable fee is charged for the examination.

**Credit Through Documented Valid Academic or Work Experience (EX)**

Credit may be obtained by providing validated written documentation to the respective academic division in which the student is enrolled and seeking a degree. The documentation must either:

1. indicate course content and hours, such as that provided by military programs, industrial programs and hospital programs, or
2. provide evidence that the applicant has already demonstrated through successful work experience those skills or competencies which are the desired end-product of one or more courses the applicant would ordinarily take in the Cincinnati Technical College program curriculum.

**Credit Through Senior Vocational Teacher Referral (VO)**

Students who have earned an "A" or "B" in their completed high school vocational programs of Butler County Joint Vocational School, Cincinnati Public Schools, Colerain Vocational Center, Northwest Vocational Center, The Great Oaks Joint Vocational Schools, U.S. Grant Joint Vocational School and West Clermont County Career Center can earn credit for specific courses in related technical programs at Cincinnati Technical College if the senior teacher of the program submits a recommendation on the Advanced Standing Referral Form to waive such courses. Students who desire to earn credit by this means are advised to inquire about the articulation program with their program chairpersons. No fee is charged for the courses for which credit is received.

## Grade Reports

Grades are reported to the student at the current address on file with the Registrar's Office at the end of each term. It is the student's responsibility to check his or her grade report for accuracy. Any errors, discrepancies, omissions, should be reported in writing to the Registrar's Office. Concerns of students should be made within 30 days of the end of the term for which the grade report was issued.

## Dean's List

Full-time students (those who complete academic courses totaling twelve or more credit hours) will qualify for Dean's List status if their GPA for the current term is 3.5 or greater, providing that they do not have a grade of I, IP, F, U, or V in their most recent academic term.

Part-time students (those who complete academic courses totaling fewer than twelve credit hours) who have a current term GPA and cumulative GPA of 3.5 or greater, will qualify for Dean's List status after completion of 12, 24, 36, 48, 60, 72, 84, and 96 academic credit hours. Part-time students will not qualify if they have a grade of I, IP, F, U, or V in their most recent academic term.

# State of Ohio Policy for Institutional Transfer

The Ohio Board of Regents, following the directive of the Ohio General Assembly, has developed a new statewide policy to facilitate movement of students and transfer credits from one Ohio public college or university to another. The purpose of the State Policy is to avoid duplication of course requirements and to enhance student mobility throughout Ohio's higher education system. Since independent colleges and universities in Ohio may or may not be participating in the transfer policy, students interested in transferring to an independent institution are encouraged to check with the college or university of their choice regarding transfer agreements.

## Transfer Module

The new Ohio Board of Regents' Transfer and Articulation Policy established the Transfer Module, which is a specific subset or the entire set of a college or university's general education requirements. The Transfer Module contains 54-60 quarter hours or 36-40 semester hours of specified course credits in English composition, mathematics, fine arts, humanities, social science, behavioral science, natural science, physical science, and interdisciplinary coursework.A transfer module completed at one college or university will automatically meet the requirements of the transfer module at the receiving institution, once the student is accepted. Students may be required, however, to meet additional general education requirements that are not included in the Transfer Module.

## Conditions for Transfer Admission

Students meeting the requirements of the Transfer Module are subject to the following conditions:

1. The policy encourages receiving institutions to give preferential consideration for admission to students who complete the Transfer Module and either the Associate of Arts or the Associate of Science degrees. These students will be able to transfer all courses in which they received a passing grade of D or better. Students must have an overall grade point average of 2.0 to be given credit for the Transfer Module.
2. The policy also encourages receiving institutions to give preferential consideration for admission to students who complete the Transfer Module with a grade of C or better in each course and 90 quarter hours or 60 semester hours. Students must have an overall grade point average of 2.0 to be given credit for the Transfer Module and only courses in which a C or better has been earned will transfer.
3. The policy encourages receiving institutions to admit on a non-preferential consideration basis students who complete the Transfer Module with a grade of C or better is each course and less than 90 quarter hours or 60 semester hours. These students will be able to transfer all courses in which they received a grade of C or better.

Admission to a given institution, however, does not guarantee

that a transfer student will be automatically admitted to all majors, minors, or fields of concentration at that institution. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as all other students. Furthermore, transfer students shall be accorded the same class standing and other privileges as native students on the basis of the number of credits earned. All residency requirements must be successfully completed at the receiving institution prior to the granting of a degree.

## Responsibilities of Students

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course requirements that can be met during the freshman or sophomore year. This will enable students to plan and pursue a course of study that will articulate with the receiving institution's major. Students are encouraged to seek further information regarding transfer from both their advisor and the college or university to which they plan to transfer.

## Appeals Process

A multi-level, broad based appeal process is required to be in place at each institution. A student disagreeing with the application of transfer credit by the receiving institution shall be informed of the right to appeal the decision and the process for filing the appeal. Each institution shall make available to students the appeal process for that specific college or university.

If a transfer student's appeal is denied by the institution after all appeal levels within the institution have been exhausted, the institution shall advise the student in writing of the availability and process of appeal to the state level Articulation and Transfer Appeals Review Committee.

The Appeals Review Committee shall review and recommend to institutions the resolution of individual cases of appeal from transfer students who have exhausted all local appeal mechanisms concerning applicability of transfer credits at receiving institutions.

## CTC Transfer Module Appeal Process

Should a student transferring into Cincinnati Technical College be dissatisfied with the credit awarded as part of the transfer module program of the State of Ohio, an internal appeal process and an external appeal process are both available.

The internal appeal process must be utilized first. At Cincinnati Technical College, the appropriate internal appeal process is that described by the College Academic Appeals Procedure.

The external appeal process may be utilized only after the internal appeal process has been completed and the student remains dissatisfied with the institution's judgement. The external appeal will be conducted by the Statewide Appeals Review Committee. More information on this process is available from the Ohio Board of Regents in Columbus, Ohio.

Cincinnati Technical College's Transfer Module can be found in the Humanities Division section.

# Academic Probation and Dismissal

"Academic Probation" means that a student has not maintained the required GPA. Such a student is given a period during which he or she has the opportunity to meet the required standards or be subject to academic dismissal from the program.

A full-time student (12 credit hours or more per term) shall be on academic probation when the student's term total grade point average is 1.0 or below.

A student shall be on academic probation when the student's total grade point average falls below the average listed for the following designated levels:

| Credit Levels | Total Credit Hours Attempted | GPA* |
|---|---|---|
| I | 18 through 35 | 1.75 |
| II | 36 through 53 | 2.00 |
| III | 54 through 71 | 2.00 |
| IV | 72 and over | 2.00 |

*Non-degree credit hours will not be calculated in the GPA.

A student who does not maintain the above cumulative averages will be placed on academic probation. A student designated as on academic probation is subject to the following conditions:

1. The student may not enroll for more than twelve (12) credit hours or four (4) courses without the permission of the student's program chairperson/faculty advisor.
2. The student may not be eligible to enroll for cooperative education or clinical experience/directed practice without the permission of the program coordinator.
3. The student will be subject to academic dismissal from the program if he or she does not attain the appropriate GPA upon entering the next credit level. The student is then notified by letter of pending dismissal from the program and given an opportunity to arrange a hearing to request an extension of the probationary period.

## Reinstatement Following Academic Dismissal

A student academically dismissed from a program will be eligible to apply for reinstatement one calendar year after the date on the letter of academic dismissal. In order to be reinstated into the program from which the student was dismissed, a student must submit a request in written form to the appropriate division dean. Final permission will be decided by the division dean.

## Academic Appeals Procedure

Cincinnati Technical College has adopted the following procedures to ensure that students with legitimate academic grievances can resolve these grievances equitably.

1. A student is expected to bring his or her grievance to the attention of his or her program chairperson/faculty advisor first.
2. If the grievance cannot be settled at this level, the student is expected to take his or her grievance to the division dean or the dean's designee.
3. It is expected that most grievances will be resolved at the division level. However, if the grievance cannot be resolved at this level, and the student chooses to go to the next level, the student is asked to submit to the executive assistant in room 174 a formal, written statement which gives the basis for the grievance. The division dean will also submit a memo to the executive assistant with a summary of the actions taken and of the recommendations

made at the division level. That executive assistant will convene a panel of three deans (excluding the dean of the division involved with the grievance).

4. The student meets with the panel of deans (excluding the dean of the division involved with the grievance) for further discussion. The panel may choose to invite others to participate in the meeting. It is the responsibility of the panel to determine final resolution. However, the panel, at its own discretion, may refer the matter to the Academic Policy & Curriculum Committee (APCC) for its advice and recommendations.
5. In those cases where the panel has reached a recommendation the chairperson makes the recommendation for action to the dean of the division involved with the grievance.
6. The chairperson is to notify the student of the recommendation for action.
7. The chairperson is to submit copies of all correspondence pertaining to the recommendation for action to the executive assistant in room 174.
8. In those cases where a formal hearing before the APCC is to be convened, the following information must be submitted one week prior to the actual hearing:
   a. Student's written statement and any other material the student wishes to submit.
   b. Student's transcript.
   c. A written summary of the disposition of the case at the division level.
9. The committee meets with the student, the program chairperson/faculty advisor and other relevant parties to review the case.
10. The committee makes the recommendation for action to the dean of the division involved with the grievance.

## Administrative Withdrawal

A matriculated student who fails to enroll for five (5) consecutive terms will be administratively withdrawn. In such a case, the student must reapply for admission to a program and will be subject to re-evaluation and to any change of degree requirements during his or her absence. The re-admitting process is done in the Admissions Office.

## Re-Entry

Any student who registers at CTC after an absence of five (5) or more calendar years may petition to have all courses in which he or she received a grade of "D" or "F" removed from the calculation of his or her cumulative Grade Point Average (CGPA). The original course grade will continue to be shown on the transcript even though it is not calculated in the CGPA. Courses which are removed from the calculation of the CGPA under this policy must be repeated to fulfill graduation requirements. Petitions to remove such grades must be submitted to the appropriate academic division dean. Remaining courses must be reviewed for appropriate current content as required by the academic policies of the College.

## Changing Technologies

Students transferring from one technology to another must secure written approval from the program chairperson/faculty advisor and academic dean for acceptance into the new/alternate technology.

Only courses which are applicable to the curriculum of the new technology will be computed in the student's program/major GPA The calculation of the cumulative GPA would still be based on all courses taken at CTC.

# Graduation Requirements

To qualify for the associate degree, a student must declare a major, fulfill the program requirements as identified at the time of acceptance, attain at least a 2.0 cumulative GPA, and petition to graduate.

As a part of the graduation requirements, a student must complete at least 21 credit hours in the communication skills/social sciences area. Of the 21 credit hours, 12 must be in communication skills and 9 in the social sciences. The communication skills requirement consists of 6 credit hours in written composition, 3 credit hours in technical writing or business communications, and 3 credit hours in oral communication. To complete the minimum requirements in the social sciences, a student, in consultation with an academic advisor, will select a minimum of 3 courses (9 credit hours) from at least 2 of the 4 areas: psychology, economics, sociology, and government relations.

A student who changes programs is subject to the academic requirements of the new program at the time of the change. A student who extends study beyond the normal two years is subject to the requirements of the program as published at the time of admission, or those requirements approved by the division dean or his or her designee.

**Residency Requirement** - Students transferring to Cincinnati Technical College from another accredited Ohio college or university with a completed Transfer Module shall follow the guidelines set forth in the "Transfer Module" statement found elsewhere in this section. Except for the Associate of Technical Study degree and other special training programs, other transfer students must complete at Cincinnati Technical College at least 50 percent of the total non-co-op/non-clinical credit hours required by their programs. In Associate of Technical Study programs, the residency requirement shall be determined jointly by program faculty and college administration.

**Certificate Programs** - To qualify for a certificate, a matriculated student must fulfill the program requirements as identified at the time of acceptance, and attain no less than a 2.0 cumulative GPA. It is the student's responsibility to successfully complete the courses necessary for graduation. A transfer student must complete at Cincinnati Technical College at least 50 percent of the total non-co-op/non-clinical credit hours required by his or her program and maintain a 2.0 cumulative GPA.

### Graduation Petition

A student must file a graduation petition in order to graduate. Any matriculated student may file a graduation petition when he or she has earned and/or transferred in a combined total of seventy (70) credit hours towards an associate degree and a combined total of forty (40) credit hours towards a certificate. The petition must be filed in the Registrar's Office twenty (20) weeks prior to the date of completed coursework.

| Term* | Dates Petitions Accepted | Graduation Date |
|---|---|---|
| **Summer 1992** | | |
| (6/24/92 - 8/26/92) | March 16 to April 24 | August 26, 1992 |
| **Early Fall 1992** | | |
| (9/8/92 - 11/10/92) | May 26 to July 17 | November 10, 1992 |
| **Late Fall 1992** | | |
| (11/16/92 - 1/29/93) | August 10 to October 1 | January 29, 1993 |
| **Winter 1993** | | |
| (2/8/93 - 4/12/93) | October 19 to December 11 | April 12, 1993 |
| **Spring 1993** | | |
| (4/19/93 - 6/21/93) | January 10 to March 5 | June 21, 1993 |

***Term in which all coursework is completed.**

## Participation in Commencement

Students may participate in the September commencement ceremonies if they have met the following requirements:

They have satisfactorily completed all requirements for a certificate or degree and have not previously participated in a CTC graduation ceremony.

*They need no more than nine credit hours (including co-op) and can complete all degree or certificate requirements during the Fall (September) term. These students may participate if:

1. They register for all remaining courses by the close of the advance payment date and present a paid registration receipt to the Registrar.
2. The division dean approves the student's participation.

*Students in this category will be noted in the commencement program as those who will complete their academic program as scheduled at the end of the Fall Term. Students will not be eligible for honors at commencement.

## Graduation Honors

Students who achieve a cumulative grade point average of 3.50 or higher for five terms will graduate with honors. "Honor" awards will be designated on the degree and will be classified as follows:

Cum Laude 3.50 - 3.79
Magna Cum Laude 3.80 - 3.89
Summa Cum Laude 3.90 - 4.00

## Transcripts

Upon completion of a Request for Transcript Form, obtainable in the Registrar's Office, an official transcript of a student's academic record will be forwarded to any employer or educational institution as designated by the student. A fee is charged for each transcript. Please allow a minimum of five working days for processing transcripts.

# Conduct Policy

Ohio Administrative Code (O.A.C.) Rule 3357:4-1-98 Conduct of students, staff, faculty and visitors.

A. Behavior contrary to civil law and/or behavior which interferes with the College's maintenance of order or its educational process is forbidden. Such behavior may result in disciplinary action including, but not limited to, disciplinary probation, suspension, dismissal, expulsion, withholding of transcripts or other appropriate action.

B. The decision as to whether a specific kind of behavior is a violation will rest with the administration. Following are specific but not exclusive examples of behavior prohibited by this section.

1. Deliberate destruction of, damage to, malicious misuse of, or abuse of College property.
2. Assault or battery upon another person while on College owned or controlled property.
3. Theft of property of the College or any private individual which is physically located on College owned or controlled property.
4. Forgery or alteration of any college identification card, parking permits, records or information storage systems.
5. Plagiarism or any behavior involving academic dishonesty.
6. Illegal manufacture, sale, possession, or use of alcoholic beverages, narcotics, marijuana, hypnotics, sedatives, tranquilizers, stimulants, hallucinogens or similar controlled substances.
7. Obstruction or disruption of teaching, research, administration, disciplinary procedures or other College activities.
8. Participation in or organization of any demonstration, or unauthorized activity which interrupts the functions of the College or interferes with the rights of other members of the College community.
9. Unauthorized entry into or use of College facilities, either buildings or grounds.
10. Illegal or unauthorized possession or use of firearms, fireworks, explosives, dangerous chemicals or other weapons on College owned or controlled property.
11. Deliberate disobedience of or resistance to identified College authorities acting in accordance with College policy.
12. Drunkenness or gambling on College owned or controlled property.
13. More than three parking violations per academic term
14. Disorderly conduct on College owned or controlled property.
15. Sexual and other forms of harassment prohibited by state and federal law.

Effective: May 1, 1978
Promulgated under: Chapter 111.15 of the Revised Code.
Rule amplifies Chapter 3345.21 of the Revised Code.
Revised October, 1982.

**Sexual Harassment**

Cincinnati Technical College affirms its commitment to ensuring an environment for all employees and students which is fair, humane and respectful—an environment which supports and rewards employee and student performance on the basis of relevant considerations such as ability and effort. Behaviors which inappropriately assert sexuality as relevant to employee or student performance are damaging to this environment.

Title VII of the Civil Rights Act of 1969 and Title IX of the Educational Amendments of 1972 as interpreted by Federal Regulation prohibit sexual harassment.

**Definition**

Sexual favors may not be required explicitly or implicitly as a term or condition of an individual's employment or student status. The submission to or rejection of sexual favors may not be used as a basis for employment of educational decisions. Sexual conduct which has the purpose or effect of unnecessarily interfering with an individual's work or student performance or creating an intimidating, hostile or offensive working or educational environment is prohibited.

Such conduct may include:

- verbal harassment or abuse
- subtle pressure for sexual activity
- sexist remarks about a woman's or man's clothing, body, or sexual activities
- unnecessary touching, patting, or pinching
- leering or ogling of a woman's or man's body
- constant brushing against a woman's or man's body
- demanding sexual favors accompanied by implied or overt threats concerning one's job, grades, letters of recommendation, etc.
- physical assault

# Substance Abuse Policy

Cincinnati Technical College prohibits the unlawful manufacture, possession, use or distribution of drugs on its property or as a part of its activities. Cincinnati Technical College also prohibits the use or possession of alcoholic beverages on campus property except as authorized by campus policy. Students and staff may

be accountable to both civil authorities and to the College administration for drug and alcohol related actions which are a violation of federal, state or local laws, or the College policy as stated below. In 1989, the College Board of Trustees approved a Drug Free Workplace policy found below.

**Policy For Drug-Free Workplace: 89.49**

The unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Cincinnati Technical College workplace. Employees who violate this prohibition will be subject to disciplinary action up to and including immediate discharge.

All employees are obligated to the terms of this policy and must notify their immediate supervisor of conviction for any criminal drug statute violation occurring in the workplace no later than five days after such conviction.

Each employee of the College will receive a written copy of this POLICY STATEMENT regarding a Drug-Free Workplace and will be notified that, as a condition of employment, he or she must abide by this POLICY STATEMENT and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace not later than five days after such conviction.

Upon receiving notice that an employee who is engaged in the performance of a federal contract has had any criminal drug statute conviction for a violation occurring in the workplace, Cincinnati Technical College will notify the federal contracting agency within ten days. The College will impose a sanction on, or require participation in a drug abuse assistance/rehabilitation program by the convicted employee.

Substance abuse is a serious problem in our society. In response to this problem, Cincinnati Technical College offers the following educational activities and personal assistance to all members of the campus community.

- An annual distribution of this statement to all students and employees of the College.
- A Health/Wellness Table with a variety of information on substance abuse is available in the Cafeteria the first 3 days of each term.
- The Department of Athletics and Student Activities has an alcohol/drug education assistance program for athletes.
- Two College-wide workshops on issues dealing with substance abuse are held during each academic year.
- Information and literature on substance abuse is available in the Counseling Center, room 157.
- Students, as well as faculty and staff members who may have alcohol or other substance abuse problems, may receive confidential counseling and referral to appropriate community agencies from the counselors in the Counseling Center, room 157, or employees may contact the Office of Human Resources for assistance.

Early recognition, intervention and treatment for substance abuse is necessary to avoid detrimental effects to physical and mental health. Health risks associated with substance abuse include, but are not limited to:

- Physical dependence
- Psychological dependence
- Alterations in the body's immune system
- Digestive problems
- Liver complications
- Neurospychological complications
- Nutritional deficiencies
- Certain cancers
- Cardiovascular complications
- Respiratory complications
- An increased risk of contracting AIDS
- Deterioration in learning ability, memory and judgment
- Placental transfer resulting in low birth weight, mental retardation, congenital malformation and neonatal addiction
- Moral deterioration
- Deterioration of personal relationships

Death may result from continued substance abuse.

For further information on substance abuse and early intervention and treatment, contact the Counseling Center, room 157, (513) 569-1544, or the Office of Human Resource Services in room 177, (513) 569-1565.

# Student Fact-Finding Hearing Procedure

Ohio Administrative Code (O.A.C.) Rule 3357:4-52 Right to fact finding hearing.

A. When an allegation is made that a student has violated the provisions of rule 3357:4-01-98 of the Ohio Administrative Code, "Regulation of behavior of students, staff, faculty and visitors," the involved party shall be advised in writing and shall be given an opportunity to acknowledge or deny the accusation.

B. When such an allegation is denied, the involved party shall be, upon written demand to the Vice President for Student Services, afforded the right to a fact finding hearing to determine the truth of the allegation.

C. Upon receipt of written demand for a fact finding hearing, the Vice President for Student Services for the College, or such other individual as the administration shall designate, shall notify the involved party in writing as to the time and place of the hearing, not to be less than five working days from the date of such notification.

D. Such notice shall advise the involved party of his or her right to be represented by counsel of his or her own choosing, legal or other, and shall contain a copy of the fact finding hearing procedure.

E. When a student experiences difficulties not involving the disciplinary code, the student may request that a faculty/staff committee be convened by the Student Services Officer or a designate.

When a student is in disciplinary difficulty, a faculty/staff committee shall be convened by the Vice President for Student Services or a designate.

The student and all members of the committee shall be informed of the alleged violation and a mutually agreeable meeting time will be set. The student has a right to choose an advisor to be present at the hearing.

The committee will hear the evidence, reach a decision and make appropriate recommendations to the Vice President for Student Services who will then make a final binding recommendation. The student has the right to appeal the decision within three (3) working days to the Vice President for Student Services.

## Student Complaint Procedures

Cincinnati Technical College has established procedures to address the violation of the rights of students. A complete copy of the procedures can be obtained from the Office of Student Services. (Matters related to appeal of academic decisions must first be handled through the Academic Appeals Procedure which is referred to elsewhere in this handbook.)

If a student feels that his or her rights have been, or are being, violated, the following procedure is available:

Step 1 — The student should discuss problems with his or her instructor or faculty advisor.

Step 2 — If the problem is not resolved at Step 1, a student complaint/referral form should be submitted to the Office of Student Services. A copy of the form shall be forwarded to the Dean of the person against whom the complaint is made for resolution.

Step 3 — If the complaint is not resolved at Step 2, the complainant may request a fact-finding hearing under the provisions of 3357:4-52 through the office of the Vice President for Student Services.

# Release of Information

A student's record contains information which is classified as confidential or public. The following is considered public information and the College may exercise its discretion regarding the release of this information.

1. Name
2. Technology/Division
3. Full or Part Time Status
4. Date of Graduation and Degree/Certificate Granted.

Public information will be used for releases to newspapers, television and radio.

All other information is confidential and will be released only upon the receipt of written permission from the student for legitimate College purposes, or as otherwise required by law.

Photographs and/or films of students for promotional and recruitment purposes are taken throughout the school year. Students who do not wish to be included in these visuals must inform the Director of Public Information prior to photographing and/or filming.

STUDENT SERVICES
ONE DOLLAR
CINCINNATI TECHNICAL COLLEGE

# Student Services

As a service to students and to the community, Cincinnati Technical College maintains a cadre of professional administrators and support staff to help in making intelligent decisions regarding admission to the College,registering for classes, application and eligibility for financial aid, career and educational decision making, as well as personal-social counseling.

## Counseling

The Counseling Center maintains a professional staff to assist students. All sessions are confidential and free of charge to all students.

The following services are provided by the counseling staff:

**Counseling** — counsel students regarding personal, social, or academic problems or concerns.

**Career Counseling** — help students and potential students with career decisions and concerns through testing, individual conferences and/or career development coursework.

**Admissions Advising** — advise students regarding general admission; assist students in choosing programs, and refer students to program chairpersons.

**Educational Transfer Counseling** — assist students interested in continuing their education at other colleges or universities.

**International Students** — provide admissions, immigration and naturalization assistance.

**Special Assistance** — provide assistance to students with handicaps or special needs, and students in special programs.

**Information** — provide students with information regarding College policies, programs, housing, etc.

If a situation develops which the staff feels unprepared to handle, the student will be referred to an appropriate professional.

The Counseling Center is located in room 157. Office hours are 8:00 a.m. to 8:00 p.m. Monday through Thursday, and 8:00 a.m. to 5:00 p.m. on Friday.

## Living Accommodations

CTC has no student housing facilities of its own as it is primarily a "commuter" institution. However, for individuals living too far from the College to commute, help will be given to locate living accommodations available at reasonable costs.

## Veterans

Cincinnati Technical College has a Veterans' Affairs Coordinator to aid persons attending school on V.A. benefits. The Veterans' Affairs coordinator will help students with official paperwork and information regarding benefits. All degree programs at Cincinnati Technical College are fully approved by the State Approving Agency for Veterans Training. Upon being accepted by CTC, veterans should contact the Veterans Office for full information concerning application for Veterans' Educational Benefits.

Tutorial services can be arranged for veterans in need of academic assistance. The Department of Veteran's Affairs will reimburse the veteran for this cost. Fair and reasonable charges for this service will be determined by the Coordinator of Veterans' Affairs prior to approval of tutorial assistance.

Whenever possible, a student tutor will be utilized. However, when there is not a qualified student tutor available, the Veterans' Affairs Coordinator will attempt to find a qualified faculty tutor. Please contact the Veterans Office for further information.

The State Approving Agency for Veterans Training has approved Cincinnati Technical College for the education and training of veterans and all their dependents under all existing public laws. Inquiries concerning eligibility should be directed to the Coordinator of Veterans' Affairs in room 157.

# Financial Aid

At Cincinnati Technical College the purpose of financial aid to students is to provide financial assistance to qualified students who, without such aid, would be unable to attend college. Financial Aid is a program whereby money is made available to eligible students to help them pay their educational costs such as: tuition, fees, books, transportation, etc.

In 1989-90, the College awarded approximately $2,500,000 from federal and state government funds, private donors and the College's own funds. These funds helped more than 3,000 students pay for their education at Cincinnati Technical College.

Amounts of individual awards vary and depend upon the student's demonstrated and verified financial need, as well as the amount of funds available for distribution. "Need" is determined by subtracting the family contribution from the educational cost at Cincinnati Technical College. The family contribution is estimated on the basis of the amount of income and assets, as well as a consideration of taxes and other expenses of the family. An independent, objective, nationally recognized method of analysis developed by the College Scholarship Service (CSS) is used to evaluate the family's financial circumstances. The source of information is derived from CSS's Financial Aid Form (FAF). Students may obtain the FAF from high school counselors and from the Office of Student Financial Aid and Scholarships (OSFAS) at Cincinnati Technical College. The financial aid award year begins with the Summer (June) term and extends through the Spring (April) term.

One category of questions on the FAF deal with the determination of the student's dependency status. The most recent definition of independent and dependent status, effective for the 1992-93 academic year, is as follows:

An applicant for 1992-93 financial aid funds will be considered **independent** if he or she:

1. Is 24 years of age by Jan 1, 1992
2. Is a veteran of the U.S. Armed Forces.
3. Is an orphan or ward of the court.
4. Has legal dependents other than a spouse.

The student will also be considered to be independent if the school documents that one of the following circumstances exists:

5. The student is married, is a graduate or professional student, and will not be claimed as an income tax exemption by his or her parents for the 1991 tax year.
6. The student is a single, undergraduate student and was not claimed as an income tax exemption by his or her parents in either 1990 or 1991, and demonstrates self-sufficiency for two years. The student is considered self-sufficient if he or she had a total annual income and other resources of a least $4,000.

The two years used to demonstrate self-sufficiency are the two years before the student first applied for and received federal student aid.

Students must mail the **accurately** completed FAF to the address listed on the front of the FAF with a check or money order for the processing fee which is also noted on the front of the FAF. It takes CSS approximately 4 to 6 weeks to process the FAF. Once the FAF has been processed, the evaluation and a copy of the information that was submitted by the family is sent directly to the

OSFAS at Cincinnati Technical College from CSS.

A financial aid advisor will review the data from CSS for completeness and will request any additional documentation from the family to verify the accuracy of the information. The documentation required is as follows:

1. The previous year's income tax forms (1040 or 1040EZ or 1040A).
2. Completed verification document (obtained from OSFAS at CTC).
3. An Ohio Instructional Grant (OIG) certificate. The application, which can be obtained from the OSFAS at Cincinnati Technical College, must be mailed to the Ohio Board of Regents, which in turn will submit a certificate to the student. The student, in turn, must submit the certificate to the OSFAS at Cincinnati Technical College.
4. The Pell Grant Student Aid Report (SAR).
5. The evaluated FAF which CSS sends to the OSFAS at Cincinnati Technical College after the student has completed and submitted it to CSS.
6. The OSFAS institutional application for aid (obtained from the OSFAS at Cincinnati Technical College).
7. Students must also apply for admission to Cincinnati Technical College.
8. Financial Aid Transcripts (FAT) from each college or university previously attended, if applicable.

## Deadlines

All Cincinnati Technical College applications for financial aid should be completed by March 15 in order to receive full consideration for all forms of assistance. Applications completed after March 15 are not guaranteed any consideration for campus-based funds.

Campus-Based Funds (Allocated to institution by the federal government)

1. **Perkins Loans** - ("Self-help" - **must** be repaid)
   a. Interest rate of 5%. Repayment begins nine months after graduation or termination of at least half-time (6 to 8 credit hours) attendance for new borrowers.
   b. Loan maximums - (a) $4,500 for first two years of undergraduate study, (b) $9,000 for undergraduates who have completed their first two years of study. (The $9,000 includes the first $4,500).
   c. Repayment can be deferred or cancelled under certain circumstances.
   d. Priority must be given to students with exceptional financial need.
   e. Exit interviews required for students who withdraw or graduate.
2. **College Work-Study** (CWS)
   ("Self-help" - non-repayable)
   a. Wages will be at least equal to the federal minimum wage.
   b. Students will be employed on-campus for a maximum of 20 hours per week.
   c. Students are paid bi-weekly through the College's payroll system. Time cards must be submitted in a timely fashion. Late time cards will cause a delay in payment. Proper student identification is required.
3. **Supplemental Education Opportunity Grant (SEOG)**
   ("gift aid" - non-repayable)
   a. Available only to undergraduate students with exceptional financial need.
   b. For 1992-93 the awards will range from $100 to $1200 per student.
   c. Must be enrolled at least half-time (6-8 credit hours). Priority is given to full-time students.

Other forms of aid awarded directly to the student are:

1. **Pell Grant** (awarded by the federal government)
   a. No repayment. (For undergraduates only)
   b. Must be enrolled at least half-time. Grants may be awarded for half-time (6-8 credit hours), three-quarter time (9-11 credit hours), and full-time (12 credit hours or more).
   c. In the 1992-93 academic year, grants will range from $200 to $2,400.
   d. Students should bring their Student Aid Report (SAR) to the OSFAS at Cincinnati Technical College as soon as it's received.
2. **Stafford Loan** (Federal Loan - formerly "GSL")
   a. A low interest loan which must be repaid. For new borrowers who take out a Stafford loan for periods of enrollment beginning on or after July 1, 1988, the interest rate is 8% for the first 4 years of repayment and 10% after that. For students who currently have a 7% or 9% GSL, the interest rate on additional Stafford loans will continue to be 7% or 9%. Students are given a 6-month grace period for repayment after graduation or withdrawal from college.
   b. Must be enrolled at least half-time (6-8 credit hours)
   c. Must apply for a Pell Grant and demonstrate financial need.
   d. May borrow up to $2,625 a year if student is a first or second-year undergraduate student. May borrow up to $4,000 if student has completed 2 years of study and has achieved third-year status.
   e. An origination fee will be deducted by the lender before issuing the checks.
   f. Students must complete the first section of the loan application and submit it to the OSFAS at Cincinnati Technical College. The OSFAS will complete the second section before mailing to the lender.
   g. Students may obtain a Stafford Loan application from a savings and loan association, credit union, bank, or from the OSFAS at Cincinnati Technical College.
   h. Loans are co-payable to Cincinnati Technical College and the borrowers and are sent directly to the college.
   i. Students have up to 10 years to repay the loan.
3. **Supplemental Loan for Students** (SLS)-(Federal Loan)
   a. Must be repaid.
   b. Loans are made by lenders such as banks, credit unions and savings and loan associations.
   c. Variable interest rate is determined on June 30 for each academic year.
   d. Student does not have to demonstrate financial need.
   e. Must begin repaying both principal and interest within 60 days after the loan is disbursed unless the borrower is eligible for deferment.
   f. Checks are sent directly to the college.
   g. Eligible undergraduate students may borrow up to $4,000 per year for a total of $20,000 (this is in addition to Stafford Loans).
   h. Obtain a determination of eligibility or ineligibility for a Pell Grant and Stafford Loan.

Effective January 1, 1991, the educational institution may not present to the student borrower for endorsement the first disbursement of his or her loan proceeds until 30 days after the bor-

rower begins a course of study. This applies only to student borrowers who are entering their first year in a program of undergraduate study and who have not previously obtained a Guaranteed Student Loan. This provision affects all Stafford and SLS loans (regardless of the amount of the loan or the length of the period of enrollment) guaranteed for periods of enrollment beginning on or after January 1, 1991).

4. **PLUS Loans** (Federal Loans)
   a. Must be repaid.
   b. Parents may borrow up to $4,000 per year for a total $20,000 for each dependent child.
   c. Loans are made by banks, credit unions, and savings and loan associations.
   d. Variable interest rate is determined on June 30 for each academic year.
   e. Student does not have to demonstrate financial need.
   f. Parents must begin repaying both principal and interest within 60 days after the last loan disbursement.
   g. Lender sends the check to parents.

## State of Ohio Aid

1. **Ohio Instructional Grant** (OIG) (State grant)
   a. Non-repayable grant.
   b. In the 1992-93 academic year the maximum adjusted family income is **$27,000** to be eligible.
   c. Must be an Ohio resident.
   d. Must carry a minimum of 12 credit hours and enroll in a **degree** program.
   e. Must apply to the Ohio Board of Regents.
   f. The OIG can be used only for tuition and fees. For the 1992-93 academic year, students must mail the application to the Ohio Board of Regents by September 25, 1992.
   g. Limited to 3 terms per year.
   h. Cannot be enrolled in a course of study leading to a degree in theology.
2. **Ohio Academic Scholarship** (Ohio Aid)
   a. Non-repayable scholarship.
   b. Must be a high school senior at time of application. Must have taken ACT test. Must have a 3.0 GPA from sophomore year to first semester of senior year.
   c. $1,000 per year. A 4-year award.
   d. Must attend an Ohio institution for at least 12 credit hours per term.
3. **Ohio War Orphan Scholarship** (Ohio Aid)
   a. Non-repayable scholarship.
   b. Pays fees (**no** lab fees).
   c. Must be at least 16-21 years of age at time of application.
   d. For dependents of a veteran parent(s) who served in one of the conflicts and died, or were disabled during their period of service.
   e. Must be Ohio resident.
   f. Eligibility determined by Ohio Board of Regents.
   g. Awards cover cost of instructional and general fees for 4 years of study.
4. **Ohio National Guard Scholarship** (Ohio Aid)
   a. Non repayable scholarship.
   b. Scholarship pays 60% of student's fees.
   c. Student must enlist in National Guard for at least 6 years.
   d. Must be an Ohio resident for at least one year.
   e. Applications may be obtained from Adjutant General's Office.
   f. Covers instructional and general fees.

Additional information may be obtained from the following agencies:

1. For the **Ohio National Guard Scholarship**, write or call.
   State of Ohio
   Adjutant General Dept.
   Attention: AGOH/TG
   2825 W. Granville Road
   Columbus, Ohio 43235-2712
   Phone (614) 889-7032
2. For the **OIG, Ohio Academic Scholarship**, and the **Ohio War Orphans Scholarship**, write or call:
   Ohio Board of Regents
   Student Assistance Office
   30 E. Broad St.
   3600 State Office Tower
   Columbus, Ohio 43216-6503
   Phone (614) 466-7420
3. Regarding the **Stafford Loan, PLUS Loan**, and the **SLS Loan**, write or call the particular lender.
4. Regarding the status of the **Pell Grant**, call (301) 722-9200.
5. Regarding the status of the **Financial Aid Form (FAF)**, call College Scholarship Service at 1-800-433-4323.

In addition to the program-specific eligibility requirements, the following general eligibility requirements for the above-mentioned financial aid programs are:

**General Eligibility Requirements**

1. U.S. citizen or eligible non-citizen in the country "for other than temporary purpose."
2. Enrolled as a "regular" degree-seeking student.
3. Maintain satisfactory academic progress as defined by the college.
4. Cannot be in default on any federal loan (Perkins, Stafford/GSL, PLUS, SLS) received at any institution; cannot owe a refund or repayment of a Pell Grant, SEOG, or OIG award.
5. File with the institution a "Statement of Educational Purpose."
6. Demonstrate financial need as determined by an approved needs- analysis system.
7. Sign a statement of Selective Service registration compliance.

## State of Indiana Aid

**Indiana Contract for Spaces Grant** — To be eligible for tuition assistance from the Indiana Contract Grant Program, students must:

1. Reside in one of the six Indiana counties: Dearborn, Franklin, Jefferson, Ohio, Ripley, or Switzerland.
2. Be accepted for admission to Cincinnati Technical College and enrolled on a full or part-time basis in a program/technology leading to an associate degree or certificate. Students not accepted into a program/technology are not eligible.
3. Complete and return an Indiana Contract for Space Grant Application and a CTC Financial Aid Application to the Office of Student Financial Aid and Scholarships at CTC.
4. Students receiving Indiana Contract for Space Grant can also use their Indiana State Grant Award.
5. No other financial aid documents required, unless student is seeking other federal aid or Indiana State Grant. (Must complete the Indiana FAF). Student's eligibility for the Indiana Contract for Spaces Program will be determined on a first-come first-served basis in accordance with the date applications are received by the Office of Student Financial

Aid and Scholarships. Waiting lists will be maintained for eligible students for whom Indiana Contract for Space Grant funds are not available. When funds do become available, they will be awarded to students on the waiting list in order of their application date for the program.

The Indiana Contract for Spaces Grant Program will be limited to 3 terms during an academic school year.

## Institutional Aid Programs

Cincinnati Technical College aid programs include academic and need-based scholarships and emergency student loans and grants.

1. **CTC Scholarship Program** — In 1980, the CTC Scholarship program was established by the Office of Resource Development. The purpose of the program is to acknowledge and reward high academic achievement by helping deserving students remove some of the financial barriers they face while pursuing a technical education.Eligibility requirements include:
   a. Applicants must meet priority deadline of April 1.
   b. Applicants must be U.S. citizens.
   c. Applicants must be fully accepted and matriculated into a certificate or degree program.
   d. Applicants must have ranked in the upper 20% of their high school graduating class and/or have a minimum GPA of 3.0 on a 4.0 scale, or have earned a minimum of 12 credit hours at CTC with a minimum of 3.0 GPA and 3.0 core average if applicable.
   e. Need-based applicants must have on file in the Office of Student Financial Aid and Scholarships a CTC Financial Aid Application and a completed Financial Aid Form (FAF).
2. **Emergency Aid Programs** — Cincinnati Technical College acknowledges the concerns and needs for additional emergency student assistance programs. It is the College's policy to attempt to assist the student body in meeting educational costs which may delay enrollment.

A. **The Emergency Student Loan Program** is designed to serve as an institutional short-term loan with emphasis on repayment by the fifth week of the term. The program will provide emergency assistance for tuition and fees. For those students who meet eligibility requirements, awards will be made upon availability of funds. The maximum loan amount is the total cost of tuition.

1. Student must be a U.S. citizen **born** in the U.S.
2. Student must be enrolled at least half-time and accepted into an eligible program.
3. Student must be making satisfactory progress as defined in CTC's catalog.
4. Student must not be in default on a Perkins Loan (formerly NDSL), Stafford, SLS or PLUS Loan, or any institutional loan.

B. **Schell Loan Program** (Interest free)

1. Student must be a U.S. citizen **born** in the U.S.
2. Student must be enrolled at least half-time and accepted into an eligible program.
3. Student must be making satisfactory progress as defined in CTC's catalog.
4. Student must not be in default on a Perkins Loan (formerly NDSL), Stafford, SLS or PLUS Loan or any institutional loan.
5. Must be 25 years of age or younger.
6. Citizens of Ohio, Kentucky, West Virginia or adjoining states.
7. Pays tuition and all institutional fees, books and supplies.
8. Full tuition in-state $742; out-of-state $1316 (subject to change).
9. Repayment is required at least by the end of the term in which the loan was sought in order to help aid other students who may, without this assistance, be unable to attend college.

**ALL FINANCIAL AID RECIPIENTS MUST REAPPLY EACH YEAR.**

## Methods of Disbursement and Refund of Aid

The Financial Aid Office will authorize aid funds (excluding College Work-Study) to be charged to the appropriate fund control accounts by the Office of Finance and Business Affairs. This authorization takes place by the end of the fourth week of each term. The Office of Finance and Business Affairs will apply the authorized aid to the student's institutional charges with priority first given to tuition and fees. When all institutional charges have been paid, CTC's Office of Finance and Business Affairs will disburse the remaining balance of aid (excluding College Work-Study and OIG) directly to the student. The disbursement occurs on the first day of class, the following Monday, and the Monday of the fifth week of the term. It is disbursed by check, and proper student identification is required by the Cashier.

## Financial Aid Refund Policy

Since financial aid is expected to meet or help meet educational costs, any tuition and fee refund, up to the amount of financial aid received for that term, will be refunded to the Financial Aid Program(s) from which the student received assistance.

When figuring the amount of refunds to Title IV Programs at the time students withdraw, drop-out, or are expelled during the Institution's Refund Period, as stated in the College Catalog, the Institution must first determine the student's last enrolled date or the last recorded date of attendance, identify the aid sources that make-up the disbursement, and determine the amount the student received as cash disbursement for non-institutional costs. If that date exceeds the institutional refund period, no refund is required. Otherwise, the institution must perform the refund calculation. The formula is as follows:

Title IV Refund = (Amount of Refund) x $\frac{\text{Total amount of Title IV Aid - minus (CWS earnings) Awarded for payment period}}{\text{Total Amount of aid - (CWS earnings)}}$ = Amount to be returned to Title IV accounts

Non-Title IV Refund = Amount of refund - Title IV refund

Refund = The term "refund" is used in regulations to refer specifically to refunds by institutions of payments made to them for institutional charges. Institutional charges at CTC are tuition and fees.

The portion of a refund allocated to a program may not exceed the amount a student received from that program.

**The Allocation Priority for Program Refunds**

A. Title IV Programs
   First - Perkins
   Second - SEOG
   Third - Pell
   Fourth - Stafford
   Fifth - SLS/Plus

B. Non-Title IV Programs
   Sixth - Athletic Grants
   Seventh - State Grants
   Eighth - State Scholarships
   Ninth - Institutional Scholarships
   Tenth - Agency aid
   Eleventh - Student

## Rights and Responsibilities Governing Receipt of Financial Aid

The following information is provided in compliance with federal regulations.

### Student's Rights

1. All students have the right to know what financial aid programs are available at CTC, and the deadlines for submitting applications for each program.
2. Each student has the right to know how his or her need is determined (including tuition, books, fees, and personal expenses), and what resources are used in the calculation of need, and, if awarded, how the award has been "packaged," and how his or her aid will be distributed.
3. Each financial aid student has the right to know how much of his or her need has not been met by the College.
4. If not awarded, each student has the right to be notified by mail with the stated reason(s) for denial of aid.
5. Each financial aid student has the right to know what portion of his or her aid must be repaid, the interest rate, pay back procedures, and what portion is grant aid.
6. All students have the right to know the College's refund policy and how it affects their financial aid packages.
7. All students have the right to know what the College's Satisfactory Academic Progress policy is for applicants and recipients of financial aid.

### Student's Responsibilities

1. All aid applicants have the responsibility of meeting application deadlines for filing, providing correct information on financial aid application forms, and returning all documentation, verification and corrections as requested by the Financial Aid Office.
2. Each student is responsible for reading, understanding and accepting responsibility for all agreements which are signed.
3. All financial aid recipients must notify the Financial Aid Office of any other resources, taxable or non-taxable income.
4. All financial aid recipients must notify the Financial Aid Office of any changes as they occur, including change of full- or part-time status, technology, family circumstances, address, etc.
5. All financial aid recipients are responsible for repayment of funds, if applicable, due to course(s) withdrawal.
6. All students who are awarded any type of loan are responsible for arranging pre-loan counseling, an entrance interview and exit interview. LOANS WILL BE ISSUED AFTER THE STUDENT SIGNS THE PROMISSORY NOTE.
7. All financial aid applicants and recipients have the responsibility of understanding and complying with the CTC Office of Student Financial Aid and Scholarships' Standards of Satisfactory Academic Progress.
8. All students must notify the Financial Aid Office if they are in default on a loan - Perkins (formerly NDSL), Stafford (formerly GSL), SLS and PLUS while in attendance at **ANY** postsecondary institution.

## Cincinnati Technical College Standards of Satisfactory Academic Progress

The Higher Education Act (HEA) of 1965, as amended by Congress in 1980, requires institutions of higher education to establish minimum Standards of Satisfactory Academic Progress (SSAP) for students receiving federal financial aid under the Title IV programs. CTC applies these standards to all institutionally-awarded funds including the College Work Study (CWS), Perkins loan, Pell Grant, Supplemental Educational Opportunity Grant (SEOG), Stafford loan (formerly GSL), SLS and PLUS loans.

The Ohio Board of Regents requires that a student who receives financial aid through a State of Ohio funded program must maintain Standards of Academic Progress considered by the institution as satisfactory toward receipt of the degree sought by the student. The CTC Financial Aid Office (FAO) applies these standards to the Ohio Academic Scholarship, Ohio Instructional Grant (OIG), Ohio National Guard Scholarship, and the Ohio War Orphan Scholarship.

Standards of Satisfactory Academic Progress were established to encourage students to "successfully complete" courses for which financial aid is received and to "progress satisfactorily" toward degree completion. "Successful completion" of a course is defined as receiving one of the following grades: A, B, C, D, or S. The grade marks: F, W, V, I, IP, U, or N will not be considered as successful completion of a course.

The Office of Student Financial Aid is responsible for establishing and monitoring a standard of minimum acceptable progress for continuation of financial aid eligibility. The prior non-receipt of Title IV aid by a student is irrelevant to the determination of whether a student is maintaining satisfactory progress in his or her course of study. Students must make satisfactory progress toward a degree or certificate in order to be eligible for Title IV aid.

The standards limit the total number of terms in which a student may receive aid. Once the student has reached the maximum number of terms for assistance he or she is no longer eligible to receive financial aid. In addition, to meet the standards a student must satisfactorily complete a minimum number of credit hours that he or she attempted during the academic year. Satisfactory academic progress shall be monitored at the end of the completion of each academic year. Students who do not satisfactorily complete the required minimum number of credit hours per academic year will be suspended from eligibility for financial aid. CTC's SSAP incorporate the following two concepts:

**QUALITATIVE STANDARDS** - Each student is required to have a grade point average (GPA) which meets the following requirement:

| Credit Levels | Total Cr. Hrs. Attempted | GPA |
|---|---|---|
| I | 1 through 35 | 1.75 |
| II | 36 and over | 2.00 |

If a student fails to successfully complete the required cumulative minimum credit hours by the end of a particular academic year, he or she will be suspended from eligibility for federal financial aid. A student who changes his or her major is still responsible for completing his or her degree or certificate in the maximum timeframe.

**QUANTITATIVE STANDARDS** - Each student is required to complete at least 60% of the credits for which he or she is registered.

If a student fails to maintain the required minimum GPA, or fails to successfully complete at least 60% of the credit hours in any academic year, he or she registered for, he or she will be placed on probation for receipt of aid.

**INCOMPLETES & IN-PROGRESS** - If a student receives a grade of "I" or "IP" he or she must submit a transcript to the FAO verifying successful completion before aid will be released for the next term.

**REPEATED COURSES** - If a student repeats a course because he or she failed it in a previous term or because the student wishes to improve a grade in the course, the credits may be included in the total number of credits the student is taking when determining

enrollment status as long as the student is considered to be making satisfactory progress, and as long as the institution is allowing the student to receive credit for the repeated courses. However, the Financial Aid Office will pay for a repeated course and count it in the number of credit hours only once-a total of two times for any one course.

**REMEDIAL COURSES (PRE-TECH COURSES)** - Federal regulations state that the student must be enrolled in an eligible program leading to a certificate or degree. Until such time as a student is admitted to such a program, he or she would not be eligible for federal financial aid. Remedial courses required for admission to the program would, therefore, not constitute an eligible program.

If, on the other hand, a student is admitted to an eligible program, but is required to take remedial courses (or at the student's option) and is otherwise eligible, the remedial courses will not affect the student's eligibility for federal aid. However, regulations effective April 29, 1985 limit the student to one year (equivalent to 45 credit hours) of non-credit or reduced credit remedial work except for courses relating to English as a second language.

**TRANSFER STUDENTS** - The number of terms which a transfer student may be allowed to be eligible for financial aid will vary depending upon the total number of hours accepted for transfer to CTC. The number of credit hours transferred from other institutions during the period of matriculation at CTC will be included in the total number of credit hours and terms earned.

**The CTC FAO's SSAP includes the student's total academic history. In order to receive aid, a student must be making SSAP regardless of whether he or she has previously received Title IV aid.**

If a student completely withdraws and/or vanishes from all classes in a given term, financial aid will be terminated automatically at the end of that term.

If a student received all no-passing grades, he or she will be placed on probation. If the student repeats the next term with all no-passing grades, financial aid will be terminated automatically at the end of that second term.

**REPAYMENT OF AID** - It is the responsibility of each College student to be aware of the academic progress standards which must be maintained for a student's continued eligibility for receipt of financial assistance. Due to time restrictions, it is not always possible to notify a student on a timely basis that he or she is no longer eligible to receive aid. It is each student's responsibility to determine that he or she has met or not met the established standards. Any student who does not satisfactorily complete any credit hours in a particular term and subsequently secures the proceeds of financial assistance for which he or she is not eligible will be immediately notified and required to repay such funds to the financial aid account. Any student who owes a repayment to the CTC Financial Aid account is no longer eligible to receive financial assistance at CTC.

**FINANCIAL AID APPEALS** - All students have the right to appeal a suspension from eligibility for financial assistance. Appeals of probation status will not be considered. The financial aid appeals procedure is meant to be as simple as possible. If a student wishes to appeal the decision of suspension, he or she should obtain the student Financial Aid Appeals Form from the FAO. The student should explain on the appeal form why he or she was not able to complete the minimum number of credit hours or maintain the required minimum GPA. The appeal form should be submitted along with other supporting documents (doctor's statement, etc.).

It is the student's responsibility to provide any documentation that will verify or support his or her appeal. The completed appeal form should be submitted to the FAO within 14 days of notice of suspension. The Financial Aid Appeal Committee will review the appeal. The student will be notified of the action taken on the appeal within 15 working days, unless the appeal is submitted during a registration period. If submitted during a registration period, the student will be notified of the disposition within 15 working days after the next term begins. A student may appeal the committee's decision in writing to the Director of Student Financial Aid.

A student whose financial aid suspension status has been removed by the Director of Student Financial Aid is simply returned to good standing and must continue to abide by the standards established in this policy statement.

Any student whose financial aid suspension has been removed, via an appeal, is eligible for financial assistance. However, the financial aid awarded to that student upon reinstatement will be based soley upon the student's eligibility and upon funds available at that time.

If a student attending **full-time** has completed 13 terms, all title IV aid will be automatically and permanently terminated.

If a student attending **part-time** has completed 20 terms, all Title IV aid will be automatically and permanently terminated.

A student who changes majors or courses is still responsible for completing his/her degree or certificate in the maximum time frame.

# Student Activities

## Student Government

A student body president and officers are voted into office in the Summer (June) Term.

All CTC students are encouraged to attend Senate meetings. The Senate is involved in all student activities and acts as a liaison between students and the administration.

## Athletics

The Tigers of Cincinnati Technical College have built a winning tradition in athletics as members of the National Junior College Athletic Association (NJCAA).

At the present time CTC offers intercollegiate men's & women's basketball, and co-ed golf.

In basketball CTC is a member of Region XII of the NJCAA and the Ohio Junior College Athletic Conference and play a very competitive junior college schedule.

## Student Organizations

Students are encouraged to join organizations designed for special interests. Business Technologies students can apply for membership in the Business Professionals of America (BPA). There are other organizations such as the Society for Manufacturing Engineers (SME), student chapter of Data Processing Management Association (DPMA), student chapter of the Les Chefs De La Cuisine, Ornamental Horticulture Club, Greater Cincinnati Restaurant Association Student Auxiliary, and the Junior Craftsmen Club. For additional information check with the Student Senate Office or program chairperson.

## The Women's Center

The Women's Center at Cincinnati Technical College was established in the fall of 1986. The Women's Center, located in room 14, is a place for women to come together to share their concerns, a place to go between classes to meet
others, and a place where women can develop their own support networks. The Center also provides professional and personal

counseling seminars and workshops designed to meet the needs of women returning to school. For information call 569-1422.

# Facilities

## Use of College Facilities

Students presenting College I.D. cards may use such facilities as the gymnasium, natatorium, weight room, library, student center, meeting rooms, etc. Such use is restricted to hours set aside for student use for free time recreation. These hours will not conflict with previously scheduled events, and may be subject to change because of short term scheduling of intramurals, athletics, community use, etc.

Students or student groups may lease on-campus facilities through the Office of the Director of Facilities.

## Learning Resource Center
## Johnnie Mae Berry Library

The Johnnie Mae Berry Library, named for CTC's first librarian, includes both Information and Multimedia Services. The center is open from 7:30 a.m. to 9:30 p.m. Monday through Thursday, and 7:30 a.m. to 4:30 p.m. on Fridays. Library professional and associate staff members are available to provide assistance during most open hours.

Books, journals and media programs (films, slides, videotapes, laser disks,) are available to support the CTC curriculum. New technologies such as compact disk players, computers, and other interactive devices are increasingly available to the student. Reference books, reserve materials, journals and media programs must be used in the library. Students may check out circulating books for a two-week period by presenting a CTC I.D. card or another type of identification with the student's photograph. There is no charge for the return of overdue material. However, if items are not returned within one week of the receipt of an overdue notice, students will receive a bill for the replacement cost of the book plus a $50 service charge.

The library includes group study rooms, tables and desks for individual study, and carrels for the use of media programs and equipment. Typewriters and microcomputers (with standard business programs) are available for student
use during library hours.

Smoking, food, and drink are not permitted in the LRC.

## William L. Mallory
## Child Development Center

The William L. Mallory Child Development Center is located on the Fourth Floor of the College. It offers a comprehensive program of child care for infants of six months and older through pre-kindergarten. The Center is operated by the Salvation Army and is available both day and evening. Students interested in placing children in the program should contact the director.

## Access to Greater Cincinnati Library Consortium (GCLC Libraries)

CTC students have access to a number of libraries in the area through the Greater Cincinnati Library Consortium. To use the member libraries, students must obtain a "GCLC Common Patron I.D." card from the circulation desk. These I.D.s expire at the end of each term and must be renewed every term. Brochures that explain the Consortium and give information about the member libraries are available in the LRC.

## Student Bookstore

The bookstore is located on the first floor of Wing C. A complete supply of new texts and a limited supply of used books are available covering all the courses offered at the College. The store also carries a complete line of classroom supplies, calculators, and course related equipment and supplies.

Used books are purchased by the bookstore at any time during the year.

Books for which an exchange or refund is requested must be accompanied by the original receipt and presented to the College bookstore within one week after the beginning day of each term. If a student drops a course and wishes a refund within the established time frame, the student must show the bookstore personnel a copy of the drop/add form. Only books on approved technology book lists can be returned as used books and refunded accordingly

Regular hours of the Bookstore are Monday thru Thursday, 9:30 a.m. to 6:30 p.m.; Friday 9:30 a.m. to 4:00 p.m. During registration periods hours are extended.

## Dining Facilities

The cafeteria, operated by Canteen, Inc. offers a wide selection of foods and refreshments - hot and cold. An extensive salad bar and a deli sandwich bar offer many healthful and appetizing choices.

Hours of operation are:

7:30 a.m. to 10:00 a.m. - Breakfast,
10:45 a.m. to 2:00 p.m. - Lunch
5:00 p.m. - 6:30 p.m. - Dinner

Daily specials are featured during the lunch hours.

Vending facilities are open 6:30 a.m. - 10:00 p.m. daily in the first floor cafeteria area and the third floor student lounge area. Refunds from vending facilities are obtained from the cafeteria cashier or at the switchboard.

## Gymnasium

The gymnasium is open for "free play" from 8:00 a.m. to 3:00 p.m. Monday through Friday. Equipment to play volleyball, basketball, football, soccer, and softball is available. I.D.s are required to check out equipment.

## Pool

The pool is open for free swimming Monday through Friday during designated hours.

## Activities Center

This area features a game room with pool tables, ping pong, foose ball, pin ball, card tables, etc., a snack and lounge area. I.D.s are required to use this facility. Hours — 8:00 a.m. to 6:30 p.m.

## Activities Center, Pool, Gym Rules

1. Students using the center must have their CTC I.D. card and drivers license and show them upon request
2. Food and drink will not be allowed in the gym, exercise room or pool.
3. No smoking allowed in the gym, exercise room or pool.
4. No street clothes allowed in pool area.
5. No swimming suits allowed in other activities areas.
6. Students must present I.D. to lifeguard while using pool area.
7. Please place all cigarettes in ashtrays and all trash in trash containers.
8. I.D.s must be presented to use equipment.
9. Loud or disruptive behavior will not be tolerated.

10. All students are encouraged to shower after activity.
11. Gym shoes must be worn when using the gymnasium. (Street shoes with soft soles are not permissible.)
12. It is recommended that gym clothes be worn when using the gymnasium.

## Facilities for the Disabled

The College has renovated areas to make its facilities more accessible to disabled students. Outdoor and indoor ramps, elevators and specially designed restroom facilities are available to assist any physically disabled person.

## Lockers

The College has lockers available for use by students. Students must provide their own locks. CTC assumes no responsibility for any loss, theft or damage to lockers, locks or contents due to fire, trespassers, etc. Each year, at the end of the Spring (April) Term, students must remove locks and contents from their lockers so that general cleaning and maintenance can be performed.

# Parking & Traffic Regulations

The regulations set forth in this section were developed by the Security and Safety Department, and approved by the College Administration in accordance with the Ohio Revised Code.

The goal of the Security and Safety Department is to utilize the available parking resources for the benefit of students, faculty, and visitors to insure that the parking areas are maintained and safe.

The purpose of parking tickets, etc. is not to generate income; it is to obtain cooperation from all students, faculty, and visitors.

### Parking Facilities

CTC offers on-campus parking in lots, spaces and on driveways around the building (designated "Upper Lot" and in an adjacent lot accessible from Ludlow Avenue (designated "Lower Lot C"). Students and CTC Staff may park on campus as designated below:

**Upper Lot**

CTC Staff: spaces lined in white are reserved for Faculty/Staff until 4:30 p.m.

Students: all spaces in Lot A and Lot B. Spaces lined in yellow around the building and on the main entrance and exit drives are designated for student parking.

Handicapped parking: spaces lined in blue are reserved for the handicapped. Handicapped parking requires a state-issued license plate or plaque and a CTC parking permit.

Temporary Permit parking: spaces lined in orange are reserved for vehicles displaying temporary parking permits until 4:30 p.m.

**Lower Lot "C"** parking spaces are available for any vehicle displaying a valid CTC parking permit.

### Obtaining a Parking Permit

Complete a Vehicle Registration form (forms are available in the main lobby or in Room #15). A maximum of two vehicles may be registered on each form and only one permit will be issued to each student. Deliver the completed form to the proper College office, as designated below, to receive the parking permit:

**Day Parking (prior to 1:45 p.m.)**

Upper Lot - Permits are limited in number and sold on a first-come, first-served basis. These permits are purchased in-person only at the College Cashier window. Mail-in requests will not be accepted. A new permit must be purchased for each academic term.

Lower Lot "C" - Prior to 3:00, parking is charged on a per-use basis at the entrance to Lower Lot "C". A permit to use the lot is required and obtained free of charge in Room 15. This permit is valid through the end of the Summer term each year. Parking in Lower Lot "C" after 3:00 requires the purchase of an Upper Lot Permit or Evening Permit.

**Evening Parking (after 1:45 p.m.)**

The evening parking permit allows students to park in both the upper and lower lots. Students may park in all yellow-boardered spaces, Lot "A", and Lot "B" until 4:30 p.m. with this permit. After 4:30 p.m., all parking spaces are open except for spaces specifically designated "Handicapped" or "Evening Faculty Parking Area". These permits are sold by the College Cashier Office. A new permit must be purchased for each academic term.

**Handicapped Parking**

Parking permits are available allowing use of the Handicap parking spaces. Both a state-issue license plate/plaque and a CTC parking permit are required. Student Upper Lot Permits are sold at a reduced rate. Contact the Parking Office (Room 15) for details.

Parking permit sales begin approximately four weeks prior to the beginning of every term at the Cashier window. Please see the Cashier Bulletin Board for the exact dates.

### Parking Permit Regulations

1. Falsifying any information on the registration form will result in revocation of the permit.
2. Issuance of a parking permit does not guarantee an available parking space.
3. If a parking permit is lost or stolen, replacement permits are available at a reduced charge.
4. Permits must be displayed on the rear-view mirror, or dash facing out.
5. Permits are not transferable.

## Emergencies

If you see a crime being committed on campus or need assistance from the Security and Safety Department call 861-8888 or for Police or Fire Department call 911.

If you accidentally lock your keys in your car or need a jump start, come to the Security and Safety Office in room 15 and a security officer will assist you.

## Violations

### Citation Procedure

College parking regulations are enforced by the Campus Security and Safety Department. Any violation can result in a citation being issued. Citations must be paid or appealed within five business days from the date of issue. After that time, the fine will double and the ability to appeal will be lost. At this time a financial hold will be placed on the student operating or registered to the ticketed vehicle. Repeated or serious violations can result in permanent loss of on-campus parking privileges, immobilization or towing of the vehicle and impoundment at the owner's risk and expense. Ignorance of College parking policy is not an excuse for operating or parking in violation. Citations are payable at the Cashier's Office.

The purchase and display of a parking permit does not guarantee the availability of a parking space and does not justify parking against College policy.

## Parking Violations

Parking in the following areas is not allowed:

1. In any area with posted "NO PARKING" signs.
2. Outside a bordered parking space or not in front of concrete parking chocks.
3. On the lawns or grass.
4. In front of entrances or garage doors.
5. In a crosswalk or hash-marked area.
6. In reserved areas such as the Upper Lot, Staff, Handicapped, or marked temporarily as "NO PARKING."
7. Without displaying a valid parking permit.
8. With an unregistered vehicle.
9. In areas designated by a Security Officer or Parking Attendant.

## Moving Violations

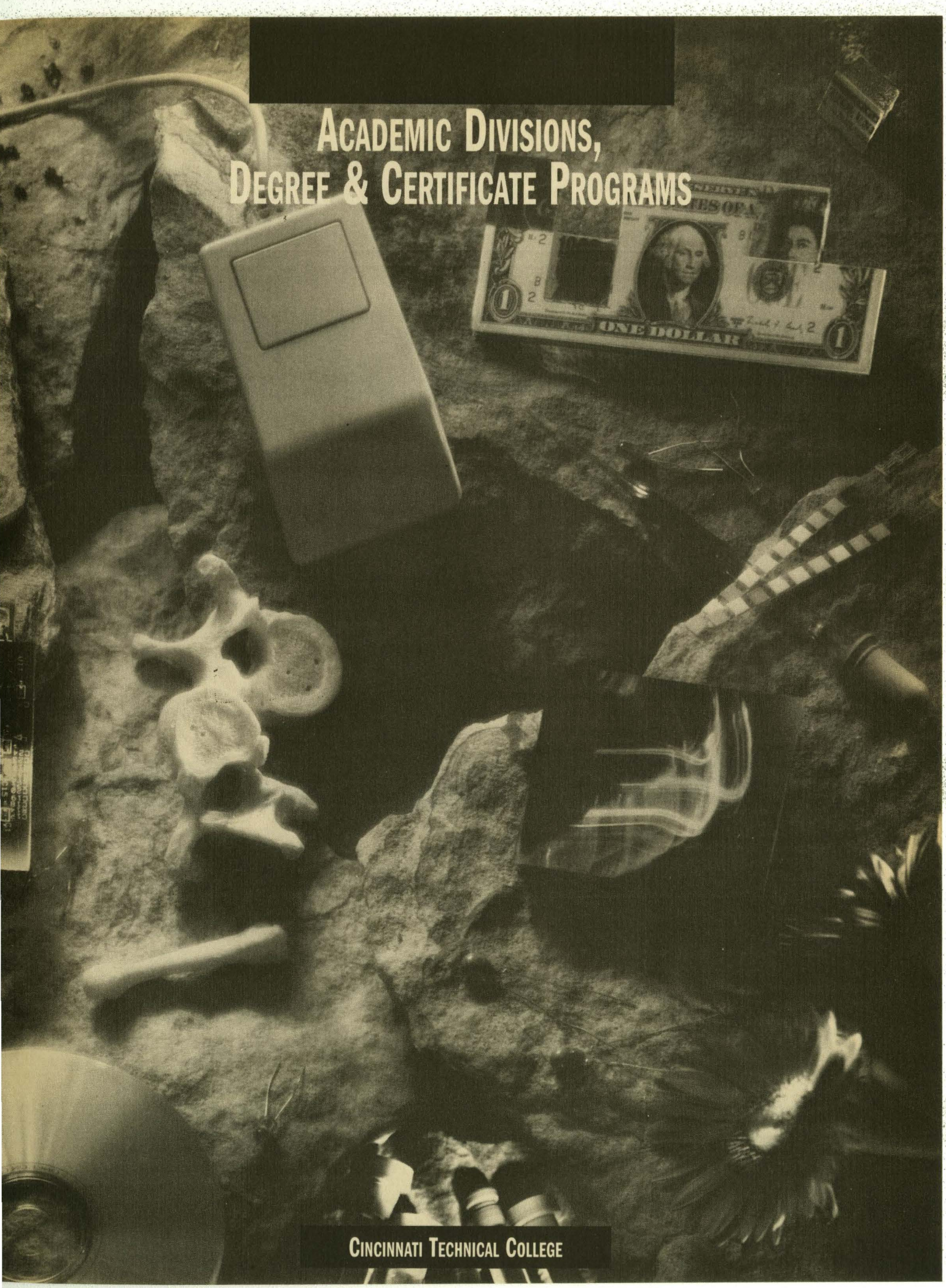
1. Excessive speed of a vehicle. The posted speed limit on campus is 10 miles per hour.
2. Driving the wrong way on a one-way drive or entering through an exit.
3. Reckless operation of a vehicle.
(Amounts of fines are printed on the back of the ticket.)

## Citation Appeal Procedure

Any ticket issued by the Security and Safety Department can be appealed by filling out the appeal form available in the Security and Safety Office. The form must be completed and turned in prior to 4:00 p.m. on the fifth business day after the ticket was issued. The findings of the Appeal Committee are final.

## Liability

Cincinnati Technical College assumes no responsibility for theft or damage to vehicles parked on College property.




# Academic Divisions, Degree & Certificate Programs

Cincinnati Technical College

# Academic Divisions

Cincinnati Technical College has six academic divisions and departments which offer credit courses: Pre-Technical Studies, Business Technologies, Humanities, Engineering Technologies, Health Technologies and the Sciences.

## Pre-Technical Studies Program

The Pre-Technical program consists of several parts which assist students in preparing for their technical programs.

### Courses

Each Pre-Tech course has been developed around specific objectives which relate to the courses required for the various technologies. Diagnostic techniques are used to determine individual deficiencies, to measure individual progress, and to determine when the student has met the established course objectives.

Pre-Tech courses are designed to develop specific minimum competencies in each subject area. The grades for courses numbered from 0001 to 0027 are based on achievement of the identified competencies. Only grades of A, B, IP and F are awarded in these courses. Each specific course has predefined criteria to earn a grade of A, B, IP or F.

Through the use of specialized methods and modern equipment, and with extensive reliance upon learning laboratory experiences, the student may progress at an individual rate in most courses. The student will be tested frequently to assist in determining progress.

The following courses are offered:

| | | Credits |
|---|---|---|
| 0001 | English Grammar | 4 |
| 0002 | College Spelling | 3 |
| 0003 | Basic Writing 1 | 4 |
| 0004 | Basic Writing 2 | 4 |
| 0010 | College Reading 1 | 4 |
| 0011 | College Reading 2 | 4 |
| 0017 | Speed Reading | 4 |
| 0020 | Basic Mathematics 1 | 4 |
| 0021 | Basic Mathematics 2 | 4 |
| 0022 | Essentials of Mathematics | 6 |
| 0023 | Basic Geometry | 4 |
| 0024 | Basic Algebra 1 | 4 |
| 0025 | Basic Algebra 2 | 4 |
| 0027 | Pre-Tech Health Math | 4 |
| 2900 | Introduction to Accounting | 4 |
| 9014 | College Study Skills | 4 |

### Basic Skills Assessment Services

Placement testing in the basic skills academic areas of Reading, Writing and Mathematics is available upon request.

Testing, interpretation, and advising are available on a walk-in basis from 8:30 a.m. to 3:00 p.m., Monday through Friday, and Monday evenings from 6:00 p.m. to 9:00 p.m.

### Learning Lab

Pre-Tech offers an open lab with Apple and IBM computers, VCR equipment, Didactor machines and cassette players for students' use. Instructional materials in Math, Biology, Chemistry, Physics, Accounting, Computer Programming, Engineering, Reading, Grammar and Spelling are available. There are also drop-in "Help Sessions" on selected topics where students can come and get help one-on-one. Located on the mezzanine of the Learning Resource Center, the Lab is open in the afternoon for all CTC students.

### Tutorial Services

Tutoring is offered to those who want and need more instruction, more practice or more discussion in a particular subject. At the beginning of each term, students sign up for tutoring hours in the subjects of their choice. As soon as a qualified student-tutor is located, weekly sessions are scheduled. Tutoring may be conducted in small groups or individually. Math drop-in tutoring is also available. There is no fee for this service.

# Transfer Module

The CTC Transfer Module consists of 56-58 quarter credit hours which will transfer to any public Ohio two or four-year college. The following courses constitute the Transfer Module. Students should choose a track from each category depending on the requirements of the college to which they will transfer, CTC major, and their individual needs and interests.

1. Courses marked with an * are introductory courses and may be prerequisites to other courses in the category. You may be qualified to begin at a higher level but must still satisfy the minimum credit requirements in each category.
2. You should schedule an appointment with the Transfer Module advisor to assure that the courses selected are appropriate for the major and the transfer institution selected, and are consistent with the minimum graduation requirements of that institution.

**ENGLISH COMPOSITION**

Choose one of the following tracks (9 credit hours):

| Course | Number | Title | Credit Hours |
|---|---|---|---|
| ENG | * 1001 | English Composition 1 | 3 |
| ENG | 1002 | English Composition 2 | 3 |
| ENG | 1010 | Technical Writing 1 or | |
| ENG | 1011 | Business Communications | 3 |
| ENG | * 1001 | English Composition 1 | 3 |
| ENG | 1010 | Technical Writing 1 | 3 |
| ENG | 1015 | Technical Writing 2 | 3 |

**MATHEMATICS**

Choose one of the following tracks (8 credit hours):

| Course | Number | Title | Credit Hours |
|---|---|---|---|
| MAT | * 1179 | Introduction to Applied Statistics | 4 |
| MAT | 1128 | Business Calculus | 4 |
| MAT | * 1154 | Calculus 1 | 4 |
| MAT | 1155 | Calculus 2 | 4 |
| MAT | * 1179 | Introduction to Applied Statistics | 4 |
| MAT | 1192 | Algebra and Trigonometry | 4 |
| MAT | * 1193 | Analytic Geometry & Calculus 1 | 4 |
| MAT | 1194 | Analytic Geometry & Calculus 2 | 4 |

**ARTS AND HUMANITIES**

Choose four courses from at least two tracks (12 credit hours):

| Course | Number | Title | Credit Hours |
|---|---|---|---|
| LIT | 1050 | The Short Story: Forms and Themes | 3 |
| LIT | 1055 | Science Fiction | 3 |
| HUM | 1620 | Critical and Creative Thinking | 3 |
| HUM | 1625 | Technology and Ethical Decisions | 3 |

| | | | |
|---|---|---|---|
| HUM | 1640 | Contemporary American History | 3 |
| HUM | 1645 | Civilization and Technology | 3 |
| HUM | 1660 | Introduction to Art | 3 |
| HUM | 1665 | Introduction to Music | 3 |

**SOCIAL AND BEHAVIORAL SCIENCES**

Choose four courses from at least two tracks (12 credit hours):

| Course | Number | Title | Credit Hours |
|---|---|---|---|
| PSY | * 1505 | Introduction to Psychology 1 | 3 |
| PSY | 1506 | Introduction to Psychology 2 | 3 |
| ECO | * 1512 | Microeconomics | 3 |
| ECO | 1513 | Macroeconomics | 3 |
| SOC | * 1521 | Introduction to Sociology | 3 |
| SOC | 1523 | Sociology: Major Institutions | 3 |
| SOC | 1525 | Changing Roles for Men & Women | 3 |
| SOC | 1526 | Sociology: Marriage and the Family | 3 |
| GOV | * 1535 | Introduction to Labor/ Management Relations | 3 |
| GOV | 1539 | Public Policy and the American worker | 3 |
| GEO | * 1551 | Geography of Developed Nations | 3 |
| GEO | 1553 | Geography of Developing Nations | 3 |

**NATURAL AND PHYSICAL SCIENCES**

Choose one of the following four-course tracks or four courses from two tracks (15-17 credit hours):

| Course | Number | Title | Credit Hours |
|---|---|---|---|
| BIO | * 2100 | Introduction to Biology or | 4 |
| BIO | 4009 | General Microbiology | 4 |
| BIO | 4014 | Anatomy and Physiology 1 | 4 |
| BIO | 4015 | Anatomy and Physiology 2 | 4 |
| BIO | 4016 | Anatomy and Physiology 3 | 4 |
| CHE | * 2200 | Introduction to Chemistry | 5 |
| CHE | 2231 | Fundamentals of Inorganic Chemistry | 4 |
| CHE | 2232 | Fundamentals of Organic Chemistry | 4 |
| CHE | 2233 | Fundamentals of Biochemistry or | |
| CHE | 2236 | Physiological Chemistry | 4 |
| CHE | 2232 | Fundamentals of Organic Chemistry | 4 |
| CHE | 6611 | Chemistry 1 & Quantitative Analysis | 4 |
| CHE | 6621 | Chemistry 2 & Quantitative Analysis | 4 |
| CHE | 6631 | Chemistry 3 & Quantitative Analysis | 4 |
| PHY | * 2270 | Introduction to Physics | 3 |
| PHY | 2291 | Physics 1 | 4 |
| PHY | 2292 | Physics 2 | 4 |
| PHY | 2293 | Physics 3 or | |
| PHY | 2294 | Physics 4 | 4 |

# Humanities Division

The Humanities Division recognizes that each student is a unique combination of attitudes, beliefs, values, and experiences. The Humanities courses are designed to enable students to understand the forces which shape them, especially in the psychological, social, and economic areas and to provide tools which will assist students either in controlling or in adapting to these forces.

Foremost among tools is effective communication, both oral and written; therefore, the division offers a number of courses which enhance communication skills through the development of critical thinking techniques and the development of the ability to present information in a clear, organized manner.

## Customized Training

Faculty in the Humanities Division welcome inquiries about providing training for individuals and corporations. Resources are available to assist with identifying and satisfying a variety of training needs.

## The Writing Center

Individualized Courses—Currently, English composition courses 1001, 1009, 1010 and 1011 are also offered on an individualized basis. Individualized courses being offered each term are designated by the course type I.

Other Services—Instructors of Communication Skills staff the Writing Center to provide all students with help they need in any writing or other communication problems. Students can usually be accommodated on a "drop-in" basis or may request an appointment. For students uncertain of their communication skills level, assessment is available.

**The Writing Center Hotline** (569-1736 or 569-1737) answers questions about business communications, technical writing, grammar, punctuation, spelling, capitalization and word usage. The hours are 8:00 a.m. to 8:00 p.m., Monday through Thursday, 8:00 a.m. to 4:00 p.m. Friday, and 9:00 a.m. to 1:00 p.m. Saturday.

## Requirements

College-Wide

To qualify for the associate degree, a student must complete at least 21 credit hours; 12 must be in the communication skills area and 9 in the social sciences area. The communication skills requirement consists of 6 credit hours in written composition, 3 credit hours in technical writing or business communications, and 3 credit hours in oral communication. Some sections of selected composition classes are offered in a microcomputer lab. These classes contain the same material as other composition classes but allow students to compose and revise their assignments using word processing. Students interested in taking such a class are advised to have keyboarding skills and prior microcomputer experiences. A lab fee is charged in these classes.

To complete the minimum requirements in the social sciences, a student will select a minimum of three courses (9 credit hours) from at least two of the five areas: psychology, economics, sociology, cultural/community relations and arts/humanities.

Listed below are the courses which constitute each of the areas:

**Communication Skills**

Composition:
- 1001 English Composition 1
- 1002 English Composition 2
- 1007 Critical Thinking and Writing
- 1009 Business English

Technical Writing and Business Communications:
- 1010 Technical Writing 1
- 1011 Business Communications
- 1015 Technical Writing 2
- 1017 Project Research
- 1018 Technical Writing Style and Techniques 1
- 1019 Technical Writing Style and Techniques 2

Oral Communication:
- 1020 Effective Speaking
- 1024 Group Dynamics and Problem Solving
- 1025 Group Dynamics within Organizations

**Social Sciences**

Psychology:
- 1502 Human Relations - Applied Psychology
- 1505 Introduction to Psychology 1
- 1506 Introduction to Psychology 2

1508 Psychology: Child Development
1509 Psychology: Adult Development
1510 Psychology: Adolescent Development

Economics:
1512 Microeconomics
1513 Macroeconomics

Sociology:
1521 Introduction to Sociology
1523 Social Institutions
1524 Stress Management
1525 Changing Roles for Men and Women
1526 Sociology of Family and Marriage
1527 Technology and Ethical Decisions

Community Relations:
1531 Introduction to Political Science
1535 Introduction to Labor Management Relations
1539 Public Policy and the American Worker
1551 Geography of the Developed Nations
1553 Geography of the Developing Nations

Arts/Humanities:
1050 The Short Story: Forms and Themes
1055 Science Fiction
1620 Critical and Creative Thinking
1625 Technology and Ethical Decisions
1640 Contemporary American History
1645 Civilization and Technology
1660 Introduction to Art
1665 Introduction to Music

## Cooperative Education in the Humanities Division

The Humanities Division shares the College's commitment to cooperative education as an integral part of the curriculum. In order to participate in cooperative education, students in the Humanities Division degree programs must comply with College eligibility requirements and registration procedures. Students may complete their cooperative education requirement through varied (full-time or part-time) on-site work experiences.

In some cases, degree-seeking students in the Humanities Division may complete their cooperative education requirement by receiving credit for past related work experience or by completing appropriate courses. However, all substitutions must be approved in advance by the Program Director and the Cooperative Education Coordinator.

## Transfer Module

Associate degree programs in the Humanities Division contain in their curricula most of the required courses for the CTC Transfer Module. The additional courses needed to complete the transfer module should be scheduled at times convenient to the student. Students who wish to transfer to an Ohio public university for baccalaureate degrees will find that a CTC Associate of Applied Science degree combined with a transfer module (showing grades of "C" or better) will receive preferential consideration at the receiving university.

## Employee and Labor Relations Certificate Curriculum

The certificate in employee and labor relations recognizes the student who successfully completes a program of courses from the Business and Social Sciences curricula which have been chosen to develop competencies in the area of Human Resource Management. The student will prepare to face the complex social, legal, and economic issues of the modern American workplace. The focus of the coursework is on human behavior, vital management/leadership skills, and the rights and responsibilities of the employer and employee today.

This concentration of courses would be helpful to students or professionals in preparing for such positions as manager, supervisor, team leader, foreperson, department head, or employee representative. It would also be useful as a foundation for those who plan a career in the field of human resource management. Students may elect to take longer than three terms to complete the curriculum.

## Employee and Labor Relations Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1024 | Group Dynamics and Problem Solving | 3 | 0 | 3 |
| 1535 | Intro to Labor-Management Relations | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| XXXX | Elective | 0 | 0 | 3 |
| | | 12 | 0 | 15 |
| **■ Second Term** | | | | |
| 1525 | Changing Roles for Men and Women | 3 | 0 | 3 |
| 1538 | Case Studies in Labor Relations | 3 | 0 | 3 |
| 1832 | Personnel Management | 3 | 0 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| XXXX | Elective | 0 | 0 | 3 |
| | | 12 | 0 | 15 |
| **■ Third Term** | | | | |
| 1539 | Public Policy and the American Worker | 3 | 0 | 3 |
| 2970 | Contemporary Management Concepts | 3 | 0 | 3 |
| XXXX | Elective | 0 | 0 | 3 |
| XXXX | Elective | 0 | 0 | 3 |
| XXXX | Elective | 0 | 0 | 3 |
| | | 6 | 0 | 15 |
| | | | | 45 |

Electives: 1025, 1502, 1505, 1506, 1509, 1512, 1521, 1523, 1524, 1527, 1824, 1850, 2975

## Technical Writing & Editing Technology (TWET)

Technical communication is the work performed by writers and editors who put scientific or technical information into readily understandable language for a specific group of readers. Technical writers and editors combine their language skills with their technical knowledge so they can prepare materials which meet the needs of technical specialists as well as average consumers.

The Technical Writing & Editing Technology program gives students an opportunity to develop the skills required of professional technical communicators. Students practice the writing and editing techniques needed to enter the profession by preparing reports, manuals, handbooks, brochures, and many other documents. Much class work takes place in the College's Writing Center, where students learn to use a variety of business computer application systems. In addition, students gain technical competence by selecting a minimum of 18 credit hours in a designated technical specialty area (see the "Sample Technical Specialty Requirements" below).

Because courses in the technical specialty area vary, students may complete the Technical Writing & Editing with a total of 100 to 110 credit hours.

Students who plan to study Technical Writing & Editing Technology should have previous successful writing experience (either in school or on the job) and good reading skills.

## Technical Writing & Editing Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 11XX | Mathematics Elective | 4 | 0 | 4 |
| *1001 | English Composition 1 | 3 | 0 | 3 |
| 1018 | Technical Writing Style & Techniques 1 | 2 | 2 | 3 |
| 5001 | Intro TWE Careers | 1 | 2 | 2 |
| 5002 | Introduction to Macintosh™ | 2 | 2 | 3 |
| | | 12 | 6 | 15 |
| **■ Second Term** | | | | |
| **XXXX | Technical Specialty Requirement | 2 | 3 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1019 | Tech Writing Style & Techniques 2 | 2 | 2 | 3 |
| 3007 | Intro to Keyboarding | 3 | 0 | 3 |
| 5003 | Macintosh™ Software Applications | 2 | 2 | 3 |
| | | 15 | 7 | 18 |
| **■ Third Term** | | | | |
| **XXXX | Technical Specialty Requirement | 2 | 3 | 3 |
| **XXXX | Technical Specialty Requirement | 2 | 3 | 3 |
| 1017 | Project Research | 3 | 2 | 4 |
| 5016 | Desktop Publishing - Macintosh™ | 2 | 2 | 3 |
| 1850 | Computer Business Applications | 3 | 2 | 4 |
| | | 12 | 12 | 17 |
| **■ Fourth Term** | | | | |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 1480 | Photolithography 1 | 2 | 3 | 3 |
| 5010 | Plan & Preparing Illustration | 2 | 2 | 3 |
| 5017 | Advanced Desktop Publishing - Macintosh™ | 2 | 2 | 3 |
| 5032 | Write Instructional Docum | 3 | 2 | 4 |
| | | 12 | 9 | 16 |
| **■ Fifth Term** | | | | |
| 9700 | Co-Op Employment TWET | 1 | 40 | 2 |
| **■ Sixth Term** | | | | |
| **XXXX | Technical Specialty Requirement | 2 | 3 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 5041 | Technical Editing Methods 1 | 2 | 2 | 3 |
| 5034 | Preparing On-Line Documents | 2 | 2 | 3 |
| | | 9 | 7 | 12 |
| **■ Seventh Term** | | | | |
| 9700 | Co-Op Employment TWET | 1 | 40 | 2 |
| **■ Eighth Term** | | | | |
| **XXXX | Technical Specialty Requirement | 2 | 3 | 3 |
| 5022 | Technical Presentations | 3 | 2 | 4 |
| 5033 | Writing Promotional Documents | 3 | 2 | 4 |
| 5042 | Technical Editing Methods 2 | 2 | 2 | 3 |
| | | 10 | 9 | 14 |
| **■ Ninth Term** | | | | |
| 9700 | Co-Op Employment | 1 | 40 | 2 |
| **■ Tenth Term** | | | | |
| **XXXX | Technical Specialty Requirement | 2 | 3 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 5051 | Organ. Dynamics & Career Assessment | 3 | 1 | 3 |
| 5089 | Technical Communication Seminar | 2 | 3 | 3 |
| | | 10 | 7 | 12 |
| | | | | 110 |

*Students whose test scores or previous experience indicate advanced standing may substitute another communication skills course. Recommended substitutes: 1007, 1009, 1010.

**Program Chair/Advisor approval required. The technical speciality component must total no less than 18 credit hours.

Mathematics Elective: 1154, 1179, 1191, 1192, 1193. Other mathematics courses may be substituted with Program Director approval.

Social Science Electives: any 15XX course, 1625, 1645. At least two Social Science/Humanities groups must be included.

## Sample Technical Specialty Requirements

Students who seek a degree in Technical Writing & Editing Technology must select a technical speciality, which is comparable to a "minor" within the student's degree program. The technical specialty courses must provide a minimum of 18 credit hours in courses selected from any of the other technologies offered at Cincinnati Technical College. The Technical Writing & Editing advisor helps students plan an appropriate curriculum in their preferred technical specialty area.

The samples that follow show courses that could be selected for a few technical specialty areas. Students should consult with the Technical Writing & Editing Program Director for information about other technical specialty areas.

## Sample A - Computer Systems Documentation Writing

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| 1701 | Introduction to Data Processing | 2 | 3 | 3 |
| 1702 | Introduction to BASIC Programming | 2 | 3 | 3 |
| 1721 | Programming Logic & Methods | 2 | 3 | 3 |
| 1731 | PC/MS-DOS | 2 | 3 | 3 |
| 1742 | COBOL I | 3 | 7 | 6 |
| 1763 | Systems Analysis & Design | 2 | 3 | 3 |
| 1127 | Business Satistics | 4 | 0 | 4 |
| 1135 | "C" Programming Language | 2 | 3 | 3 |

## Sample B - Applied Engineering Documentation

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| 7008 | Engineering Drawing I | 2 | 3 | 3 |
| 1191 | Algebra & Trigonometry I | 4 | 0 | 4 |
| 1192 | Algebra & Trigonometry II | 4 | 0 | 2 |
| 7160 | Computer Aided Design/Drafting | 2 | 3 | 3 |
| 7130 | Engineering Mechanics | 3 | 2 | 4 |
| 7132 | Hydraulics & Pneumatics | 3 | 3 | 4 |
| 7441 | Statistical Process Control | 3 | 2 | 4 |
| 7701 | Electronic Fundamentals I | 4 | 2 | 4 |

## Sample C - Applied Health Sciences Documentation

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| 2100 | Introduction to Biology | 3 | 2 | 4 |
| 2200 | Introduction to Chemistry | 4 | 2 | 5 |
| 2232 | Fundamentals of Organic Chemistry | 3 | 2 | 4 |
| 4009 | General Microbiology | 3 | 3 | 4 |
| 4014 | Anatomy & Physiology I | 2 | 3 | 4 |
| 4016 | Anatomy & Physiology II | 2 | 3 | 4 |
| 4015 | Anatomy & Physiology III | 2 | 3 | 4 |
| 4000 | Medical Terminology | 2 | 2 | 3 |

## Sample D - Scientific Testing and Research Documentation

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| 1191 | Algebra & Trigonometry I | 4 | 0 | 4 |
| 2291 | Physics I | 3 | 2 | 4 |
| 2293 | Physics III | 3 | 2 | 4 |
| 6611 | Chemistry/Quantitative Analysis I | 3 | 3 | 4 |
| 6621 | Chemistry/Quantitive Analysis II | 3 | 3 | 4 |
| 6631 | Chemistry/Quantitive Analysis III | 3 | 3 | 4 |
| 6629 | Industrial Materials Testing I | 3 | 2 | 4 |
| 6639 | Fund. of Physical Measurement | 3 | 2 | 4 |

## Technical Writing & Editing Certificate

The certificate in Technical Writing & Editing is designed for persons already competent in technical fields who want to expand their communication skills and for professional communicators who want to enhance their technical expertise.

The certificate program is designed to meet individual needs. To earn the certificate, the student is required to take 12 courses, usually a combination of six technical communication courses and six courses (minimum 18 credits) in a technical skill area. However, the specific curriculum for each student is developed individually in consultation with the Program Director. In some cases, students may be able to receive academic credit for prior studies or work experience.

## Technical Writing & Editing Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| XXXX | Tech Specialty Requirement | 0 | 0 | 0 |
| 1018 | Technical Writing Style & Techniques1 | 2 | 2 | 3 |
| 1019 | Technical Writing Style & Techniques2 | 2 | 2 | 3 |
| 5032 | Writing Instructional Documents | 2 | 5 | 4 |
| 5033 | Writing Promotional Documents | 2 | 5 | 4 |
| 5041 | Technical Editing Methods&Techniques 1 | 2 | 2 | 3 |
| 5042 | Technical Editing Methods&Techniques 2 | 2 | 2 | 3 |
| | | 12 | 18 | 38 |

** Program Director approval required. Generally, the technical specialty will include six courses totaling 18 or more credit hours.

## Desktop Publishing Certificate (DTPC)

The certificate in Desktop Publishing is designed for persons who want to develop skill using many application software programs that are part of the rapidly-evolving, computerized environment for communication and publishing-related fields. Students will learn to operate the software that is used in business and industry for a variety of writing, editing, design, and document production tasks, and will improve their ability to prepare specific documents such as newsletters.

The certificate program is intended to help those who want to add contemporary computer skills to their current knowledge in a communication-related field, or to help those who may be considering starting a home-based desktop publishing business. The certificate program also could be a foundation for pursuing an associate degree in a communication or business-related field.

Students may elect to take longer than four terms to complete the certificate curriculum.

## Desktop Publishing Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1018 | Technical Writing Style & Techniques 1 | 2 | 2 | 3 |
| 5002 | Introduction to Macintosh™ | 2 | 2 | 3 |
| 3007 | Intro Keyboarding | 3 | 0 | 3 |
| | | 7 | 4 | 9 |
| **Second Term** | | | | |
| 5003 | Macintosh Software Applications | 2 | 2 | 3 |
| 5016 | Desktop Publishing - Macintosh™ | 2 | 2 | 3 |
| 1850 | Computer Business Applications | 3 | 2 | 4 |
| 3064 | Business Graphics | 1 | 4 | 3 |
| | | 8 | 10 | 13 |
| **Third Term** | | | | |
| 5017 | Adv. Desktop Publishing - Macintosh™ | 2 | 2 | 3 |
| 5010 | Planning & Prepare Illustrations | 2 | 2 | 3 |
| 1422 | Desktop Publishing (PC) | 2 | 2 | 3 |
| | | 6 | 6 | 9 |
| **Fourth Term** | | | | |
| 5037 | Writing & Designing Newsletters | 2 | 2 | 3 |
| 5011 | Adv. Illustration Software - Macintosh™ | 2 | 2 | 3 |
| **XXXX | Business Elective | 2 | 2 | 3 |
| | | 6 | 6 | 9 |
| | | | | 40 |

** Program Director approval required.

# Health Technologies Division

The Health Technologies Division at Cincinnati Technical College brings together in one unit all programs for the education and training of health personnel. The division offers associate degree and certificate programs which are clinically intensive and prepare students to perform immediately upon graduation. Additionally, the division offers special courses, workshops, seminars and forums at which persons can learn new skills and acquire new knowledge or update the knowledge and skills needed to perform effectively on their jobs. The division affiliates with over fifty different hospitals and other health care agencies and institutions to provide clinical experiences for health students. All programs are accredited or approved by their respective professional bodies (if accreditation or approval is available).

Prerequisites for all programs are available at CTC.

## Cooperative Education

Programs of education in health technology have a well established tradition of including experience in the clinical setting as an integral part of the educational process.

The Health Division supports the College's mission of providing a combination of theory and practice. The practical experience is received through cooperative/clinical education components, and each health program provides such experience. Refer to individual curriculum for specific information.

## Transfer Module

Associate degree programs in the Health Technologies Division contain in their curricula most of the required courses for the CTC Transfer Module. The additional courses needed to complete the transfer module should be scheduled at times convenient to the student. Students who wish to transfer to an Ohio public university for baccalaureate degrees will find that a CTC Associate of Applied Science degree combined with a transfer module (showing grades of "C" or better) will receive preferential consideration at the receiving university.

## Central Service Technology (CST)

This short certificate program will acquaint entry-level technicians with the scope of the central service profession along with the scientific principles that underlie their daily work. Individuals within this field must possess the knowledge, skill and ability necessary to process or provide patient care items used in the health care facility.

The Central Service Technician processes and distributes supplies and equipment needed for patient care. In addition, Central Service Technicians participate in the evaluation and selection of patient care items and assist with inventory management and preventative maintenance of equipment.

The Central Service Technology program is approved by the International Association of Hospital Central Service Management (IAHCSM). After successful completion of the program, graduates will be recognized as Registered Central Service Technicians (RCST). Graduates are eligible for the National Certification Examination administered by IAHCSM for designation as a Certified Registered Central Service Technician (CRCST). Central Service Technicians can be employed in a health care facility in the purchasing and/or central service department.

## Central Service Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 4580 | Central Service Technology 1 | 5 | 0 | 5 |
| **■ Second Term** | | | | |
| 4581 | Central Service Technology 2 | 5 | 0 | 5 |
| | | 10 | 0 | 10 |

## Dietetic Technician (DT)

The Dietetic Technician is a professional in the challenging and ever-changing field of nutrition and dietetics. A Dietetic Technician is most often employed in the nutrition department of a hospital, nursing home, extended care facility, health maintenance organization, school or day care center.

The technician assumes a wide range of responsibilities assisting the Licensed Dietitian in nutrition care and departmental administration. The Dietetic Technician may be responsible for many aspects of health care from nutrition care and education of clients to the management of the food service facility. Activities in which the technician is involved include assessing a client's nutritional status utilizing appropriate assessment tools, teaching valuable nutrition concepts to individuals of varied age groups and social backgrounds, planning menus and diet modifications, training and scheduling food service employees, and supervising food production and service.

Successful completion of this program permits the student to take the American Dietetic Association certification examination for Dietetic Technicians. This program is approved by the American Dietetic Association.

## Dietetic Technician Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 2236 | Physiological Chemistry | 3 | 3 | 4 |
| 4000 | Introduction to Medical Terminology | 2 | 2 | 3 |
| 4111 | Dietetics Orientation | 1 | 0 | 1 |
| 4120 | Food Management 1 | 2 | 6 | 4 |
| | | 8 | 11 | 12 |
| **■ Second Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 4001 | Intro to the Health Care System | 2 | 0 | 2 |
| 4100 | Fundamentals of Nutrition | 3 | 2 | 4 |
| 4121 | Food Management 2 | 2 | 3 | 3 |
| | | 10 | 5 | 12 |
| **■ Third Term** | | | | |
| 1502 | Human Relations | 3 | 0 | 3 |
| 4102 | Nutrition for the Life Cycle | 3 | 2 | 4 |
| 4112 | Dietetics Clinical Practice 1 | 0 | 9 | 3 |
| 4124 | Food Serv Sanitation Cert | 2 | 0 | 2 |
| | | 8 | 11 | 12 |
| **■ Fourth Term** | | | | |
| 10XX | Communications Elective | 3 | 0 | 3 |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 4125 | Quantity Food Production | 2 | 6 | 4 |
| 9310 | Coop Employment Health Tech | 0 | 15 | 1 |
| | | 8 | 23 | 12 |
| **■ Fifth Term** | | | | |
| 1024 | Group Dynmic & Prob Solving | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4104 | Clinical Nutrition 1 | 3 | 2 | 4 |
| 4113 | Dietetics Clinical Practice 2 | 0 | 9 | 3 |
| 9310 | Coop Employment Health Tech | 0 | 15 | 1 |
| | | 9 | 26 | 14 |
| **■ Sixth Term** | | | | |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 4106 | Clinical Nutrition 2 | 3 | 2 | 4 |
| 4114 | Dietetics Clinical Practice 3 | 0 | 9 | 3 |
| 4155 | Management of Human Res | 3 | 0 | 3 |
| 9310 | Cooperative Employment Health Tech | 0 | 15 | 1 |
| | | 9 | 28 | 15 |
| **■ Seventh Term** | | | | |
| 4016 | Anatomy and Physiology 3 | 3 | 2 | 4 |
| 4107 | Clinical Nutrition 3 | 3 | 2 | 4 |
| 4115 | Dietetics Clinical Practice 4 | 0 | 9 | 3 |
| 4122 | Food Systems Management 1 | 2 | 3 | 3 |
| | | 8 | 16 | 14 |
| **■ Eighth Term** | | | | |
| 101X | Technical Writing Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4030 | Tech of Ed For Health | 1 | 3 | 2 |
| 4129 | Food Systems Management 2 | 2 | 6 | 4 |
| | | 9 | 9 | 12 |
| **■ Ninth Term** | | | | |
| 4108 | Community Nutrition | 2 | 3 | 3 |
| 4109 | Dietetic Technician Seminar | 2 | 0 | 2 |
| 4116 | Dietetics Directed Practice 6 | 0 | 8 | 1 |
| 4117 | Community Outreach Directed Practice | 0 | 5 | 1 |
| | | 4 | 16 | 7 |
| | | | | 110 |

Communications Electives: 1002, 1007, 1008, 1010, 1015
Social Science Electives:
Psychology: 1505, 1506, 1508, 1509, 1510
Economics: 1512, 1513
Sociology: 1521, 1523, 1524, 1525, 1526, 1527
Government: 1531, 1535, 1539, 1551, 1553
Humanities: 1620, 1625, 1640, 1642, 1645
Tech Writing Elective: 1010, 1015, 1018

## Dietary Management Certificate (DMC)

This one-year certificate program prepares a person to perform supervisory functions in many types of dietary facilities. The program, attended on a part-time basis, encourages employment and coursework at the same time. Two terms of cooperative work experience or the equivalent are required.

Dietary Management graduates are employed in nursing homes, retirement facilities, hospitals, schools, handicap institutions and businesses. Job activities might include food distribution supervision; employee hiring, training, scheduling and evaluation; inventory controls and purchasing; safety and sanitation programs and food production supervision.

The program has national approval by the Dietary Managers Association. Following the certification examination, membership in this professional organization is encouraged.

## Dietary Management Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 4130 | Introduction to Nutrition | 3 | 0 | 3 |
| 4141 | Dietary Manager's Orientation | 1 | 3 | 2 |
| | | 4 | 3 | 5 |
| **■ Second Term** | | | | |
| 4124 | Food Service Sanitation Certification | 2 | 0 | 2 |
| 4151 | Food Production 1 | 2 | 3 | 3 |
| 4153 | Diet Therapy | 2 | 0 | 2 |
| 9310 | Cooperative Employment Health Tech | 0 | 15 | 1 |
| | | 6 | 18 | 8 |
| **■ Third Term** | | | | |
| 4142 | Dietary Manager's Field Experience 1 | 0 | 9 | 3 |
| 4152 | Food Production 2 | 2 | 3 | 3 |
| 4155 | Management of Human Resources | 3 | 0 | 3 |
| 9310 | Cooperative Employment Health Tech | 0 | 15 | 1 |
| | | 5 | 26 | 10 |
| **■ Fourth Term** | | | | |
| 4143 | Dietary Manager's Field Experience 2 | 0 | 9 | 3 |
| 4154 | Dietary Food Systems | 3 | 0 | 3 |
| | | 3 | 9 | 6 |

| | | | | |
|---|---|---|---|---|
| **■ Fifth Term** | | | | |
| 9300 | Cooperative Employment Health Tech | 1 | 40 | 2 |
| | | | | 31 |

## Electrocardiograph Technician Certificate (EGRT)

The ECG Technician is the entry-level position for the health field of cardiovascular technology. Individuals in this field must possess the knowledge, skill and ability necessary to provide professional services related to proper diagnosis and subsequent treatment of cardiovascular diseases. The ECG technician is responsible for performing electrocardiograms with patients who may have irregularities in heart action, or as part of a routine examination. The technician prepares the recording for analysis by the physician. This includes the recognition and elimination of technical errors in the recording and also the ability to recognize and call to the physician's attention significant ECG abnormalities. Some ECG technicians must also type physician interpretations of ECGs on reports, schedule appointments, maintain patient files and care for ECG equipment. ECG technicians spend time moving from patient to patient and must have the physical dexterity to handle the equipment and the patient, and the stamina to endure long periods of time on their feet. With experience, an ECG technician may assist with or perform additional procedures such as stress testing and Holter monitoring. The Cincinnati Technical College program in Electrocardiography meets the essentials for an approved short course ECG technician training program as published by the American Cardiology Technologists Association. This program is designed for students seeking basic entry-level skills in the field of cardiovascular technology. Completion of the program will qualify the student to function as an ECG technician in the hospital, clinic or private physician's office.

## Electrocardiograph Technician Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1502 | Human Relations | 3 | 0 | 3 |
| 4000 | Introduction to Medical Terminology | 2 | 2 | 3 |
| | | 5 | 2 | 6 |
| **■ Second Term** | | | | |
| 4770 | Basic Electrocardiography | 3 | 2 | 4 |
| **■ Third Term** | | | | |
| 4771 | Arrhythmia Recognition | 3 | 0 | 3 |
| 4780 | ECG Clinical Practice | 0 | 20 | 2 |
| | | 3 | 20 | 5 |
| | | | | 15 |

## Health Information Management

(formerly Medical Records Technology)

Health Information Management Technicians are responsible for organizing, analyzing and generating health information in hospitals, clinics, nursing homes, insurance companies and health maintenance organizations. The technician has both medical and information processing knowledge necessary to manage the complex and computerized systems found in the modern health care institution.

Students spend every other term in paid cooperative education experience.

CTC's program is accredited by the Committee on Allied Health Education and Accrediation (CAHEA) in collaboration with the Council on Education of the American Health Information Management Association for the designation A.R.T. (Accredited Record Technician).

## Health Information Management Technician Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1850 | Computerized Business Appl | 3 | 2 | 4 |
| 4000 | Intro Medical Terminology | 2 | 2 | 3 |
| 4001 | Intro Health Care System | 2 | 0 | 2 |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 4405 | Orient to Health Info | 2 | 2 | 3 |
| 4407 | Record Content-Format | 2 | 2 | 3 |
| | | 14 | 10 | 19 |
| **■ Second Term** | | | | |
| 9300 | Coop Employment Health Tech | 1 | 40 | 2 |
| **■ Third Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 4410 | CPT Coding | 2 | 2 | 3 |
| 4415 | Legal Aspects of Health Infor | 3 | 0 | 3 |
| 4441 | Med Word Processing Oper 1 | 1 | 2 | 2 |
| | | 15 | 6 | 18 |
| **■ Fourth Term** | | | | |
| 9300 | Coop Employment Health Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 100X | English Comp Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4016 | Anatomy and Physiology 3 | 3 | 2 | 4 |
| 4416 | ICD-9-CM Coding | 4 | 2 | 5 |
| 4431 | Health Info Dept Mgmt | 3 | 0 | 3 |
| | | 16 | 4 | 18 |
| **■ Sixth Term** | | | | |
| 9300 | Coop Employment Health Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 4020 | Fund of Pathophysiology | 5 | 0 | 5 |
| 4417 | Med Stat and Rec Abstract | 3 | 2 | 4 |
| 4419 | Advanced ICD Coding | 2 | 2 | 3 |
| 4428 | Mr Directed Practice I | 0 | 16 | 3 |
| 4432 | Alt Health Record Systems | 3 | 0 | 3 |
| | | 13 | 20 | 18 |
| **■ Eight Term** | | | | |
| 9300 | Coop Employment Health Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 102X | Oral Comm Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4409 | Medical Record Seminar | 3 | 0 | 3 |
| 4418 | Tumor Reg Utili Rev & Qua | 4 | 0 | 4 |
| 4429 | MR Directed Practice 2 | 0 | 16 | 3 |
| | | 16 | 16 | 19 |
| **■ Tenth Term** | | | | |
| 9300 | Coop Employment Health Tech | 1 | 40 | 2 |
| | | | | 102 |

English Comp Elective: 1002, 1009
Oral Comm Elective: 1020, 1024
Social Science Elective:
Group 1 - Psychology: 1505
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1524, 1527
Group 4 - Government: 1535, 1539
Group 5 - Humanities: 1620, 1625, 1640, 1642, 1645

## Health Unit Coordinator Certificate (UCMR)

Health Unit Coordinators work in hospitals and nursing homes as managers of the non-clinical nursing tasks. Job duties include communications with the patients, public and other members of the health care team; maintenance of the patient's chart; coordination of unit procedures; and general assistance with activities of

the nursing unit.

Health Unit Coordinators must have good communication skills, ability to be tactful with all people, ability to organize and prioritize, and understand the legal and ethical implications of managing patient records.

Cincinnati Technical College's Health Unit Coordinator training program is a four-term program. The first three terms consist of classes at the College covering Health Unit Coordinating procedures and communication skills. The last term consists of a five-week internship at a local hospital along with classes at the College.

The Cincinnati Technical College program in Health Unit Coordinating meets the standards of education as published by the National Association of Health Unit Coordinators and is registered with the National Association of Health Unit Coordinators. This program is designed for students seeking basic entry-level skills in Health Unit Coordinating. Completion of the program will qualify the student to take the National Certification Exam for Health Unit Coordinators.

## Health Unit Coordinator Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 4000 | Introduction to Medical Terminology | 2 | 2 | 3 |
| 4001 | Introduction to Health Care Systems | 2 | 0 | 2 |
| 4470 | Orient Health Unit Coordination | 3 | 2 | 4 |
| | | 7 | 4 | 9 |
| **Second Term** | | | | |
| 3001 | Typewriting 1 | 2 | 3 | 3 |
| 4408 | Advanced Medical Terminology | 3 | 0 | 3 |
| 4471 | Health Unit Coordinating 1 | 2 | 4 | 4 |
| | | 7 | 7 | 10 |
| **Third Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 4472 | Health Unit Coordinating 2 | 2 | 4 | 4 |
| | | 8 | 4 | 10 |
| **Fourth Term** | | | | |
| 4481 | Health Unit Coordinating Practicum | 2 | 20 | 6 |
| | | | | 35 |

## Medical Assistant Technology (MAC) (MA)

Medical Assisting is a growth occupation for the 1990s. Job opportunities are plentiful and are expected to increase rapidly. The Medical Assistant is a versatile professional who performs administrative, clinical, and management functions.

The Medical Assistant program prepares students to work in physicians' offices providing patient care, performing administrative tasks and managing the medical office. The administrative tasks performed include filing, scheduling appointments, handling correspondence, maintaining patient records, bookkeeping and completing insurance forms. The clinical tasks performed involve taking and recording medical histories, preparing patients for examinations, assisting with examinations and office surgeries, measuring vital signs, performing routine laboratory work, x-rays, EKG's and giving injections. As a manager, the Medical Assistant manages patient care, the office, and the physician's time, personal & professional affairs.

The Medical Assistant program offers two options for the student: students can complete one year for a technical certificate or continue on to the second year, earning an associate degree upon successful completion. The first year of the program prepares the student with entry-level job skills. The second year of the program adds additional management, occupational and education skills. Students in either option must complete supervised clinical practices or externships to develop competencies in the skills needed by the Medical Assistant. Students receive no monetary reimbursement for these experiences.

CTC's Medical Assistant program is accredited by the American Medical Association's Committee on Allied Health Education and Accreditation (CAHEA) in collaboration with the American Association of Medical Assistants (AAMA).

Upon successful completion of the program, either the one or two year, graduates are eligible to take the examination to become a Certified Medical Assistant (CMA).

## Medical Assistant Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 4000 | Introduction to Medical Terminology | 2 | 2 | 3 |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 4202 | Clinical Procedures 1 | 3 | 3 | 4 |
| 4204 | Medical Lab Procedures 1 | 3 | 3 | 4 |
| 4214 | Medical Office Computer Literacy | 1 | 3 | 2 |
| | | 12 | 13 | 17 |
| **Second Term** | | | | |
| 4007 | Emergency Medical Procedures | 1 | 2 | 2 |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 4200 | Medical Office Practice 1 | 2 | 3 | 3 |
| 4203 | Clinical Procedures 2 | 3 | 3 | 4 |
| 4205 | Medical Lab Procedures 2 | 3 | 3 | 4 |
| | | 12 | 13 | 17 |
| **Third Term** | | | | |
| 4208 | Medical Office Bookkeeping | 3 | 6 | 5 |
| 4211 | MA Clinical Experience 1 | 0 | 17 | 3 |
| | | 3 | 23 | 8 |
| **Fourth Term** | | | | |
| 1009 | Business English | 3 | 0 | 3 |
| 1505 | Intro to Psychology 1 | 3 | 0 | 3 |
| 4009 | General Microbiology | 3 | 3 | 4 |
| 4016 | Anatomy and Physiology 3 | 3 | 2 | 4 |
| 4201 | Medical Office Practice 2 | 2 | 3 | 3 |
| | | 14 | 8 | 17 |
| **Fifth Term** | | | | |
| 1506 | Intro to Psychology 2 | 3 | 0 | 3 |
| 4018 | Essentials of Pharmacology | 3 | 0 | 3 |
| 4212 | MA Clinical Experience 2 | 0 | 17 | 3 |
| 4215 | MA Applications | 2 | 3 | 3 |
| | | 8 | 20 | 12 |
| | | | | 71 |

## Medical Assistant Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 4130 | Introduction to Nutrition | 3 | 0 | 3 |
| 4224 | Advanced Clinical Procedure | 2 | 3 | 3 |
| 4408 | Advanced Medical Terminology | 3 | 0 | 3 |
| | | 11 | 3 | 12 |
| **Second Term** | | | | |
| 4213 | MA Clinical Experience 3 | 0 | 17 | 3 |
| **Third Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 1527 | Technical & Ethical Decisions | 3 | 0 | 3 |
| 4206 | Medical Laboratory Procedures 3 | 2 | 3 | 3 |
| | | 11 | 3 | 12 |
| **Fourth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1509 | Psychology: Adult Development | 3 | 0 | 3 |
| 4209 | Medical Assistant Seminar | 2 | 4 | 3 |
| | | 11 | 4 | 12 |
| | | | | 39 |

Social Science Electives: 1502, 1508, 1521, 1523, 1525, 1620, 1625, 1640, 1642, 1645

## Medical Laboratory Technician (ML)

Medical Laboratory Technicians work closely with physicians. They provide much of the information needed by physicians to diagnose and treat patients. They work in the laboratories of hospitals, clinics, research centers and industry. In biochemistry, hematology, microbiology and blood bank laboratories they form a vital part of the health care team.

Medical Laboratory Technicians employed in a laboratory, a hospital or clinic may specialize in one or two of the several areas of laboratory work or may rotate through all the departments in the laboratory. In biochemistry they perform chemical analysis of the blood for constituents, including glucose, urea, chloride, sodium, potassium and enzymes. In hematology they take blood samples from patients; count red and white cells; determine coagulation, bleeding and prothrombin times; measure sedimentation rates and determine hemoglobin concentrations. In microbiology they prepare and stain slides; plate cultures from urine, feces and wound specimens; determine the susceptibility of bacteria to antibiotics; and examine specimens for parasites. In blood banks they type blood from patients, draw blood from donors and process it. In the serology department they examine specimens for antibodies against various diseases.

The Medical Laboratory Technician program is an associate degree program which includes two terms of unpaid clinical laboratory experience and two terms of paid cooperative employment. The program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association in collaboration with the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

Successful completion of the curriculum enables a student to apply to take a national certification exam. Graduates may apply to the American Society for Clinical Pathology Board of Registry Examination to obtain certification as a Medical Laboratory Technician, MLT (ASCP), or the National Certification Agency for Medical Laboratory Personnel to obtain certification as a Clinical Laboratory Technician, CLT (NCA).

## Medical Laboratory Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1105 | Health Math | 4 | 0 | 4 |
| 2231 | Fundamentals of Inorganic Chemistry | 3 | 2 | 4 |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 4301 | Basic Laboratory Techniques | 2 | 3 | 3 |
| | | 15 | 7 | 18 |
| **■ Second Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 2236 | Physiological Chemistry | 3 | 3 | 4 |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 4302 | Basic Hematology & Urinalysis | 3 | 6 | 5 |
| | | 12 | 11 | 16 |
| **■ Third Term** | | | | |
| 4001 | Introduction to Health Care System | 2 | 0 | 2 |
| 4016 | Anatomy and Physiology 3 | 3 | 2 | 4 |
| 4304 | Clinical Chemistry | 3 | 6 | 5 |
| 4307 | Hematology 2 | 1 | 3 | 2 |
| | | 9 | 11 | 13 |
| **■ Fourth Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 4023 | Immunoiogy | 3 | 0 | 3 |
| 4311 | Clinical Appl 1-Hematology & Urin | 0 | 6 | 2 |
| 4312 | Clinical Appl 2-Clinical Chemistry | 0 | 6 | 2 |
| 4350 | Orientation to the Clinical Lab | 0 | 10 | 2 |
| | | 6 | 22 | 12 |
| **■ Fifth Term** | | | | |
| 4353 | Medical Lab Clinical Practice | 1 | 40 | 6 |
| **■ Sixth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4009 | General Microbiology | 3 | 3 | 4 |
| 4305 | Blood Banking - Serology | 4 | 6 | 6 |
| 4308 | Immunochemistry | 1 | 3 | 2 |
| | | 11 | 12 | 15 |
| **■ Seventh Term** | | | | |
| 9300 | Co-op Employment Health Technology | 1 | 40 | 2 |
| **■ Eighth Term** | | | | |
| 101X | Technical Writing Elective | 3 | 0 | 3 |
| 4020 | Fundamentals of Pathophysiology | 5 | 0 | 5 |
| 4306 | Clinical Microbiology | 4 | 6 | 6 |
| | | 12 | 6 | 14 |
| **■ Ninth Term** | | | | |
| 4309 | Clinical Laboratory Seminar | 3 | 0 | 3 |
| 9300 | Co-op Employment Health Technology | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Tenth Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4313 | Clinical Appl 3-Blood Bank Serology | 0 | 6 | 2 |
| 4314 | Clinical Appl 4-Clinical Microbiology | 0 | 6 | 2 |
| | | 6 | 12 | 10 |
| | | | | 111 |

Social Science Electives:
Group 1 - Psychology: 1502, 1505, 1506, 1508, 1509, 1510
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1523, 1524, 1525, 1527
Group 4 - Government: 1531, 1535, 1539
Group 5 - Humanities: 1620, 1625, 1640, 1642, 1645
Technical Writing Electives: 1010, 1015, 1018
Oral Communication Electives: 1020, 1024

## Nursing Program (NUR)

The purpose of the program is to prepare graduate nurses who are eligible to take the national standardized nursing examination (NCLEX-RN) and upon passing, work as registered nurses.

The graduate is a member of the health team prepared to provide nursing care to clients with common health problems in structured health care settings, such as hospitals and extended health care facilities.

The objectives of the program are to prepare the graduate to:

1. Synthesize the knowledge and principles from biological, behavioral, and nursing sciences in providing nursing care to individuals and groups with common health problems.
2. Collaborate with health team members to provide client and family referrals to appropriate resources.
3. Advance own nursing practice by seeking new knowledge from current resources, continuing education courses and formal study.
4. Practice therapeutic communication to promote client and family self-exploration, self-understanding, redirection for growth and development.
5. Delegate aspects of nursing care to other health care workers commensurate with their educational preparation, experience, and job descriptions.
6. Use nursing process as the basis for decision-making to administer care for individuals and groups of clients.
7. Incorporate planned and spontaneous teaching activities into own practice with individuals, families and groups.
8. Demonstrate competence in providing individualized nurs-

| | | | | |
|---|---|---|---|---|
| 4996 | Role Transition in Nursing: NURP | 3 | 1 | 4 |
| (successful completion of this course results in fulfilling requirements for 4911 and 4912) | | | | |
| | | 9 | 3 | 11 |
| **■ Fourth Term - Level 3** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 4983 | Gerontological Nsg: NURP | 1 | 1 | 2 |
| (successful completion of this course results in fulfilling requirements for 4913) | | | | |
| | | 7 | 1 | 8 |
| **■ Fifth Term - Level 4** | | | | |
| 1508 | Psych: Child Development | 3 | 0 | 3 |
| 4009 | General Microbiology | 3 | 3 | 4 |
| 4984 | Adult Nursing 2: NURP | 2 | 1 | 3 |
| (successful completion of this course results in fulfilling requirements for 4914) | | | | |
| | | 8 | 4 | 10 |
| **■ Sixth Term - Level 4** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4985 | Mental Health Nursing: NURP | 5 | 6 | 7 |
| | | 8 | 6 | 10 |
| **■ Seventh Term - Level 4** | | | | |
| 4986 | Parent Child Nursing: NURP | 9 | 10 | 11 |
| **■ Eighth Term - Level 5** | | | | |
| 4988 | Adult Nursing 3: NURP | 3 | 2 | 4 |
| (successful completion of this course results in fulfilling requirements for 4917) | | | | |
| **9372 | Nursing Coop Educ Exp 2 | 0 | 25 | 1 |
| | | 3 | 27 | 5 |
| **■ Ninth Term - Level 6** | | | | |
| 4989 | Management of Client Care: NURP | 6 | 15 | 9 |
| | | | | 96 |

* Advanced Standing Credit given with NAPNES or other medication administration certificate.

** Advanced Standing Credit given for 500 hours of current work experience as an LPN.

| | |
|---|---|
| Total credit hours: | 86 |
| Advanced Standing Credit (4911 and 4912) | 12 |
| | 98 |

Social Science Electives: 1509, 1510, 1525, 1526, 1527

All courses within a level must be completed with a "C" or better before a student can progress to the next term/level.

## Occupational Therapy Assistant Program (OTA)

Occupational therapy is the art and science of directing man's response to selected activity to promote and maintain health, to prevent disability, to evaluate behavior and to treat or train patients with physical or psychological dysfunction.

The term "selected activity" in the definition of occupational therapy is the key to the uniqueness of the field and relates directly to an individual's occupation. Occupation may be defined as those tasks which occupy the majority of one's time. Occupational therapy is concerned with the person biologically, psychologically and socially, and provides services to those individuals whose ability to cope with the tasks of living is threatened or impaired. Using evaluative and therapeutic means, occupational therapy promotes meaningful performance throughout the life cycle and encourages a healthy balance of time spent in self-care, work and play-leisure.

The graduate Occupational Therapy Assistant is a technically qualified member of the health team who functions under the supervision or consultation of a certified/registered occupational therapist. The assistant accepts clinical responsibilities in hospitals, nursing homes, day care centers, rehabilitation centers or those organizations directed to maintain health and socialization of their members. The graduate will demonstrate entry-level competency in the analysis of activities and their application to patient needs; occupational therapy concepts and skills (daily living skills, group activities, media used in treatment and adaptive equipment); direction of activity programs; management of department operations; data collection; self understanding and the realization of the effect that one's behavior has on the patient/client and others; upholding the standards of the profession and identifying the need for continuing professional education and growth; and relating occupational therapy to the total health care system.

The mission of the Occupational Therapy Assistant program is multifaceted. Major areas addressed by this program are as follows:

1. to meet the Occupational Therapy manpower needs in the greater Cincinnati area.
2. to prepare the graduates of the program to be a competent entry-level occupational therapy assistant in the variety of potential practice areas in the greater Cincinnati area.
3. to prepare the graduates to be contributing members of society.
4. to educate the community in the role of the occupational therapy assistant.
5. to function within the standards of the institution's mission, purpose, and philosophy.
6. to function within the educational and practice standards of the American Occupational Therapy Association.

The Occupational Therapy Assistant program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association in conjunction with the Accrediation Committee of the American Occupational Therapy Association. Graduates of the program will be able to sit for the national certification examination for the occupational therapy assistant administered by the American Occupational Therapy Certification Board. After successful completion of this exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure in order to practice, however, state licenses are usually based on the results of the AOTCB Certification Exam.

## Occupational Therapy Assistant Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 1505 | Introduction to Psychology 1 | 3 | 0 | 3 |
| 4000 | Introduction to Medical Terminology | 2 | 2 | 3 |
| 4600 | Introduction to OTA | 2 | 3 | 3 |
| | | 13 | 5 | 15 |
| **■ Second Term** | | | | |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1506 | Introduction to Psychology 2 | 3 | 0 | 3 |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 4610 | Theory of OT | 4 | 0 | 4 |
| 4620 | Techniques of OT | 0 | 4 | 2 |
| | | 13 | 6 | 16 |
| **■ Third Term** | | | | |
| 4007 | Emergency Medical Procedures | 1 | 2 | 2 |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 4611 | OT Concepts - Psychosocial | 3 | 0 | 3 |
| 4621 | Media for OT - Psychosocial | 0 | 4 | 2 |
| 4651 | OTA Field Work 1 (Level 1) | 0 | 9 | 2 |
| | | 7 | 17 | 13 |
| **■ Fourth Term** | | | | |
| 1508 | Psychology: Child Development | 3 | 0 | 3 |
| 4016 | Anatomy and Physiology 3 | 3 | 2 | 4 |
| 4612 | OT Concepts - Infants & Children | 3 | 0 | 3 |
| 4622 | Media for OT - Infants & Children | 0 | 4 | 2 |
| 4652 | OTA Field Work 2 (Level 1) | 0 | 9 | 2 |
| | | 9 | 15 | 14 |
| **■ Fifth Term** | | | | |
| 1010 | Technical Writing I | 3 | 0 | 3 |

| | | | | |
|---|---|---|---|---|
| 1521 | Sociology | 3 | 0 | 3 |
| 4001 | Intro. to the Health Care System | 2 | 0 | 2 |
| | | 8 | 0 | 8 |
| **■ Sixth Term** | | | | |
| 1509 | Psychology | 3 | 0 | 3 |
| 4025 | Kinesiology | 2 | 2 | 3 |
| 4613 | OT Concepts - Physical Disabilities | 3 | 0 | 3 |
| 4623 | Therapeutic Media for OT | 0 | 4 | 2 |
| 4653 | OTA Field Work 3 (Level 1) | 0 | 9 | 2 |
| | | 8 | 15 | 13 |
| **■ Seventh Term** | | | | |
| 4020 | Pathophysiology | 5 | 0 | 5 |
| 4614 | OT Concepts - Gerontology | 3 | 0 | 3 |
| 4624 | OT Therapeutic Media - Gerontology | 0 | 4 | 2 |
| | | 8 | 4 | 10 |
| **■ Eighth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 4625 | Survey of Ther. Media for OT | 0 | 6 | 3 |
| 4631 | OT Fundamentals Practice | 3 | 0 | 3 |
| | | 6 | 6 | 9 |
| **■ Ninth Term** | | | | |
| 4660 | OTA Field Work 4 (Level 2) | 2 | 32 | 6 |
| **■ Tenth Term** | | | | |
| 4661 | OTA Field Work 5 (Level 2) | 2 | 32 | 6 |
| | | | | 110 |

## Respiratory Care (RC)

Respiratory Care education at CTC is a two-year associate degree program.

Students are trained to administer all routine respiratory care procedures, continuous mechanical ventilation, hemodynamic monitoring and other specialized diagnostic and therapeutic procedures. In addition, they receive training in nontraditional areas such as home care and pulmonary rehabilitation. The program is twenty-two months in duration. This program does not include paid cooperative education since students spend their time in coursework and unpaid clinical experiences.

The program is accredited by the American Medical Association's Committee on Allied Health Education and Accreditation in collaboration with the Joint Review Committee for Respiratory Therapy Education. Program graduates may apply for the certification examination and registry examination administered by the National Board for Respiratory Care (NBRC). Candidates who complete these requirements are recognized as Certified Respiratory Therapy Technicians (CRTT) and as Registered Respiratory Therapists (RRT).

## Respiratory Care Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1105 | Health Mathematics | 4 | 0 | 4 |
| 2244 | Health Physics 1 | 3 | 2 | 4 |
| 4001 | Introduction to Health Care System | 2 | 0 | 2 |
| 4007 | Emergency Medical Procedures | 1 | 2 | 2 |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 4700 | Introduction to Respiratory Care | 1 | 0 | 1 |
| | | 14 | 6 | 17 |
| **■ Second Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 4701 | Respiratory Care Science 1 | 3 | 2 | 4 |
| 4720 | Cardiopulmonary A & P | 3 | 2 | 4 |
| | | 12 | 6 | 15 |
| **■ Third Term** | | | | |
| 4009 | General Microbiology | 3 | 3 | 4 |
| 4016 | Anatomy and Physiology 3 | 3 | 2 | 4 |
| 4702 | Respiratory Care Science 2 | 2 | 3 | 3 |
| 4711 | RC Clinical Practice 1 | 0 | 8 | 1 |
| | | 8 | 16 | 12 |
| **■ Fourth Term** | | | | |
| 100X | English Composition Elective | 3 | 0 | 3 |
| 4703 | Respiratory Care Science 3 | 5 | 2 | 6 |
| 4712 | RC Clinical Practice 2 | 0 | 8 | 1 |
| 4718 | Pulmonary Diseases 1 | 2 | 0 | 2 |
| | | 10 | 10 | 12 |
| **■ Fifth Term** | | | | |
| 4704 | Respiratory Care Science 4 | 3 | 3 | 4 |
| 4713 | RC Clinical Practice 3 | 0 | 24 | 4 |
| 4719 | Pulmonary Diseases 2 | 2 | 0 | 2 |
| | | 5 | 27 | 10 |
| **■ Sixth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4705 | Respiratory Care Science 5 | 3 | 2 | 4 |
| 4714 | RC Clinical Practice 4 | 0 | 32 | 5 |
| | | 6 | 34 | 12 |
| **■ Seventh Term** | | | | |
| 101X | Technical Writing Elective | 3 | 0 | 3 |
| 2236 | Physiological Chemistry | 3 | 3 | 4 |
| 4020 | Fundamentals of Pathophysiology | 5 | 0 | 5 |
| 4706 | Respiratory Care Science 6 | 3 | 2 | 4 |
| | | 14 | 5 | 16 |
| **■ Eighth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4707 | Respiratory Care Science 7 | 3 | 0 | 3 |
| 4715 | RC Clinical Practice 5 | 0 | 16 | 3 |
| | | 9 | 16 | 12 |
| **■ Ninth Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 4716 | RC Clinical Practice 6 | 0 | 16 | 3 |
| 4723 | Respiratory Care Seminar | 2 | 2 | 3 |
| | | 5 | 18 | 9 |
| | | | | 115 |

English Composition Electives: 1002, 1007, 1008, 1010
Oral Communication Electives: 1020, 1024
Social Science Electives:
Group 1 - Psychology: 1502, 1505, 1506, 1508, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1523, 1524, 1525, 1527
Group 4 - Government: 1531, 1535, 1539
Group 5 - Humanities: 1620, 1625, 1640, 1642, 1645
Technical Writing Electives: 1010, 1015

## Surgical Technology (ST)

Surgical Technology is the only health care educational program that prepares practitioners specifically for the operating room scrub role. Employment opportunities include hospital operating room departments, obstetrical departments, surgical supply/processing departments, outpatient surgery centers and surgeon office practices.

During operative procedures, the Surgical Technologist functions as an integral part of the surgical team and works directly with the surgeon and registered nurse. Their responsibilities include preparation of operative equipment and supplies, instrumentation during operative procedures and other intra-operative patient care activities.

Surgical Technology, an associate degree program, focuses upon the scrub role during general surgery and surgical specialty procedures. Approximately thirteen area hospitals are affiliated with the program.

Theory and practice are integrated through the use of simulated laboratory experiences and hospital operating room experiences. Students also take supportive coursework in basic sciences, communication skills and social sciences.

The program is accredited by the American Medical Association's Committee on Allied Health Education and

Accreditation in collaboration with the Joint Review Committee for Surgical Technologists.

Upon satisfactory completion of the curriculum, students are eligible for the National Certification Examination of the Association of Surgical Technologists for designation as a Certified Surgical Technologist (CST). A Certified Surgical Technologist may practice in any state within the USA.

## Surgical Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 4000 | Introduction to Medical Terminology | 2 | 2 | 3 |
| 4009 | General Microbiology | 3 | 3 | 4 |
| 4505 | Introduction to Surgery 1 | 5 | 0 | 5 |
| 4541 | ST Surgery Lab | 0 | 3 | 1 |
| | | 10 | 8 | 13 |
| **Second Term** | | | | |
| 1105 | Health Math | 4 | 0 | 4 |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 4506 | Introduction to Surgery 2 | 5 | 0 | 5 |
| 4542 | ST Clinical Experience 1 | 1 | 5 | 3 |
| | | 13 | 7 | 16 |
| **Third Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 4531 | General Surgery | 5 | 0 | 5 |
| 4543 | ST Clinical Experience 2 | 1 | 5 | 3 |
| | | 12 | 7 | 15 |
| **Fourth Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 4016 | Anatomy and Physiology 3 | 3 | 2 | 4 |
| 4532 | General Surgery 2 | 5 | 0 | 5 |
| 4544 | ST Clinical Experience 3 | 1 | 4 | 3 |
| | | 12 | 6 | 15 |
| **Fifth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4001 | Intro. to Health Care System | 2 | 0 | 2 |
| 4533 | Surgical Specialties 1 | 5 | 0 | 5 |
| | | 13 | 0 | 13 |
| **Sixth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4534 | Surgical Specialties 2 | 5 | 0 | 5 |
| 4551 | ST Clinical Practice 1 | 1 | 24 | 5 |
| | | 9 | 24 | 13 |
| **Seventh Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4535 | Surgical Specialties 3 | 5 | 0 | 5 |
| 4552 | ST Clinical Practice 2 | 1 | 24 | 5 |
| | | 9 | 24 | 13 |
| **Eighth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 4018 | Essentials of Pharmacology | 3 | 0 | 3 |
| 4553 | ST Clinical Practice 3 | 1 | 24 | 5 |
| | | 7 | 24 | 11 |
| | | | | 109 |

Social Science Electives:

Group 1 - Psychology: 1502, 1505, 1506, 1508, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1523, 1525, 1527
Group 5 - Humanities: 1620, 1625, 1640, 1642, 1645

# Business Technologies Division

Business and industry are constantly searching for capable and responsible men and women identified as managers who can establish an environment in which people work together in the most effective manner to achieve management goals. The number of managerial workers required by business is great and, especially in specialized business fields, is growing each year. Sound business training helps to develop better management for American business enterprise and, ultimately, has a profound influence on the economic welfare of the nation.

Cincinnati Technical College is meeting the need for specialized business training with twenty-four technological programs. Organized job experience through cooperative work assignments with leading business firms is a key phase of the learning program in each of these twenty-four business curricula. Collegiate level courses in these business areas, combined with job-related activities during the alternating ten-week co-op terms, provide students with both business skills and business experience. Upon completion of the two-year, co-op/college program in business, students receive an associate degree and begin advancing rapidly to more responsible and better paying mid-management positions.

Credits earned in the degree programs are transferable. Articulation agreements have been established with The College of Mount St. Joseph, Thomas More College, Xavier University, Northern Kentucky University, Ohio University, Rochester Institute of Technology and the Union for Experimenting Colleges and Universities.

## Cooperative Education

In the Business Technologies Division, students participate in a cooperative education program. We feel that cooperative education sets Cincinnati Technical College apart from most colleges and universities. Cooperative education allows students to apply their majors in the business world, and to gain experience that will enhance their first full-time employment after graduation. Therefore, in the Business Technologies Division, all students are required to earn 10 credit hours in cooperative education.

To prepare for successful job interviews and continued success in their cooperative education jobs, all students are required to successfully complete the Professional Practice course 9200 (1 credit hour) offered by the Business Technologies Division, either before or concurrent with course 9210 (first co-op session).

## The Co-op Requirement

1. All students are urged to participate in the Cooperative Education Program. In order to be eligible to co-op, a student must meet the following requirements:

A. Be a matriculated student.
B. Have a 2.0 GPA or better, and complete any required program technical courses. See coordinator for list.
C. Complete a Petition to Co-op Packet and return it to the technology coordinator before they will be considered ready for placement.
D. Agree to follow their curriculum and meet all requirements as prescribed in the curriculum in the order in which they appear.
E. Agree not to seek full-time employment with their co-op employer until all five co-op terms have been completed.

F. Any student wishing to drop out of co-op must have co-ordinator approval and complete the remainder of their co-op requirement by taking business courses 9230 and 9231. Once a student leaves the co-op program, they will not be eligible to re-enter.

## ASSET

All students seeking entry to degree programs in the Business Technologies Division are required to take the ASSET Placement Test. The results of the test will be used by the program advisors to place students in the proper reading, English and math courses according to their ability level.

## Transfer Module

Associate degree programs in the Business Technologies Division contain in their curricula most of the required courses for the CTC Transfer Module. The additional courses needed to complete the transfer module should be scheduled at times convenient to the student. Students who wish to transfer to an Ohio public university for baccalaureate degrees will find that a CTC Associate of Applied Business or Associate of Applied Science degree combined with a transfer module (showing grades of "C" or better) will receive preferential consideration at the receiving university.

## Industry Training

The Business Technologies Division is committed to providing customized training programs for business and industry. These programs are designed to provide employees with the necessary skill-building or updating needed to keep abreast of the rapid technological changes and challenges faced in today's business world.

## Small Business Management

The Small Business Management Certificate and Small Business Management Technology degree are scheduled through the Center for Business and Industry for in-plant associate degree programs.

Small Business Management is another option of the Business Management Technology. This program is designed to provide the students with the knowledge to own and operate their own businesses. The courses will expose the student to the basic principles of management, marketing, accounting and other courses that are developed for those with this type of career in mind. The combination of courses and on-the-job training will give the students the necessary background for Small Business Management.

## Small Business Management Certificate

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2901 | Principles of Marketing 1 | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| | | 12 | 4 | 14 |
| **Second Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2902 | Principles of Marketing 2 | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| | | 11 | 4 | 13 |
| **Third Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 2971 | Small Business Management 1 | 3 | 0 | 3 |
| | | 12 | 0 | 12 |
| **Fourth Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| 2972 | Small Business Management 2 | 3 | 0 | 3 |
| | | 12 | 0 | 12 |
| **Fifth Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1804 | Risk and Insurance | 3 | 0 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| | | 12 | 0 | 12 |
| | | | | 63 |

*Technical Electives: Chairperson approval required

## Small Business Management Technology

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 18 | 4 | 20 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| | | 20 | 4 | 22 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| 2971 | Small Business Management 1 | 3 | 0 | 3 |
| | | 18 | 1 | 18 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2905 | Money and Banking | 3 | 0 | 3 |
| 2972 | Small Business Management 2 | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **Eighth Term** | | | | |
| 9204 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Ninth Term** | | | | |
| *XXXX | Technical Elective | 3 | 0 | 3 |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1804 | Risk and Insurance | 3 | 0 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| | | 18 | 0 | 18 |

| | | | | |
|---|---|---|---|---|
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 107 |

Social Science Electives: 1502, 1505, 1521, 1524, 1539, 1551, 1553, 1620, 1625
*Technical Electives: Chairperson approval required

## Automotive Service Management Technology (ASM)

Automotive Service Management students are instructed in automotive theory, repair and testing procedures and practices, as well as management techniques while in school. As co-ops on the job in automotive service departments, parts departments and technical centers they receive practical experience under the direction of qualified technicians or experienced managers.

## Automotive Service Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 2503 | Engine Overhaul | 2 | 3 | 3 |
| 1001 | English Composition | 13 | 0 | 3 |
| 1121 | Business Mathematics | 13 | 0 | 3 |
| 2501 | Engine Fundamentals | 2 | 3 | 3 |
| 2515 | Machine & Hand Tool Lab | 2 | 3 | 3 |
| 2502 | Cylinder Head Rebuilding | 2 | 3 | 3 |
| | | 14 | 12 | 18 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 2506 | Engine Trouble Diagnosis | 2 | 3 | 3 |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1170 | Intro to Technical Mathematics | 4 | 0 | 4 |
| 2221 | Technical Physics 1 | 2 | 3 | 3 |
| 2504 | Ign. Electrical Systems | 2 | 3 | 3 |
| 2505 | Fuel Systems | 2 | 3 | 3 |
| | | 15 | 12 | 19 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 2222 | Technical Physics 2 | 2 | 3 | 3 |
| 2507 | Brake Systems | 2 | 3 | 3 |
| 2508 | Suspension & Alignment | 2 | 3 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 15 | 11 | 19 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1505 | Intro to Psychology 1 | 3 | 0 | 3 |
| 1535 | Intro to Labor Management Relations | 3 | 0 | 3 |
| 2509 | Automatic Transmissions | 2 | 3 | 3 |
| 2516 | Techniques of Welding | 2 | 3 | 3 |
| 2514 | Automotive Management | 2 | 3 | 3 |
| 2510 | Manual Trans. & Drive Line | 2 | 3 | 3 |
| | | 17 | 12 | 21 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 2513 | Engine Performance | 2 | 3 | 3 |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2511 | A/C Heat & Vent Sys. | 2 | 3 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 2512 | Diagnostic Equipment | 2 | 3 | 3 |
| | | 18 | 11 | 22 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 110 |

## Business Computer Science Technologies

The three majors available, Computer Communications, Computer Operations and Computer Programming, provide specialized technical training in the most popular career areas of Data Processing.

The Computer Communications (CC) technician is trained to provide expertise to ensure that information gets from its source to the place where it is needed. Trained to utilize a wide array of diagnostic tools and trouble-shooting techniques, the Data Communications specialist installs and maintains the links of information.

The Computer Operations (CO) courses prepare the student for two career paths: micro-computer specialist (PC Specialist) and/or computer operations. Students learn the initial COBOL and BASIC languages. Emphasis is placed on PC software packages such as dBASE and LOTUS and operating systems such as Job Control Language and DOS.

The Computer Programming (CP) major is trained to write business applications programs for micro-, mini-, and main-frame computers. The three most popular languages, COBOL, RPG and BASIC, are emphasized, as well as training in Data Communications and Data Base Management Systems.

## Computer Communications Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1124 | Business Algebra | 4 | 0 | 4 |
| 1701 | Introduction to Data Processing | 3 | 2 | 4 |
| 1731 | PC/MS-DOS | 2 | 3 | 3 |
| 7701 | Electronic Fundamentals 1 | 4 | 2 | 4 |
| | | 16 | 7 | 18 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1721 | Program Logic & Methods | 2 | 3 | 3 |
| 1733 | Advanced PC/MS-DOS | 2 | 3 | 3 |
| 1754 | Data Communications 1 | 2 | 3 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| 7702 | Electronic Fundamentals 2 | 4 | 2 | 4 |
| | | 16 | 11 | 19 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1702 | Structured BASIC | 2 | 3 | 3 |
| 1764 | Data Communications 2 | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| | | 17 | 7 | 20 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1127 | Business Statistics | 4 | 0 | 4 |

| | | | | |
|---|---|---|---|---|
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1771 | Data Base Management Systems | 2 | 3 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| | | 17 | 7 | 20 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 1763 | Systems Analysis and Design | 2 | 3 | 3 |
| 1774 | Telecommunications | 3 | 2 | 4 |
| 1784 | Networking | 3 | 2 | 4 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| | | 17 | 7 | 20 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 108 |

Business Electives: Chairperson approval required
Social Science Electives: 1505, 1506, 1509, 1513, 1521, 1523, 1524, 1525, 1527, 1531, 1535, 1536, 1539, 1542, 1543, 1551, 1553

## Computer Operations Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1124 | Business Algebra | 4 | 0 | 4 |
| 1701 | Introduction to Data Processing | 3 | 2 | 4 |
| 1703 | Program Design | 3 | 0 | 3 |
| 1711 | Introduction to Computer Operations | 2 | 3 | 3 |
| 1731 | PC/MS-DOS | 2 | 3 | 3 |
| | | 16 | 9 | 20 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1127 | Business Statistics | 4 | 0 | 4 |
| 1721 | Programming Logic and Methods | 2 | 3 | 3 |
| 1733 | Advanced PC/MS-DOS | 2 | 3 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| | | 16 | 10 | 20 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1702 | Structured Basic | 2 | 3 | 3 |
| 1771 | Database Management Systems | 2 | 3 | 3 |
| 1862 | Advanced Electronic Spreadsheets | 2 | 2 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 15 | 10 | 19 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1739 | Operating Systems | 2 | 3 | 3 |
| 1754 | Data Communications 1 | 2 | 3 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| | | 19 | 7 | 21 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1741 | Operating Systems 2 | 2 | 3 | 3 |
| 1742 | Intro Structured Cobol | 3 | 7 | 6 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| | | 14 | 10 | 18 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 109 |

Social Science Electives: 1505, 1506, 1513, 1521, 1524, 1527, 1535, 1551, 1553

## Computer Programming Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 112X | Math Elective | 4 | 0 | 4 |
| 1701 | Introduction to Data Processing | 3 | 2 | 4 |
| 1731 | PC/MS - DOS | 2 | 3 | 3 |
| 1721 | Programming Logic & Methods | 2 | 3 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 17 | 8 | 20 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 4 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1127 | Business Statistics | 4 | 0 | 4 |
| 1702 | Structured Basic | 2 | 3 | 3 |
| 1761 | Introduction to RPG 2 | 3 | 6 | 5 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| | | 15 | 11 | 19 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1505 | Intro to Psychology 1 | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1781 | Advanced RPG 2 | 2 | 3 | 3 |
| 1742 | Intro Structured COBOL | 3 | 7 | 6 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| | | 14 | 12 | 19 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1762 | Advanced Structured COBOL | 3 | 7 | 5 |
| 1754 | Data Communications 1 | 2 | 3 | 3 |
| 1763 | Systems Analysis & Design | 2 | 3 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| | | 16 | 14 | 20 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1769 | Program Data Base Applications | 2 | 3 | 3 |
| 1797 | Special Problems Seminar | 2 | 3 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 1739 | Operating Systems | 2 | 3 | 3 |
| | | 18 | 9 | 21 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 110 |

Math Electives: 1124, 1126, 1140

Social Science Electives: 1502, 1506, 1513, 1521, 1524, 1527, 1535, 1551, 1553

## Business Management Technology (BM)

The Business Management Technology at CTC combines sound business training with on-the-job experience. The classroom experience centers around a well-planned management curriculum including courses in basic management principles, labor-management relations and management theories with practical applications. Through cooperative education work experience, students learn to handle directions and gain valuable insights into solving management problems.

## Business Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 1512 | Micro Economics | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 18 | 4 | 20 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1535 | Intro Labor Mgt. Relations | 3 | 0 | 3 |
| 2901 | Principles of Marketing 1 | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 2902 | Principles of Marketing 2 | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| | | 17 | 3 | 18 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 29XX | Business Elective | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| 2970 | Contemporary Management Concepts | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 29XX | Business Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1804 | Risk and Insurance | 3 | 0 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| 2921 | Managerial Accounting | 3 | 0 | 3 |
| 2975 | Business Management Seminar | 2 | 3 | 3 |
| | | 20 | 3 | 21 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 107 |

Business Electives: Chairperson approval required
Oral Communication Electives: 1020, 1024
Social Science Electives: 1502, 1505, 1513, 1521, 1524, 1539, 1551, 1553, 1625

## Business Financial Management Technology (BFM)

Business Financial Management is an option of the Business Management technology designed especially to provide a combination of sound financial business training with on-the-job experience. Courses covering basic management concepts and specializing in investment management techniques, financial law and investment tax principles provide much of the necessary background for careers in the financial industry.

## Business Financial Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 151X | Economics Elective | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 18 | 4 | 20 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 29XX | Business Elective | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| | | 17 | 3 | 18 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1804 | Risk and Insurance | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 1862 | Advanced Electronic Spreadsheets | 2 | 2 | 3 |
| 2970 | Contemporary Management Concepts | 3 | 0 | 3 |
| 2976 | Principles of Banking | 3 | 0 | 3 |
| | | 17 | 2 | 18 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 1535 | Intro to Labor Management Relations | 3 | 0 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 2961 | Financial Planning | 3 | 0 | 3 |

| | | | | |
|---|---|---|---|---|
| 2962 | Principles of Investments | 3 | 0 | 3 |
| 2975 | Business Management Seminar | 2 | 3 | 3 |
| | | 20 | 3 | 21 |
| **Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 107 |

Economics Electives: 1512, 1513
Oral Communication Electives: 1020, 1024
Business Elective: Chairperson approval required
Social Science Elective: 1502, 1505, 1521, 1524, 1539, 1551, 1553, 1625

## Chef Technology (CH)

The Chef Technology program leads to the awarding of an associate degree. Students will be trained in all aspects of Culinary Arts including soups, sauces, butchery, vegetable cookery, meat and fish cookery, pastry, hors d'oeuvres, ice and tallow carving, garde manager and all other fields of culinary management.

The program is accredited by the American Culinary Federation and The City and Guilds of London Institute.

## Chef Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 2801 | Food & Beverage Sanitation & Safety | 3 | 0 | 3 |
| 2802 | Food&Beverage Cost Control & Pur. 1 | 4 | 0 | 4 |
| 2811 | Intro. Hospitality Management | 3 | 0 | 3 |
| 2822 | Chef Basic Cookery 1 | 3 | 5 | 5 |
| 2827 | Butchery & Fish Management | 2 | 3 | 3 |
| | | 18 | 8 | 21 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 2808 | Food and Beverage Service and Lab 1 | 1 | 4 | 2 |
| 2818 | Food&Beverage Cost Control & Pur. 1 | 4 | 0 | 4 |
| 2823 | Chef Basic Cookery 2 | 2 | 4 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 19 | 8 | 22 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1825 | Hotel Law | 3 | 0 | 3 |
| 2824 | Chef Advanced Cookery | 2 | 3 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| | | 17 | 5 | 19 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2805 | Food & Beverage Supervision | 3 | 0 | 3 |
| 2821 | Hosp. Sales & Marketing | 3 | 0 | 3 |
| 2825 | Pastry & Confectionary | 4 | 8 | 6 |
| | | 16 | 10 | 19 |
| **Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Ninth Term** | | | | |
| 102X | Oral Communications Elective | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 2803 | Menu Prod. & Facility Plan | 3 | 0 | 3 |
| 2826 | Classical Cookery | 4 | 8 | 6 |
| 2828 | Nutrition for Food Service | 2 | 3 | 3 |
| | | 15 | 11 | 18 |
| **Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 110 |

Oral Communications Elective: 1020, 1024
Social Science Elective: 1505, 1513, 1521, 1524, 1539, 1551, 1553

## Graphic Communications Technology (GC)/ Flexography Communications (FGT)

At CTC, modern computerized typesetting equipment, color scanners, letterpress and offset presses, screen printing, flexographic and ancillary equipment are combined with experienced instructors to provide a quality graphic arts program.

Although students study all of the major modern graphic arts processes, the scope of the program is not limited to the development of craftsmanship. The Graphic Communications program provides mid-management training as well as technical knowledge.

Flexography is an option of the Graphic Communications program. Flexography is used to print on corrugated boxes, plastics, foils and pressure sensitive substrates. Students will get hands-on experience on a 7" four color flexo press, photopolymer, platemaking, mounting and a step and repeat camera.

## Graphic Communications Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1170 | Introduction to Technical Mathematics | 4 | 0 | 4 |
| 1403 | Advertising Typography | 2 | 6 | 4 |
| 1415 | Graphic Arts Processes | 2 | 3 | 3 |
| 1419 | Survey of Printing Inks | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 17 | 9 | 20 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1421 | Cold Type Process | 1 | 9 | 4 |
| 1449 | Estimating Preparation | 2 | 3 | 3 |
| 1480 | Photolithography 1 | 2 | 3 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| | | 14 | 17 | 20 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1422 | Desktop Publishing | 2 | 2 | 3 |
| 1429 | Screen Printing | 1 | 9 | 4 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 2263 | Physical Science for GC | 3 | 4 | 5 |
| | | 15 | 15 | 21 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1430 | Relief Presswork 1 | 1 | 9 | 4 |
| 1450 | Estimating | 2 | 3 | 3 |

| | | | | |
|---|---|---|---|---|
| 1481 | Photolithography 2 | 2 | 3 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| | | 14 | 17 | 20 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1428 | Management Survey | 3 | 0 | 3 |
| 1440 | Offset Press Operation | 2 | 13 | 6 |
| 1483 | Color Imaging | 2 | 3 | 3 |
| 1521 | Introduction to Sociology | 3 | 0 | 3 |
| | | 13 | 16 | 18 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 110 |

## Flexography Communications Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1170 | Introduction to Technical Mathematics | 4 | 0 | 4 |
| 1403 | Advertising Typography | 2 | 6 | 4 |
| 1415 | Graphic Arts Processes | 2 | 3 | 3 |
| 1419 | Survey of Printing Inks | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 17 | 9 | 20 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1421 | Cold Type Process | 1 | 9 | 4 |
| 1449 | Estimating Preparation | 2 | 3 | 3 |
| 1480 | Photolithography 1 | 2 | 3 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| | | 13 | 18 | 19 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1422 | Desktop Publishing | 2 | 2 | 3 |
| 1429 | Screen Printing | 1 | 9 | 4 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 2263 | Physical Science for GC | 3 | 4 | 5 |
| | | 15 | 15 | 21 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1430 | Relief Presswork 1 | 1 | 9 | 4 |
| 1450 | Estimating | 2 | 3 | 3 |
| 1481 | Photolithography 2 | 2 | 3 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| | | 14 | 17 | 20 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1428 | Management Survey | 3 | 0 | 3 |
| 1431 | Relief Presswork | 2 | 13 | 6 |
| 1483 | Color Imaging | 2 | 3 | 3 |
| 1521 | Introduction to Sociology | 3 | 0 | 3 |
| | | 13 | 16 | 18 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 110 |

## Hotel-Restaurant Management Technology (HR)

CTC's Hotel-Restaurant Management students receive comprehensive knowledge of all the departments and operations found in the hospitality industry. Students are involved early in these fields through paid cooperative work experience so they can set their goals for the type of career they wish to follow in industry.

## Hotel-Restaurant Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2801 | Food & Beverage Sanitation & Safety | 3 | 0 | 3 |
| 2802 | Food&Beverage Cost Control & Pur1 | 4 | 0 | 4 |
| 2811 | Introduction to Hospitality Mgmt | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 19 | 2 | 20 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 2808 | Food and Beverage Service and Lab 1 | 1 | 4 | 2 |
| 2812 | Hotel Front Office Procedures 1 | 3 | 0 | 3 |
| 2813 | Hospitality Housekeeping | 3 | 0 | 3 |
| 2818 | Food&Beverage Cost Control & Pur 2 | 4 | 0 | 4 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| | | 20 | 6 | 22 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 102X | Communications Elective | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1825 | Hotel Law | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2817 | Hotel Front Office Procedures 2 | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1123 | Business Math 3 | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 2805 | Food & Beverage Supervision | 3 | 0 | 3 |
| 2814 | Hotel Maintenance | 3 | 0 | 3 |
| 2821 | Hospitality Sales & Marketing | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 2803 | Menu Prod. & Facility Planning | 3 | 0 | 3 |
| 2804 | Food & Beverage Catering & Banquets | 2 | 0 | 3 |
| 2806 | Hospitality Beverage Management | 3 | 0 | 3 |
| 2828 | Nutrition for Food Service | 2 | 3 | 3 |
| 2830 | Managing QT/Food Product | 2 | 4 | 3 |
| | | 14 | 7 | 18 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 108 |

Communications Elective: 1020, 1024
Social Science Elective: 1505, 1513, 1521, 1524, 1539, 1551, 1553

## International Trade Management Technology (ITM)

The International Trade Management Technology Program is designed to train students for beginning work assignments in the rapidly expanding field of International Trade Marketing & Operations. Students will be trained in the areas of international banking, manufacturing, shipping and related services important to international traders. These areas of study include: selecting market entry strategies, market research, issuing quotations, coordinating shipping and production schedules, processing orders, preparing export and financial documents used for payment purposes, and performing post-shipment activities. In addition to these specialized areas of training, students will receive practical business education in business administration topics such as accounting, marketing, finance, law, and management. Students entering this technology will be required to double major in business management in order to co-op.

## International Trade Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 2911 | Prin of Accounting 1 | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| 1513 | Macro Economics | 3 | 0 | 3 |
| 1850 | Comp. Bus. Applications | 3 | 2 | 4 |
| | | 18 | 4 | 20 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1551 | Geo of Developed Nations | 3 | 0 | 3 |
| 2901 | Principles of Marketing 1 | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 2980 | Intro to Int'l Business | 3 | 0 | 3 |
| | | 21 | 2 | 22 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 2902 | Prin. Marketing 2 | 3 | 0 | 3 |
| 1553 | Cultural Geography | 3 | 0 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| 2981 | International Marketing | 3 | 0 | 3 |
| | | 15 | 1 | 15 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2982 | International Banking & Finance | 3 | 0 | 3 |
| 2983 | International Order Proc & Shipping | 3 | 0 | 3 |
| | | 17 | 2 | 18 |
| **Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Ninth Term** | | | | |
| 102X | Oral Comm. Elective | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 15XX | Social Science | 3 | 0 | 3 |
| 1804 | Risk & Insurance | 3 | 0 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| 2985 | Applied Transaction Analysis | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 104 |

Oral Comm. Electives: 1020, 1024
Social Science Electives: 1502, 1505, 1512, 1521, 1524, 1539, 1625, 1535

## Landscape Horticulture (LH)/ Turfgrass Management (TUR)

The Landscape Horticulture program prepares students for management positions in firms that design, install, maintain or produce and market plants for both interior and exterior landscapes. Our new Turfgrass Management Option allows students to specialize in lawn care or golf course fields. Hands-on lab experiences are blended with classroom teaching to provide students with the skill and knowledge necessary to excel in this growing field.

Because of the unique seasonal employment opportunities of horticulturally related jobs, this program follows a different co-op schedule. Landscape Horticulture students spend two terms (during the growing season) in cooperative employment during each of the 2 years of the program. Students find cooperative employment with landscape contractors, nurseries, greenhouses, arboretums, golf courses, lawn care companies, interior plantscapers, or the staffs of major corporations and park systems as grounds managers.

## Landscape Horticulture Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 11XX | Math Elective | 4 | 0 | 4 |
| 3502 | Horticulture Science | 2 | 2 | 3 |
| 3504 | Woody Plant Materials 1 | 2 | 3 | 3 |
| 3508 | Turfgrass Management | 2 | 3 | 3 |
| | | 13 | 8 | 16 |
| **Second Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 22XX | Chemistry Elective | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| 3500 | Orient to Horticulture Occupation | 1 | 0 | 1 |
| 3510 | Small Engine Maintenance & Repair | 2 | 3 | 3 |
| 3532 | Landscape Management | 2 | 3 | 3 |
| | | 14 | 8 | 17 |
| **Third Term** | | | | |
| 1502 | Human Relations | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 3501 | Soils & Plant Nutrition | 3 | 0 | 3 |
| 3509 | Principles of Landscape Design | 2 | 3 | 3 |
| 3528 | Greenhouse Management | 2 | 3 | 3 |
| 3530 | Horticulture Seminar 1 | 1 | 1 | 1 |
| | | 14 | 9 | 17 |
| **Fourth Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Bus Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Fifth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 35XX | Technical Elective | 2 | 3 | 3 |

| | | | | |
|---|---|---|---|---|
| 3505 | Herbaceous Plant Material | 2 | 2 | 3 |
| 3511 | Landscape Construction | 1 | 5 | 3 |
| 3520 | Horticulture Lab | 0 | 3 | 1 |
| 3521 | Entomology/Plant Pathology | 2 | 2 | 3 |
| | | 10 | 15 | 16 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Bus Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 151X | Economics Elective | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 35XX | Technical Elective | 2 | 3 | 3 |
| 3515 | Woody Plant Materials 2 | 2 | 3 | 3 |
| | | 16 | 8 | 19 |
| **■ Eighth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 35XX | Technical Elective | 2 | 3 | 3 |
| 35XX | Technical Elective | 2 | 3 | 3 |
| 3531 | Horticulture Seminar 2 | 1 | 1 | 1 |
| | | 14 | 7 | 16 |
| **■ Ninth Term** | | | | |
| 9210 | Co-Op Employment Bus Tech | 1 | 40 | 2 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Bus Tech | 1 | 40 | 2 |
| | | | | 110 |

Math Electives: 1170, 1171, 1172, 1173, 1179, 1191, 1192, 1193, 1194, 1195
Oral Communication Electives: 1020, 1024
Technical Electives: 3506, 3507, 3518, 3519, 3533, 3534, 3535, 3536, 3537, 3538, 3539, 3540, 3544
Chemistry Electives: 2200, 2209
Social Science Electives: 1505, 1506, 1508, 1509, 1510, 1521, 1524, 1551, 1553
Economics Elective: 1512, 1513

## Turfgrass Management Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 35XX | Horticulture Elective | 2 | 3 | 3 |
| 3508 | Turfgrass Management | 2 | 3 | 3 |
| | | 4 | 6 | 6 |
| **■ Second Term** | | | | |
| 3510 | Small Engine Maintenance & Repair | 2 | 3 | 3 |
| 3533 | Landscape Irrigation | 2 | 3 | 3 |
| | | 4 | 6 | 6 |
| **■ Third Term** | | | | |
| 3501 | Soils & Plant Nutrition | 3 | 0 | 3 |
| 3502 | Horticulture Science | 2 | 2 | 3 |
| | | 5 | 2 | 6 |
| **■ Fourth Term** | | | | |
| 3536 | Turfgrass Culture | 2 | 2 | 3 |
| 3537 | Turfgrass Pests | 2 | 2 | 3 |
| | | 4 | 4 | 6 |
| **■ Fifth Term** | | | | |
| 3538 | Turfgrass Practices | 2 | 2 | 3 |
| | | | | 27 |

Horticulture Elective: 3504, 3505, 3506, 3509, 3521, 3528

## Managerial Accounting Technology (MG)

Managerial Accounting provides students knowledge of business fundamentals and an understanding of accounting skills. Students are provided an opportunity to enhance their skills by co-oping with financial institutions, small and large CPA firms, manufacturing, merchandising and service companies and governmental agencies.

In addition to preparation in managerial, financial and tax accounting, students will be given a sound background in communication skills, management philosophy and computerized accounting.

## Managerial Accounting Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 18 | 4 | 20 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 100X | English Composition Elective | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheet | 2 | 2 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2917 | Federal Taxation 1 | 3 | 0 | 3 |
| | | 17 | 4 | 19 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1862 | Advanced Electronic Spreadsheets | 2 | 2 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| 2914 | Cost Accounting 1 | 3 | 0 | 3 |
| 2918 | Federal Taxation 2 | 3 | 0 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| | | 20 | 3 | 21 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 2915 | Cost Accounting 2 | 3 | 0 | 3 |
| 2919 | Intermediate Accounting 1 | 3 | 0 | 3 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1851 | Auditing | 3 | 0 | 3 |
| 29XX | Business Elective | 3 | 0 | 3 |
| 2920 | Intermediate Accounting 2 | 3 | 0 | 3 |
| 2921 | Managerial Accounting | 3 | 0 | 3 |
| | | 21 | 0 | 21 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 110 |

English Composition Electives: 1002, 1008, 1009, 1010
*Business Elective: Chairperson approval required
Social Science Electives: 1502, 1505, 1506, 1508, 1509, 1510, 1513, 1521, 1523, 1525, 1527, 1551, 1553, 1625

## Marketing Management (MMT)

The scope of marketing is very broad and complex. This technology examines consumer behavior; pricing practices; how, why, and where products are sold and developed.

The serious student will discover not only the challenge and excitement of marketing but the many rewarding career opportunities as well. These opportunities include sales, purchasing, advertising, marketing research, market analysis, distribution specialists and many more.

## Marketing Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 1513 | Macro Economics | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2901 | Principles of Marketing 1 | 3 | 0 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| | | 17 | 2 | 18 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1505 | Intro to Psychology 1 | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2902 | Principles of Marketing 2 | 3 | 0 | 3 |
| | | 21 | 2 | 22 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 2981 | International Marketing | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Ninth Term** | | | | |
| 1804 | Risk and Insurance | 3 | 0 | 3 |
| 1817 | Industrial Purchasing | 3 | 0 | 3 |
| 1845 | Principles of Retailing | 3 | 0 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| 2923 | Market Concepts & Applications | 3 | 0 | 3 |
| 2975 | Business Management Seminar | 2 | 3 | 3 |
| | | 17 | 4 | 18 |
| **Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 107 |

## Purchasing Management Technology (PUR)

Purchasing is very important to a company's operations and profits. Approximately 50 cents of every dollar received by a company is spent on the purchase of goods and services. Because of this, business is constantly searching for individuals who understand the fundamentals of effective purchasing practices. A career in purchasing offers individuals the opportunity to work with many professionals within their company and from the companies that call on them.

## Purchasing Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1817 | Industrial Purchasing | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| | | 17 | 4 | 19 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1625 | Technology & Ethical Decisions | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| | | 18 | 2 | 19 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| 11XX | Math Elective | 3 | 0 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 1818 | Advanced Purchasing | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 29XX | Business Elective | 3 | 0 | 3 |
| 2913 | Principles of Accounting 3 | 3 | 1 | 3 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| | | 21 | 1 | 21 |
| **Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Ninth Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 1819 | Contemporary Purchasing Issues | 2 | 1 | 3 |
| 1824 | Business Law 2 | 3 | 0 | 3 |
| 1872 | Offshore Sourcing | 3 | 0 | 3 |
| 1810 | Principles of Sales | 3 | 0 | 3 |
| 7005 | Intro Blueprint Reading & Sketching | 2 | 2 | 3 |
| | | 16 | 3 | 18 |
| **Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 107 |

Math Electives: 1125, 1127
Business Electives: Chairperson Approval Required

## Property Management Technology (PM)

CTC was the first college in the country to offer an associate degree in Property Management. The curriculum is based on textbook course materials, class discussion and case studies. Publications of the Institute of Real Estate Management and the National Association of Realtors also are utilized. The curriculum includes required courses for the Ohio real estate sales license.

## Property Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| 2931 | On-Site Property Management 1 | 3 | 0 | 3 |
| 2951 | Real Estate Principles & Practices | 3 | 0 | 3 |
| 3007 | Intro to Keyboarding | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 2932 | On-Site Property Management 2 | 3 | 0 | 3 |
| 2953 | Real Estate Law | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2933 | Executive Level Property Management | 3 | 0 | 3 |
| 2945 | Residential Construction | 3 | 0 | 3 |
| 2955 | Real Estate Appraisal 1-Residential | 3 | 0 | 3 |
| | | 21 | 2 | 22 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2901 | Principles of Marketing 1 | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 2936 | Institutional Property Management | 3 | 0 | 3 |
| 2954 | Real Estate Finance | 3 | 0 | 3 |
| | | 17 | 4 | 19 |
| **Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Ninth Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 2964 | Real Estate Finance 2 | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 2902 | Principles of Marketing 2 | 3 | 0 | 3 |
| 2935 | Property Management Case Study | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 107 |

Oral Communication Electives: 1020, 1024
Social Science Electives: 1505, 1506, 1512, 1535, 1536, 1551, 1553, 1625

## Real Estate Technology (RE)

If you are outgoing and flexible, if you are looking for a career in sales, management or finance, and if you want a real challenge, the Real Estate program is for you. This program provides an educational foundation which satisfies the requirements for licensing as well as future requirements for becoming a real estate broker.

Real Estate careers are available through local and national real estate firms, financial institutions, insurance companies and most major corporations. Students must combine this program with the Property Management curriculum in order to co-op.

## Real Estate Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| 2951 | Real Estate Principles & Practices | 3 | 0 | 3 |
| 2953 | Real Estate Law | 3 | 0 | 3 |
| 3007 | Intro to Keyboarding | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **Third Term** | | | | |
| 1620 | Critical & Creative Thinking | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 1850 | Computerized Business Applications | 3 | 2 | 4 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 2940 | Real Estate Sales | 3 | 0 | 3 |
| 2954 | Real Estate Finance | 3 | 0 | 3 |
| | | 18 | 2 | 19 |
| **Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Fifth Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 2901 | Principles of Marketing 1 | 3 | 0 | 3 |
| 2960 | Principles of Finance | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 2955 | Real Estate Appraisal 1 - Residential | 3 | 0 | 3 |
| | | 21 | 2 | 22 |
| **Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 1804 | Risk and Insurance | 3 | 0 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| 2902 | Principles of Marketing 2 | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 29XX | Business Elective | 3 | 0 | 3 |
| | | 17 | 4 | 19 |
| **Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **Ninth Term** | | | | |
| 102X | Oral Communications Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 2956 | Real Estate Appraisal 2-Income | 3 | 0 | 3 |
| | | 15 | 0 | 15 |
| **Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 104 |

Oral Communication Electives: 1020, 1024

Social Science Electives: 1505, 1506, 1512, 1535, 1536, 1551, 1553, 1625
Business Elective: Chairperson Approval Required.

## Administrative Services Technologies

Three programs are available in the administrative services area: Executive Secretarial, Office Management, and Office Information Processing. The curricula include not only technical skill development but also courses in business principles and management.

The Executive Secretarial (ES) curriculum emphasizes the art of oral and written communication in office procedures, shorthand, keyboarding, information processing and management techniques.

The Office Management (OM) curriculum emphasizes learning skills in keyboarding, data entry, Office Information Processing and office management.

The Office Information Processing (OIP) curriculum prepares an individual to be an information processing operator or an information processing supervisor. In this program, hands-on classroom training is provided on electronic typewriters and personal computers. Information Processing management techniques and procedures are emphasized.

Advanced placement is available only through testing in keyboarding, shorthand, and typing.

## Executive Secretarial Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 300X | Typewriting Elective | 2 | 3 | 3 |
| 3021 | Office Procedures 1 | 2 | 3 | 3 |
| 3061 | Word/Information Processing 1 | 1 | 4 | 3 |
| 3062 | Database/Spreadsheet Application | 1 | 4 | 3 |
| | | 12 | 14 | 18 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| 3002 | Typewriting 2 | 2 | 3 | 3 |
| 3092 | WP with Desk Top Publ | 2 | 2 | 3 |
| 3032 | Office Proc2/Professional Development | 2 | 3 | 3 |
| | | 15 | 8 | 18 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 3003 | Typewriting 3 | 2 | 3 | 3 |
| 3022 | Machine Trans & Proofreading | 2 | 3 | 3 |
| 3035 | Essential Business Correspondence | 2 | 3 | 3 |
| 3080 | Speedwriting 1 | 2 | 3 | 3 |
| | | 17 | 12 | 21 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| XXXX | Business Elective | 2 | 3 | 3 |
| 1018 | Technical Writing Style & Techniques1 | 2 | 2 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 3023 | Adv Machine Transcrp/Dictat | 2 | 3 | 3 |
| 3081 | Shorthand: Speed Development | 2 | 3 | 3 |
| | | 17 | 13 | 22 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 1521 | Introduction to Sociology | 3 | 0 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 3090 | Shorthand Transcription | 2 | 8 | 4 |
| 29XX | Business Elective | 3 | 0 | 3 |
| | | 17 | 10 | 20 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 110 |

Typewriting Electives: 3001, 3006
Business Elective: Chairperson Approval Required

## Office Management Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 300X | Typewriting Elective | 2 | 3 | 3 |
| 3021 | Office Procedures 1 | 2 | 3 | 3 |
| 3061 | Word/Information Processing | 1 | 4 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| | | 14 | 10 | 18 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 3002 | Typewriting 2 | 2 | 3 | 3 |
| 3032 | Office Proc2/Professional Development | 2 | 3 | 3 |
| 1861 | Electronic Spreadsheets | 2 | 2 | 3 |
| | | 15 | 8 | 18 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 1521 | Intro to Sociology | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 3003 | Typewriting 3 | 2 | 3 | 3 |
| 3022 | Mach Trans and Proofreading | 2 | 3 | 3 |
| 3035 | Essential Business Correspondence | 2 | 3 | 3 |
| | | 18 | 11 | 22 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1832 | Human Resource Management | 3 | 0 | 3 |
| 3064 | Business Graphics | 1 | 4 | 3 |
| 2912 | Principles of Accounting 2 | 3 | 2 | 4 |
| 3024 | Office Proc3/Simulation&Appl | 2 | 3 | 3 |
| | | 15 | 9 | 19 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1512 | Micro Economics | 3 | 0 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 2970 | Contemporary Management | 3 | 0 | 3 |
| 3070 | Administrative Office Management | 3 | 0 | 3 |

| | | | | |
|---|---|---|---|---|
| 3072 | Data Entry Systems | 2 | 3 | 3 |
| 29XX | Business Elective | 3 | 0 | 3 |
| | | 20 | 3 | 21 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 109 |

Typewriting Electives: 3001, 3006
Business Elective: Chairperson Approval Required

## Office Information Processing Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1121 | Business Mathematics 1 | 3 | 0 | 3 |
| 3062 | Dbase/Spreadsheet Applications | 1 | 4 | 3 |
| 300X | Typewriting Elective | 2 | 3 | 3 |
| 3021 | Office Procedures 1 | 3 | 2 | 3 |
| 3061 | Word/Information Processing 1 | 1 | 4 | 3 |
| | | 13 | 13 | 18 |
| **■ Second Term** | | | | |
| 9200 | Professional Practices | 1 | 0 | 1 |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | 2 | 40 | 3 |
| **■ Third Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 1122 | Business Mathematics 2 | 3 | 0 | 3 |
| 2925 | Business Principles | 3 | 0 | 3 |
| 3002 | Typewriting 2 | 2 | 3 | 3 |
| 3032 | Office Proc2/Professional Development | 2 | 3 | 3 |
| 3063 | Advanced Word Processing | 1 | 4 | 3 |
| | | 14 | 10 | 18 |
| **■ Fourth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Fifth Term** | | | | |
| 1123 | Business Mathematics 3 | 3 | 0 | 3 |
| 3065 | Text Processing | 1 | 4 | 3 |
| 2926 | Principles of Management | 3 | 0 | 3 |
| 3003 | Typewriting 3 | 2 | 3 | 3 |
| 3022 | Machine Trans & Proofreading | 2 | 3 | 3 |
| 3035 | Essential Business Correspondence | 2 | 3 | 3 |
| 3064 | Business Graphics | 1 | 4 | 3 |
| | | 14 | 17 | 21 |
| **■ Sixth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Seventh Term** | | | | |
| 1011 | Business Communications | 3 | 0 | 3 |
| 1422 | Desktop Publishing | 2 | 2 | 3 |
| 2903 | Survey of Marketing | 3 | 0 | 3 |
| 2911 | Principles of Accounting 1 | 3 | 2 | 4 |
| 3023 | Adv Mach Trans & Dictation | 2 | 3 | 3 |
| 3066 | Integrated Info Proc | 1 | 4 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| | | 17 | 11 | 22 |
| **■ Eighth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| **■ Ninth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 1521 | Introduction to Sociology | 3 | 0 | 3 |
| 1823 | Business Law 1 | 3 | 0 | 3 |
| 29XX | Business Elective | 3 | 0 | 3 |
| 1512 | Micro Economics | 3 | 0 | 3 |
| 3067 | Simul: Integ Info Process | 3 | 0 | 3 |
| | | 18 | 0 | 18 |
| **■ Tenth Term** | | | | |
| 9210 | Co-Op Employment Business Tech | 1 | 40 | 2 |
| | | | | 108 |

Typewriting Electives: 3001, 3006
Business Elective: Chairperson Approval Required

# Engineering Technologies Division

The Engineering Technologies Division is proud of its recognition for instructional excellence and 98 percent graduate placement. In 1984 the Ohio Board of Regents initiated the prestigious Program Excellence Competition among Ohio's publicly supported two-year colleges and four-year universities.Cincinnati Technical College's Engineering Technologies Division owns three Program Excellence Awards.

The Engineering Technologies Division offers programs in many engineering technology disciplines to help meet the need for competent technicians required for today's highly technological society. All programs are either two-year associate degree programs or one-year certificate programs.

In addition to our two-year associate degree and certificate programs, the Engineering Technologies Division offers specialized training classes that are tailored to meet the needs of business and industry in their efforts to keep pace with rapidly changing technologies and computer software. The training classes vary in duration and dates offered. The director of the Engineering Technologies Division's Productivity Improvement Center maintains a schedule of projected training sessions. The Productivity Improvement Center has training license for AUTOCAD, Micro Station, SCO, and Smart CAM.

The curriculum in each program provides specialized technical instruction in the student's major area of concentration and basic theory and skills in physics and mathematics. In addition, the student takes a variety of courses in communication skills, the humanities and social sciences. These courses enable students to express ideas in speech and writing, and to better understand themselves and others in society.

Upon successful completion of a two-year program, the student is awarded an Associate Degree in Applied Science.

In order to ensure a high degree of success in the technology selected, the student must be able to meet established academic levels in mathematics, communication skills and reading comprehension. To aid in determining these levels, all students planning to enter an engineering technology program must take the college admission test.

Each program has a planned sequence of courses which provides a path for completion in two years. Students should attempt to follow the sequence of courses outlined to ensure completion in the two year period. There is no guarantee that classes will be conducted outside of the planned curriculum sequence.

Students are encouraged to begin the admissions and testing process as soon as possible. If the test indicates that a student has not achieved certain academic levels, the student will be referred to the Engineering Technologies Division Pre-Technical advisor to develop a plan of study that will help meet specific program entry-level requirements. If any preparatory courses are needed, students may be able to enroll in them during the summer, thereby improving their chances of being admitted into a program in the Fall (September) or Late Fall (November) terms when program course sequences begin.

## Cooperative Education

The primary mission of the Engineering Technologies Division is to provide associate degree programs that combine classroom and laboratory instruction with practical, hands-on experience in a real work environment. This combination, called cooperative education, prepares graduates for immediate employment after

graduation and for potential advancement in technical and mid-management careers.

Because the Engineering Technologies Division believes that cooperative education work experience is of great value, all students are required to earn 10 credit hours in cooperative education. Most students will complete this requirement through on-site cooperative education assignments.

Engineering Technology Division students who are enrolled in a curriculum that contains a cooperative education requirement may fulfill the requirement in one of three ways:

* Alternate full-time terms in the classroom with full-time terms of cooperative education employment over a ten term period.
* Attend classes on a half-day schedule, while simultaneously working part-time (or more) in cooperative education employment, for ten consecutive terms.
* With prior approval from the appropriate program co-op coordinator, certain students may substitute appropriate academic courses or previous related work experience for cooperative education employment.

Students with prior related work experience may be permitted to fulfill a portion (if not all) of the cooperative education requirement by submitting a petition to substitute that work experience for co-op credit. The petition must provide validated written documentation of evidence that the applicant has already demonstrated through successful work experience those skills or competencies which are the desired end-product of co-op employment. The petition will be evaluated by the co-op office to determine its validity. Students may earn up to 10 credits through this process. (See "Grades and Credit Earned, Advanced Standing Credit.") For eligibility requirements, co-op registration policy and other policies relating to cooperative education, please refer to the "Cooperative Education Program" section of the catalog.

The Engineering Technologies Division's Office of Cooperative Education will assist students in fulfilling their cooperative education requirements. Although the Division's cooperative education coordinators have been extremely successful in finding positions for co-op students, they cannot guarantee placement. In these rare cases, the coordinator will work with the student on alternatives to meet the co-op education requirements.

## Transfer Module

Associate degree programs in the Engineering Technologies Division contain in their curricula most of the required courses for the CTC Transfer Module. The additional courses needed to complete the transfer module should be scheduled at times convenient to the student. Students who wish to transfer to an Ohio public university for baccalaureate degrees will find that a CTC Associate of Applied Science degree combined with a transfer module (showing grades of "C" or better) will receive preferential consideration at the receiving university.

## Aviation Maintenance Technology

Because of Federal Aviation Agency (FAA) regulations, students enrolled in Aviation Technology must complete six academic terms, with a cumulative grade point average of 2.00 or better, to be eligible for placement in cooperative education assignments. Courses will not count oward FAA Licensing unless the student is matriculated in either AMT or Pre-AMT programs.

## Aviation Maintenance Technology (AMT)

Graduates of the Aviation Program receive an Associate Degree in Applied Science and are eligible, under Air Agency Certificate Number A09T-004R, to test for the FAA Aviation Mechanic Certificate with Airframe and Powerplant ratings. The mechanic certificate entitles the holder to release aircraft for flight after maintenance has been performed. Classroom study is devoted to learning every system of today's aircraft while mechanical skills are developed on the fleet of aircraft owned by CTC. Primary employers of graduates include airlines and manufacturers of aircraft and engines.

## Aviation Maintenance Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 2221 | Technical Physics 1 | 2 | 3 | 3 |
| 8100 | Aircraft Orientation | 4 | 4 | 5 |
| 8101 | Machine & Hand Tools | 2 | 3 | 3 |
| 8102 | Aerodynamics & FAA Regulations | 3 | 2 | 3 |
| | | 15 | 12 | 18 |
| **■ Second Term** | | | | |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 2222 | Technical Physics 2 | 2 | 3 | 3 |
| 8106 | Engineering Graphics (AV) | 2 | 2 | 2 |
| 8107 | Materials & Processes | 5 | 5 | 5 |
| 8108 | Aircraft Electricity | 3 | 2 | 3 |
| 8109 | Cleaning & Corrosion Control | 2 | 3 | 3 |
| | | 18 | 15 | 20 |
| **■ Third Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 2223 | Technical Physics 3 | 2 | 3 | 3 |
| 8130 | Airframe Structures 1 | 3 | 7 | 5 |
| 8132 | Aircraft Electric/Generating Systems | 5 | 5 | 5 |
| 8143 | Airframe Hyd & Pneu System | 1 | 4 | 2 |
| | | 14 | 19 | 18 |
| **■ Fourth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 8140 | Airframe Structures 2 | 3 | 7 | 5 |
| 8142 | Assembly & Rigging | 3 | 7 | 5 |
| 8151 | Airframe Sys Hyd & Pneu Landing Gear | 3 | 7 | 5 |
| | | 12 | 21 | 18 |
| **■ Fifth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 8131 | Welding Processes | 1 | 4 | 2 |
| 8150 | Air Electronic Instrumental Systems | 4 | 6 | 6 |
| 8152 | Flightline Maintenance | 1 | 4 | 2 |
| 8154 | Airframe Systems & Comp | 4 | 6 | 6 |
| | | 13 | 20 | 19 |
| **■ Sixth Term** | | | | |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 7035 | Computer Applications | 2 | 3 | 3 |
| 8172 | Ignition Systems | 5 | 5 | 5 |
| 8180 | Engine Systems Inspection | 5 | 5 | 5 |
| | | 15 | 13 | 16 |
| **■ Seventh Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 8160 | Powerplant Theory & Maint 1 | 5 | 5 | 5 |
| 8162 | Propellers | 4 | 4 | 4 |
| 9400 | Co-op Employment Engineering Tech | 1 | 40 | 2 |
| | | 13 | 49 | 14 |
| **■ Eighth Term** | | | | |
| 1502 | Human Relations | 3 | 0 | 3 |
| 8170 | Powerplant Theory & Maint 2 | 5 | 5 | 5 |
| 8171 | Powerplant Fuel Metering Systems 1 | 5 | 5 | 5 |
| | | 13 | 10 | 13 |
| **■ Ninth Term** | | | | |
| 8161 | Powerplant Lubrication | 3 | 2 | 4 |
| 8183 | Powerplant Theory & Maint 3 | 5 | 5 | 5 |
| 9400 | Co-op Employment Engineering Tech | 1 | 40 | 2 |
| | | 9 | 47 | 11 |

| | | Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ Tenth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 8182 | Engine Instruments/Fire Protect | 2 | 3 | 3 |
| | | 5 | 3 | 6 |
| | | | | 153 |

Social Science Electives: 1513, 1521, 1524, 1527, 1535, 1536, 1539, 1542, 1543
Oral Communication Electives: 1020, 1024

## Aviation Maintenance Certificate Programs

Included in the Aviation Maintenance degree program are two certificate programs (Air Agency Certificate No. 105-5). After the successful completion of either or both of the airframe and powerplant requirements, Cincinnati Technical College issues a certificate which, upon presentation to an FAA designated examiner, allows students to take the FAA written test that leads to licensing.

## Aviation Mechanics Airframe Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 2221 | Technical Physics 1 | 2 | 3 | 3 |
| 2222 | Technical Physics 2 | 3 | 2 | 3 |
| 2223 | Technical Physics 3 | 2 | 3 | 3 |
| 8100 | Aircraft Orientation | 4 | 4 | 5 |
| 8101 | Machine & Hand Tools | 2 | 3 | 3 |
| 8102 | Aerodynamics & FAA Regulation | 3 | 2 | 3 |
| 8106 | Engineering Graphics (AV) | 2 | 2 | 2 |
| 8107 | Materials & Processes | 5 | 5 | 5 |
| 8108 | Aircraft Electricity | 3 | 2 | 3 |
| 8109 | Cleaning & Corrosion Control | 2 | 3 | 3 |
| 8130 | Airframe Structures 1 | 3 | 7 | 5 |
| 8131 | Welding Processes | 1 | 4 | 2 |
| 8132 | Aircraft Electrical/Generating System | 5 | 5 | 5 |
| 8140 | Airframe Structures | 3 | 7 | 5 |
| 8142 | Assembly & Rigging | 3 | 7 | 5 |
| 8143 | Airframe Hydraulic & Pneumatic System | 1 | 4 | 2 |
| 8150 | Air Electronic Instrument Systems | 4 | 6 | 6 |
| 8151 | Airframe Systems, Hyd & Pneu Land Gr | 3 | 7 | 5 |
| 8152 | Flightline Maintenance | 1 | 4 | 2 |
| 8154 | Airframe Systems & Comp | 4 | 6 | 6 |
| 8155 | Airframe Comprehensive | 2 | 1 | 2 |
| | | 75 | 87 | 95 |
| | | | | 95 |

## Aviation Mechanics Powerplant Certification Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 2221 | Technical Physics 1 | 2 | 3 | 3 |
| 2222 | Technical Physics 2 | 3 | 2 | 3 |
| 2223 | Technical Physics 3 | 2 | 3 | 3 |
| 8100 | Aircraft Orientation | 4 | 4 | 5 |
| 8101 | Machine & Hand Tools | 2 | 3 | 3 |
| 8102 | Aerodynamics & FAA Regulation | 3 | 2 | 3 |
| 8106 | Engineering Graphics (AV) | 2 | 2 | 2 |
| 8107 | Materials & Processes | 5 | 5 | 5 |
| 8108 | Aircraft Electricity | 3 | 2 | 3 |
| 8109 | Cleaning & Corrosion Control | 2 | 3 | 3 |
| 8160 | Powerplant Theory and Maintenance 1 | 5 | 5 | 5 |
| 8161 | Powerplant Lubrication | 3 | 2 | 4 |
| 8162 | Propellers | 4 | 4 | 4 |
| 8170 | Powerplant Theory and Maintenance 2 | 5 | 5 | 5 |
| 8171 | Powerplant Fuel Metering System | 5 | 5 | 5 |
| 8172 | Ignition Systems | 5 | 5 | 5 |
| 8180 | Engine Systems | 5 | 5 | 5 |
| 8182 | Engine Instruments/Fire Protection | 1 | 4 | 3 |
| 8183 | Powerplant Theory & Maintenance 3 | 3 | 2 | 3 |
| 8185 | Powerplant Comprehensive | 2 | 1 | 2 |
| | | 83 | 67 | 91 |
| | | | | 91 |

## Biomedical Electronics Engineering Technology (BMET)

(A TAC/ABET accredited program)

The Biomedical Electronics Engineering Technology Program was created because of a need for technicians who repair, maintain, modify and design complex medical instrumentation.

This person is employed by hospitals as well as medical equipment manufacturers. The BMET graduate will have advanced electronic skills as well as education in the following areas:

* Installation and calibration of biomedical equipment.
* Preventative maintenance, repair, and inspection of equipment.
* Operation of safety and maintenance programs.

The Biomedical Electronics Technician is a professional whose broad background in electronics and instrumentation will make the graduate an asset to any organization.

Students pursuing a degree in Biomedical Electronics Engineering Technology are required to hold on-site, related cooperative education assignments for a minimum of three terms. Exceptions to this policy will be permitted with the approval of the co-op coordinator and the program chair for the BMET program.

## Biomedical Electronics Engineering Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 7710 | DC Circuit Analysis | 5 | 0 | 5 |
| 7711 | DC Circuits Lab | 0 | 3 | 1 |
| 7728 | Intro to Digital Concepts | 3 | 2 | 4 |
| 7739 | Intro to Biomedical Instrumentation | 3 | 2 | 4 |
| | | 15 | 7 | 18 |
| **■ Second Term** | | | | |
| 2231 | Fund of Inorganic Chemistry | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Third Term** | | | | |
| 1192 | Algebra and Trigonometry 2 | 4 | 0 | 4 |
| 7717 | Intro to C Programming | 3 | 3 | 4 |
| 7720 | AC Circuit Analysis | 5 | 0 | 5 |
| 7721 | AC Circuits Lab | 0 | 3 | 1 |
| 7738 | Digital Systems 1 | 3 | 3 | 4 |
| | | 15 | 9 | 18 |
| **■ Fourth Term** | | | | |
| 4014 | Anatomy and Physiology 1 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Fifth Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7730 | Electronics 1 | 5 | 2 | 6 |
| 7748 | Digital Systems 2 | 3 | 3 | 4 |
| | | 14 | 7 | 17 |

| | | | | |
|---|---|---|---|---|
| **■ Sixth Term** | | | | |
| 1193 | Analytical Geometry & Calculus 1 | 4 | 0 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 5 | 40 | 6 |
| **■ Seventh Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 4015 | Anatomy and Physiology 2 | 3 | 2 | 4 |
| 7740 | Electronics 2 | 5 | 2 | 6 |
| 7768 | Digital Systems 3 | 3 | 3 | 4 |
| | | 17 | 7 | 20 |
| **■ Eighth Term** | | | | |
| 7749 | Biomedical Instrumentation 1 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Ninth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 7750 | Electronics 3 | 4 | 3 | 5 |
| 7759 | Biomedical Instrumentation 2 | 3 | 2 | 4 |
| | | 16 | 5 | 18 |
| **■ Tenth Term** | | | | |
| 1502 | Human Relations | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 120 |

Courses 7749 and 7759 are normally offered only one term per year in late afternoon or evening.
Oral Communication Electives: 1020, 1024
Social Science Electives: Any course with the first two digits of 15 except 1502 and 1513.

## Civil Engineering Technology (CET)

(A TAC/ABET accredited program)

Recipient of an Ohio Board of Regents Program Excellence Award.

Civil Engineering Technology is a single program from which a student may select one of three majors: Architectural, Construction Management or Surveying. A request has been submitted to the Ohio Board of Regents for approval of a fourth major in Environmental Engineering Technologies. If approval is obtained, the CET program will begin admitting students into the major in September, 1992. Contact the program chairperson for additional information.

Students who work during the day can earn an associate degree in approximately three years while attending class only two nights per week.

**Architectural Major**

Architectural students work closely with architects and engineers as Architectural Technicians. To prepare students for the current needs of the profession, the Architectural Technology Curriculum features a heavy emphasis on mechanical systems, water, waste, electrical lighting systems, and computer aided drafting. In addition, the program instructs students in the areas of construction methods and principles, architectural drafting and design, and structural design involved in building construction.

**Construction Management Major**

Early in the curriculum, students learn about materials and methods of construction, manual and computer aided architectural drafting, survey drafting, elements of structures, and light construction principles. Later, the principles of construction management are investigated. Topics include project control, scheduling, estimating, project safety, contracting, heavy construction,value engineering and labor relations.

Civil Engineering fundamentals are conveyed through the four course sequence of statistics, strength of materials, structural steel design and reinforced concrete.

Most courses are supplemented by the use of computers loaded with the leading architectural, scheduling, and estimating softwares in the industry.

**Surveying Major**

A surveyor is a multi-talented individual possessing skills in mathematics, graphics, law, history, astronomy, computer science and urban planning. Professional surveyors are called upon to perform diverse tasks such as designing subdivisions, retracing original boundary lines, controlling construction projects, preparing legal descriptions, orienting communications systems by star observations, and inventoring resources.

Students train using state-of-the-art electronic surveying and computing equipment. Topics covered include instrument usage, computer graphics, document research and resolution, route design, control surveying, subdivision planning and satellite positioning, and geographic information systems.

## Civil Engineering Technology Curriculum Architectural Major

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 7024 | Architectural Drafting 1 | 3 | 4 | 4 |
| 7910 | Surveying Measurements | 3 | 2 | 4 |
| 7913 | Civil & Environ Topics | 3 | 0 | 3 |
| 7935 | Introduction to CAD (CET) | 2 | 3 | 3 |
| | | 18 | 9 | 21 |
| **■ Second Term** | | | | |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Third Term** | | | | |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 7025 | Surveying Drafting | 2 | 3 | 3 |
| 7920 | Surveying Calculations | 4 | 2 | 5 |
| 7927 | CAD 1 (CET) | 2 | 3 | 3 |
| 7934 | Statics (CET) | 3 | 2 | 4 |
| | | 15 | 10 | 19 |
| **■ Fourth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Fifth Term** | | | | |
| 1193 | Analytical Geometry & Calculus 1 | 4 | 0 | 4 |
| 1625 | Technical & Ethical Decisions | 3 | 0 | 3 |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 7026 | Architectural Drafting 2 | 2 | 3 | 3 |
| 7944 | Strength of Materials (CET) | 3 | 2 | 4 |
| | | 15 | 7 | 18 |
| **■ Sixth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Seventh Term** | | | | |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7928 | CAD 2 (CET) | 2 | 3 | 3 |
| 7956 | Structural Steel Design | 3 | 2 | 4 |
| 7963 | Electrical Design Systems | 3 | 2 | 4 |
| 7964 | Thermal Control Systems | 2 | 3 | 3 |
| | | 13 | 12 | 18 |
| **■ Eighth Term** | | | | |
| 1645 | Civilization & Technology | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Ninth Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |

| | | | | |
|---|---|---|---|---|
| 7954 | Reinforced Concrete Design | 3 | 2 | 4 |
| 7960 | Water & Waste Systems | 3 | 2 | 4 |
| 7968 | Lighting Systems | 2 | 3 | 3 |
| 7969 | Building Systems Design | 3 | 2 | 4 |
| | | 14 | 9 | 18 |
| **Tenth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 120 |

## Civil Engineering Technology Curriculum Construction Management Major

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 7024 | Architectural Drafting 1 | 3 | 4 | 4 |
| 7910 | Surveying Measurements | 3 | 2 | 4 |
| 7913 | Civil & Environ Topics | 3 | 0 | 3 |
| 7935 | Introduction to CAD (CET) | 2 | 3 | 3 |
| | | 18 | 9 | 21 |
| **Second Term** | | | | |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **Third Term** | | | | |
| 1192 | Algebra and Trigonometry 2 | 4 | 0 | 4 |
| 7025 | Surveying Drafting | 2 | 3 | 3 |
| 7920 | Surveying Calculations | 4 | 2 | 5 |
| 7927 | CAD 1 (CET) | 2 | 3 | 3 |
| 7934 | Statics (CET) | 3 | 2 | 4 |
| | | 15 | 10 | 19 |
| **Fourth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **Fifth Term** | | | | |
| 1193 | Analytical Geometry & Calculus 1 | 4 | 0 | 4 |
| 1625 | Technical & Ethical Decisions | 3 | 0 | 3 |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 7931 | Light Construction | 3 | 2 | 4 |
| 7944 | Strength of Materials (CET) | 3 | 2 | 4 |
| | | 16 | 6 | 19 |
| **Sixth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **Seventh Term** | | | | |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7928 | CAD 2 (CET ) | 2 | 3 | 3 |
| 7942 | Construction Management 1 | 2 | 3 | 3 |
| 7943 | Construction Estimating | 2 | 3 | 3 |
| 7956 | Structural Steel Design | 3 | 2 | 4 |
| | | 12 | 13 | 17 |
| **Eighth Term** | | | | |
| 1645 | Civilization & Technology | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **Ninth Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 7951 | Heavy Construction | 3 | 2 | 4 |
| 7953 | Construction Management 2 | 2 | 3 | 3 |
| 7954 | Reinforced Concrete Design | 3 | 2 | 4 |
| 7955 | Applied Soil Mechanics | 3 | 2 | 4 |
| | | 14 | 9 | 18 |
| **Tenth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 120 |

## Civil Engineering Technology Curriculum Surveying Major

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 7024 | Architectural Drafting 1 | 3 | 4 | 4 |
| 7910 | Surveying Measurements | 3 | 2 | 4 |
| 7913 | Civil & Environ Topics | 3 | 0 | 3 |
| 7935 | Introduction to CAD (CET) | 2 | 3 | 3 |
| | | 18 | 9 | 21 |
| **Second Term** | | | | |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **Third Term** | | | | |
| 1192 | Algebra and Trigonometry 2 | 4 | 0 | 4 |
| 7025 | Surveying Drafting | 2 | 3 | 3 |
| 7920 | Surveying Calculations | 4 | 2 | 5 |
| 7927 | CAD 1 (CET) | 2 | 3 | 3 |
| 7934 | Statics (CET) | 3 | 2 | 4 |
| | | 15 | 10 | 19 |
| **Fourth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **Fifth Term** | | | | |
| 1193 | Analytic Geometry & Calculus 1 | 4 | 0 | 4 |
| 1625 | Tech & Ethical Decisions | 3 | 0 | 3 |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 7930 | Route Surveying | 3 | 2 | 4 |
| 7944 | Strength of Materials (CET) | 3 | 2 | 4 |
| | | 16 | 6 | 19 |
| **Sixth Term** | | | | |
| 1020 | Effective Speaking | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **Seventh Term** | | | | |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7940 | Elements of Land Surveying | 3 | 3 | 4 |
| 7947 | Drainage Control Systems | 3 | 2 | 4 |
| 7948 | Subdivision Design 1 | 2 | 3 | 3 |
| 7949 | Intro Geographic Info Sys | 3 | 2 | 4 |
| | | 14 | 12 | 19 |
| **Eighth Term** | | | | |
| 1645 | Civilization & Technology | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **Ninth Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 7950 | Surveying Field Project | 1 | 6 | 3 |
| 7955 | Applied Soil Mechanics | 3 | 2 | 4 |
| 7958 | Control/GPS Surveying | 1 | 6 | 3 |
| 7959 | Subdivision Design 2 | 2 | 3 | 3 |
| | | 10 | 17 | 16 |
| **Tenth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 120 |

## Computer Engineering Technology (CPET)

(A TAC/ABET accredited program)

The purpose of the Computer Engineering Technology program is to educate students in the areas of computer hardware/software design and testing. Coursework includes single board and multi-card microcomputers, operating systems, high-level languages and control applications.

A graduate of the program will be capable of working with

computer hardware and software engineers. Also, the knowledge and use of test equipment make the graduate an excellent candidate for field service work. The introduction to computer communications systems will enable the graduate to install, test and troubleshoot digital communication equipment. The Computer Engineering Technology graduate should fit very well into any organization that uses computer systems to solve engineering problems.

## Computer Engineering Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 7710 | DC Circuit Analysis | 5 | 0 | 5 |
| 7711 | DC Circuits Lab | 0 | 3 | 1 |
| 7728 | Introduction to Digital Concepts | 3 | 2 | 4 |
| | | 15 | 5 | 17 |
| **■ Second Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Third Term** | | | | |
| 1192 | Algebra and Trigonometry 2 | 4 | 0 | 4 |
| 7717 | Introduction to "C" Programming | 3 | 3 | 4 |
| 7720 | AC Circuit Analysis | 5 | 0 | 5 |
| 7721 | AC Circuits Lab | 0 | 3 | 1 |
| 7738 | Digital Systems 1 | 3 | 3 | 4 |
| | | 15 | 9 | 18 |
| **■ Fourth Term** | | | | |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Fifth Term** | | | | |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 7730 | Electronics 1 | 5 | 2 | 6 |
| 7742 | Comp Aided Drafting (Elec) | 2 | 3 | 3 |
| 7748 | Digital Systems 2 | 3 | 3 | 4 |
| | | 13 | 10 | 17 |
| **■ Sixth Term** | | | | |
| 1193 | Analytic Geometry & Calculus 1 | 4 | 0 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 5 | 40 | 6 |
| **■ Seventh Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 7727 | Advanced "C" and UNIX | 4 | 2 | 5 |
| 7747 | Computer Instrumentation | 4 | 2 | 5 |
| 7768 | Digital Systems 3 | 3 | 3 | 4 |
| | | 17 | 7 | 20 |
| **■ Eighth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Ninth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7XXX | Technical Elective | 3 | 2 | 4 |
| 7767 | Computer Communications | 4 | 2 | 5 |
| | | 13 | 6 | 16 |
| **■ Tenth Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 115 |

Oral Communication Electives: 1020, 1024
Social Science Electives: Any course with the first two digits of 15 except 1502 and 1513.
Technical Elective: 1194, 1195, 2294, 6710, 7146, 7157, 7743, 7758, 7740, 7750, 7765, 7766

## Electro-Mechanical Engineering Technology (EMET)

(A TAC/ABET accredited program)

Recipient of an Ohio Board of Regents Program Excellence Award.

The Electro-Mechanical Engineering Technology program is a unique combination of the study of mechanical systems used in industry and the electronic systems used to control them. There is a high demand for graduates in this field in many technical job categories.

The curriculum includes theory and applications of analog and digital electronics and devices, electric motors and controls, computer control applications/programming, industrial hydraulic and pneumatic systems, mechanisms and machine drives, programmable logic controllers, servomechanisms, industrial control systems, and robotics.

Electro-mechanical systems technicians test, install, maintain, troubleshoot, repair, modify, and operate automated systems such as industrial robots, computer controlled machines, and other machine and process systems used in industry. Graduates are equipped to enter diverse positions such as robotics/automation technician, field service technician, maintenance technician, process control technician, and similar fields.

## Electro-Mechanical Engineering Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 7712 | Electrical Circuit Analysis 1 | 5 | 0 | 5 |
| 7713 | Electrical Circuit Analysis I Lab | 1 | 3 | 2 |
| | | 16 | 5 | 18 |
| **■ Second Term** | | | | |
| 1024 | Group Dynamics & Prob Solving | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Third Term** | | | | |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 7036 | Technical Computer Programming | 3 | 2 | 4 |
| 7722 | Electrical Circuit Analysis 2 | 5 | 0 | 5 |
| 7723 | Electrical Circuit Analysis 2 Lab | 0 | 4 | 2 |
| 7728 | Introduction to Digital Concepts | 3 | 2 | 4 |
| | | 15 | 8 | 19 |
| **■ Fourth Term** | | | | |
| 7027 | Beginning AutoCAD* | 2 | 3 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 3 | 43 | 5 |
| **■ Fifth Term** | | | | |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 7730 | Electronics 1 | 5 | 2 | 6 |
| 7738 | Digital Systems 1 | 3 | 3 | 4 |
| 7758 | Motors and Controls | 3 | 2 | 4 |
| | | 14 | 9 | 18 |
| **■ Sixth Term** | | | | |
| 1193 | Analytic Geometry & Calculus 1 | 4 | 0 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 5 | 40 | 6 |
| **■ Seventh Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 7135 | Fluid Power Systems | 3 | 3 | 4 |
| 7142 | Mechanisms Analysis and Design | 3 | 2 | 4 |
| 7146 | Electro-Mechanical Controls 1 | 3 | 3 | 4 |
| 7167 | Robotics 1 | 2 | 2 | 3 |
| | | 14 | 10 | 18 |
| **■ Eighth Term** | | | | |
| 2293 | Physics 3 | 3 | 2 | 4 |

| | | | | |
|---|---|---|---|---|
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Ninth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 7156 | Electromechanical Project | 2 | 4 | 4 |
| 7157 | EM Controls 2/Robotic Systems | 3 | 3 | 4 |
| | | 14 | 7 | 17 |
| **■ Tenth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 117 |

* Every EMET student is required to have a copy of the EMET Student Guide book and an Academic Plan. Contact the program chairperson.
* Course 7156, Electro-Mechaincal Project, requires a project plan to be approved by the instructor during the previous term. See EMET Student Guide.
* Courses 1024, 1502, 1513, and 15XX can be taken any time they can be worked into a schedule.
* It is recommended that the student take 7008, Engineering Drawing 1, before taking 7027 (Computer Aided Drafting1) if the student has had no prior drafting course or experience.
* Take 7036 before 7027.
* Courses 7146, 7157, and 7167 are available to students in other programs on a space-available basis. Complete the required prerequisites.
* 15XX, social science elective: Any course with the first two digits of 15.

## Electronics Engineering Technology (EET)

(A TAC/ABET accredited program)

Electronics Engineering Technology includes studies in both analog and digital electronics.

College work consists of classes covering the theory and application of electronic systems, including time spent in labs fully equipped for electronic design. Graduates assume positions such as applications technician, software specialist, service technician, engineering technician, computer repair technician, telecommunications specialist, avionics technician, or field service technician.

## Electronics Engineering Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 7710 | DC Circuit Analysis | 5 | 0 | 5 |
| 7711 | DC Circuits Lab | 0 | 3 | 1 |
| 7728 | Intro to Digital Concepts | 3 | 2 | 4 |
| | | 12 | 5 | 14 |
| **■ Second Term** | | | | |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 5 | 40 | 6 |
| **■ Third Term** | | | | |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 7717 | Introduction to "C" Programming | 3 | 3 | 4 |
| 7720 | AC Circuit Analysis | 5 | 0 | 5 |
| 7721 | AC Circuits Lab | 0 | 3 | 1 |
| 7738 | Digital Systems 1 | 3 | 3 | 4 |
| | | 14 | 11 | 18 |
| **■ Fourth Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Fifth Term** | | | | |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 7730 | Electronics 1 | 5 | 2 | 6 |
| 7742 | Computer Aided Drafting | 2 | 3 | 3 |
| 7748 | Digital Systems 2 | 3 | 3 | 4 |
| | | 13 | 10 | 17 |
| **■ Sixth Term** | | | | |
| 1193 | Analytic Geometry & Calculus 1 | 4 | 0 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 5 | 40 | 6 |
| **■ Seventh Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7740 | Electronics 2 | 5 | 2 | 6 |
| 7766 | Computer Control Systems | 3 | 2 | 4 |
| 7768 | Digital Systems 3 | 3 | 3 | 4 |
| | | 17 | 9 | 21 |
| **■ Eighth Term** | | | | |
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Ninth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1502 | Human Relations | 3 | 0 | 3 |
| 7743 | Communication Systems 1 | 3 | 2 | 4 |
| 7750 | Electronics 3 | 4 | 3 | 5 |
| | | 16 | 5 | 18 |
| **■ Tenth Term** | | | | |
| 1513 | Macroeconomics | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 115 |

Oral Communication Electives: 1020, 1024
Social Science Electives: Any course with the first two digits of 15 except 1502 and 1513.

## Laser Electro-Optics Engineering Technology (LEOT)

Recipient of an Ohio Board of Regents Program Excellence Award.

CTC's Laser Electro-Optics Engineering Technology program is the only such program in Ohio and one of the few associate degree programs of its kind in the country. The objectives of the Laser Electro-Optics Technology program are to give the student practical experience and theoretical training in the following areas:

1. the properties of laser light, optical cavities, and laser classification.
2. the reflection and refraction of light and wave optics.
3. an introduction to Optical Components and Electro-Optic devices.
4. light wave fundamental and waveguides, with emphasis on step index fiber, graded index fiber, and attenuation.
5. applications of the laser in materials processing and holography.
6. measurements in laser power and energy, with use of monochromators and spectrophotometers, for example.

Graduates of this program will have a good basic background in fundamentals of lasers and electronic principles. They should be able to understand the workings and applications of different types of lasers. The Laser Electro-Optics Engineering Technology graduate should fit well in an organization that uses lasers.

## Laser Electro-Optics Engineering Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 6710 | Introduction to Lasers | 3 | 3 | 4 |
| 7710 | DC Circuit Analysis | 5 | 0 | 5 |
| 7711 | DC Circuits Lab | 0 | 3 | 1 |
| | | 15 | 8 | 18 |
| **■ Second Term** | | | | |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Third Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 6715 | Laser Safety | 2 | 2 | 3 |
| 6720 | Geometrical & Wave Optics | 3 | 3 | 4 |
| 7720 | AC Circuit Analysis | 5 | 0 | 5 |
| 7721 | AC Circuits Lab | 0 | 3 | 1 |
| | | 17 | 8 | 20 |
| **■ Fourth Term** | | | | |
| 102X | Oral Comm Elective | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Fifth Term** | | | | |
| 1193 | Analytic Geometry & Calculus 1 | 4 | 0 | 4 |
| 6730 | Optical Components/Devices | 3 | 3 | 4 |
| 7XXX | Computer Program Elective | 3 | 3 | 4 |
| 7730 | Electronics 1 | 5 | 2 | 6 |
| | | 15 | 8 | 18 |
| **■ Sixth Term** | | | | |
| 151X | Economics Elective | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Seventh Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 6740 | Applications of Lasers | 3 | 3 | 4 |
| 6741 | Introduction Fiber-Optics | 3 | 3 | 4 |
| 7740 | Electronics 2 | 5 | 2 | 6 |
| | | 17 | 8 | 20 |
| **■ Eighth Term** | | | | |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Ninth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 6745 | Optical System Design | 3 | 3 | 4 |
| 6750 | Laser/Electronics Optic Measurement | 3 | 3 | 4 |
| 7750 | Electronics 3 | 4 | 3 | 5 |
| | | 13 | 9 | 16 |
| **■ Tenth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 119 |

Computer Programming Electives: 7030, 7036, 7717
Economics Electives: 1512, 1513
Oral Communication Electives: 1020, 1024
Social Science Electives: Any course with the first two digits of 15 except 1512 and 1513.

## Manufacturing Engineering Technology (MFGT)

The Manufacturing Engineering Technology (MFGT) program produces technicians able to function in the world-wide manufacturing competition of the 90's.

Three distinct areas of manufacturing engineering technology are stressed in the curriculum. These areas are:

1. CNC-CAD/CAM
2. Statistical Quality Control
3. Applications of Manufacturing Processes

1. CNC-CAD/CAM - A series of courses designed to enable a student to use a CAD (computer aided drafting) system to develop three-view orthagonal, isometric, and three-dimensional piece part drawings. Also introduced in CAD are concepts of assembly drawings, bills of materials, and customizing CAD systems for manufacturing applications. CAM (Computed Aided Manufacturing) covers the sequence of transcribing a program from a drawing: part programs, language-based computer aided part programming such as APT and Compact II, and then graphics-based CAM systems that utilize CAD drawings' data bases to develop machine-ready N/C code.
2. Statistical Quality Control - A series of courses designed to enable a student to use applications of computer programming to compile and create necessary charts for comparing quality levels. Histograms, frequency distribution curves, SPC, and pareto diagrams, along with various quality concepts, are used to assess quality levels.
3. Applications of Manufacturing Processes - A series of courses designed to enable a student to apply manufacturing processes in areas of process planning, process sequence, estimating, tooling, material usage, work method and measurement and computer programming necessary to compile and obtain documentation of the same.These applications, along with the cooperative experience, will enable a manufacturing graduate to perform in the new age of manufacturing.

## Manufacturing Engineering Technology

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 7008 | Engineering Drawing 1 | 2 | 3 | 3 |
| 7035 | Computer Applications | 2 | 3 | 3 |
| 7412 | Manufacturing Data Analysis | 3 | 2 | 4 |
| 7417 | Manufacturing Processes | 3 | 2 | 4 |
| | | 14 | 10 | 18 |
| **■ Second Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Third Term** | | | | |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 7144 | NC/CNC Programming 1 | 2 | 3 | 3 |
| 7420 | CAD 1 (MFGT) | 2 | 3 | 3 |
| 7422 | Quality Control 1 | 3 | 2 | 4 |
| | | 14 | 10 | 18 |
| **■ Fourth Term** | | | | |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Fifth Term** | | | | |
| 1179 | Introduction to Applied Statistics | 4 | 0 | 4 |
| 7111 | Engineering Materials | 3 | 2 | 4 |
| 7145 | Statics & Strength of Mat | 3 | 2 | 4 |
| 7444 | Mfg Process Planning & Estimating | 3 | 3 | 4 |
| 7458 | World Class Manufacturing | 3 | 2 | 4 |
| | | 16 | 9 | 20 |
| **■ Sixth Term** | | | | |
| 1002 | English Composition 2 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |

**■ Seventh Term**

| | | | | |
|---|---|---|---|---|
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7154 | CNC Programming 2 | 2 | 3 | 3 |
| 7438 | Work Methods & Measurements | 3 | 2 | 4 |
| 7441 | Statistical Process Control | 3 | 2 | 4 |
| 7449 | Computer Aided Manufacturing 1 | 2 | 3 | 3 |
| | | 13 | 12 | 18 |

**■ Eighth Term**

| | | | | |
|---|---|---|---|---|
| 1535 | Intro to Labor Management Relations | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |

**■ Ninth Term**

| | | | | |
|---|---|---|---|---|
| 102X | Oral Communication Elective | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 7428 | CAD 2 - Manufacturing | 2 | 3 | 3 |
| 7459 | Computer Aided Manufacturing 2 | 2 | 3 | 3 |
| 7707 | Electrical Applications | 3 | 2 | 4 |
| | | 16 | 8 | 19 |

**■ Tenth Term**

| | | | | |
|---|---|---|---|---|
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 119 |

Oral Communication Electives: 1020, 1024
Social Science Electives: Any course with the first two digits of 15 except 1512 and 1535.

## Mechanical Engineering Technology (MET)

(A TAC/ABET accredited program)

Mechanical Engineering Technology produces graduates with the ability to combine problem solving skills and computer aided design skills to create new machine and product designs. Advanced CAD-CAM software and the MET computer design facility are used to teach students Computer Aided Design and Computer Aided Drafting . Graduates of the MET program assume positions such as CAD-CAM systems operator, machine and product design technician, and mechanical systems design technician.

In an independent survey of ALL Ohio colleges, the MET program at Cincinnati Technical College had the best equipped academic CAD facility in the state of Ohio. The MET CAD facility is regularly upgraded with the latest in software and hardware.

Along with its outstanding software and facilities, the MET program has five full-time, highly qualified faculty members. The program has been selected twice as one of only 44 statewide finalists in the Ohio Program Excellence Award competition, and the program has received two state of Ohio Academic Challenge Grants.

## Mechanical Engineering Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **■ First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 7008 | Engineering Drawing 1 | 2 | 3 | 3 |
| 7160 | Computer Aided Drafting 1 (MET) | 2 | 3 | 3 |
| | | 14 | 8 | 17 |
| **■ Second Term** | | | | |
| 7030 | Computer Programming (BASIC) | 3 | 2 | 4 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **■ Third Term** | | | | |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 7010 | Engineering Drawing 2 | 2 | 3 | 3 |
| 7130 | Engineering Mechanics | 3 | 2 | 4 |
| 7165 | Computer Aided Drafting 2 (MET) | 2 | 3 | 3 |
| | | 14 | 10 | 18 |
| **■ Fourth Term** | | | | |
| 1502 | Human Relations | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Fifth Term** | | | | |
| 1193 | Analytic Geometry & Calculus 1 | 4 | 0 | 4 |
| 7012 | Engineering Drawing 3 | 2 | 3 | 3 |
| 7111 | Engineering Materials | 3 | 2 | 4 |
| 7132 | Hydraulics and Pneumatics | 3 | 3 | 4 |
| 7140 | Strength of Materials | 3 | 3 | 4 |
| | | 15 | 11 | 19 |
| **■ Sixth Term** | | | | |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| **■ Seventh Term** | | | | |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 7124 | Manufacturing Processes w/CAD-CAM | 3 | 2 | 4 |
| 7141 | Kinematics & Dynamics of Machines | 3 | 2 | 4 |
| 7150 | Machine Design 1 | 3 | 3 | 4 |
| 7707 | Electrical Applications | 3 | 2 | 4 |
| | | 15 | 11 | 20 |
| **■ Eighth Term** | | | | |
| 1010 | Technical Writing 1 | 3 | 0 | 3 |
| 7198 | Intro to Mechanical Systems Design | 0 | 4 | 2 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 44 | 7 |
| **■ Ninth Term** | | | | |
| 1015 | Technical Writing 2 | 3 | 0 | 3 |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 7148 | Applied Thermodynamics | 3 | 2 | 4 |
| 7155 | Machine Design 2 | 4 | 2 | 5 |
| 7158 | Mechanical Systems Design Project | 1 | 6 | 3 |
| | | 14 | 10 | 18 |
| **■ Tenth Term** | | | | |
| 1535 | Intro to Labor Management Relations | 3 | 0 | 3 |
| 9400 | Co-Op Employment Engineering Tech | 1 | 40 | 2 |
| | | 4 | 40 | 5 |
| | | | | 120 |

# Sciences Division

Division faculty have been selected for their dedication and academic preparation to fulfill the two major functions of the division:

1. teaching the principles of physics, chemistry, mathematics and computer programming considered basic for successful study in a science dependent field such as engineering technology, health or technical business services.
2. providing in-depth instruction in the applied physical sciences leading the student to a career in scientific laboratory technology.

Course recommendations for students in the sciences at CTC are determined according to the readiness of each student. Readiness is determined during the admission process through assessment and an interview. Faculty are chosen for their abilities to communicate effectively with students and their knowledge of subject matter, as well as their experiences in business and industry. As a result, the chances for student success in physics, chemistry and mathematics are greatly enhanced, and the student is well prepared to master technological developments.

## Mathematics Readiness

Students who wish to brush up on skills prior to enrolling in a regular course sequence should refer to the Pre-Technical Studies courses listed elsewhere in this catalog.

## Customized Training

Faculty in the Sciences Division welcome inquiries about providing training for individuals and corporations. A program may vary from a single course to a series of programs. Resources are available to assist and advise individuals in solving their problems in these areas.

## Mathematics Courses

Each sequence of mathematics courses is tailored to meet the requirements of the curriculum served and to provide additional skills as elected by the student.

**Courses Serving General Student Interests:**

1131 College Algebra
1132 Statistics
1151 Pre-Calculus Math: Algebra
1153 Elementary Analysis
1154 Calculus 1
1155 Calculus 2

**Courses Serving Health Technology Students:**

1105 Health Mathematics
1170 Introduction to Technical Mathematics
1171 Technical Mathematics 1
1179 Introduction to Applied Statistics

**Courses Serving Business Technology and Business Programming Students:**

1121 Business Mathematics 1
1122 Business Mathematics 2
1123 Business Mathematics 3
1124 Business Algebra
1125 Computerized Financial Analysis
1127 Business Statistics
1128 Business Calculus
1170 Introduction to Technical Mathematics

**Courses Serving Engineering Technology & Science Technology Students:**

1161 Applied Algebra
1162 Applied Geometry & Trigonometry
1171 Technical Mathematics 1
1172 Technical Mathematics 2
1179 Introduction to Applied Statistics
1191 Algebra & Trigonometry 1
1192 Algebra & Trigonometry 2
1193 Analytic Geometry & Calculus 1
1194 Analytic Geometry & Calculus 2
1195 Analytic Geometry & Calculus 3

Physics and chemistry are, of necessity and tradition, laboratory sciences. Many students cannot know without doing. Actual observation and manipulation allow physical laws, concepts and hypotheses to take on real meaning in the minds of the students. The science departments therefore place much emphasis on the laboratory. Care is taken to ensure all laboratories are well supplied with equipment. The laboratory experiences point the way for students by helping them to organize an attack on a problem, to use their own ingenuity and thoughts while carrying the investigation to a conclusion, and to prepare a report of the findings.

**Introductory Courses Serving General Student Interests:**

2100 Introduction to Biology
2200 Introduction to Chemistry
2270 Introduction to Physics

**Courses Serving General Student Interests:**

2231 Fundamentals of Inorganic Chemistry
2232 Fundamentals of Organic Chemistry
2233 Fundamentals of Biochemistry
2236 Physiological Chemistry
2241 College Physics 1
2242 College Physics 2

**Courses for Students With Specific Needs in Business & Health Technologies**

2221 Technical Physics 1
2222 Technical Physics 2
2223 Technical Physics 3
2244 Health Physics 1
2245 Health Physics 2
2263 Physical Science for Graphic Communications

**Courses Serving Engineering Technology & Physical Sciences Technology Students:**

2291 Physics 1
2292 Physics 2
2293 Physics 3
2294 Physics 4

**Computer Science Courses:**

1135 "C" Programming 1
1137 PASCAL Programming 1
1139 Introduction to XENIX/UNIX
6101 Introduction to Artificial Intelligence
6135 "C" Programming 2

For the student who relates to the sciences, the Scientific Laboratory Technology program leads to careers which focus on chemical and physical testing techniques as well as the instrumentation used while performing the tests.

## Transfer Module

Associate degree programs in the Science Division contain in their curricula most of the required courses for the CTC Transfer Module. The additional courses needed to complete the transfer module should be scheduled at times convenient to the student. Students who wish to transfer to an Ohio public university for baccalaureate degrees will find that a CTC Associate of Applied Science degree combined with a transfer module (showing grades of "C" or better) will receive preferential consideration at the receiving university.

## Cooperative Education in the Sciences Divisions

The Sciences Division shares the College's commitment to cooperative education as an integral part of the curriculum. in order to participate in cooperative education, students in Sciences Division degree programs must comply with College eligibility requirements and registrartion procedures. Students may complete their cooperative education requirements through varied (full-time or part-time) on-site work experiences.

In some cases, degree-seeking students in the Sciences Division may complete their cooperatice education requirement by receiving credit for past related work experience or by completing appropriate additional courses. However, all substitutions must be approved in advance by the program chairperson.

## Scientific Laboratory Technology

The Scientific Laboratory Technology program is designed to prepare the student for employment in testing laboratories in which the chemical and physical properties of materials are measured. A graduate of the program will be capable of performing a variety of testing and analytical jobs, from the instrumental analy-

sis of pharmaceutical and other consumer products to the testing of properties of polymers and other materials. As a well-prepared lab technician, the graduate will apply the concepts from chemistry, physics, materials science and statistics to the planning and execution of tests and to the taking, compiling, reporting and analysis of measurement data. Because the Scientific Laboratory Technology curriculum has ample chemistry, math and physics requirements, students who are interested in later earning the bachelor of science degree from a university have found the curriculum serves their needs well.

## Scientific Laboratory Technology Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 6611 | Chemistry 1 & Quantitative Analysis | 3 | 3 | 4 |
| 6619 | Computer Analysis of Lab Data 1 | 2 | 2 | 3 |
| | | 15 | 7 | 18 |
| **Second Term** | | | | |
| 2232 | Fundamentals of Organic Chemistry | 3 | 2 | 4 |
| 9600 | Co-Op Employment SLT Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **Third Term** | | | | |
| 101X | Technical Writing Elective | 3 | 0 | 3 |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 6621 | Chemistry 2 & Quantitative Analysis | 3 | 3 | 4 |
| 6629 | Industrial Materials Testing | 3 | 2 | 4 |
| | | 16 | 7 | 19 |
| **Fourth Term** | | | | |
| 1179 | Intro Applied Stats | 4 | 0 | 4 |
| 9600 | Co-Op Employment SLT Tech | 1 | 40 | 2 |
| | | 5 | 40 | 6 |
| **Fifth Term** | | | | |
| 6631 | Chem 3 & Quant Anal | 3 | 3 | 4 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 6639 | Fund of Physical Measure | 3 | 2 | 4 |
| 2293 | Physics 3 | 3 | 2 | 4 |
| | | 15 | 7 | 18 |
| **Sixth Term** | | | | |
| 9600 | Co-Op Employment SLT Tech | 1 | 40 | 2 |
| | | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| XXXX | Elective/Advisor Approval Required | 2 | 2 | 3 |
| 101X | Technical Writing Elective | 3 | 0 | 3 |
| 1193 | Analytic Geometry and Calculus 1 | 4 | 0 | 4 |
| 6641 | Instrumentation Chemical Analysis 1 | 3 | 3 | 4 |
| 6672 | Intro to Design of Experiment | 3 | 2 | 4 |
| | | 15 | 7 | 18 |
| **Eighth Term** | | | | |
| 6651 | Instrumentation Chemical Analysis 2 | 2 | 3 | 3 |
| 9600 | Co-Op Employment SLT Tech | 1 | 40 | 2 |
| | | 3 | 43 | 5 |
| **Ninth Term** | | | | |
| XXXX | Elective/Advisor Approval Required | 2 | 2 | 3 |
| 1024 | Group Dynamics & Problem Solving | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 2294 | Physics 4 | 3 | 2 | 4 |
| 6649 | Phys/Chem Analysis & Test | 2 | 3 | 3 |
| | | 13 | 7 | 16 |
| **Tenth Term** | | | | |
| 9600 | Co-Op Employment SLT Tech | 1 | 40 | 2 |
| | | | | 110 |

Elective/Advisor Approval Required: 1135, 1137, 1194, 1195, 1861, 1862, 2221, 2233, 4000, 4009, 6661, 6665, 6710, 6720, 7030, 7031, 7700, 7704, 7707, 7708, 7710, 7711
Social Science Elective: 1502, 1505, 1506, 1521, 1524, 1527, 1535, 1551, 1553, 1620, 1625, 1645
Technical Writing Elective: 1010, 1015, 1017, 1018, 1019
Co-op Elective: 9610

## Scientific Laboratory Technology - Biochemistry Option

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1001 | English Composition 1 | 3 | 0 | 3 |
| 1191 | Algebra & Trigonometry 1 | 4 | 0 | 4 |
| 2291 | Physics 1 | 3 | 2 | 4 |
| 6611 | Chemistry 1 & Quant Anal | 3 | 3 | 4 |
| 6619 | Comp Analysis Lab Data 1 | 2 | 2 | 3 |
| | | 15 | 7 | 18 |
| **Second Term** | | | | |
| 2232 | Fund of Organic Chem | 3 | 2 | 4 |
| 9600 | Co-op Employment SLT Tech | 1 | 40 | 2 |
| | | 4 | 42 | 6 |
| **Third Term** | | | | |
| 101X | Tech Writing Elective | 3 | 0 | 3 |
| 1192 | Algebra & Trigonometry 2 | 4 | 0 | 4 |
| 2292 | Physics 2 | 3 | 2 | 4 |
| 6615 | Biochemical Cellular Anal | 3 | 3 | 4 |
| 6621 | Chemistry 2 & Quant Anal | 3 | 3 | 4 |
| | | 16 | 8 | 19 |
| **Fourth Term** | | | | |
| 1179 | Intro Applied Statistics | 4 | 0 | 4 |
| 9600 | Co-op Employment SLT Tech | 1 | 40 | 2 |
| | | 5 | 40 | 6 |
| **Fifth Term** | | | | |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 1512 | Microeconomics | 3 | 0 | 3 |
| 2293 | Physics 3 | 3 | 2 | 4 |
| 6625 | Biochemical Genetics 1 | 3 | 3 | 4 |
| 6631 | Chemistry 3 & Quant Anal | 3 | 3 | 4 |
| | | 15 | 8 | 18 |
| **Sixth Term** | | | | |
| 9600 | Co-op Employment SLT Tech | 1 | 40 | 2 |
| **Seventh Term** | | | | |
| XXXX | Elective/Advsr Approv Req | 2 | 2 | 3 |
| 101X | Tech Writing Elective | 3 | 0 | 3 |
| 6635 | Biochemical Genetics 2 | 3 | 3 | 4 |
| 6641 | Inst. for Chem Analysis | 3 | 3 | 4 |
| 6672 | Intr Design of Experiment | 3 | 2 | 4 |
| | | 14 | 10 | 18 |
| **Eighth Term** | | | | |
| 6651 | Instrumental Chem Analy 2 | 2 | 3 | 3 |
| 9600 | Co-op Employment SLT Tech | 1 | 40 | 2 |
| | | 3 | 43 | 5 |
| **Ninth Term** | | | | |
| XXXX | Elective/Advsr Approv Req | 2 | 2 | 3 |
| 1024 | Group Dynamic & Prob Solving | 3 | 0 | 3 |
| 15XX | Social Science Elective | 3 | 0 | 3 |
| 2294 | Physics 4 | 3 | 2 | 4 |
| 6645 | Biochem Analysis and Test | 2 | 3 | 3 |
| | | 13 | 7 | 16 |
| **Tenth Term** | | | | |
| 9600 | Co-op Employment SLT Tech | 1 | 40 | 2 |
| | | | | 110 |

Tech Writing Elective: 1010, 1015, 1017, 1018, 1019
Social Science Elective: 1502, 1505, 1506, 1521, 1524, 1527, 1535, 1551, 1553, 1620, 1625, 1645
Elective/Advisor Approv Req: 1135, 1137, 1194, 1195, 1861, 1862, 2221, 2233, 4000, 4009, 6661, 6665, 6710, 6720, 7030, 7031, 7700, 7704, 7707, 7708, 7710, 7711

## Quality Control/Assurance Certificate

The Professional Certificate in Quality Control and Assurance is designed for persons already competent in one or more technical fields who want to expand and add focus to their quality skills. Both product quality and service quality (e.g. banks, hospitals, airlines, etc.) are emphasized throughout the curriculum.

The certificate is designed around the body of knowledge required for certification by the American Society for Quality Control (ASQC). The idea is that many individuals may also be interested in earning ASQC certification as a quality technician (CQT), quality engineer (CQE), or quality engineer-in-training (QEIT). The curriculum advisor can provide specific details.

To earn the certificate, the candidate must successfully complete the eight courses listed below and verify that he or she is a current practitioner in the quality field.

## Quality Control/Assurance Certificate Curriculum

| | | Hours Per Week Class | Lab | Credit Hours |
|---|---|---|---|---|
| **First Term** | | | | |
| 1018 | Technical Writing Style & Techniques | 2 | 2 | 3 |
| 1027 | Group Dynamics for Quality Profession | 3 | 0 | 3 |
| 1179 | Introduction to Applied Statistics | 4 | 0 | 4 |
| | | 9 | 2 | 10 |
| **Second Term** | | | | |
| XXXX | Technical Elective * | 3 | 0 | 3 |
| 6670 | Intr Stat Process Control | 4 | 0 | 4 |
| | | 7 | 0 | 7 |
| **Third Term** | | | | |
| 6672 | Intro to Design of Exp | 3 | 2 | 4 |
| 6674 | Intro to Reliability | 3 | 2 | 4 |
| 6699 | Technical Lab Problems | 0 | 3 | 1 |
| | | 6 | 7 | 9 |
| | | | | 26 |

*Suggested technical electives: 4001, 6611, 6629, 7111

# Associate of Individualized Study

To maximize the College's ability to meet particular career education needs, CTC offers the Associate of Individualized Study program. This program allows for consideration of total individual educational needs and, in cooperation with career consultants from the business/industrial community, provides an A.I.S. program to respond to those needs.

### Who Should Apply

The A.I.S. program will be attractive to anyone whose career education objectives cannot readily be met through one of the more structured associate degree programs offered by the College. In order to be admitted the applicant must meet the following requirements:

1. Submit written justification for admission to this degree program in preference to one of the other associate degree programs and options available at the College.
2. Demonstrate a level of maturity and motivation which gives promise of success in handling the responsibilities inherent in such a program.
3. Satisfy the general admissions requirements of the Cincinnati Technical College.
4. Demonstrate academic aptitude by completing a minimum of six quarter college credit hours with an average of "C" or better at either CTC or another recognized institution of higher education.
5. Declare candidacy for the program after the minimum six quarter college credit hours have been accumulated.
6. At the time of candidacy, plan an acceptable curriculum which must meet the approval of the A.I.S. Approval Committee.

Final approval of an A.I.S. program must be granted by the Associate of Individualized Study Review Committee. (This committee consists of division deans and the Director of Continuing Education.

All advising will be coordinated by an assigned A.I.S. advisor. The applicant will receive counsel from professionals in business/industry and appropriate members of the CTC staff.

For additional information on the Associate of Individualized Study program, contact the Director of Continuing Education.

*Special Partnerships With Business & Industry*

## Associate of Technical Study-Type A Program

This program enables the student to receive college credit for qualified industry training and to choose courses from two or more existing CTC associate degree programs and thereby design a personalized curriculum. All ATS-Type A program curriculums must be approved by the Academic Policy and Curriculum Committee.

For more information concerning the Associate of Technical Study-Type A program, contact the Director of Continuing Education.

## Associate of Technical Study-Type B Program

This program enables the college to develop associate degree programs in partnership with professional organizations and business/industrial firms with staff development programs by equating their training activity to a block of college credit.

A college review committee will review the training program offered by an organization in order to determine if it qualifies for inclusion.

When implemented, each program accommodates students transferring from an educational program which lies outside the traditional collegial domain. The degree gives recognition to the training of the professionals while enabling them to experience the broadening, liberalizing, and enriching components of a college education.

For more information concerning the Associate of Technical Study-Type B program, contact the Director of Continuing Education.

Currently, cooperative arrangements have been effected for ATS-Type B degrees in the following:

**Industrial Technologies**

CTC is working with the Ford Motor company to provide an associate degree program for apprentices in traditional areas such as industrial electricity, machine repair, plumber/pipefitter, tool and die. Coursework is conducted in the Ford plants and at CTC.

**Law Enforcement**

The Cincinnati Police Academy cooperates with CTC in this program. Credits toward this degree are awarded for proof of certification from any accredited or approved Peace/Police Officer Training School. Additional CTC coursework is required to complete this associate degree.

# Continuing Education and Extended Services

As more students with greater diversity of needs enroll, the College has developed different and improved ways to serve those needs. These services may be categorized in the following ways:

**Flexibility of Scheduling**

To serve students who would like to continue their education, CTC offers classes during the day, evening and Saturday. If a student desires to take a class for personal enrichment, they may do so without being accepted into a degree program.

**Programs Available in the Evening**

Cincinnati Technical College offers the following associate degree and certificate programs through the main campus evening program:

**Business Technologies Division**

Administrative Services:
- Executive Secretarial
- Office Management
- Word Processing

Automotive Service Management
Business Management
Business Financial Management
Business Computer Sciences:
- Computer Communications
- Computer Operations
- Computer Programming

Hotel Restaurant Management
International Trade Management
Managerial Accounting
Marketing Management
Property Management
Purchasing Management
Real Estate
Turfgrass Management (Certificate)

**Engineering Technologies Division**

Aviation Maintenance Technology
Biomedical Electronics Engineering Technology
Civil Engineering Technology - Architectural
Civil Engineering Technology - Construction Management
Civil Engineering Technology - Surveying
Computer Engineering Technology
Electro-Mechanical Engineering Technology
Electronics Engineering Technology
Manufacturing Engineering Technology
Mechanical Engineering Technology

**Health Technologies Division**

Dietary Manager (Certificate)
Electrocardiography (Certificate)
Medical Records
Health Unit Coordinator (Certificate)

**Humanities Division**

Employee & Labor Relations (Certificate)
Technical Writing & Editing Technology (Degree and Certificate)
Transfer Module (Certificate)

**Sciences Division**

Scientific Laboratory Technology
Quality Control Assurance (Certificate)
Transfer Module (Certificate)

**Flexibility of Location**

Students who are working full-time generally have full daily schedules. Travel time and energy for going to and coming from classes are becoming greater concerns. More students need classes located closer to their residences or to their places of employment.

Cincinnati Technical College has addressed these student needs by providing college credit courses through our extension center located within the College service area. CTC's extension center is located at Oak Hills High School.

The continuing education operations also include recreational and leisure-time courses.

**Services For Business and Industry**

Cincinnati Technical College can respond to the business, industrial, and professional communities' requests to provide on-site courses to upgrade employee skills. In addition, the College works with professional and technical societies, organizations and trade unions to offer short-term and long-term programs for their members. Charges are negotiated on an individual contractual basis dependent upon instructional services, facilities, number of participants and equipment.

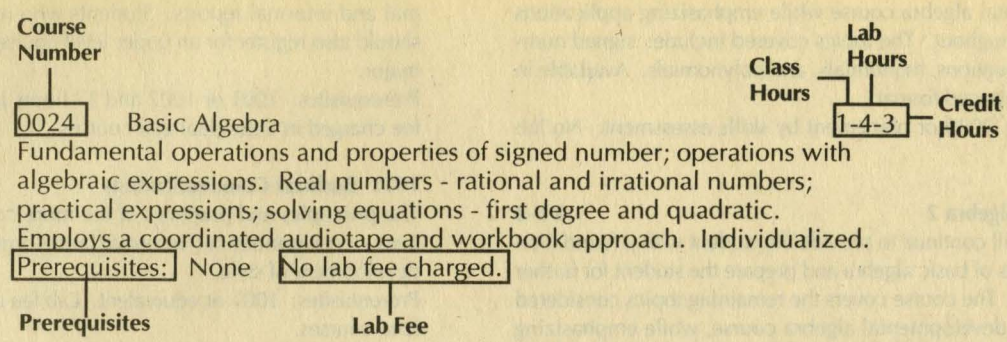
Benefits to the employer are: programs tailored to meet company needs which are delivered on-site; programs that offer a blend of audience participation; flexibility to meet busy business schedules; reduction of travel costs, time and inconvenience; and guaranteed follow-up after training.

# Continuing Education and Extended Services

# COURSE DESCRIPTIONS

CINCINNATI TECHNICAL COLLEGE

# Understanding Course Descriptions




**Course Number**: identifying code for each course in a curriculum.

**Class Hours**: number of hours per week of lecture or individualized instruction.

**Lab Hours**: number of hours per week in laboratory instruction. Lab hours are usually in addition to class hours.

**Credit Hours**: academic credit awarded for successful completion of the course.

**Prerequisites**: any course(s) which must be successfully completed before a student may enroll in the course.

**Co-requisites**: any course(s) which must be taken at the same time or at a previous time as the course listed.

**Lab Fees**: a fee in addition to the regular tuition which covers the cost of laboratory supplies for a particular course. A listing of current lab fees is available in the division offices.

## Credit Courses

**0001 English Grammar** **4-0-4**
This course deals with the words and language of the grammatical system of standard English. Correct usage is stressed.
Prerequisites: None. Lab fee charged.

**0002 College Spelling** **4-0-4**
An individualized spelling improvement program. Uses multisensory approach to develop desirable spelling attitudes and habits. Also stresses word analysis, word processing, and proofreading.
Prerequisites: None. No lab fee charged.

**0003 Basic Writing 1** **4-0-4**
After an analysis of strengths and weaknesses in writing, student is given instruction and practice in the construction of clear, error-free sentences and messages.
Prerequisites: 0001 or equivalent. Lab fee charged.

**0004 Basic Writing 2** **4-0-4**
Emphasizes paragraph organization and transitional devices in longer composition; punctuation.
Prerequisites: 0003 or equivalent. No lab fee charged.

**0010 College Reading 1** **4-0-4**
Instruction and practice to develop flexibility in reading, improve vocabulary; and sharpen comprehension. Diagnostic and prescriptive testing; individualized, multi-media.
Prerequisites: None. Lab fee charged.

**0011 College Reading 2** **4-0-4**
Continuation of 0010. Recommended for students needing further improvement in reading skills.
Prerequisites: 0010 or equivalent. Lab fee charged.

**0017 Speed Reading** **4-0-4**
This course is designed to help readers increase their reading efficiency. This course will increase recall, and eliminate inefficient reading habits while improving speed, comprehension and memory. Speed reading offers specific techniques to help readers process written materials quickly while extracting essential information. This course uses several approaches, processing skill development, visual/perceptual training and concept development, to improve speed and comprehension.
Prerequisites: 0013. No lab fee charged.

**0020 Basic Mathematics 1** **4-0-4**
Individualized instruction and practice in the fundamental skills of mathematics. Assignments for each student as determined by diagnostic test. Topics available: whole numbers and related operations, primes, composites, factoring, common fractions, decimals, percent.
Prerequisites: None. No lab fee charged.

**0021 Basic Mathematics 2-Individualized** **4-0-4**
Continuation of 0020. Recommended for students needing further instruction and practice in computation and application.
Prerequisites: 0020. No lab fee charged.

**0022 Essentials of Mathematics** **4-0-4**
A review of mathematical principles and computations. Individualized instruction and practice in the fundamental skills of mathematics. Assignments determined by diagnostic testing. Basic topics available: whole numbers, common fractions, decimals, percent, metric system.
Prerequisites: None. No lab fee charged.

**0023 Basic Geometry** **4-0-4**
This course will provide the student with the essential elements of Geometry. Included are the following topics: logic and sets, systems of measurement, geometric figures, triangle relationships, and coordinate geometry.
Prerequisites: 0020 or equivalent. No lab fee charged.

**0024 Basic Algebra 1** **4-0-4**
This course will provide the student with a foundation in the con-

cepts of basic algebra and prepare the students for further math courses. The course covers all the topics considered essential in a developmental algebra course while emphasizing applications of algebra throughout. The topics covered include: signed numbers, linear equations, monomials, and polynomials. Available in lecture or self-paced format.
Prerequisites: 0020 or placement by skills assessment. No lab fee charged.

**0025 Basic Algebra 2** **4-0-4**
This course will continue to provide the student with a foundation in the concepts of basic algebra and prepare the student for further math courses. The course covers the remaining topics considered essential in a developmental algebra course, while emphasizing applications of algebra throughout. Those topics covered include: factoring, quadratic equations, algebraic fractions, square roots, radical expressions, graphing, properties of lines, systems of equations. Available in lecture or self-paced format.
Prerequisites: 0024. No lab fee charged.

**0026 Fundamentals of Business Math** **4-0-4**
Structure of the number system with business applications. Whole numbers, equations, fractions, decimals, percent, percentages, ratio, proportion, measurements (U.S. and metric), measures of central tendency. Individualized with audio tapes, text and film strips.
Prerequisites: None No lab fee charged.

**0027 Pre-Tech Health Math** **4-0-4**
Fundamental skills of mathematics applied to health professions. Includes: operations with fractions, decimals, and percents; geometry; metric, apothecaries', and household systems; ration and proportions; measurement; graphs; introduction to statistics. Available in lecture or self-paced format.
Prerequisites: 0020 or placement by skills assessment. No lab fee charged.

**1001 English Composition 1** **3-0-3**
The composition of essays emphasizing the development of an effective thesis; review of grammar, usage, and sentence and paragraph development.
Prerequisites: None. No Lab Fee Charged.

**1002 English Composition 2** **3-0-3**
Composition of themes emphasizing types of development; syntax, composition of clear and effective sentences; principles of library research.
Prerequisites: None. Lab fee charged.

**1007 Critical Thinking & Writing** **3-0-3**
Principles of logical thinking including distinguishing between fact and opinion, differentiating between fact and opinion, distinguishing bias from reason; recognizing statements that are provable, and other concepts. Applications of the theory will be demonstrated through various writing assignments.
Prerequisites: 1001 or 1002. No lab fee charged.

**1009 Business English** **3-0-3**
Current practices in business communication; accuracy is stressed in the areas of grammar, mechanics, usage, spelling, and syntax.
Prerequisites: None. No lab fee charged.

**1010 Technical Writing 1** **3-0-3**
The principles and practices of various types of business correspondence including the letter of application and resume; audience analysis; visuals; various technical communications such as procedures, explanation of process, mechanism description, formal and informal reports. Students who register for this course should also register for an upper level course within their program major.
Prerequisites: 1001 or 1002 and 12 hours in technical area. Lab fee charged in individualized courses.

**1011 Business Communications** **3-0-3**
The principles and practices of the more common types of business correspondence; informal and formal business reports; development of style.
Prerequisites: 1001 or equivalent. Lab fee charged in individualized courses.

**1015 Technical Writing 2** **3-0-3**
The principles and practices of researching, organizing, and presenting the various types of reports germane to the student's career choice. The course focuses on both written and oral reports which include analytical subject areas such as surveys, proposals, testing, lab reports, problem analysis, and job related reports. Students who register for this course should also register for an upper level course within their program major.
Prerequisites: 1010. No lab fee charged.

**1017 Project Research** **3-2-4**
This course addresses the tasks that technical writers and editors perform as they conduct research. Students will learn to identify, select, and use the most appropriate method that corresponds to the project. Major topics to be explored include interviewing skills, questionnaire design, observation techniques, case studies, and classical experimental design. Literature searches using data bases will also be discussed. Students will prepare primary and secondary research reports, and present an oral report.
Prerequisite: 1007 or 1620. No lab fee charged.

**1018 Technical Writing Style & Techniques 1** **2-2-3**
In this course students examine and practice the conventions, style, and structures of technical writing. The course focuses on four skill areas: economy, emphasis, clarity and correctness. Students are tested in each skill area and then complete individually-assigned exercises to build proficiency. All exercises must be completed in the CTC Writing Center. Other course topics include audience analysis, readability criteria, and the terminology of technical writing style. Conferences with the instructor are required.
Prerequisite: None. Corequisite: 3 credits Eng. Comp. No Lab fee charged.

**1019 Technical Writing Style and Techniques 2** **2-2-3**
In this course students examine and practice the conventions, style and structures of technical writing. This course focuses on four skill areas: concreteness, unity, coherence, and correctness. Students will write five compositions and read articles about technical communications. Other course topics involve the analysis and critique of great authors' writing styles. All exercises should be completed in the CTC Writing Center. Conferences with the instructor are required.
Prerequisite: 1018. Lab fee charged.

**1020 Effective Speaking** **3-0-3**
The preparation and effective delivery of various types of speeches. Improved listening techniques, audience participation, and evaluation are stressed.
Prerequisites: None. No lab fee charged.

**1024 Group Dynamics & Problem Solving** **3-0-3**
This course helps people understand themselves and their roles as communicators, improve their small group communication skills, develop problem-solving strategies as group members and apply theories to their work (i.e. Quality circles) and personal relationships. Students must participate in structured experiences.
Prerequisites: None. No lab fee charged.

**1025 Group Dynamics within Organizations** **3-0-3**
Investigation of methods groups can use to operate successfully within any given organizational structure. Problem solving between groups and the organization, decision making, recommendation and implementation are major areas studied.
Prerequisites: 1024. No lab fee charged.

**1027 Group Dynamics for Quality Professionals** **3-0-3**
This course stresses the concept of the individual as part of the team in terms of solving quality problems related to products and/or services provided by their organization. Successful quality circles and brainstorming sessions are taught hands on through real student generated problems. The team approach is emphasized and synergism demonstrated. Human factors and quality motivation approaches are explained and stressed.
Prerequisites: None. Corequisites: Current employment in quality profession. No lab fee charged.

**1037 Technical French for Culinary Professionals** **2-2-3**
This course will provide the student with an introduction to the fundamentals of French grammar and pronunciation, with an emphasis on vocabulary used in the culinary professions.
Prerequisites: None. No lab fee charged.

**1050 The Short Story: Forms and Themes** **3-0-3**
An exploration of short classics, emphasizing their development and form. The course concentrates on works by a multicultural group of authors.
Prerequisites: None. No lab fee charged.

**1055 Science Fiction** **3-0-3**
An examination of the formal elements of science fiction, including early examples and recent works. The course emphasizes discussing the writing in relation to current trends in science and technology.
Prerequisites: None. No lab fee charged.

**1098 Workshops in Communication Skills** **Var-Var-Var-1-6**
Consideration and study of selected areas of written and oral communication designed to meet current needs. Content and emphasis vary year to year.

**1099 Special Problems in Communication Skills** **Var-Var-Var**
Individual study and special projects pertaining to the particular technology that the student is enrolled in. Open to students wishing advanced standing, independent study, and/or research. This course is arranged with the instructor with the approval of the Dean of the Communication Skills Division.
Prerequisites: 6 hours in Communication Skills. No lab fee charged.

**1105 Mathematics For The Health Professions** **4-0-4**
This course is primarily for the health technologist whose work environment implies use of measurement concepts. The prime thrust is problem solving experiences within the health field. This includes: applications of elementary mathematics such as solving simple algebraic equations, ratio & proportion and percent; work with units (metric, apothecary and household systems) including conversions; dosage and concentration calculations. Use of an electronic calculator is required.
Prerequisites: 0024, or equivalent. No lab fee charged.

**1121 Business Mathematics 1** **4-0-4**
The first of a sequence of courses designed to cover the many applications of mathematics in the business world. Introductory topics on equations, formulas, ratios and a review of percents. Mathematics of business topics include: graphs, trade and cash discounts, payroll, insurance, and taxes. Use of an electronic calculator is required.
Prerequisites: 0024 or equivalent. No lab fee charged.

**1122 Business Mathematics 2** **3-0-3**
A continuation of business mathematics. Topics include: markups, markdowns, depreciation, inventory, financial reports, simple interest, and bank discounts. Use of an electronic calculator is required.
Prerequisites: 1121. No lab fee charged.

**1123 Business Mathematics 3** **3-0-3**
A continuation of business mathematics topics with emphasis on financial math. Topics included are: compound interest, multiple payment plans, annuities, amortizations, stocks and bonds, and statistics. Use of an electronic calculator is required.
Prerequisites: 1121. No lab fee charged.

**1124 Business Algebra** **4-0-4**
Review of the basic laws of algebra. Linear and exponential equations with business applications in compound interest, annuities, etc. Graphing as a problem solving method. Simultaneous equations. Linear inequalities. This course requires students to have had three years of high school college prep math, or the equivalent.
Prerequisites: 0023, 0024, 0025 and 0010. No lab fee charged.

**1125 Computerized Financial Analysis** **2-2-3**
Qualitative and quantitative graphs, data, etc. Stocks, bonds, and annuities. Common business, investment and banking, financial calculations, trends and forecasts taught through the use of a microcomputer.
Prerequisites: 1861, 1123. Lab fee charged.

**1127 Business Statistics** **4-0-4**
An introduction to the quantitative techniques of probability and statistics as applied to modern business problems. The scientific method, organization of data and graphical displays. Descriptive measures including mean, median, standard deviation and z-scores. Probability concepts, and distributions including the binomial and normal. Sampling techniques and size determination. Hypothesis testing for proportions, means and relationships. Forecasting, linear regression and correlation. This course is business application oriented. A scientific calculator with STAT capabilities is required.
Prerequisites: 1124 or equivalent. No lab fee charged.

**1128 Business Calculus** **4-0-4**
Covered topics include: analytic geometry involving lines and the conic sections, graphs and analysis of polynomial function, derivative concept and indefinite and definite integrals. Derivative applications include related rates and finding maximum and minimum points. Integral applications include areas and volumes and related topics. Applications are used extensively. Use of a scientific calculator is required.
Prerequisites: 1124 or 1131. No lab fee charged.

**1131 College Algebra** **4-0-4**
Covered topics include: scientific calculations, unit conversions, geometry review, solving algebraic formulas, graphing, right triangle and oblique triangle trigonometry, quadratic equations and simultaneous equations. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required. This course requires students to have had three years of high school college prep math, or the equivalent.
Prerequisites: 0023, 0024, 0025 or equivalent. No lab fee charged.

**1132 Statistics** **4-0-4**
An introduction to the quantitative techniques of probability and statistics as applied to modern problems. The scientific method, organization of data and graphical displays. Descriptive measures including mean, median, standard deviation and z-scores. Probability concepts, and distributions including the binomial and normal. Sampling techniques and size determination. Hypothesis testing for proportions, means and relationships. Forecasting, linear regression and correlation. This course is application oriented. A scientific calculator with STAT capabilities is required.
Prerequisites: 1131. No lab fee charged.

**1135 "C" Programming-1** **2-2-3**
"C" is a very portable programming language used for systems and communications programs. Its portability is making it increasingly popular for applications programs. This course will cover structured programming concepts, input/output operations, arrays and data structures, functions, pointers and the "C" library. Students should have some programming experience. This "C" is 90 percent compatible with UNIX or XENIX operation systems.
Prerequisites: Any high level programming language. Lab fee charged.

**1137 PASCAL Programming-1** **2-2-3**
Since its introduction in the early 70's, PASCAL has gained popularity in both scientific and business applications due to its simplicity of expression, its structure and its powerful data handling capability. A study of the PASCAL language is an excellent introduction to programming in a modern high level language. This course covers: top-down design, procedures and functions, branching, loops, case statement, arrays, records, strings, files and libraries.
Prerequisites: Any high level language such as BASIC, COBOL, etc. Lab fee charged.

**1139 Introduction to XENIX/UNIX** **2-2-3**
A course designed to introduce students to the UNIX operating system for mini and micro computers. Covered topics include: basic operating system concepts, text editors, file systems, shell scripts, system utilities. Students will employ microcomputer terminals to master the basics of UNIX while completing a set of predefined exercises.
Prerequisites: Some programming experience. Lab fee charged.

**1151 Pre-Calculus Math: Algebra** **4-0-4**
Covered topics include: real numbers, exponents, basic equation solving methods, factoring, quadratic equations, fractional equations, graphing, straight lines, systems of equations, determinants and Cramer's Rule.
Prerequisites: 1105 or equivalent. No lab fee charged.

**1154 Calculus 1** **4-0-4**
Covered topics include: analytic geometry involving lines and the conic sections, graphs and analysis of polynomial function, derivative concept and indefinite and definite integrals. Derivative applications include related rates and finding maximum and minimum points. Integral applications include areas and volumes and related topics. Applications from the sciences are used extensively. Use of a scientific calculator is required.
Prerequisites: 1131 or 1153. No lab fee charged.

**1155 Calculus 2** **4-0-4**
Covered topics include: Derivatives and integrals of transcendental functions, integration using tables, integration using the computer, double integrals and partial derivatives with application to Least Squares curve fitting. Use of a scientific calculator is required.
Prerequisites: 1131, 1154. No lab fee charged.

**1161 Applied Algebra** **3-2-4**
A course designed to build an awareness of the practical uses of algebra in engineering technology and basic science applications. Covered topics include: manipulation of measured values and variables in formulas; relationship between formulas and real devices; construction & reading of graphs and lab exercises reading numbers from technical drawings & from measuring devices. Use of a scientific calculator is required.
Prerequisites: Recommendation of coordinator/advisor. No lab fee charged.

**1162 Applied Geometry & Trigonometry** **3-2-4**
A course designed to build an awareness of the practical uses of geometry and trigonometry in engineering technology and basic science applications. Covered topics include: manipulation of the formulas of geometry and trigonometry; use of geometric facts; the relationship between geometry & trigonometry and lab exercises reading numbers from technical drawings & from measuring devices. Use of a scientific calculator is required.
Prerequisites: 0024 or 1161 or equivalent. Corequisites: None. No lab fee.

**1170 Introduction to Technical Mathematics** **4-0-4**
Covered topics include: percents, geometric figures, measurement and geometry, metric system, signed numbers, solving algebraic equations, ratios and proportions, reading measuring instruments and dial scales and interpretation and construction of graphs. Applications will use the tools of the sciences and the engineering technologies: graphs, calipers, etc. Use of an electronic calculator is required.
Prerequisites: 0020, 0024 or indicated by skills assessment. No lab fee charged.

**1171 Technical Mathematics 1** **4-0-4**
Covered topics include: order of calculation, scientific notation, accuracy, rounding, unit conversion, formula & equation manipulation, graphing ratio & proportion, area & volume calculation, right triangle trigonometry and simultaneous equations. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required.
Prerequisites: Indicated by skills assessment. No lab fee charged.

**1172 Technical Mathematics 2** **4-0-4**
Covered topics include: quadratic equations, equations involving fractions, oblique triangle trigonometry, solving exponential equations and equations requiring angles in radians. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required.
Prerequisites: 1171 or equivalent. No lab fee charged.

**1179 Introduction to Applied Statistics** **4-0-4**
An introduction to the quantitative techniques of probability and

statistics as applied to manufacturing/industrial problems. The scientific method, organization of data and graphical displays. Descriptive measures including mean, median, standard deviation and z-scores. Probability concepts, and distributions including the binomial and normal. Sampling techniques and size determination. Hypothesis testing for proportions, means and relationships. Forecasting, linear regression and correlation. This course is industry application oriented. A scientific calculator with STAT capabilities is required.
Prerequisites: 1131 or equivalent. No lab fee charges.

**1191 Algebra and Trigonometry 1** **4-0-4**
Covered topics include: scientific calculations, unit conversions, geometry review, solving algebraic formulas, graphing, right triangle & oblique triangle trigonometry, quadratic equations and simultaneous equations. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required. This course requires students to have had three years of high school college prep math, or the equivalent.
Prerequisites: 0023, 0024, 0025 or equivalent. No lab fee charged.

**1192 Algebra and Trigonometry 2** **4-0-4**
Covered topics include: solving exponential & logarithmic equations, complex numbers, solving trigonometric equations, variation, second degree simultaneous equations and graphs of trigonometric functions. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required.
Prerequisites: 1191 or equivalent. No lab fee charged.

**1193 Analytic Geometry & Calculus 1** **4-0-4**
Covered topics include: Analytic geometry involving lines and the conic sections, graphs and analysis of polynomial functions, derivative concept and indefinite & definite integrals. Derivative applications include related rates and finding maximum & minimum points. Integral applications include areas and volumes and related topics. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required.
Prerequisites: 1192 or equivalent. No lab fee charged.

**1194 Analytic Geometry & Calculus 2** **4-0-4**
Covered topics include: Derivatives and integrals of transcendental functions, integration using tables, integration using the computer, double integrals and partial derivatives with application to Least Squares curve fitting. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required.
Prerequisites: 1193. No lab fee charged.

**1195 Analytic Geometry & Calculus 3** **4-0-4**
Covered topics include: Maclaurin Series, Taylor Series, Fourier Series, first order differential equations, linear differential equations, second order differential equations, equations with repeated roots, nonhomogeneous equations, Laplace Transform and numerical methods of solving differential equations. Applications from the sciences and the engineering technologies are used extensively. Use of a scientific calculator is required.
Prerequisites: 1194. No lab fee charged.

**1198 Workshops in Mathematics** **Var-Var-1-4**
Study of selected topics in mathematics designed to meet current needs. Content and emphasis varies year-to-year.
Prerequisites: None. No lab fee charged.

**1199 Special Studies-Mathematics** **Var-Var-Var**
A personal academic pursuit related to the student's technical field of study mutually agreed upon by the student and supervising faculty member. Prior to registration, the plan of study must be approved by the Dean of the Division. (Grades S or U.)
Prerequisites: None. No lab fee charged.

**1202 First Aid** **3-0-3**
First-aid instruction including Red Cross Multi-Media Standard First Aid course, including instructors' certification; CPR instruction, including instructors' certification.
Prerequisites: None. No lab fee charged.

**1203 Security Investigation** **3-0-3**
Investigations will provide the security officer the methods for gathering information from public records and private individuals. Legal aspects, investigative strategies, and report writing will be covered.
Prerequisites: None. No lab fee charged.

**1205 Criminal Interrogation** **3-0-3**
This course is an in-depth study of proper interrogation procedures designed to gather information from persons.
Prerequisites: None. No lab fee charged.

**1208 Criminal Law 1** **3-0-3**
Criminal procedure deals with the scope of all criminal rules and their applicability as established by the State of Ohio. Procedures and options of criminal justice.
Prerequisites: None. No lab fee charged.

**1209 Criminal Law 2** **3-0-3**
This course covers all areas dealing with Ohio codes and statutes (H.B.511).
Prerequisites: None. No lab fee charged.

**1233 Emergency Planning** **3-0-3**
Principles governing the development of emergency plans. Problems encountered in planning for emergencies and implementing such plans. Procedures for plan development. Procedures for plan implementation. Emergencies to be covered include: bomb threat, fire, explosion, storm, riot, strike violence.
Prerequisites: None. No lab fee charged.

**1239 Special Studies in Law Enforcement** **Var-Var-Var**
Individual or independent study or particular project as related to the area of law enforcement. Advisor approval is required before registration.
Prerequisites: None. No lab fee charged.

**1240 Directed Case Study** **3-0-3**
An analysis of criminal court decisions; these decisions must be reduced to a written brief by student.
Prerequisites: 1208, 1209. No lab fee charged.

**1299 Problems in Law Enforcement** **Var-Var-1-45**
Individual study and special projects pertaining to law enforcement. Open to students wishing advanced standing, independent study, and/or research. This course is arranged with the approval of the Dean of the Division.

**1401 Layout and Design** **3-0-3**
Principles of printing design and art work. Conventional layout, modern layout, type design, color usage, scaling photographs and art work, copy preparation for camera, newspaper layouts,

designing folder, broadsides and booklets.
Prerequisites: None. Lab fee charged.

**1403 Advertising Typography** **2-6-4**
An extended study of display advertising utilizing computer equipment and some hot metal typesetting. Analysis, evaluation, and recommendations based on individual usage of type styles and sizes presented for good design and makeup.
Prerequisites: 3007 Intro Keyboarding. Lab fee charged.

**1415 Graphic Arts Processes** **2-3-3**
Development and evaluation of printing devices. Graphic art processes in use today: letterpress, gravure, flexographic, offset and screen printing. How they work, and the kind of work for which they were designed. Hands on training of offset duplicator and electrostatic plates will be covered in laboratory.
Prerequisites: None. Lab fee charged.

**1419 Survey of Printing Inks** **3-0-3**
This course is about ink technology as it is divided into physical makeup; how its integral parts affect color, drying properties, substrates, cost, time; how the many printing processes use inks to each advantage.
Prerequisites: None. No lab fee charged.

**1421 Cold Type Process** **1-9-4**
Classification of cold type devices - hand assembled paper or plastic alphabets, dry transfer fonts; keyboard text - on paper machines; keyboarded photo-typesetting; photo-lettered displays. Principles and operation of various keyboards. The use of electronics, computers, and tape operated controls.
Prerequisites: 1403 and 3007. Corequisites: 3007. Lab fee charged.

**1422 Desktop Publishing** **2-2-3**
The program is designed to provide high quality training in the field of Desktop Publishing with PC Pagemaker. The student is expected to become proficient in Pagemaker skills to build reports, build newsletters and create display ads using the IBM personal computer.
Prerequisites: 1850 or approval by instructor. Lab fee charged.

**1428 Management Survey** **3-0-3**
Use of the production board in control-planning a job and following through all phases of production. Methods of hiring and firing.
Prerequisites: None. No lab fee charged.

**1429 Screen Printing** **1-9-4**
The use and operation of manual and semi-automatic screen printing presses. Basic fundamentals of printing frames, screen cloths, stencils, squeegees and inks. Printing on many substrates and odd shaped objects.
Prerequisites: 1421. Lab fee charged.

**1430 Relief Presswork 1** **1-9-4**
The use and operation of platen and cylinder letterpress equipment. The use of such equipment for diecutting, foil stamping and embossing. Basic fundamentals of flexographic printing.
Prerequisites: 1403, 1480. Lab fee charged.

**1431 Relief Presswork 2** **2-13-6**
Advance techniques in the operation of multi-color narrow web flexo press. Strong emphasis in process printing. Comparison of narrow web, wide web and corrugated flexo presses. Advance training on mounting, platemaking, and finishing operations.
Prerequisites: None. Lab fee charged.

**1440 Offset Press Operation** **2-13-6**
Techniques of operation and control, study of various moistening systems, comparison of wet and dry forms of lithography. Plate comparisons to include wipe on, presensitized, albumin surface, deep etch, bi-metal, tri-metal, dycril and other synthetics, grained and grainless. Understanding the required adjustments necessary for top quality printing. Use of pressroom and quality control equipment.
Prerequisites: None. Lab fee charged.

**1449 Estimating Preparation** **2-3-3**
This course is designed to cover those areas in the printing industry that require the attention of math, i.e., paper, copyfitting, weight of metal, ink, spoilage, and camera calibrations.
Prerequisites: None. No lab fee charged.

**1450 Estimating** **2-3-3**
Determine job costs; elements of job costs - labor, materials, burden, profit and markup. Characteristics and types of paper; paper sizes, selection and purchase of paper; determining proper cuts from mill size sheets; use of manufacturers' catalogs and price books.
Prerequisites: 1449. No lab fee charged.

**1480 Photolithography 1** **2-3-3**
Types and uses of photo-copy and process camera. General and special uses of films. Uses of precise measuring darkroom instruments. Darkroom techniques. Making line and half-tone negatives. Comparing and making single color proofs. Simple stripping.
Prerequisites: None. Lab fee charged.

**1481 Photolithography 2** **2-3-3**
Follow-up of Photolithography 1 using advanced techniques. Making color separations and color proofs. Stripping techniques related to multi-color jobs.
Prerequisites: 1480 or 1482. Lab fee charged.

**1483 Color Imaging** **2-3-3**
Overview of electronic color separations and color stripping. Hands-on training of color scanners and color proofing systems. Students will also learn color correction, UCR, UCA, and GCR. Several color stripping projects help the students to understand advanced stripping technology.
Prerequisites: 1480 and 1481. Lab fee charged.

**1502 Human Relations - Applied Psychology** **3-0-3**
Applies psychological principles to everyday life. These applications help students understand themselves better, change their behaviors, and enhance their relationships. The students must participate in structured experiences.
Prerequisites: None. No lab fee charged.

**1505 Introduction to Psychology 1** **3-0-3**
This course presents psychology as the science of understanding behavior. Topics covered are: methods of psychological research, the biological bases of behavior, perception, learning, memory and language; motivation, and emotions.
Prerequisites: None. No lab fee charged.

**1506 Introduction to Psychology 2** **3-0-3**
This course discusses the development and growth of people; the personality, the maladjusted patterns of behavior; psychotherapy; social psychology; and applied psychology in terms of business, industry, education, and consumerism.
Prerequisites: 1505 or equivalent. No lab fee charged.

**1508 Psychology: Child Development** **3-0-3**
This course discusses the child's life which begins with genetic and environmental influences. The student considers the physical, intellectual, language, social, moral, and abnormal growth of the child. Theories help to explain this growth to adolescence.
Prerequisites: 1506 or equivalent. No lab fee charged.

**1509 Psychology: Adult Development** **3-0-3**
The general principles and theories governing human growth and development from adolescence through aging are studied as they relate to the physical, cognitive, and psychosocial development of people. The major contemporary theories are presented, discussed and compared. Major topics include the identity struggle of adolescence, career selection and development marriage, parenting, mid-life crises, retirement and death and dying.
Prerequisites: 1506 or equivalent. No lab fee charged.

**1510 Psychology: Adolescent Development** **3-0-3**
Adolescence, the years between 12 and 22, are a period of tremendous changes physically, psychologically and socially. This course will examine these developmental issues as well as self concept, sex roles and identity, relating to parents, peers and achieving independence, value formation, and choosing and preparing for an occupation. Hazards of this age period, such as alcohol and drug abuse, will be discussed.
Prerequisites: 1506 or equivalent. No lab fee charged.

**1512 Microeconomics** **3-0-3**
This course will introduce the fundamental economic problem of scarcity and provide a brief overview of the macro-system. The primary focus will be on demand and supply analysis within individual markets, price determination, analysis of cost, forecasting, and economic decision making in the firm.
Prerequisites: None. No lab fee charged.

**1513 Macroeconomics** **3-0-3**
This course introduces the basic economic problems of scarcity and provides an overview of the micro-system. The primary focus of the course is on an analysis of price level, inflation and unemployment, the role of government in monetary and fiscal policy, and analysis of aggregate income, consumption, savings and investment.
Prerequisites: None. No lab fee charged.

**1521 Introduction to Sociology** **3-0-3**
A look at sociology as a science occupied with classifying and defining group behavior. Emphasis is placed on the basic institutions necessary to the processes of socialization and acculturation.
Prerequisites: None. No lab fee charged.

**1523 Sociology: Major Institutions** **3-0-3**
The detailed study of the five major social institutions in society; the family, religion, education, the economy and government.
Prerequisites: 1521. No lab fee charged.

**1524 Stress Management** **3-0-3**
Theory and coping techniques for use in dealing with physical, social, and psychological stressors. Course utilizes both lecture and group interaction in discussing such diverse topics as nutrition, time management, and assertiveness. Relaxation techniques are practiced in class.
Prerequisites: None. No lab fee charged.

**1525 Changing Roles for Men and Women** **3-0-3**
An interdisciplinary look at the processes through which sex roles develop, the ways in which they impact upon individuals and society, and an analysis of the changing sex role patterns in the U.S. and elsewhere.
Prerequisites: Three (3) hours of psychology or sociology. No lab fee charged.

**1526 Sociology: Marriage and The Family** **3-0-3**
This course examines the social institutions of marriage and the family. Course topics include the historical perspective of marriage, male and female roles and society's impact on marital roles, and the impact of the family on the individual.
Prerequisites: None. No lab fee charged.

**1527 Technology and Ethical Decisions** **3-0-3**
The technician and issues having ethical or moral implications to technology. Students will use acceptable ethical principles and apply them to their own technology. Research into current publications will assist students in understanding how ethics is applied in practical situations. Discussion of ethical principles and procedures is an integral part of the course. Practical decisions with emphasis on technology will be stressed.
Prerequisites: None. No lab fee charged.

**1535 Introduction to Labor/Management Relations** **3-0-3**
A general overview of the historical, legal and current status of Labor Management relations, in union and nonunion environments, and in both the private and public sectors. Include Labor Economics, Labor Law, Labor Movements and concept of Relative Bargaining Power.
Prerequisites: None. No lab fee charged.

**1538 Case Studies in Labor Relations** **3-0-3**
A case study approach to the American Labor relations system and the application of labor law.
Prerequisites: 1535 or equivalent. No lab fee charged.

**1539 Introduction to Employment and Workplace Law** **3-0-3**
Covers the major legislation regarding employment rights and responsibilities from the viewpoint of management and labor. Emphasis on the Public Policy on EEO, workers' compensation, OSHA, hiring, termination, ADA related topics.

**1551 Geography of Developed Nations** **3-0-3**
This course includes both physical and cultural geographic studies of the following nations and areas: Australia, Canada, Japan, New Zealand, U.S.A., Central and Western Europe.

**1553 Geography of Developing Nations** **3-0-3**
This course includes the physical and cultural studies of the following nations: Mexico, Central America, South America, Eastern Europe, Africa, Southeast Asia, China, India, Southwest Asia, and Pacific Island nations.
Prerequisites: 1551. No lab fee charged.

**1599 Special Problems in Social Science** **Var-Var-Var**
Individual study and special projects pertaining to the particular technology that the student is enrolled in. Open to students wishing advanced standing, independent study, and/or research. This course is arranged with the instructor with the approval of the Dean of the Division.
Prerequisites: None. No lab fee charged.

**1620 Critical and Creative Thinking** **3-0-3**
An introduction to principles of philosophy, with emphasis on the development of "thinking tools" that students will use to solve abstract and practical problems. Course topics include review of standard methods and terms used to ask philosophical questions,

survey of the thinkers and thinking systems that have shaped Western and non-Western culture, and exploration of the role of creativity in the thinking process.
Prerequisites: None. No lab fee charged.

**1625 Technology and Ethical Decisions 3-0-3**
An introduction to philosophical principles of ethics and moral reasoning. Through reading and research, students will develop understanding of how ethics is applied in practical situations. The course emphasizes making practical decisions about issues which have ethical or moral implications, and are related to technology and the technician.
Prerequisites: None. No lab fee charged.

**1640 Contemporary American History 3-0-3**
Study of the history of the United States from World War II to the present, with discussion of political, economic, social, and cultural issues and trends.
Prerequisites: None. No lab fee charged.

**1642 African-American Studies 3-0-3**
This course explains how and why the highly advanced Black civilizations of antiquity were devastated. It also examines the crucial issues involved in the exclusion of Black history from Western history. Finally, it reviews the critical issues affecting African-Americans today and suggests historically proven actions to address them.

**1645 Civilization and Technology 3-0-3**
A survey of significant individual achievements and cultural trends that have resulted in scientific and technological developments, from the Ancient World through the Twentieth Century. Course topics include the development of theories and practices of science, and the impact of applied science and technology in Western and non-Western culture.
Prerequisites: None. No lab fee charged.

**1660 Introduction to Art 3-0-3**
An introduction to visual artistic expression in Western culture from ancient times to the present. The course emphasizes examination of the painting, sculpture, architecture, and other appropriate media of each period for their style, function, and relationship to the historical and cultural developments of the period. No previous formal art training is necessary. Students are required to participate in field trips to local art museums.
Prerequisites: None. No lab fee charged.

**1665 Introduction to Music 3-0-3**
An introduction to major periods in Western musical history from the Middle Ages to the Twentieth Century, including the major composers of the Western musical tradition. The course emphasizes development of perceptive listing habits through analysis of compositional styles and techniques. No previous formal music training is necessary. Students are required to attend a listening laboratory session once each week.
Prerequisites: None. No lab fee charged.

**1701 Introduction to Data Processing 3-2-4**
This course is designed to provide first-term students with an overview of Data Processing. Terminology and concepts for hardware and software are introduced. Current issues and future trends are discussed. Classroom concepts will be reinforced with lab exercises.
Prerequisites: None. Lab fee charged.

**1702 Introduction to Structured BASIC Programming 2-3-3**
This course is designed to teach the student BASIC Programming using Structured Programming techniques. The concepts of modules and cohesiveness are stressed, and business applications are used as class problems.
Prerequisites: High school typing or 3001. Corequisites: 1701, 1721. Lab fee charged.

**1703 Introduction to Program Design 3-0-3**
The course is designed to introduce students to the basic elements of program design. Emphasis is on flowcharting and pseudocode. Basic program functions of business applications are discussed and assignments will be typical business problems. This course does not substitute for 1721.
Prerequisites: None. Corequisites: 1701. No lab fee charged.

**1711 Introduction to Computer Operations 2-3-3**
Instruction is in the operational function of the key-operated equipment and introduction to computer operations. Laboratory work will reinforce these principles.
Prerequisites: High school typing or 3001. Lab fee charged.

**1721 Programming Logic & Methods 2-3-3**
The course is designed to give the student initial exposure to programming logic methods and programming documentation. Emphasis is on structured approach to programming. Typical business applications are assigned as problems.
Prerequisites: None. Corequisites: 1701. No lab fee charged.

**1722 Introduction to Structured BASIC on the PC 2-3-3**
The full range of BASIC instructions are utilized in structured programming formats. The course will use Microsoft BASIC and/or Microsoft Quick BASIC to program disk and printer file assignments.
Prerequisites: Typing, 1701, 1721.Corequisites: 1701, 1721. Lab fee charged.

**1723 Assembler Language 1 2-4-4**
The first course in assembler coding techniques utilizing microcomputer assembler instructions. Program problems are assigned to utilize I/O processing, direct and indirect addressing, and peripheral equipment and table manipulation.
Prerequisites: 1721. Lab fee charged.

**1731 PC/MS-DOS 2-3-3**
This course covers introductory and advanced features of PC-DOS and MS-DOS Version 3.X including additional commands and utilities provided with the operating system. Emphasis on hands-on training. The course is intended for anyone supporting PC's or those with a hard disk system.
Prerequisites: None. Lab fee charged.

**1733 Advanced PC/MS DOS 2-3-3**
Advanced PC/MS DOS will continue programming batch files, using shells/menus including "windows" and multiprogramming on the PC. Upgrading the PC will be covered, specifically determining upgrade specifications and installing/configuring the PC.
Prerequisites: 1701,1721, 1731. Lab fee charged.

**1739 Operating Systems 2-3-3**
The standard functions of supervisory routines, including introduction to: run control, I/0 control, multi-programming and service routines, are discussed and explained. Job control languages are introduced with exercises.
Prerequisites: "C" or better in one programming class and 1701. Lab fee charged.

**1740 Operating Systems 1** **2-3-3**
Designed for those students who have elected the Data Management program. Greater emphasis is placed on the functions of an operating system in this program. The student is required to demonstrate advanced techniques in operating a computer under Operating Systems.
Prerequisites: "C" or better in 1731. Lab fee charged.

**1741 Operating Systems 2** **2-3-3**
Advanced operations concepts, cataloged procedures; generation of test files—OS, MFT, MVT, VSAM; concepts of real-time operating systems and time sharing.
Prerequisites: "C" or better in 1740. Lab fee charged.

**1742 Introduction to Structured COBOL** **3-7-6**
The COBOL - 85 standard language will be used in the structured environment. Assignments will use disk, printer and terminal data. Debugging techniques are emphasized.
Prerequisites: "C" or better in 1701 and 1721. Lab fee charged.

**1752 Real Time Systems & Data Communications** **2-3-3**
The Systems Analysis student will enter into man-machine interactions through a teleprocessing based on data processing system. Topics will include tele-communications hardware and the appropriate (related) programming languages. Emphasis will be placed on the current timesharing language(s). Also stressed will be problem-solving techniques requiring the use of remote terminals, inquiry-response techniques, and time-sharing techniques.
Prerequisites: "C" or better in 1762. Lab fee charged.

**1754 Data Communications 1** **2-3-3**
The course is designed to give the student an understanding of the scope of business data communications. It will also explain basic terminology and concepts that apply to the operation and design data communications systems and to provide a logical approach to recognizing communication problems.
Prerequisites: "C" or better in 1701 or 1850. Lab fee charged.

**1761 Introduction to RPG 2** **3-6-5**
Beginning level course for the programming major student. Topics covered include processing of sequential files and generating typical business reports.
Prerequisites: "C" or better in 1701 and 1721. Lab fee charged.

**1762 Advanced Structured COBOL** **3-7-5**
Advanced COBOL techniques using randomly processed disc files. The student is taught to access indexed-sequential and direct-access files using keys and algorithms.
Prerequisites: "C" or better in 1742. Lab fee charged.

**1763 Systems Analysis & Design** **2-3-3**
A complete methodology of analyzing and designing computer oriented information processing systems is presented. Instruction and exercises cover data collecting, data structure, file structure and design, input editing and volume consideration, processing requirements, output formats, real time and time sharing systems.
Prerequisites: 15 credit hours of 1700 courses, including 1701 and 1721. No lab fee charged.

**1764 Data Communications 2** **3-2-4**
The course will focus on area communication systems. Students will work with communications equipment, test equipment and software. Labs will include analysis of protocols, construction of transmission cables and connectors, and troubleshooting activities.
Prerequisites: 1702, 1754, 7701. Corequisites: 7702. Lab fee charged.

**1769 Programming Data Base Applications** **2-3-3**
The programmer will be introduced to the concepts of Data Base Management Systems, both Hierarchical and Relational. Problems will be assigned using the cobol database implementation.
Prerequisites: 1762. Lab fee charged.

**1771 Data Base Management Systems** **2-3-3**
Manipulating data to extract required information through the use of external database managers. Topics include designing the database, creating it, and accessing it. Methods of access will include interactive manipulation, user-written procedures, and access through other languages.
Prerequisites: 15 credit hours in technical courses including 1701 and 1721. Lab fee charged.

**1774 Telecommunications** **3-2-4**
This course will focus on business telephone systems, equipment, services and management. Topics to be covered will include PBX, Digital IBX, ISDN, SDN, DDS, ACD T-1, Wats, Megacomm, tariffs, wire distribution systems, documentation, and integration between computers and phone systems. Course work will include case histories and case studies.
Prerequisites: 1754, 7701. No lab fee charged.

**1781 Advanced RPG 2** **2-3-3**
A business application oriented course for the business data processing student with emphasis on advanced programming techniques using RPG II. Topics include table handling, ISAM and file handling.
Prerequisites: "C" or better in 1761. Lab fee charged.

**1784 Networking** **3-2-4**
The course is designed to present the methodologies of data transmission and networks, highlighting software and data bases. The details of physical, electrical and procedural communication system interfaces will be discussed. Network planning and management guidelines will be used to accomplish laboratory projects.
Prerequisites: 1754, 7701. Corequisites: 1731. Lab fee charged.

**1790 CICS - Online Applications Programming** **2-3-3**
The Customer Information Control System (CICS) is a software product which does high volume transaction control to promote higher productivity for the company. Students will be introduced to: File control; terminal control; transient data control; temporary storage control; intercommunication; internal and task control; testing/problem determination; internal and task control; testing/problem determination; internal control; and additional BMS topics. In-depth discussions on CICS components, and VSAM file browsing using base and alternate indexes. Learning will be reinforced by lab problems. done on the classroom system.
Prerequisites: CICS-Command Level or significant COBOL Programming experience.

**1791 CICS - Additional Topics** **2-3-3**
The Customer Information Control System (CICS) is a software product which does high colume transaction control to promote higher productivity for the company. Students are introduced to: CICS environment; bringing up/shutting down CICS; journaling; discussion of CICS tables; initialization/termination; local IMS; using control blocks for run-time information; relationship between CICS and DB2. Learning is reinforced by lab problems done on the classroom system.
Prerequisites:: 6 cr. hrs. Oper. Systems courses or 2 yrs Opn's. experience

**1792 CICS - Command Level Online Programming 2-3-3**
The Customer Information Control System (CICS) is a software product which does high volume, general purpose transaction processing for the organization. Students will be introduced to: CICS environment; command level interface; pseudo-conversational transaction design; basic mapping support; Link and XCTL commands; File inquiry and update transactions. Learning is reinforced by laboratory problems done on the classroom system.
Prerequisites:: 1762 or COBOL Programming experience.

**1797 Current Topics Seminar 2-3-3**
Current topics seminar has many applications to the computer science/data processing field. Course content will be initiated by the instructor and could include but will not be limited to CICS, COBOL 2, Windows, Netware, DB2, DL1, IMS and others. The topics covered will draw on knowledge gained from existing 17XX courses and focus on state-of-the-art systems, software, and issues. Learning will be reinforced by practical computer laboratory problem solving techniques.
Prerequisites: 20 credit hours in programming courses. Lab fee charged.

**1804 Risk & Insurance 3-0-3**
The concept of risk in the business enterprise, the need for insurance protection against risks in area of property and liability, casualty, fire, life and health. Fundamentals of insurance contracts and selection of insurers.
Prerequisites: None. No lab fee charged.

**1810 Principles of Sales 3-0-3**
Analysis of the general principles and techniques of effective salesmanship. Principles and problems that include background information a salesman needs, and analysis of the selling process.
Prerequisites: None. No lab fee charged.

**1817 Industrial Purchasing 3-0-3**
Analysis of buyer behavior in terms of the way a company views the market. Review techniques which influence institutional buyers, industrial buyers, the purchasing agent and consumers. Review difference in department buyer and purchasing agent.
Prerequisites: 1846, 1847, 1813. No lab fee charged.

**1818 Advanced Purchasing 3-0-3**
A detailed study of purchasing's role in the overall operation of company activities. Examine relationships between purchasing and other company departments.
Prerequisites: 1817. No lab fee charged.

**1819 Contemporary Purchasing Issues 2-2-3**
Current purchasing trends, market cost and value analysis, buying decisions. Course will incorporate use of microcomputers.
Prerequisites: 1817, 1818, 1850. Lab fee charged.

**1823 Business Law 1 3-0-3**
Treatment of fundamental principles of business law, including contracts, negotiable instruments, and agencies.
Prerequisites: None. No lab fee charged.

**1824 Business Law 2 3-0-3**
A continuation of Business Law 1 with a treatment of government regulations, trust, and insurance.
Prerequisites: 1823. No lab fee charged.

**1825 Hotel Law 3-0-3**
A study of the fundamental principles of hotel law concerned with the various public callings. Covers the essential laws for making responsible decisions in the complex and diverse operations of modern hotels, motels and restaurants.
Prerequisites: None. No lab fee charged.

**1826 Financial Law 3-0-3**
This course covers the study of the securities and exchange commission, regulations as they relate to the offering, and management of client investments.
Prerequisites: 1823. No lab fee charged.

**1832 Human Resource Management 3-0-3**
A broad overview of the traditional functions of a personnel office, such as job evaluation, recruitment, interviewing, training, employee and union relations, employee services, and of specific concepts concerning human relations and organizational behavior.
Prerequisites: 2926. No lab fee charged.

**1845 Principles of Retailing 3-0-3**
Introduces students to the field of retailing and provides the technical and theoretical knowledge necessary for retail mid-management employment. Case studies are introduced to give the students practical operating experiences.
Prerequisites: None. No lab fee charged.

**1850 Computerized Business Applications 3-2-4**
A course in Data Processing theory with an emphasis on business applications. Laboratory work will include the operation of personal computers, execution of application software, and use of results to increase productivity.
Prerequisites: Keyboarding knowledge or 3007. Lab fee charged.

**1851 Auditing 4-1-4**
Auditing techniques and procedures for manual and computer based accounting. Topics include review of internal control; preparation of audit programs, flowcharts and working papers; internal auditing.
Prerequisites: 2913. No lab fee charged.

**1860 Management Software for Professionals 2-2-3**
This course is designed to acquaint students with Symphony, a fully integrated software package. Students will be introduced to three of Symphony's five microcomputer software applications: spreadsheet, word processing, and data management.
Prerequisites: Basic microcomputer operations & keyboarding. Lab fee charged.

**1861 Electronic Spreadsheets (Lotus 1-2-3) 2-2-3**
Lotus Development Corps. 1-2-3 Application Software Package will be the primary topic discussed in this class. This software combines the benefits of an electronic spreadsheet, a graphics chart generator and a file manager in one integrated package.
Prerequisites: Keyboarding knowledge or 3007. Lab fee charged.

**1862 Advanced Electronic Spreadsheets 2-2-3**
This course teaches advanced concepts in spreadsheet applications utilizing LOTUS 1-2-3. The topics include macros, the command language, advanced data commands, advanced graph commands, transferring files, advanced functions, and LOTUS add-ins.
Prerequisites: 1861. Lab fee charged.

**1865 Advanced Smart 2-3-3**
Topic in this advanced course include macros, project processing, and module intergration.
Prerequisites: None. Lab fee charged.

**1866 Computer Literacy** **2-2-3**
This course gives the student an overview of business applications software. Students gain "hands on" experience with electronic spreadsheets, word processing, and data base management.
Prerequisites: None. No lab fee charged.

**1867 Word Processing** **2-2-3**
A "hands on" course in the basic operation and management of word processing. Topics include how to enter and format text, how to use the special math features, and how to build project files.
Prerequisites: None. No lab fee charged.

**1868 Spreadsheet** **2-2-3**
This "hands on" course acquaints students with the concept of electronic spreadsheets. Topics include how to build a spreadsheet, use the major spreadsheet manipulation commands, use the special mathematical functions, use project processing and design, and print graphs.

**1869 Data Manager** **2-2-3**
This "hands on" course acquaints students with he concept of data base management. This includes how to create a data base, set up data entry procedures, manipulate data, generate reports, and set up project files.
Prerequisites: None. No lab fee charged.

**1872 Offshore Sourcing** **3-0-3**
The purpose of this course is to help the student understand the planning and procedures necessary to participate in International Purchasing. Discussions include import/export activities, quotas and tariff regulations.
Prerequisites: 1817, 1818. No lab fee charged.

**1999 Special Problem Seminar** **Var-Var-Var**
Individual study and special projects pertaining to the particular technology that the student is enrolled in. Open to fourth and fifth term students, by special arrangement with the Coordinator and Division Dean.
Prerequisites: None. No lab fee charged.

**2100 Introduction to Biology** **3-2-4**
This is an introductory course to help prepare the student for further study in related areas. Basic Biological Principles and their application in the modern world will be stressed. Topics covered will be origin of life, classification, cells (anatomy and function) tissues, organs and organ systems, reproduction and development, Mendelian genetics, evolution and ecology.
Prerequisites: None. Lab fee charged.

**2200 Introduction to Chemistry** **4-2-5**
This is an introductory course that is designed to satisfy entrance requirements for related areas of study. The course stresses an integrated approach between lectures and laboratory experiments to form a sound basis for future study in more rigorous chemistry courses. Topics covered include properties, structure and chemical classification of matter, use of symbols, formulas and equations, chemical bonding, properties of bases, salts and solutions, naming of acids, bases and salts, radio-activity, and organic chemistry. (All students should be tested in advance of registration for basic math competency and if there is a need, suggested corequisite math courses are available.)
Prerequisites: 0024 or 1161. (Competency test may be waived.) Lab fee charged.

**2221 Technical Physics 1** **2-3-3**
The major emphasis will be placed on the theory of basic electricity, circuit building and analysis, and VOM instruments. The fundamental of analog and digital electrics are presented.
Prerequisites: None. Corequisites: 1161 or 1170. Lab fee charged.

**2222 Technical Physics 2** **2-3-3**
The topics of mechanics, pressure, density and heat will be examined. The treatment of mechanics with emphasis on kinematics and dynamics of moving objects, including rotational motion and machines. Heat with emphasis on temperature scales; expansion; energy; specific heat; latent heat; heat of combustion; and the gas laws.
Prerequisites: 2221. Lab fee charged.

**2223 Technical Physics 3** **2-3-3**
Topics to be examined include the structure of matter, the laws of thermodynamics, energy conversions, engines, ideal gases, properties of waves, doppler effect, electromagnetic waves, optics, and modern physics.
Prerequisites: 2221. Lab fee charged.

**2231 Fundamentals of Inorganic Chemistry** **3-2-4**
A course in college level general chemistry; for those interested in the structure and properties of matter, changes in matter, chemical bonding, chemical reactions, equilibrium.
Prerequisites: high school chemistry and/or 2200 within 3 years. Lab fee charged.

**2232 Fundamentals of Organic Chemistry** **3-2-4**
A course in college level organic chemistry as a foundation of biochemistry—carbon bonding; saturated, unsaturated aromatic hydrocarbons; alcohols; phenols; aldehydes; ketones; acids; amines.
Prerequisites: 2231 or 2200. Lab fee charged.

**2233 Fundamentals of Biochemistry** **3-2-4**
A course in college level biochemistry—carbohydrates, amino acids, proteins, lipids, vitamins, enzymes, metabolism body fluids.
Prerequisites: 2232 or equivalent. Lab fee charged.

**2236 Physiological Chemistry** **3-3-4**
An introduction to physiological chemistry for the health professional. Students will first consider basic concepts of pH, buffers, organic nomenclature and reactions. Then they will study carbohydrates, proteins, lipids and metabolic cycles.
Prerequisites: High School chemistry or 2200 (within 3 years). Lab fee charged.

**2241 College Physics 1** **3-2-4**
Measurement, units and conversions, linear measure, area and volume, velocity and acceleration, motion with a constant force, the gravitational field, projectile motion, energy and work, heat energy, temperature scales, specific heat, latent heat, heat transfer, radiation.
Prerequisites: High School Algebra or equivalent. Lab fee charged.

**2242 College Physics 2** **3-2-4**
Waves as carriers of energy, sound, light as a wave, index of refraction, fundamentals of optics, simple optical systems, diffraction, light as a photon, spectral analysis, the hydrogen atom, the photoelectric effect, the nucleus, mass defect and binding energy, fission and fusion, carbon 14 dating, types of decay, radiation units, and the biological effects of radiation.
Prerequisites: 2241. Lab fee charged.

**2244 Health Physics 1** **3-2-4**
Selected topics as applied to the allied health profession. Pressure, forces, volume, temperature and density; fundamental nuclear particles and applications of nuclear techniques both as diagnostic and therapeutic tools; fundamentals of basic electricity, including current, resistance, voltage, power, simple DC circuits, potentiometer, transformer, and simple amplifier circuits; simple schematics and basic components of various medical instruments.
Prerequisites: 1105. Lab fee charged.

**2245 Health Physics 2** **3-2-4**
Selected topics from those not covered in course number 2244.
Prerequisites: 2244. Lab fee charged.

**2263 Physical Science for Graphic Communications** **3-4-5**
This is a lab-oriented course concerning selected topics from chemistry and physics as they are applied to the graphic communications field.
Prerequisites: 1170. Lab fee charged.

**2270 Introduction to Physics** **2-3-3**
Fundamentals of physics; laboratory procedures; the controlled experiment; methods of measurement; techniques of data collection and analysis; interpretation of experimental results.
Prerequisites: None. Corequisites: 1161 or math assessment. Lab fee charged.

**2291 Physics 1** **3-2-4**
Measurement techniques; functions and scaling; kinematics; velocity vectors; motion near the earth; laws of force and motion; work; energy; power; impulse; momentum; machines; conservation of energy and momentum.
Corequisites: 1172 or 1191. Lab fee charged.

**2292 Physics 2** **3-2-4**
Translational equilibrium; center of gravity; moments of forces; force analysis of structures; beams; trusses; booms; shear; elasticity; friction as a force; structure of matter; density; pressure; temperature scales; expansion; molecular energy; specific heat; change of state; heat of combustion; heat energy.
Prerequisites: 2291, 1191 or 1172. Lab fee charged.

**2293 Physics 3** **3-2-4**
Electromagnetic radiation with emphasis on the wave nature; basic wave properties; the electromagnetic spectrum with emphasis on the visible region, refraction; fundamentals of geometric optics, simple optical instruments; diffraction; spectral analysis and color; vision, and the eye; the inverse square law and the nature of the fundamental forces.
Prerequisites: 2291, 1191 or 1172. Lab fee charged.

**2294 Physics 4** **3-2-4**
Relativity, and the relativistic changes in space, time, and mass; mechanics of the electron and its relationship to the field of electronics; electron energies, and their relationship to electromagnetic radiation; planck's radiation, the hydrogen atom; the compton effect, and other related atomic phenomena. The nucleus and its structure, mass defect, and binding energy; radioactivity and modes of decay; half-life, and carbon 14 dating, fission, fusion, reactors and power generation; the biological effects of nuclear radiation.
Prerequisites: 2291, 1192. Lab fee charged.

**2298 Workshops in Physics** **Var-Var-1-4**
Study of selected topics in physics designed to meet current needs. Content and emphasis varies from year-to-year.
Prerequisites: None. Lab fee Charged.

**2299 Special Studies-Science** **Var-Var-Var**
A personal academic pursuit related to the student's technical field of study mutually agreed upon by the student and supervising faculty member. Prior to registration, the plan of study must be approved by the Dean of the Division. (Grades S or U.)
Prerequisites: None. No lab fee charged.

**2501 Engine Fundamentals** **2-3-3**
Fundamental operating principles of the internal-combustion engine. Identifying various component parts, types of cylinder arrangements, valve locations, measurements and tolerances, cooling and lubricating systems. Tools used in diagnosis and repair will be included. (ie. leak detectors, torque wrenches, and micrometers).
Prerequisites: None. Corequisites: 2502, 2503. Lab fee charged.

**2502 Cylinder Head Rebuilding** **2-3-3**
Principles of cylinder head design, construction valve train locations and arrangements. Inspection and repair of various seats, camshafts, lifters, rocker arms, etc. Proper use of specialized hand and machine tools will be emphasized.
Prerequisites: None. Corequisites: 2501, 2503. Lab fee charged.

**2503 Engine Overhaul (Cylinder Block Assembly)** **2-3-3**
Internal-combustion engine cylinder block assembly repair and rebuilding. Cylinder bores, pistons, piston rings, connecting rods, crank shafts, and bearings will be studied. Emphasis on proper use of hand tools and special machine equipment included.
Prerequisites: None. Corequisites: 2501, 2502. Lab fee charged.

**2504 Ignition & Electrical Systems** **2-3-3**
Fundamentals of automotive electronics; construction operation and repair of the electrical system including batteries, ignition, starting, generating and accessory circuits.
Prerequisites: None. Corequisites: 2505, 2506. Lab fee charged.

**2505 Automotive Fuel Systems** **2-3-3**
Fundamental principles, operation and service of carbureted and fuel injected fuel delivery systems. Emission control systems with computer controls and various types of engine fuels included.
Prerequisites: None. Corequisites: 2504, 2506. Lab fee charged.

**2506 Engine Trouble Diagnosis** **2-3-3**
Advanced automotive electronics are provided for computer controlled mechanisms on which vehicles operate today. Including: distributorless ignition systems, fuel delivery systems, sensors, transistors and other electronic computers will be studied and repaired. Testing, etc., D.V.O.M., hand-held, roll-around, and engine dynamometer testers included.
Prerequisites: None. Corequisites: 2504, 2505. Lab fee charged.

**2507 Brake Systems** **2-3-3**
Principle of operation, diagnosis and repair of braking systems. Disc and drum service, machining operations, power assisted booster units, meter valving, proportion valving, and anti-lock brake units are incorporated in this course.
Prerequisites: None. Corequisites: 2508. Lab fee charged.

**2508 Steering, Suspension and Alignment** **2-3-3**
Suspension and steering systems principles, design, diagnosis and service of these units. From leaf and coil springs to torsion bars and active suspension from manuel to power to rack and pinon to 4 wheel alignment tires, wheels, balance plus shock absorbers including struts will studied.
Prerequisites: None. Corequisites: 2507. Lab fee charged.

**2509 Automatic Transmissions/Transaxles** **2-3-3**
Theory, operation, and service of automatic transmissions and transaxles. Laboratory experience includes diagnosis and overhaul of various manufacturers products. Live testing and repair of these units provides an understanding of two-speed, three-speed and four-speed automatic overdrive units with standard and lock up torque converters.
Prerequisites: None. Corequisites: 2510. Lab fee charged.

**2510 Manual Transmissions & Drive Line** **2-3-3**
Theory, operation and service of manual transmissions, clutchs, drive shafts, differential and axle assembles. Diagnosis and service of drive line vibrations, abnormal operations, and non-functional units will be studied.
Prerequisites: None. Corequisites: 2509. Lab fee charged.

**2511 A/C, Heating & Ventilating Systems** **2-3-3**
The theory and operation of heating, ventilating and air conditioning systems of the passenger cabin are studied. Laboratory experiences in diagnosis and repair procedures including computerized electronic controls. (ie. 4-seasons climate control).
Prerequisites: None. Corequisites: 2512, 2513. Lab fee charged.

**2512 Diagnostic Equipment for Tune-up** **2-3-3**
The use of all types of diagnostic equipment to assist the auto technician to achieve maximum engine performance will be undertaken. From simple volt, ohm, and amp tests, to full computer aided diagnosis. The use of compression, pressure and leakage gauges, chassis, dynamometer assisting load tests, and many more will be advanced during the lab time.
Prerequisites: 2501, 2506. Corequisites: 2511, 2512. Lab fee charged.

**2513 Engine Performance** **2-3-3**
Engine performance (Tune-up) is the process of bringing an engine up to its maximum capabilities through the use of specialized equipment and adjustments. Chassis refinements, electrical, and fuel delivery as well as most emission controls will be serviced. This course, combined with diagnostic equipment, is the culmination of all other technical courses.
Prerequisites: 2501, 2502, 2503, 2504, 2505, 2506. Corequisites: 2511, 2513. Lab fee charged.

**2514 Automotive Management** **2-3-3**
Organization, design, lay-out, administration and operation of an automobile dealership, trucking company or independent automotive operation as well as personnel, customer, and supervisory relations will be studied. Traffic flow, marketing, parts, sales and service selling are to be presented.
Prerequisites: 2925. No lab fee charged.

**2515 Machine & Hand Tool Lab** **2-3-3**
Principles and processes which underlie the use of hand tools, cutting tools, portable and permanent mounted equipment with their related accessories along with gauges and measuring devices. Emphasis is placed on developing sound trade judgements, safe work habits and correct work procedures.
Prerequisites: None. Corequisites: 2501, 2501, 2503. Lab fee charged.

**2516 Techniques of Welding** **2-3-3**
Fundamentals of understanding and skills in the use of arc, oxy-acetylene welding and cutting equipment is developed. Such typical operations as butt, lap, and fillet welds are performed. MIG/TIG will be studied and performed.
Prerequisites: None. Lab fee charged.

**2801 Food & Beverage Sanitation & Safety** **3-0-3**
A study of sanitation and safety and its importance in the Food Service Industry. This course provides information and methods to help a foodservice manager apply sanitation procedures to good handling functions. This course is the National Restaurant Association's Educational Institute certification course.
Prerequisites: None. No lab fee charged.

**2802 Food & Beverage Cost Control & Purchasing 1** **4-0-4**
An application of accounting theory to foodservice management. This course is offered to set up systems that can be implemented to control major costs in the foodservice industry.
Prerequisites: None. No lab fee charged.

**2803 Menu Production & Facilities Planning** **3-0-3**
Principles of Menu development: Menu Planning, Construction Constraints, Analysis and Pricing.
Prerequisites: None. No lab fee charged.

**2804 Food & Beverage Catering & Banquets** **3-0-3**
To give a comprehensive study of a hotel banquet operation and catering office.
Prerequisites: None. No Lab fee charged.

**2805 Food & Beverage Supervision** **3-0-3**
Encountering the problems of human resources while learning the elements of leadership and supervision.
Prerequisites: None. No lab fee charged.

**2806 Hospitality Beverage Management** **3-0-3**
Studies of actual situations, pricing and profit, beverage personnel job descriptions, terms, merchandising, liquor laws in relation to hospitality refreshments.
Prerequisites: None. No lab fee charged.

**2808 Food and Beverage Service & Lab 1** **1-4-2**
A practical application of service and kitchen duties in a full service restaurant.
Prerequisites: None. Lab fee charged.

**2811 Introduction to Hospitality Management** **3-0-3**
A study of the various departments within the framework of private clubs, hotels, and motels, available vocational opportunities, and a look at the future.
Prerequisites: None. No lab fee charged.

**2812 Hotel Front Office Procedures 1** **3-0-3**
Study of front office management and operation with emphasis on the use of various front office equipment, supplies, and procedures. Practical operating procedures in performing the hotel night audit including registration, rates, hotel racks posting charges and credits.
Prerequisites: None. No lab fee charged.

**2813 Hospitality Housekeeping** **3-0-3**
Studies in housekeeping and its administration, control of sup-

plies, sanitation, cleaning techniques, decoration, equipment and related subjects.
Prerequisites: None. No lab fee charged.

**2814 Hotel Maintenance Management 3-0-3**
A study of the basic terminology of energy, maintenance, and engineering. Explains, investigates, and provides basic decision-making models for energy, maintenance, and engineering situations.
Prerequisites: None. No lab fee charged.

**2817 Hotel Front Office Procedures 2 3-0-3**
A continuation of Hotel Front Office Procedures 1. Emphasis on statistics generated from the night audit.
Prerequisites: 2812. No lab fee charged.

**2818 Food & Beverage Cost Control & Purchasing 2 4-0-4**
An examination of food markets, food buyer and how they interact to develop a complete food and beverage purchasing system and to understand the problem a food and beverage purchaser faces. Topics covered are buying, receiving, storing, issuing and transfers, inventories, and cost determination.
Prerequisites: 2802. No lab fee charged.

**2821 Hospitality Sales & Marketing 3-0-3**
Establishing a sales department and sales personnel for the hotel-motel-restaurant industry, their purposes and goals. An analysis of your prospects, competition, your company or organization and yourself.
Prerequisites: None. No lab fee charged.

**2822 Chef Basic Cookery 1 3-5-5**
Through lab and lecture, the student will gain a working knowledge of the following subjects: kitchen orientation, methods of cookery, soups, sauces, culinary terms with practical application in the lab. Salad preparation with interpretation of menus will also be covered.
Prerequisites: None. Lab fee charged.

**2823 Chef Basic Cookery 2 2-4-4**
Basic classical soups, salad making, basic meat, fish and poultry, basic baking, confectionery, menu planning.
Prerequisites: 2822, 2827. Lab fee charged.

**2824 Chef Advanced Cookery 1 2-3-3**
Through lab and lecture, you will gain a working knowledge of the following: classical soups, sauces, classical meat, poultry, fish dishes, garne manger, buffet work.
Prerequisites: 2822, 2823, 2827. Lab fee charged.

**2825 Pastry & Confectionary 4-8-6**
Through lab and lecture, you will gain a working knowledge of the following: pastry and confectionary for the hotel and restaurant industry, dessert menu planning, correct orientation and familiarization with the patisserie environment, all basic pastry preparations and apply them to classical dessert making.
Prerequisites: 2822, 2823, 2824. Lab fee charged.

**2826 Classical Cookery 2-4-3**
Using previous knowledge, cooking advanced menus and planning and coordinating them, refining the skills of a chef and testing standard recipes, final cooking test of a seven-hour demonstration and theory test (three hours).
Prerequisites: 2822, 2823, 2824, 2825, 2827. Lab fee charged.

**2827 Butchery & Fish Management 2-3-3**
Through lab and lecture, the student will gain a working knowledge of the identification of grades of meats and fish, the wholesale purchase and distribution of any products, cutting of meats and fish, and the sanitary storage of them.
Prerequisites: 2822. Lab fee charged.

**2828 Nutrition for Food Service 2-3-3**
Students will learn the characteristics of the major nutrient groups, their relationship to diet and health and the foods in which they are found. Students will apply these principles to menu planning, marketing, food purchasing, preparation and service activities.
Prerequisites: None. Lab fee charged.

**2830 Managing Quantity Food Production 2-4-3**
This course is designed to give the management student an overview of the principles of cooking, the use of commercial equipment, and the guidelines for proper service and merchandising of food.
Prerequisites: None. Lab fee charged.

**2900 Introduction to Accounting 4-0-4**
This course emphasizes reading strategies, vocabulary terms and math concepts for success in accounting courses. It covers the basic accounting equation, the accounting cycle and related terminology, as well as the income statement, the statement of owner's equity and the balance sheet.
Prerequisites: None. No lab fee charged.

**2901 Principles of Marketing 1 3-0-3**
Details the principles and functions of marketing. The essential concepts of competition, demand, and the structure of distribution. The roles of marketing management and the marketing executive are emphasized.
Prerequisites: None. No lab fee charged.

**2902 Principles of Marketing 2 3-0-3**
The analysis, interpretation, application, and forecasting of research findings in marketing management. The case study method is used in relating these techniques to actual marketing problems.
Prerequisites: 2901 or permission of coordinator. No lab fee charged.

**2903 Survey of Marketing 3-0-3**
An introductory course that covers the basic principles of marketing. This course is designed to provide a fundamental understanding of the economic and social forces which influence the marketing process.
Prerequisites: None. No lab fee charged.

**2905 Money & Banking 3-0-3**
The processes of modern banking, including capital, deposits, loans, investments, and reserves. Credit expansion and contraction. The operation of the Federal Reserve Systems.
Prerequisites: None. No lab fee charged.

**2911 Principles of Accounting 1 3-2-4**
Principles and practices of basic accounting, including journalizing, posting, adjusting accounts, preparing financial statements, cash and banking procedures, and a study of the uses of special journals with practical applications as they relate to each program.
Prerequisites: 3007 or keyboarding knowledge. Lab fee charged.

**2912 Principles of Accounting 2 3-2-4**
A continuation of Principles of Accounting 1. The uses of subsidiary ledgers, classified financial statements, and payroll

accounting and associated payroll tax returns are studied. Practical accounting problems as they relate to everyday business are discussed as part of daily class routines.
Prerequisites: 2911, 1850. Lab fee charged.

**2913 Principles of Accounting 3** **3-1-3**
The more advanced aspects of accounting principles are reviewed. Topics include: partnership, corporations, earnings per share, retained earnings, dividends, bonds and investments, working capital, financial position, and analysis of financial statements.
Prerequisites: 2912, 1850. No lab fee charged.

**2914 Cost Accounting 1** **3-0-3**
Nature and purpose of cost accounting. Accounting and control procedures for materials, labor and manufacturing overhead. Cost effects of fixed and variable costs. Predetermining departmental overhead rates.
Prerequisites: 2912. No lab fee charged.

**2915 Cost Accounting 2** **3-0-3**
Job order cost system and process cost system, standard cost accounting. Setting cost standards, variance analysis. Direct costing, accounting for scrap and spoilage. Managerial use of cost data.
Prerequisites: 2914. No lab fee charged.

**2917 Federal Taxation 1** **3-0-3**
A study of Federal Income Tax as it relates to the individual taxpayer. The course deals in general terms with the most common aspects of taxes as they relate to the individual and business.
Prerequisites: None. No lab fee charged.

**2918 Federal Taxation 2** **3-0-3**
A study of Federal Taxation dealing with advanced topics, partnerships and corporations.
Prerequisites: 2917. No lab fee charged.

**2919 Intermediate Accounting 1** **3-0-3**
Preparation and analysis of accounting statements; special problems in accounting for current, plant, investment, and intangible assets, for liabilities and for corporate net worth; and funds and reserves.
Prerequisites: 2913. No lab fee charged.

**2920 Intermediate Accounting 2** **3-0-3**
Advanced topics in accounting theory and practice dealing with corporations. Topics include retained earnings, earnings per share, accounting changes, changes in financial position and financial statement analysis.
Prerequisites: 2919. No lab fee charged.

**2921 Managerial Accounting** **3-0-3**
Determining cost and revenue relationships for management, managerial uses of quantitative techniques and financial statement analysis in managerial decision making.
Prerequisites: 2913. No lab fee charged.

**2923 Marketing Concepts & Applications** **3-0-3**
Advanced marketing concepts and applications using both a traditional lecture approach and microcomputer applications in order to better understand the scope of the marketing environment.
Prerequisites: 2901, 2902, 1850. No lab fee charged.

**2925 Business Principles** **3-0-3**
A study of the nature of business, forms of business ownership, production problems and financing, forecasting, budgeting, governmental regulation of business, business personnel practices, the security markets and financial news.
Prerequisites: None. No lab fee charged.

**2926 Principles of Management** **3-0-3**
Meaning, scope, and place of management functions; study of formal and informal organizational structures including line and staff relationships indicating authority and responsibility. Introduction to organization for management in government, business, institutions.
Prerequisites: None. No lab fee charged.

**2931 On-Site Property Management 1** **3-0-3**
Practical methods for successful management of property at the on-site level. This course encompasses management systems and philosophies, policies, property maintenance, merchandising, and renting, financial reporting, resident relations and legal concerns.
Prerequisites: None. No lab fee charged.

**2932 On-Site Property Management 2** **3-0-3**
Continuation of course #2931, practical methods for successful management of property at the on-site level. This course encompasses management planning, personnel and resident policies, accounting and budgeting, legal aspects, insurance, marketing, leasing and sales, maintenance management and energy conservation.
Prerequisites: 2931. No lab fee charged.

**2933 Executive Level Property Management** **3-0-3**
Techniques for successful management of property at the executive level. This course encompasses objectives of ownership, use of data and statistics, analysis of regions, neighborhoods and markets, cash flow projections and financial analysis, developing and managing apartments, offices, shopping centers, condominiums and cooperatives, and developing the management plan.
Prerequisites: None. No lab fee charged.

**2935 Property Management Case Study** **3-0-3**
A case study utilizing a property in the Cincinnati area on which the student will develop a complete management plan. The student is allowed to utilize in a real management situation all the techniques and skills of property management developed in course 2931, 2932, 2933, and 2934, and to apply them in the form of a management plan created by the student for a specific property.
Prerequisites: 2933 and 2934. No lab fee charged.

**2936 Institutional Property Management** **3-0-3**
Techniques for successful management of non-traditional housing. This course provides training in HUD housing, nursing home care, handicapped housing and those facilities providing services for people with special needs.
Prerequisites: 2933. No lab fee charged.

**2938 Principles of Production & Inventory Management 1** **3-0-3**
This is an introductory course designed to give an overview in the field of production and inventory management, along with the terms, definitions and basic practices. The course provides fundamental treatment of manufacturing principles regarding the history and objectives of production and inventory control, organizational structure, forecasting and production planning systems, and fundamentals of controlling inventories using the latest techniques.
Prerequisites: None. No lab fee charged.

**2939 Principles of Production & Inventory Management 2** **3-0-3**
This is a continuation of course #2938 designed to give an

overview in the field of production and inventory management, along with the terms, definitions and basic practices. The course provides fundamental treatment of manufacturing principles regarding Materials Requirements Planning (MRP), Master Production Scheduling (MPS), capacity and priority control, production activity control, purchasing and materials management, and information control.
Prerequisites: 2938. No lab fee charged.

**2940 Real Estate Sales** **3-0-3**
Listing real estate. The exclusive listing. Listing goals and aids. Classified advertising, Qualifying buyers. Financing showing the property. The purchase contract. Obtaining and presenting the offer. Creative salesmanship.
Prerequisites: 2951. No lab fee charged.

**2945 Residential Construction** **3-0-3**
This course is a "bricks and mortar" course for the nonconstructionist, topics covered will include site work and concrete; building structure to the roof; finishing trades and scheduling; cost estimating; and the lender and the appraiser.
Prerequisites: None. No lab fee charged.

**2951 Real Estate Principles & Practices** **3-0-3**
An introduction to real estate economics; principles of contracts, financing, brokerage, appraisal. This course is required by the state of Ohio prior to taking the sales license exam.
Prerequisites: None. No lab fee charged.

**2952 Real Estate Brokerage** **3-0-3**
Introduction to the operation of a real estate brokerage: office management; selecting, training, and retaining sales personnel; marketing and advertising; and expansion.
Prerequisites: 2951, 2953. No lab fee charged.

**2953 Real Estate Law** **3-0-3**
Law of agency as applied to real estate, law of fixtures, estates including leases. Conveyancing of real estate, the sales contract, the mortgage, deeds and recording. Real estate brokers and managers, license laws of Ohio. Zoning, cooperatives, and condominiums. This course is required by the state of Ohio prior to taking the sales license exam.
Prerequisites: None. No lab fee charged.

**2954 Real Estate Finance** **3-0-3**
Real Estate Finance is a prerequisite course to taking the Ohio Real Estate License Examination. Emphasis on Ohio real estate cycles, government influences and the secondary market; types of Ohio lenders, types of finance instruments, types of conventional and government financing (FHA/VA), an overview of the loan process from qualifying the buyer and property; loan application, documentation, underwriting, closing, servicing and possible foreclosure and state and federal regulation of real estate finance.
Prerequisites: 2951, 2953. No lab fee charged.

**2955 Real Estate Appraisal 1 - Residential** **3-0-3**
Methodology of appraising: residential property. Theory of appraisal techniques. The three basic approaches of appraising: market comparison, cost of replacement, and income capitalization. Required by the state of Ohio prior to taking the brokers license exam.
Prerequisites: 2951, 2952, 2953. No lab fee charged.

**2956 Real Estate Appraisal 2 - Income Producing Properties** **3-0-3**
Comprehensive analysis of theory and practical application of preparing an appraisal on investment property. Appraisal techniques unique in the area of income producing properties. A term case study project is assigned providing practical experience in utilizing the income approach.
Prerequisites: 2955. No lab fee charged.

**2957 Real Estate Seminar: Special Topics** **3-0-3**
Issues and problems facing the real estate industry. Case studies discussed.
Prerequisites: 2951, 2952, 2953, 2954, 2955, 2956. No lab fee charged.

**2959 Real Estate Appraisal 3** **3-0-3**
This course will give the student an understanding & experience of the mathematical problems in analyzing data to arrive at value estimates for income producing properties. Outlines details of the uniform standards of professional practices as set forth by the Appraisal Standards Board of the Appraisal Foundation. These standards govern the necessary procedures followed by appraisers in their work. This course is necessary to sit for the State of Ohio Residential & General Appraisal Certification exam.
Prerequisites: 2955, 2956.

**2960 Principles of Finance** **3-0-3**
Study of consumer finance, small business and large business finance, including scheduling, transporting and flow of goods.
Prerequisites: None. No lab fee charged.

**2961 Financial Planning** **3-0-3**
Effective financial planning is consumerism applied to your financial affairs. It involves coordinated, realistic planning in the areas of buying insurance, homes, and investment property, accumulating capital, retirement planning, estate planning, individual and investment tax planning.
Prerequisites: None. No lab fee charged.

**2962 Principles of Investments** **3-0-3**
Principles and techniques involved in selecting and managing a portfolio; including securities, stocks, bonds, etc., depending on the financial needs and resources of the client. Course covers the concepts involved with the sources and uses of investment funds.
Prerequisites: 2960. No lab fee charged.

**2963 Investment Tax** **3-0-3**
Course content will cover tax treatment of all savings and investment vehicles including IRA's and pension plans. Discussion will identify tax benefits of various investments including federal, state, city and personal property implications.
Prerequisites: None. No lab fee charged.

**2964 Real Estate Finance 2** **3-0-3**
This course is designed to provide an advanced study of the complete structure of Real Estate Finance. Dealing with cycles, sources of funds, our monetary system and government activities affecting real estate. A detailed study will be made of mortgage lending programs, regulations, loan processing and closing procedures; problem-solving abilities with a hands-on approach are developed through an examination of specific case studies. Our goal will be to enhance your awareness, in a practical sense of the mortgage lending industry which will accomplish increasing your professionalism and your potential for success in those areas of real estate finance which you are involved.
Prerequisites: 2954

**2970 Contemporary Management Concepts** **3-0-3**
Study of the Basic Management Theories, including Theory X,

Theory Y, Theory Z and Quality Circles Management. The course includes practical applications of these theories in current management situations.
Prerequisites: 2926, 1832. No lab fee charged.

**2971 Small Business Management 1** **3-0-3**
This is a beginning course in the ownership and operation of a small business, covering the areas of formation and start-up. The course also includes your basic sources of funding and financial management as well as location and layout.
Prerequisites: 2926. No lab fee charged.

**2972 Small Business Management 2** **3-0-3**
This is the second course in the ownership and operation of a small business, covering the elements of management and control. The course also includes marketing as well as legal implications and government regulations that affect a small business owner.
Prerequisites: 2971. No lab fee charged.

**2975 Business Management Seminar** **2-3-3**
An in-depth management course using the case study and simulation methods. The course covers the entire scope of management including all functional and decision making areas.
Prerequisites: 2970. Lab fee charged.

**2976 Principles of Banking** **3-0-3**
Designed to give the financial management student a working knowledge and analysis of the operations of commercial banks. The course investigates the techniques and principles employed by bank management in the performance of their many functions; reviews past banking laws and practices and confronts the volatile economic conditions and revised regulations.
Prerequisites: None. No lab fee charged.

**2980 Intro to International Business** **3-0-3**
This course is an overview of international business and the institutions which affect business today. The scope and challenges of international trade, concepts and theories, market entry strategies, cultural dynamics, business customs and practices, political environments, legal systems and international market techniques will be discussed.
Prerequisites: None. No lab fee charged.

**2981 International Marketing** **3-0-3**
This course is designed to make students aware of the various components of International Marketing. Covers determination of export potential, international market research, internationalization of products, pricing methods, market entry strategies, promotional techniques and long-term marketing planning.
Prerequisites: 2980. No lab fee charged.

**2982 International Banking & Finance** **3-0-3**
This course is designed to identify financial procedures & responsibilities of international bankers, buyers, and sellers; examine financing & collection alternatives, & provide an understanding of the rules & regulations governing international collections. Methods of checking the credit of potential customers.
Prerequisites: 2981. No lab fee charged.

**2983 International Orders Processing & Shipping** **3-0-3**
This course provides the skills necessary to perform all of the tasks required by the international order processing & shipping departments: inquiries, quotations, foreign purchase orders, bills of lading, country required documents; selecting forwarders, carriers, insurance; and the communication procedures necessary to accomplish inter-company coordination. This course will also cover the roles & responsibilities of all parties to the contract of carriage for shipments; reading & understanding trade, tariff, exchange regulations & restrictions.
Prerequisites: 2982. No lab fee charged.

**2985 Applied Transaction Analysis** **3-0-3**
This course is designed for students to practice their skills by applying the topical instruction of previous courses to the techniques used by trade professionals in the processing of actual international transactions. This course will also offer practice in dealing with the decision making process necessary to analyze & solve problems normally encountered in transactions by exporters, importers, freight forwarders, and carriers.
Prerequisites: 2983, 1553. No lab fee charged.

**3001 Typewriting 1** **2-3-3**
A beginning course in typewriting including keyboard mastery, machine parts, margins and centering. Designed to develop accurate typing skills. Grade of "C" is required to continue into 3002.
Prerequisites: Minimum grade of "C" required to continue into 3002.

**3002 Typewriting 2** **2-3-3**
Continuous review of keyboard and techniques; intensified drills on improvement of speed and accuracy; progress through personal documents, basic business communications, unbound reports and basic tabulations.
Prerequisites: 3001 with "C" or better. Lab fee charged.

**3003 Typewriting 3** **2-3-3**
The development of skills, knowledge, and techniques applicable to typewriting. Opportunity is provided for the student to experience situations in which problem solving is necessary. Advanced typing problems and techniques, knowledge and skills involved in production typewriting and composition are taught. Minimum grade of "C" required from 3002; minimum of "C" grade required to pass the course.
Prerequisites: 3002 with "C" or better. Lab fee charged.

**3004 Typewriting 4** **2-3-3**
Application of the basic processes of typewriting. The adaptation of job-analysis data to letter writing, manuscripts, forms, duplication, statistical tabulation, reports, legal documents, and rough draft material. Minimum passing grade of "C" is required.
Prerequisites: Minimum grade of "C" in Typewriting 3 or permission from chairperson. Lab fee charged.

**3006 Intermediate Typing: Skill Development** **2-3-3**
A typing course designed for those students who have had previous instruction on the typewriter and know the keyboard, but who have not achieved proficiency in speed and accuracy to continue on to Typewriting 2. The Cortez Peters system of diagnostic testing and analyzation is used to improve speed and accuracy.
Prerequisites: Keyboarding knowledge or permission of chairperson. Lab fee charged.

**3007 Introduction To Keyboarding** **3-0-3**
A keyboarding class designed for all Business Technologies students who do not have a basic keyboarding skill. This course emphasizes keyboarding on computers.
Prerequisites: None. Lab fee charged.

**3021 Office Procedures 1/Office Skills Development** **2-3-3**
An introduction to the training and development of personality qualities essential to the office worker and the development of

principles and procedures fundamental to basic office duties and activities.
Prerequisites: "C" grade required. Lab fee charged.

**3022 Machine Transcription and Proofreading 2-3-3**
An introduction to machine transcription and proofreading utilizing tapes, dictation equipment and personal computers. This course provides realistic learning experiences through language arts exercises and tape applications. Students are expected to improve skills in grammar and punctuation, input and formatting, speaking and listening, editing and decision making. Must complete course with grade of "C".
Prerequisites: Typing 1 and 3061 or word processing knowledge. Corequisites: 3035 Lab fee charged.

**3023 Advanced Machine Transcription and Dictation 2-3-3**
An integrated approach to machine transcription and dictation combining instruction in dictation/transcription with extensive instruction in English usage and grammar. Students learn how to operate dictation/transcription equipment efficiently and apply language usage and other skills to the production of all kinds of written communications. Course must be completed with the grade of "C".
Prerequisites: 3022 with "C" or better. Corequisites: 3035. Lab fee charged.

**3024 Office Procedures 3/Simulations & Applications 2-3-3**
Business information applicable to office employment. Emphasis on important responsibilities of the office worker pertaining to business communications, travel, meetings, reference and preparation of reports, including a continuation of the operations/applications of machine transcription emphasizing dictation methods, correct grammar, punctuation and spelling. Minimum passing grade of "C" required.
Prerequisites: 3021 and 3032 "C" grade required. No lab fee charged.

**3032 Office Procedures 2/Professional Development 2-3-3**
A continuation of training in office procedures and human relations principles with emphasis placed on oral and written office communications, negotiating, assertiveness, and professional development. Minimum grade of "C" required.
Prerequisites: Passed 3021 with "C" or better. Lab fee charged.

**3035 Essential Business Correspondence 2-3-3**
An intensive, competency-based business correspondence course that involves grammar, punctuation, proofreading, spelling, vocabulary building and office correspondence origination. An 80 percent competency level must be reached in order to pass this course.
Prerequisites: 0021, 0003, solid background in English grammar and punctuation. No Lab fee charged.

**3060 Introduction to Word/Information Processing 2-0-2**
This course will present a historical overview of the development of automatic recording and transcribing equipment to show why word processors are an asset to businesses.
Prerequisites: None. No lab fee charged.

**3061 Word Processing Applications-WordPerfect 1-4-3**
A course designed for students choosing a career in word information processing. Students will receive "hands-on," practical experience on the IBM Personal Computer using WordPerfect software. Successful completion of this course requires a grade of "C" or higher.
Prerequisites: Keyboarding knowledge or 3007. Lab fee charged.

**3062 Database/Spreadsheet Applications 1-4-3**
This course is designed to acquaint students with a database management tool which involves creating, sorting, and manipulating files within a data management environment. Students will also become acquainted with an electronic spreadsheet environment utilizing the IBM Personal Computer. The creation of database records (D-Base) and spreadsheet applications (Lotus 1-2-3) are designed to enable students to logically sequence computer operations.
Prerequisites: 3001, 1850 or permission of coordinator. Lab fee charged.

**3063 Advanced Word Processing 1-4-3**
An advanced course in WordPerfect 5.1 that includes a review of basics and advances into document comparison, columnar math features, spreadsheets, line and paragraph numbering, advanced printing features, macros, style creations, and office graphic and publications.
Prerequisites: 3061. Minimum grade of "C" required. Lab fee charged.

**3064 Business Graphics 1-4-3**
This course is designed to introduce the student to the basics of sound graphing theory and the exciting software tools for producing impressive and influential charts using a friendly, easy-to-understand windows environment. Software used will be Harvard Graphics and Windows 3.
Prerequisites: 3001. Lab fee charged.

**3065 Text Processing 1-4-3**
This course will instruct students in the theories and practical applications of the Microsoft Word software package using an IBM or IBM compatible microcomputer.
Prerequisites: 3001. Lab fee charged.

**3066 Integrated Information Processing 1-4-3**
Because integrated programs are commonly used in the business world today, this course will introduce students to the integrated computer program; namely, Microsoft Works. The student will combine five computer operations--DOS, word processing, database, spreadsheet and electronic communications--to effect an exchange and combination of documents and information from various applications more quickly and accurately.
Prerequisites: 3002. Lab fee charged.

**3067 Simulation: Integrated Information Processing 3-0-3**
This course is designed to increase the skill level of the student in managing information through the use of an integrated software package on the microcomputer. It is also designed to increase the student's awareness of information processing and information management concepts. Assignments and projects will be completed in an office simulation environment using integrated software for word processing, database, spreadsheets, graphics, and electronic mail.
Prerequisites: 3035, 3065. No lab fee charged.

**3068 Word Processing Applications-Multimate 1-4-3**
A course designed to train students in word processing using Multimate Advantage Software.
Prerequisites: 3001 or keyboarding knowledge. Lab fee charged.

**3070 Administrative Office Management 3-0-3**
An upper-level office management course which emphasizes management of the office environment, office employees, office systems, and office functions.
Prerequisites: 2926, 1832. No lab fee charged.

**3072 Data Entry Systems** **2-3-3**
This course is designed to give students a basic understanding of data entry with the knowledge and skills to effectively practice with a database management tool in a data management environment.
Prerequisites: High school typing or 3001. Lab fee charged.

**3080 Speedwriting 1** **2-3-3D**
designed for those students who have had no previous speedwriting training. Emphasis is on rapid reading of plate material, mastery of principles of theory, including brief forms. The student is introduced to writing speedwriting and transcribing on the typewriter from speedwriting notes. Minimum grade of "C" required to continue to 3081.
Prerequisites: 3001 or permission of the chairperson. Lab fee charged.

**3081 Shorthand: Speed Development** **2-3-3**
Designed for those students who have had previous speedwriting training and can transcribe within a 5 percent error allowance from shorthand notes dictated at the rate of 60 words per minute. The student is introduced to dictation from material which is not familiar. Emphasis is on speed development. Minimum grade of "C" required to continue to 3090.
Prerequisites: Minimum grade of "C" in 3080 or permission of chairperson. Lab fee charged.

**3084 Shorthand 1 - Gregg** **2-3-3**
Designed for those students who have had no previous shorthand training. Emphasis is on rapid reading of plate material and mastery of principles of theory, including brief forms. The student is introduced to writing shorthand and transcribing on the typewriter from shorthand notes.
Prerequisites: 3001 or permission of the coordinator. Lab fee charged.

**3085 Shorthand 2 - Gregg** **2-3-3**
A continuation of Shorthand 1, Gregg, and/or designed for those students who have had previous shorthand training who can pass a two-minute, 60 words per minute take. A continuation of principles from 3084 and an introduction to dictation from unfamiliar material. Emphasis is on speed development.
Prerequisites: Minimum grade of "C" in 3084 or permission of coordinator. Lab fee charged.

**3086 Shorthand 3 - Speedwriting/C21/Gregg** **2-3-3**
An advanced course designed for those students who have had previous Speedwriting, Century 21, or Gregg shorthand training. Emphasis is on speed development from both familiar and unfamiliar material.
Prerequisites: Minimum grade of "C" in 3081, 3083, or 3085 or permission of coordinator. Lab fee charged.

**3087 Transcription 1 - Speedwriting/C21/Gregg** **2-8-5**
A continuation of the study of Speedwriting, Century 21, and Gregg shorthand fundamentals and a development of transcription skill. Emphasis is on the development of mailable transcription, with a review of punctuation and spelling.
Prerequisites: Minimum grade of "C" in 3086 or 3089 or permission of coordinator. Lab fee charged.

**3088 Transcription 2 - Speedwriting/C21/Gregg** **2-8-5**
Continuation of 3087. Emphasis on mailable transcription. Integration of office-style dictation and the mailable letter to meet office standards.
Prerequisites: Minimum grade of "C" in 3087 or permission of coordinator. Lab fee charged.

**3090 Shorthand Transcription** **2-8-4**
A continuation of shorthand with emphasis placed on mailable transcription with a review of punctuation and spelling.
Prerequisites: "C" or better in 3081 or permission of coordinator. Lab fee charged.

**3091 Advanced Word Processing-WordPerfect** **2-2-3**
An advanced course in WordPerfect that includes a review of basics and advances into document comparison, columnar math features, spreadsheets, line and paragraph numbering, advanced printing features, macros, style creations, and office graphics and publication.
Prerequisites: 3061. Lab fee charged.

**3092 Word Processing with Desktop Publishing** **2-2-3**
This course is designed to give students already familiar with word processing another tool, desktop publishing with WordPerfect 5.1 to add the maximum professional look to all documents and to effectively use and practice these word processing/desktop publishing features and concepts.
Prerequisites: 3001, 3061, 3063.

**3094 Workshops in Business** **Var-0-Var**
Consideration and study of selected issues and topics in the business technologies area designed to meet current needs. Content and emphasis varies from year to year.
Prerequisites: None. Lab fee charged.

**3500 Orientation to Horticulture Occupations** **1-0-1**
An introduction to the various horticulture occupations. Various guest speakers will discuss benefits, working conditions, abilities needed, and job levels within the horticulture industries.
Prerequisites: None. No lab fee charged.

**3501 Soils and Plant Nutrition** **3-0-3**
A basic course dealing with the formation and physical chemical and biological properties which affect plant growth.
Prerequisites: 2200 or 2209. No lab fee charged.

**3502 Horticulture Science** **2-2-3**
To provide a basic understanding of plant classification, structures, physiology, development, and the environmental conditions which effect plant growth.
Prerequisites: None. Lab fee charged.

**3504 Woody Plant Materials 1** **2-3-3**
The study of woody plants primarily grown by nurseries and found in the landscape and secondarily found in naturalized settings of Ohio. The deciduous and evergreen trees, shrubs, and vines will be studied with emphasis on identifying features, cultures, and landscape use. Weekly plant walk field trips are required.
Prerequisites: None. No lab fee charged.

**3505 Herbaceous Plant Materials** **2-2-3**
Classification, identification, and general cultural requirements of annuals, perennials, bulbs, and roses, commonly used in garden plantings.
Prerequisites: None. No lab fee charged.

**3506 Nursery Management** **2-2-3**
An introduction to techniques and practices used in the commercial production of herbaceous and woody plants. Plant propagation, field and container production, and marketing are emphasized.
Prerequisites: None. Lab fee charged.

**3507 Arboriculture** **3-2-3**
A study of the commercial arboriculture business. The diagnosis and treatment of tree ills, principles and techniques used to protect trees from disease and damage, pruning, removal, and climbing safety are emphasized. Field activities required.
Prerequisites: 3510, 3521, 3532. No lab fee charged.

**3508 Turfgrass Management** **2-3-3**
Principles and practices of identification, growth, uses, establishment, and pest control of turfgrass areas. Field trips required.
Prerequisites: 3510. No lab fee charged.

**3509 Principles of Landscape Design** **2-3-3**
A course in landscape development for residential sites. The design process, graphics, and lettering are emphasized. Drawing tools to be provided by student.
Prerequisites: None. Lab fee charged.

**3510 Small Engine Maintenance & Repair** **2-3-3**
A study of the operation and maintenance of equipment used in various horticultural enterprises, especially small gasoline engines; tractors, sprayers, chain saws, and various other equipment and hand tools are demonstrated with emphasis on safety and skill.
Prerequisites: None. Lab fee charged.

**3511 Landscape Construction** **1-5-3**
The techniques and use of materials for construction and installation of various landscape plantings and features such as decks, patios, trellises, benches, steps, walls, pools, fences, streams, and mounds. Use of hand and power tools is emphasized. Field trips required.
Prerequisites: 3509, 3510. Lab fee charged.

**3515 Woody Plant Materials 2** **2-3-3**
The study of woody plants primarily grown by nurseries and used in the landscape. Secondary consideration is given to novel plants found in arboretums and those plants in naturalized settings in the state of Ohio. The deciduous and evergreen trees, shrubs, and vines will be covered with emphasis on identifying features, culture, and landscape use. Weekly plant walk field trips required.
Prerequisites: None. No lab fee charged.

**3516 Herbaceous Plants 2** **2-2-3**
A continuation of Herbaceous Plants 1, with emphasis on annual and biennial flowers, and fall flowering perennials. Landscape use of herbaceous plants is studied and design and growth of flower borders is practiced.
Prerequisites: None. No lab fee charged.

**3518 Advanced Landscape Design** **2-4-3**
A continuation of the principles of Landscape Design, with progressively difficulty problems. Emphasis is placed on basic details of landscape architectural construction. Grading, construction, drainage irrigation factors are examined and utilized in plan development.
Prerequisites: 3509. Lab fee charged.

**3519 Landscape Contracts and Specifications** **3-0-3**
A study of planting design, and plan presentation. Typical plantings are examined in the field. Cost estimates, procedures, specifications and types of contracts are studied and developed.
Prerequisites: 3511. No lab fee charged.

**3520 Horticulture Lab** **0-3-1**
The lab will involve supervised practical experiences carried out in a structured environment. It will include the design, installation, and maintenance of various types of landscapes. This will enable each student to develop a skills level for each of the assigned tasks during the course. This lab will also include many experiences surrounding the use of various types and sizes of equipment that are commonly used in the Landscape Industry.
Prerequisites: None. No lab fee charged.

**3521 Entomology & Plant Pathology** **2-2-3**
Principles and practices in diagnosing and treating plant diseases and insect problems on various horticultural crops.
Prerequisites: None. Lab fee charged.

**3528 Greenhouse Management** **2-3-3**
Principles and practices involved in building and maintaining the greenhouse and structures controlling the environment within the greenhouse which is vital to plant growth.

**3530 Horticulture Seminar 1** **1-1-1**
Guest speakers and field trips dealing with current industry topics. "For first year students."
Prerequisites: None. No lab fee charged.

**3531 Horticulture Seminar 2** **1-1-1**
Guest speakers and field trips dealing with current industry topics. "For second year students."
Prerequisites: None. No lab fee charged.

**3532 Landscape Management** **2-3-3**
Principles and practices involved in the maintenance of ornamental plants including planting, fertilizing, pruning, pest control, and other related maintenance practices. Field project required.
Prerequisites: None. Lab fee charged.

**3533 Landscape Irrigation** **2-3-3**
A study of the design, construction, installation and use of landscape irrigation systems.
Prerequisites: 3501, 3508. Lab fee charged.

**3534 Interior Plantscaping** **2-2-3**
Identification, culture, and maintenance of tropical plants used in residential and commercial interior plantings. Field trips required.
Prerequisites: None. No lab fee charged.

**3535 Woody Plant Materials 3** **2-3-3**
A course emphasizing plants commercially available and widely used in the landscape and nursery industry. Special emphasis will be on cultivar distinctions and landscape use.
Prerequisites: 3504, 3515. No lab fee charged.

**3536 Turfgrass Culture** **2-2-3**
An in-depth look at the turf environment from establishment through renovation. Soil modification, selection of turf species and cultures, thatch management and fertilization practices will be covered. Field trips required.
Prerequisites: 3501, 3502, 3508. Lab fee charged.

**3537 Turfgrass Pests** **2-2-3**
A study of the insects, diseases, weeds and other pests that affect turf grasses. Diagnosis and management of the problems will be stressed. Field trips required.
Prerequisites: 3508, 3521. Lab fee charged.

**3538 Turfgrass Practices** **2-2-3**
The special concerns of athletic turf, golf course and commercial lawn care industry will be explored. A research project and field trips will be required.
Prerequisites: 3536, 3537. Lab fee charged.

**3539 Landscape Design 3** **2-3-3**
Advanced study in the application of design theory, landform design, and the use of water in garden design. The course will emphasize advanced graphic skills including section, elevation, isometric and perspective techniques an the application of computers in design. Course projects will also concentrate on client contact and sales presentation skills.
Prerequisites: 3511, 3518

**3540 Introduction to Floral Design** **2-3-3**
A basic course dealing with principles of making simple flower arrangements and corsages. Types of design, style, principle tools, equipment, materials, foliage and flower types are covered.
Prerequisites: None. Lab fee charged.

**3544 Advanced Floral Design** **2-3-3**
An advanced course in floral design, dealing with more complex designs such as wedding, hospital, church and funeral work.
Prerequisites: 3540. Lab fee charged.

**3545 Floriculture Production 3** **2-3-3**
The principles and practices involved in managing, scheduling, growing and marketing greenhouse crops. Crops covered will be those normally grown in this area during the winter, spring and early summer months.
Prerequisites: 3501, 3502, 3525, 3528. Lab fee charged.

**4000 Introduction to Medical Terminology** **2-2-3**
An introduction to a basic medical vocabulary through word analysis, definition, spelling and pronunciation of medical and surgical terms. Emphasis on prefixes, suffixes, word roots and their combining forms. Assist in the development of a basic working medical vocabulary. Includes practice in pronunciation and spelling.
Prerequisites: None. No lab fee charged.

**4001 Introduction to the Health Care System** **2-0-2**
This course will acquaint students with an overall view of the health care system. Topics stressed will include history, organization, areas of specialization, roles and relationships, education, medical ethics and patient rights.
Prerequisites: None. No lab fee charged.

**4002 Community Health Services** **2-0-2**
A survey of community structure, agencies and health care delivery within the community setting.
Prerequisites: None. No lab fee charged.

**4005 Chemistry for Health Technologies** **3-2-4**
This is a course designed to review the fundamental concepts of basic chemistry and provide an introduction to organic and biochemistry. Laboratory experiences will provide an opportunity for the student to perform related procedures.
Prerequisites: High school chemistry or equivalent. Lab fee charged.

**4007 Emergency Medical Procedures** **1-2-2**
An introduction to basic first aid including: emergency care to the sick and injured, safety awareness and habits and prevention and treatment of sudden illness or accidental injury.
Prerequisites: None. Lab fee charged.

**4009 General Microbiology** **3-3-4**
Fundamental microbiology including microbial cell structure, metabolism, growth requirements and ecology. An introduction to principles of immunology and control of microorganisms.
Prerequisites: High school biology and chemistry or equivalent. Lab fee charged.

**4010 Human Biology** **3-2-4**
An introduction to cell biology, genetics, anatomy and physiology. Fulfills high school biology requirement.
Lab fee charged.

**4014 Anatomy and Physiology 1** **3-2-4**
Structure and function of the human body. Topics discussed include anatomical terminology, physiological transport, the cell, tissue, skin, the skeletal system, and the muscular system. Laboratory includes dissection.
Prerequisites: High school chemistry and biology. Lab fee charged.

**4015 Anatomy and Physiology 2** **3-2-4**
Structure and function of the human body. Topics discussed include nervous system, special senses, endocrine system, blood, and the cardiovascular system. Laboratory includes dissection.
Prerequisites: 4014. Lab fee charged.

**4016 Anatomy and Physiology 3** **3-2-4**
Structure and function of the human body. Topics discussed include the respiratory system, gastro-intestinal system, metabolism, the renal system, fluids and electrolytes, acid-based balance, reproduction and the immune system. Laboratory includes dissection.
Prerequisites: 4015. Lab fee charged.

**4018 Pharmacology** **3-0-3**
Course content includes discussion of drug therapy, dealing with the pharmacokinetics, pharmacodynamics, pharmacotherapeutics and adverse drug reactions and drug interactions. Topics include principles, terminology, modes of administration and mechanism of action of the major drug groups.
Prerequisites: 4014 and 4015. Corequisites: 4016 (or equivalent) or permission of instructor. No lab fee charged.

**4020 Fundamentals of Pathophysiology** **5-0-5**
An introduction to basic disease processes including necrosis, inflammation, repair, developmental abnormalities, neoplasia, immune disorders and infectious disease. The pathogenesis of representative diseases in each category will be discussed.
Prerequisites: 4014, 4015, and 4016 (or equivalent) or permission of instructor. No lab fee charged.

**4023 Immunology** **3-0-3**
A study of structure and function of the immune system. Includes discussions of antigen, antibody, lymphocytes, serology complement, immune disease and transplant reactions.
Prerequisites: 4016 and 2236. No lab fee charged.

**4025 Kinesiology** **2-2-3**
A study of the movement of body parts stressing the relationship to rehabilitation therapy.
Prerequisites: 4014, 4015 or permission of instructor. Corequisite: 4613, 4623. No lab fee charged.

**4029 General Microbiology and Immunology 4-3-5**
Fundamental microbiology including microbial cell structure, metabolism, growth requirements and ecology, principles of immunology and control of microorganisms. A study of structure and function of the immune system. Includes discussions of antigen antibody, immune disease and transplant reactions.
Prerequisites: 4015. Lab fee charged.

**4030 Technology of Education for Health 1-3-2**
Principles and techniques for planning, designing, producing, implementing and evaluation and instructional program. For health occupations students.
Prerequisites: None. No lab fee charged.

**4031 Health Care Management 3-0-3**
Topics included in this course are management functions, organizational structure, line and staff relationships, position descriptions, job procedures, personnel evaluations, budgeting and general management techniques of health care institutions.
Prerequisites: Ten weeks of work experience in health care facility. No lab fee charged.

**4044 Integrated Science 4 3-2-4**
This course includes basic concepts of anatomy, physiology, pathology and pharmacology as they relate to the respiratory, digestive, renal, fluid homeostasis and reproductive systems.
Prerequisites: 4043. Lab fee charged.

**4050 Patient Care Skills 0-2-1**
Basic nursing principles including verbal and non-verbal communication, body mechanics, procedures for assisting patients to walk, patient positioning, general isolation procedures, use of restraints and vital signs. An introduction to services provided by the clinical lab is also presented.
Prerequisites: None. Lab fee charged.

**4061 Contemporary Health Care Issues 3-0-3**
This course will acquaint students with health care economics and new trends and issues in health care.
Prerequisites: None. No lab fee charged.

**4094 Workshops in Health Technologies 3-0-3**
Consideration and study of selected issues and topics in the health technologies area designed to meet current needs. Content and emphasis varies from year to year.
Prerequisites: None. No lab fee charged.

**4099 Special Topics in Immunology 10-0-1**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies. This course is approved for "S" and "U" grades.
Prerequisites: Varies. No lab fee charged.

**4100 Fundamentals of Nutrition 3-2-4**
A basic introduction to the science and art of nutrition. Includes fundamental study of the food nutrients, their digestion absorption, and metabolism; the relationship of nutrition to health maintenance, and the determination of nutritional needs of adults.
Prerequisites: Acceptance into Dietetic Technician Program. Corequisites: 2236. Lab fee charged.

**4102 Nutrition for the Life Cycle 3-2-4**
The study of the nutritional needs of the lifecycle from conception through maturity. Nutritional needs are directly correlated with normal growth patterns, taking into consideration the physiological, psychological and sociological changes significant to each age group.
Prerequisites: 4100. Corequisites: 4112. Lab fee charged.

**4104 Clinical Nutrition 1 3-2-4**
An introduction to Nutritional Therapy and Assessment. Course used a Holistic approach to the Nutritional treatment of illness, burns, and surgical disorders. Also included are nutritional treatment for bone disorders, rehabilitation, and the role of the CNS in food acceptance.
Prerequisites: 4102. Corequisites: 4113. Lab fee charged.

**4105 Introduction to Clinical Nutrition 2-2-3**
An introductory study of nutritional therapy as it relates to pathological states of the body systems. Basic nutritional assessment and counseling skills are also covered in this course.
Prerequisites: 4130. Corequisites: 4113. No lab fee charged.

**4106 Clinical Nutrition 2 3-2-4**
Nutritional therapy and assessment for endocrine, cardiovascular, and respiratory disorders. Also included is the role of the senses in food acceptance.
Prerequisites: None. Corequisites: 4114. No lab fee charged.

**4107 Clinical Nutrition 3 3-2-4**
Nutritional therapy and assessment for metabolic, gastro-intestinal, renal and immune disorders. The role of total parenteral nutrition and enteral tube feedings in nutritional therapy will be explored.
Prerequisites: None. Corequisites: 4115. Lab fee charged.

**4108 Community Nutrition 2-3-3**
A study of nutritional needs and assessment techniques within community wellness, and health maintenance programs. High risk groups such as infants, adolescents, pregnant and lactating women, and senior citizens are studied.
Prerequisites: 4107. Corequisites: 4116. Lab fee charged.

**4109 Dietetics Technician Seminar 2-0-2**
Course provides preparation for DTR examination and entry into the Dietetics profession. Students will be responsible for the preparation and presentation of a technical paper in Dietetics.
Prerequisites: Completion of all Dietetic Technician courses or in final term. No lab fee charged.

**4111 Introduction to Dietetics Technology 1-0-1**
Orientation to the field of nutrition and dietetics: roles, mission and relationship to the health care team.
Prerequisites: Acceptance into Dietetics program. Lab fee charged.

**4112 Dietetics Clinical Practice 1 0-9-3**
Nutrition care rotation in a health care facility parallel to didactics covered in Normal Nutrition.
Prerequisites: 4111, 4100. Corequisites: 4102. Lab fee charged.

**4113 Dietetics Clinical Practice 2 0-9-3**
Nutrition care rotation in a health care facility parallel to didactics covered in Nutrition in Human Growth & Development.
Prerequisites: None. Corequisites: 4104. No lab fee charged.

**4114 Dietetics Clinical Practice 3 0-9-3**
Nutrition care rotation in a health care facility parallel to didactics covered in Nutrition in Disease.
Prerequisites: 4113. Corequisites: 4106. Lab fee charged.

**4115 Dietetics Clinical Practice 4** **0-9-3**
Nutrition care rotation in a health care facility parallel to didactics covered in Diet Therapy.
Prerequisites: 4114. Corequisites: 4107. No lab fee charged.

**4116 Dietetics Directed Practice 6** **0-8-1**
Nutrition care rotation in a health care facility parallel to didactics covered in Dietetics Seminar.
Prerequisites: 4115. Corequisites: 4109. No lab fee charged.

**4117 Community Outreach Directed Practice** **0-5-1**
This directed practice provides the nutrition care dietetic technician student with home nutrition care delivery system experience. The student will be responsible for visiting, assessing, developing care plans and educating patients and nurses within the patients home under the guidance of a clinical instructor and the home care nursing staff.This course will be graded using: U - Unsatisfactory, and S - Satisfactory
Prerequisites: 4113. No lab fee charged.

**4120 Food Management 1** **2-6-4**
Course content covers basic techniques of food preparation and presentation. Topics include: menu planning, food composition, consumer equipment and food economics.
Prerequisites: Admission into DT Program. Lab fee charged.

**4121 Food Management 2** **2-3-3**
Course content covers preparation and evaluation of more complex food groups using appropriate procedures. Topics include: consumer kitchen layout, work efficiency, food presentation and food composition. Laboratory includes meal preparation and presentation for a small group.
Prerequisites: 4120. Lab fee charged.

**4122 Food Systems Management 1** **2-3-3**
This course serves as a basic introduction to the principles of health care food systems. Topics addressed are institutional menu planning recipe standardization, purchasing of supplies, inventory controls, equipment maintenance and management and supervision of quality food production and service.
Prerequisites: 4125. Lab fee charged.

**4124 Food Service Sanitation Certificate** **2-0-2**
This course includes all aspects of institutional food service sanitation for both the commercial and health care industries. Upon completion the student will receive a certificate approved by the Ohio Department of Health and one from the Education Foundation National Restaurant Association.
Prerequisites: None. No lab fee charged.

**4125 Quantity Food Production** **2-6-4**
A lecture/laboratory course in quantity food production. Including the following topics: identification and use of institutional equipment, use of standardized recipes, purchasing and inventory control.
Prerequisites: 4121. Lab fee charged.

**4129 Food Systems Management 2** **2-6-4**
Lecture content includes advanced principles of food service management as they relate to the Health Care Industry. Laboratory provides opportunity for student to rotate through all aspects of a food service program.
Prerequisites: 4122. Lab fee charged.

**4130 Introduction to Nutrition** **3-0-3**
This course serves as an introduction to nutrition for students with a minimal science background. The content includes basic nutrient composition and functions, food sources, nutritional impact on the various population groups and results of deficiencies or excesses. Energy requirements are calculated and body weights discussed. Menu planning for maximum nutritional status is studied and implemented. Legislation which impacts food and nutrition is included.
Prerequisites: None. No lab fee charged.

**4131 Developmental Nutrition** **2-0-2**
Nutritional science and its effect on human physiology with applications to all population groups. Nutrient composition, digestion absorption and metabolism for normal states are studied.
Prerequisites: None. No lab fee charged.

**4141 Dietary Manager's Orientation** **1-3-2**
This course is designed to orient the new student to the Dietary Manager's program and profession. Regulatory standards from federal, state and local agencies are studied along with accreditation requirements and how these standards impact on all institutions providing nutrition services. The Dietary Manager's role and interrelationships with other care providers is discussed along with post graduation affiliations with support organizations. Communication skills of all types are applied using client values for maximum effectiveness.
Prerequisites: Acceptance into DM Program. No lab fee charged.

**4142 Dietary Manager's Field Experience 1** **0-9-3**
This field experience will be directly supervised by a registered dietitian in various health care, child care, and school facilities. It will include basic applied techniques in food production, nutrition information, collection, and application of this information to various population groups.
Prerequisites: 4130, 4151, 4153. Lab fee charged.

**4143 Dietary Manager's Field Experience 2** **0-9-3**
This course is individualized for each student and completed in a health care institution. Food systems of all types, therapeutic nutrition and human relations is applied in a real work setting.
Prerequisites: 4142. Corequisites: 4154. No lab fee charged.

**4151 Food Production 1** **2-3-3**
This course acquaints the student with quality control factors and food evaluation standards and techniques for household and institutional food production. The course begins with appropriate and sanitary equipment usage followed by methods of food merchandising to maximize acceptability. Each food category studied includes composition, nutritional content, preparation principles for household and institutional production. Categories studied are seasonings, beverages, fruits and vegetables, cereals and breads and dairy products.
Prerequisites: None. Lab fee charged.

**4152 Food Production 2** **2-3-3**
This course continues the study of food principles, nutritive values and production methods begun in Food Production I. Household and institutional methods are used. Food categories studied include meat and meat alternatives, fats and oils, all batters and doughs plus other desserts. Efficient work flow and simplification principles will be stressed throughout the course.
Prerequisites: 4151. Lab fee charged.

**4153 Diet Therapy** **2-0-2**
This course introduces the student to some commonly used diet therapy issues applied to disease conditions. Nutrition information is identified and collected. Interview skills are practiced.
Prerequisites: 4130. No lab fee charged.

**4154 Dietary Food Systems** **3-0-3**
This course serves as an introduction to the principles of food systems. Topics addressed are institutional menu planning, recipe standardization, purchasing of supplies, inventory controls, equipment maintenance and management, and supervision of quality food production and service.
Prerequisites: 4151, 4152, 9310 (two terms). No lab fee charged.

**4155 Management of Human Resources** **3-0-3**
This course is designed to provide applied management skills for persons employed in food services. Various organizational structures and types of leadership are explored plus policy and procedure writing and all kinds of communication. The course covers practical knowledge needed for recruiting, hiring, training, and evaluating food service employees.
Prerequisites: 9310. No lab fee charged.

**4194 Workshops in Dietetics** **3-0-3**
Consideration and study of selected issues and topics in the dietetics area designed to meet current needs. Content and emphasis varies from year to year.
Prerequisites: None. No lab fee charged.

**4197 Lifesteps Weight Management** **2-0-2**
Lifesteps is a comprehensive weight management program that stresses the importance of diet, physical activity and behavior modification techniques for weight loss.
Lab fee charged.

**4199 Special Studies - Dietetics** **Var-Var-1-4**
A student initiated academic pursuit, mutually agree upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies. This course is approved for "S" and "U" grades.
Prerequisites: None. No lab fee charged.

**4200 Medical Office Practice 1** **2-3-3**
Course will include the following content areas: Medical Law & Ethics, Communication skills, team working relationships, career & professional characteristics and behavior. Students will begin working through Laboratory practice modules simulating office practices for performing administrative functions. Students work with an office automation system.
Prerequisites: 4214. No lab fee charged.

**4201 Medical Office Practice 2** **2-3-3**
Fundamentals of patient reception, appointment making, mail handling, telephone techniques, inventory procedures, care of equipment and supplies, medical-legal relationships of the medical office and the assistant's responsibility.
Prerequisites: 4200. Lab fee charged.

**4202 Clinical Procedures 1** **3-3-4**
Fundamentals of patient preparation, history taking, positioning, draping, taking and recording the vital signs, assisting the physician with the examinations, caring for the physician's bag, caring for the examination room before and after a patient.
Prerequisites: Acceptance into the Medical Assisting program. Lab fee charged.

**4203 Clinical Procedures 2** **3-3-4**
Course will include the following content areas: medications, sterile procedures, assisting in minor office surgeries, assisting in ob/gyn special examinations - pap smears, pelvics, proctology, etc.
Prerequisites: 4202. Lab fee charged.

**4204 Medical Laboratory Procedures 1** **3-3-4**
This course includes modular units in the following content areas: the use of basic laboratory equipment, specimen collection and hematology procedures, coagulation tests, blood group and rh typing and basic serology testing.
Prerequisites: High school biology, chemistry and math or permission of instructor. Lab fee charged.

**4205 Medical Laboratory Procedures 2** **3-3-4**
Continuation of Medical Procedures 1 with emphasis on urinalysis, including microscopics, microbiology, blood chemistry testing including glucose, cholesterol and BUN; and other diagnostic techniques such as electrocardiography, X-ray procedures, ultrasound, CAT scan, radionuclides and pulmonary function testing.
Prerequisites: 4204. Lab fee charged.

**4206 Medical Laboratory Procedures 3** **2-3-3**
Special diagnostic procedures and techniques including ECG interpretation, microbiology diagnostic techniques, ova and parasites, uses of standards and controls, troubleshooting x-ray procedures and techniques.
Prerequisites: 4205. Lab fee charged.

**4208 Medical Office Bookkeeping & Insurance** **3-6-5**
Course content will include principles of insurance, filing claims, using superbills, coding of claims (ICD-9-CM, CPT, HCPCS), electronic claims filing, principles of bookkeeping & billing, pegboard procedures.
Prerequisites: 4200, 4214. Lab fee charged.

**4209 Medical Assistant Seminar** **2-4-3**
In this course, student preparation for entry-level position in the professional field is stressed through competency testing, student seminar presentations, certification testing, and student-run clinics.
Prerequisites: Permission of instructor. Lab fee charged.

**4211 Medical Assisting Clinical Experience 1** **0-17-3**
Clinical practice in the physician's office, health centers and clinics, hospital out-patient departments, performing functions related to medical assisting. The student will spend an equal number of hours in clinical and administrative assisting. Students will not receive renumeration for these experiences.
Prerequisites: 4200, 4202, 4203, 4204, 4214, or permission of instructor. Lab fee charged.

**4212 Medical Assisting Clinical Experience 2** **0-17-3**
Clinical practice in the physician's office, health centers and clinics, hospital out-patient department, performing function related to medical assisting. The student will spend an equal number of hours in clinical and administrative assisting. Students will not receive remuneration for these experiences.
Prerequisites: 4208, 4201, 4211, or permission of instructor. No lab fee charged.

**4213 Medical Assisting Clinical Experience 3** **0-17-3**
Clinical practice in the physician's office, health centers and clinics, hospital out-patient departments, performing functions related to medical assisting. The student will spend an equal number of hours in clinical and administrative assisting. Students will not receive renumeration for these experiences.
Prerequisites: 4211, 4212 or permission of instructor. No lab fee charged.

**4214 Medical Office Computer Literacy** **1-3-2**
This course will cover information on computer software, hardware, and medical office applications. Students will learn com-

puter terminology and gain hands on experience using computers for word processing and in medical office applications.
Prerequisites: Typing - 25 wpm. Lab fee charged.

**4215 MA Applications** **2-3-3**
Review of theory and practice of medical assisting skills with competency testing. Discussions of resume preparation, conducting a job search, and interviewing. Includes preparation for the National Certification Exam.
Prerequisites: Completion of 4200, 4201, 4202, 4203, 4204, 4205, 4208, 4214.

**4224 Advanced Clinical Procedure** **2-3-3**
Course will include areas related to specialties and special patient concerns. Included will be information related to geriatrics, pediatrics, ophthalmology, orthopedics and ENT.
Prerequisites: 4203. Lab fee charged.

**4293 Certification Exam Review Workshop for Health Unit Coordinators** **3-0-3**
Examination review workshop is designed for entry level exam candidates and others who wish a review of health unit coordinator (clerk) practice and procedures. The course will feature lecture and discussion sessions regarding the national exam for unit coordinators and review test taking skills.
Prerequisites: None. No lab fee charged.

**4294 Workshops in Medical Assisting** **Var-0-1-4**
Consideration and study of selected issues and topics in the medical assisting area designed to meet current needs. Content and emphasis varies from year to year.
Prerequisites: None. No lab fee charged.

**4299 Special Studies - Medical Assisting** **Var-Var-1-4**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies. This course is approved for "S" and "U" grades.
Prerequisites: None. No lab fee charged.

**4301 Basic Laboratory Techniques** **2-3-3**
Introduction to the field of Medical Technology, includes a discussion of the role of the medical laboratory technician, study of the use and maintenance of laboratory equipment and basic laboratory techniques.
Prerequisites: Acceptance into tech courses of ML Program. Lab fee charged.

**4302 Basic Hematology & Urinalysis** **3-6-5**
Study of the theory and practice of hematology, coagulation, and urinalysis with emphasis on routine procedures in these areas.
Prerequisites: 4301. Lab fee charged.

**4304 Clinical Chemistry** **3-6-5**
Study of theory and procedures of routine manual and automated chemical laboratory procedures, their quality control and use of related instrumentation.
Prerequisites: 2231, 2236, 4301. Lab fee charged.

**4305 Blood Bank - Serology** **4-6-6**
A study of blood banking procedures and theory including the inheritance of blood group determinants and donor procedures. Also includes a study of serology. Performance of routine typing, crossmatching, antibody screening, cell panels and routine sero logic procedures.
Prerequisites: 4023, 4301. Lab fee charged.

**4306 Clinical Microbiology** **4-6-6**
Study of diagnostic microbiology including isolation, identification of bacteria, use of media, aerobic and anaerobic culturing techniques and preparation and staining of slides. Includes parasitology and mycology.
Prerequisites: 4009, 4301. Lab fee charged.

**4307 Hematology 2** **1-3-2**
Advanced hematology including study of anemia, leukemias, hemoglobinpathies and other blood dyscrasias. Instruction in the theory of coagulation and special hematologic procedures.
Prerequisites: 4302. Lab fee charged.

**4308 Immunochemistry** **1-3-2**
Discussion of immunochemical principles and techniques, including radial immunodiffusion, immunoelectrophoresis, enzyme-linked immunosorbent assay. Also included are special chemical analyses of body fluids such as cerebrospinal fluid and synovial fluid and therapeutic drug monitoring.
Prerequisites: 4023, 4304. Lab fee charged.

**4309 Medical Lab Seminar** **3-0-3**
Review of theory and practice of laboratory procedures. Discussion of current developments in medical laboratory science. Includes a registry-type comprehensive exam.
Prerequisites: Completion of all ML courses. No lab fee charged.

**4311 Clinical Applications 1 - Hematology and Urinalysis** **0-6-2**
Laboratory practice in routine hematology and urinalysis. The practicum will stress workload organization, record keeping, quality control, routine maintenance and troubleshooting of related instrumentations.
Prerequisites: 4302. Lab fee charged.

**4312 Clinical Applications 2 - Clinical Chemistry** **0-6-2**
Laboratory experience in performance of routine manual and automated procedures in clinical chemistry. Emphasis on workload organization, record keeping, quality control, routine maintenance and trouble-shooting for related instrumentation.
Prerequisites: 4304. Lab fee charged.

**4313 Clinical Applications 3 - Blood Bank-Serology** **0-6-2**
On campus laboratory practice in routine blood banking and serology. The practicum will stress workload organization, record keeping and quality control.
Prerequisites: 4305. Lab fee charged.

**4314 Clinical Applications 4 - Clinical Microbiology** **0-6-2**
On campus laboratory experience in routine clinical microbiology procedures. The practicum will stress workload organization, record keeping and quality control applied to the microbiology lab.
Prerequisites: 4306. Lab fee charged.

**4315 Laboratory Practicum 1** **0-12-4**
On campus laboratory experience in hematology, urinalysis, coagulation, and clinical chemistry. The practicum will stress workload organization, record keeping, quality control, routine maintenance, and trouble-shooting of related instrumentation. Approved for grade of S or U.
Prerequisites: 4302, 4304. Lab fee charged.

**4316 Laboratory Practicum 2** **0-12-4**
On campus laboratory experience in Blood Bank, Serology, and

Clinical Microbiology. The Practicum stresses workload organization, record keeping, and quality control. Approved for grade of S or U.
Prerequisites: 4305, 4306. Lab fee charged.

**4350 Orientation to the Clinical Lab 0-10-2**
Experience in the clinical laboratory, designed to familiarize the student with laboratory organization, specimen collection and handling with emphasis on phlebotomy experience.
Prerequisites: 4301, 4302, 4304. Lab fee charged.

**4351 Clinical Experience 1 1-24-4**
Students are assigned to a clinical laboratory where previously learned theories and procedures are applied in a patient-oriented atmosphere. Students are required to complete a minimum of 240 hours. This may necessitate makeup work to accommodate the scheduled holidays of the college. Students also attend seminar activities on campus, relating to the clinical experience.
Prerequisites: 4311. No lab fee charged.

**4352 Clinical Experience 2 1-24-4**
Students are assigned to the clinical laboratory where previously learned theories and procedures are applied in a patient-oriented atmosphere. Students are required to complete a minimum of 240 hours. This may necessitate makeup work to accommodate the scheduled holidays of the college. Students also attend seminar activities on campus, relating to the clinical experience.
Prerequisites: 4312. No lab fee charged.

**4353 Medical Laboratory Clinical Practice 1-40-6**
Students are assigned to the clinical laboratory where previously learned theories and procedures in hematology, urinalysis, and clinical chemistry are applied in a patient-oriented atmosphere. Students are required to complete a minimum of 400 hours. This may necessitate make-up work to accommodate scheduled college holidays. Approved for grade of S or U.
Prerequisites: 4311, 4312, 4350. No lab fee charged.

**4380 Introduction to Phlebotomy 3-0-3**
The course is designed to familiarize the student with health care issues directly related to the phlebotomist. An overview of health care organizations, legal aspects, professional development, as well as laboratory tests and their clinical significance are discussed.
Prerequisites: Acceptance into phlebotomy program. No lab fee charged.

**4390 Basic Phlebotomy 4-3-5**
This course introduces the student to blood drawing. Topics include terminology, anatomy and physiology appropriate to phlebotomy; techniques of vein puncture and capillary sampling; professional responsibilities.
Prerequisites: 4380. Lab fee charged.

**4391 Phlebotomy Clinical Practice 1-10-4**
Students are assigned to a local health care facility for practical experience in adult phlebotomy. Course requires 100 hours of clinical practice and attendance at scheduled seminars.
Prerequisites: 4390. Lab fee charged.

**4394 Interpretation of Laboratory Values 3-0-3**
Course 4394 will present many of the clinical laboratory tests. How samples are collected and analyzed will be outlined. Also discussed will be how the results are reported and what they may mean clinically to the health professional.
Prerequisites: None. No lab fee charged.

**4399 Special Studies - Medical Laboratory Var-Var-1-4**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies.
Prerequisites: None. No lab fee charged.

**4405 Orientation to Health Information 2-2-3**
Orientation to the health information field. History, philosophy and development of the profession. Course will include acquisition and maintenance of health care data. Students will be introduced to concepts and develop their knowledge in the areas of storage and retrieval systems, record retention and filing and numbering.
Prerequisites: Acceptance in Medical Record Program. No lab fee charged.

**4407 Health Record Content and Format 2-2-3**
Emphasis on the content of the medical record, importance, uses, forms, assembly and analysis. Indepth discussion on the standards from the Joint Commission on Accreditation of Health Care Organizations, Conditions of Participation and the American Osteopathic Association.
Prerequisites: None. No lab fee charged.

**4408 Advanced Medical Terminology 3-0-3**
This course will provide a continuation of the study of basic medical terminology. Terms emphasized in the areas of pathology, pharmacology, psychiatry, radiology, obstetrics, cancer medicine and other associate specialty terms.
Prerequisites: 4000. No lab fee charged.

**4409 Medical Record Seminar 3-0-3**
Review of medical record science courses, anatomy and physiology, and terminology in preparation for the accreditation examination.
Prerequisites: All technical courses or permission of instructor. No lab fee charged.

**4410 CPT Coding 2-2-3**
Introduction to ambulatory coding systems, with emphasis on Physicians' Current Procedural Terminology, Fourth Edition (CPT-4).
Prerequisites: 4000. Corequisites: None. No lab fee charged.

**4415 Legal Aspects of Health Information 3-0-3**
The medical record as a legal document; confidential communication; authorization for release of medical information; consent forms; preparation and presentation of medical record for courtroom use; the medical witness; legal responsibilities of hospital administration, employees and physicians; record management systems in other health care facilities including Medicare and Medicaid Laws and JCAHO standards for these facilities.
Prerequisites: 4405, 4407. No lab fee charged.

**4416 ICD-9-CM Coding 4-2-5**
Introduction of basic principles for coding classification system: ICD-9-CM.
Prerequisites: 4000, 4407, 4014, 4015. Lab fee charged.

**4417 Medical Statistics and Record Abstracting 3-2-4**
Statistical procedures including calculation of daily census, monthly census and percentages. Completion of monthly reports; analysis of reports including simple retrieval through abstracting of medical information from the patient record and learning the process of computer terminal input.
Prerequisites: 4407. Lab fee charged.

**4418 Tumor Registry, Utilization Review & Quality Assurance** **4-0-4**
Further understanding of Tumor Registry including completion of abstracts. Fundamentals of federal requirements for the Utilizations Review process; introduction to the quality assurance process as it relates to health care facilities.
Prerequisites: 4407, 4415.

**4419 Advanced ICD-9-CM Coding** **2-2-3**
Further understanding of coding classification according to ICD-9-CM. Includes an introduction to the Prospective Payment System, DRG coding procedures and the computer applications available to increase coding productivity. Provides an additional overview of other major coding classification systems such as SNDO, CPT and DSM-III.
Prerequisites: 4416 or 4445 & 4446 or permission of coordinator/instructor. Corequisites: 4020. No lab fee charged.

**4428 Medical Record Directed Practice 1** **0-16-3**
Practice in a medical record department performing the following: admission/discharge procedures; correspondence and release of medical information; assembly/analysis; record control and projects in health information.
Prerequisites: 4405, 4407, 4431, 4415. Lab fee charged.

**4429 Medical Record Directed Practice 2** **0-16-3**
Practice includes: Cancer Registry, Utilization Review, Quality Assurance; inpatient coding; abstracting of medical data for computer input and statistical reporting; special interest assignments and exposure to alternative specialities in the medical record field.
Prerequisites: 4416, 4417, 4419, 4428, 4410. Corequisites: 4418. No lab fee charged.

**4431 Health Information Department Management** **3-0-3**
Topics include management functions, organizational structure, line and staff relationships, position descriptions, job procedures, personnel evaluations, budgeting and specific issues in management of medical record departments.
Prerequisites: 4407, 4415, 4405. No lab fee charged.

**4432 Alternative Health Record Systems** **3-0-3**
Health Record content and format, regulatory and accreditation requirements, storage and retention needs, classification systems, data collection/reporting and quality issues in specialized patient care setting.
Prerequisites: 4405, 4407, 4415.

**4441 Medical Word Processing Operations 1** **1-2-2**
Basic medical word processing and text management operation, medical terminology and transcription related to diseases and operations encountered in transcription of history and physical examinations; radiology, operative, and pathology reports; discharge summaries.
Prerequisites: 1850, 4000. Lab fee charged.

**4442 Medical Word Processing Operations 2** **1-4-3**
Medical word processing and text management operation; medical terminology and transcription related to diseases and operations encountered in transcription of various types of medical specialty reports; autopsy reports.
Prerequisites: 4000, 4408, 4441. Lab fee charged.

**4445 Coding of Diagnoses, Operations and Procedures - Pt. 1** **3-2-4**
Introduction of basic principles for coding classification system: ICD-9-CM. This is the first half of course 4416.
Prerequisites: 4000, 4407, 4408 or permission of instructor. No lab fee charged.

**4446 Coding of Diagnoses, Operations and Procedures - Pt. 2** **2-3-3**
Introduction of basic principles for coding classification system: ICD-9-CM. This is the second half of course 4416.
Prerequisites: 4445. No lab fee charged.

**4470 Orientation to Health Unit Coordinating** **3-2-4**
This course will discuss the gradual evolution of Health Unit Coordinating, while orienting the student to the organization and structure of health care facilities. Legal and ethical issues of Health Unit Coordinating, patients admissions, transfers, and discharges are included.
Prerequisites: Acceptance into Unit Coordinator program. No lab fee charged.

**4471 Health Unit Coordinating 1 and Directed Practice** **2-4-4**
The course incorporates concepts presented in course number 4470 into the area of transcribing physician orders. The course will provide special emphasis on transcription of orders involving medications. Directed practice in a health care facility paralleled to didactics.
Prerequisites: 4470. Lab fee charged.

**4472 Health Unit Coordinating 2 and Directed Practice** **2-4-4**
This course is a continuation of course 4471, and focuses on skills involving transcription of orders for diagnostic and therapeutic procedures. Directed practice in a health care facility paralleled to didactics.
Prerequisites: 4471. Lab fee charged.

**4481 Health Unit Coordinating Practicum** **2-20-6**
This course is designed to be a learning experience in which the student will be involved in the application of principles learned in the classroom to actual performance of those principles in a health care facility. The clinical rotation is paralleled to didactics covered on campus.
Prerequisites: 1001, 1502, 3001, 4000, 4001, 4470, 4471, 4472. Lab fee charged.

**4494 Workshops in Medical Records** **3-0-3**
Consideration and study of selected issues and topics in the medical records area designed to meet current needs. Content and emphasis varies from year to year.
Prerequisites: None. Lab fee charged.

**4499 Special Studies - Medical Records** **Var-Var-1-4**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies. This course is approved for "S" and "U" grades.
Prerequisites: None. No lab fee charged.

**4505 Introduction to Surgery 1** **5-0-5**
This course will discuss the gradual evolution of modern day surgery, orient the student to the structure and organization of the hospital and operating room department and also introduce the student to the roles and functions of OR personnel. Aseptic techniques pertinent to the OR are analyzed. Preparation and storage of OR supplies and methods of sterilization of supplies are addressed. Preoperative preparation of the surgical patient is also discussed.

Prerequisites: Acceptance into Surgical Technology program or permission of the instructor. No lab fee charged.

**4506 Introduction to Surgery 2** **5-0-5**
This course will discuss potential postop complications common to any surgical procedure. Additional topics include general and regional anesthesia, complications of anesthesia, analysis of electrical hazards associated with the use of electrical OR equipment, introduction to the operating microscope, lasers, laparotomy instruments, wound healing and surgical drains, sutures, autosutures and surgical sponges and needles.
Prerequisites: 4505. No lab fee charged.

**4531 General Surgery 1** **5-0-5**
The course will introduce students to some of the basic general surgery operative procedures. Specific course content will include an understanding of the surgical anatomy of the abdominal wall, surgical incisions utilized by the surgeon to enter the abdominal cavity, hemostatic methods and basic steps of laparotomy wound exposure and wound closure. Surgical specimens obtained during the wound resection step of an operative procedure will also be discussed. Class discussions will then focus on an understanding of the following types of operative procedures: hernia procedures of the abdominal region, liver and biliary procedures, including procedures on the pancreas and spleen,gastric and related esophageal procedures.
Prerequisites: 4506. No lab fee charged.

**4532 General Surgery 2** **5-0-5**
This course is a continuation of general surgery operative procedures. Anorectal surgery, breast surgery, gynecological and obstetrical procedures will be discussed. The final segment of the course will begin a focus on surgical specialty procedures
Prerequisites: 4531. No lab fee charged.

**4533 Surgical Specialties 1** **5-0-5**
Course content will focus upon surgical specialty operative procedures. During the first five weeks of the course students will be introduced to opthalmic and genitourinary procedures. The remainder of the course will focus upon a discussion of orthopedic operative procedures.
Prerequisites: 4532 or permission of instructor. No lab fee charged.

**4534 Surgical Specialties 2** **5-0-5**
This course is a continuation of surgical specialty operative procedures. Course content includes a basic introduction to neurosurgery procedures, head and neck procedures, ear, nose and throat surgery, and oral surgery, including maxillofacial operative procedures.
Prerequisites: 4533. No lab fee charged.

**4535 Surgical Specialties 3** **5-0-5**
This final course of surgical specialty operative procedures will introduce the student to vascular procedures, thoracic and cardiac surgery. A discussion of pediatric surgery and trauma surgery will complete the course.
Prerequisites: 4534. No lab fee charged.

**4538 ST Seminar** **3-0-3**
The course consist of a comprehensive review of surgical technology.
Prerequisites: 4534. No lab fee charged.

**4541 ST Surgery Lab** **0-3-1**
Students will practice entry level technical skills in a modern, well-equipped simulated operating room on campus. Course content will include the following skills: patient transportation and transfer skills, operation of the surgical bed, patient positioning, operation of the electrosurgical unit and suction system and techniques utilized for dispensing sterile supplies to the operative field.
Prerequisites: Acceptance into Surgical Technology Program. Corequisites: 4505. Lab fee charged.

**4542 ST Clinical Experience 1** **1-5-3**
This course consists of a clinical and a lab component. The clinical component will provide students with the opportunity to apply previously learned circulator skills. Additional circulating skills will be learned in the lab component; patient skin prep, urinary catheterization. Students will then begin to focus on scrub role skills; surgical hand scrub, gowning and gloving. Students will also attend a one-hour weekly seminar, on campus, relating to the clinical experience.
Prerequisites: 4541. Lab fee charged.

**4543 ST Clinical Experience 2** **1-5-3**
Students will review circulating skills and then begin their curriculum focus on components of the scrub role. Course content will include second assisting functions, basic understanding of the four steps of an operative procedure and review of scrub, gowning, gloving procedures for actual surgical procedures. Students will then concentrate upon skills required for general surgery operative procedures: Instrumentation skills, Back Table set ups, including drugs, Mayo set ups, Laparotomy draping. Students will also attend a one hour weekly seminar, on campus, relating to the clinical experience.
Prerequisites: 4542. Lab fee charged.

**4544 ST Clinical Experience 3** **1-4-3**
Students will continue their focus on scrub skills during general surgery; Back Table and Mayo set ups and draping skills. Additional set up and draping skills for gynecological operative procedures will be learned. Students will also focus upon instrumentation skills required for each step of general surgery or gynecological operative procedures: wound exposure, wound mobilization, wound resection/reconstruction, wound closure. Students will also attend a one hour weekly seminar, on campus, relating to the clinical experience.
Prerequisites: 4543. Lab fee charged.

**4551 ST Clinical Practice 1** **1-24-5**
Students are assigned to an affiliate hospital where previously learned concepts and procedures are applied daily during operative procedures. Students will be required to demonstrate competency in scrub skills for a variety of gynecologic and general surgery procedures. Students will gain experience in endoscopic procedures. Students also attend a one hour weekly seminar, on-campus, relating to the field experience.
Prerequisites: 4533. No lab fee charged.

**4552 ST Clinical Practice 2** **1-24-5**
The course is a continuation of 4551. The course will focus on specialty operative procedures. Students will be rotated, as needed, to another affiliate hospital for OB experience. Students also attend a one hour weekly seminar, on-campus, relating to the field experience.
Prerequisites: 4551. No lab fee charged.

**4553 ST Clinical Practice 3** **1-24-5**
This course is a continuation of 4552 and continues to focus on surgical specialties. Students also attend a one hour weekly sem-

inar, on-campus, relating to the field experience.
Prerequisites: 4552. No lab fee charged.

**4580 Central Service Technician 1** **5-0-5**
This course is an overview of the Central Service Department and how it relates to the hospital in providing quality patient care. Students will be oriented to the hospital organizational structure, functions of the Central Service Department, and the responsibilities of the CSD technician. Course content includes microbiology,infection control, fundamentals of cleaning, basics of packaging, methods of sterilization and processing of surgical instruments. Medical terminology, basic anatomy and physiology will be introduced.
Prerequisites: Acceptance into Central Serv. Tech. program. Lab fee charged.

**4581 Central Service Technician 2** **5-0-5**
This course is a continuation of course 4580. Course content includes chemical disinfection, quality assurance, sterile storage, supply distribution, inventory management, equipment maintenance, and preparation of solutions. Additional topics include communication skills, work simplification and safety.
Prerequisites: 4580. Lab fee charged.

**4594 Fundamentals of Operating Room Practice** **3-2-4**
The course is designed for registered nurses, premed or med students, student nurses and surgeon's private scrub practitioners. Students will be provided with a theoretical basis for practice within the operating room setting. Students will also practice circulating and scrub skill in a modern, well-equipped simulated operating room on campus. Course content includes OR organization, legal aspects of practice, applications of aseptic techniques, general and regional anesthesia, surgical instruments, sutures, sponges and needles. Lab demonstrations include positioning, skin preps, ESU, scrub, gowning/gloving and table setups. Class sessions are held two evenings per week.
Prerequisites: Undergraduate course work in Anatomy/Physiology & Microbiology. Lab fee charged.

**4599 Special Studies - Surgical Technology** **Var-Var-1-4**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies. This course is approved for "S" and "U" grades.
Prerequisites: None. No lab fee charged.

**4600 Introduction to Occupational Therapy** **2-3-3**
Course surveys the history, philosophy, and development of the profession and its relationship to other Allied Health professions. The role and function of the Occupational Therapist and Occupational Therapy Assistant are defined; team approach is defined. The student is introduced to current practice areas of Occupational Therapy through observation in community Occupational Therapy settings.
Prerequisites: Acceptance into OTA program. No lab fee charged.

**4610 Theory of Occupational Therapy** **4-0-4**
Introduction to the developmental process of human performance; exploration of occupational tasks and roles from birth to death; instruction in age-appropriate balance of work, self-care, play/leisure; introduction to the impact of disease and function in human occupation; and development of the therapeutic use of self.
Prerequisites: 4600. No lab fee charged.

**4611 Occupational Therapy Concepts and Skills - Psychosocial** **3-0-3**
Introduction to the role of Occupational Therapy in the treatment of adults in a mental health setting; development of analysis and observational skills; use of self and group for therapeutic intervention and application of group process. Communication and interpersonal skills are developed. Documentation skills are developed.
Prerequisites: 1505, 1506, 4014, 4600, 4610. No lab fee charged.

**4612 Occupational Therapy Concepts and Skills - Infants and Children** **3-0-3**
Introduction to the role of Occupational Therapy in the treatment of children with physical and/or psychological dysfunction. Emphasis is on normal development and developmental disabilities and the selection of occupational performance age-appropriate treatment interventions. Documentation skills are developed. Team approach is explored.
Prerequisites: 4014, 4015, 4600, 4610, 4611. Corequisites: 1508. No lab fee charged.

**4613 Occupational Therapy Concepts and Skills - Phys Disabilities** **3-0-3**
Introduction to the role of Occupational Therapy in the treatment of adults with physical dysfunction to include acute care and rehabilitation. Emphasis is on understanding the treatment techniques utilized for various diagnoses. Treatment planning and implementation are developed along with documentation skills. Emphasis is on adolescence through adulthood.
Prerequisites: 4014, 4015, 4016, 4600, 4610, 4611, 4612. Corequisites: 4025. No lab fee charged.

**4614 Occupational Therapy Concepts and Skills - Gerontology** **3-0-3**
Introduction to the role of Occupational Therapy with the elderly population. Emphasis is on understanding the aging process and function pertinent to the elderly. The role of the OT assistant in non-traditional settings is explored.
Prerequisites: 1509, 4014, 4015, 4016, 4600, 4610, 4611, 4612, 4613. No lab fee charged.

**4620 Techniques of Occupational Therapy** **0-4-2**
Instruction in the use of crafts and activity as therapeutic modalities in treatment toward function. The concepts of activity analysis and therapeutic adaptations are emphasized. Problem-solving skills are developed.
Prerequisites: 1024, 4600. Lab fee charged.

**4621 Occupational Therapy Media - Psychosocial** **0-4-2**
Instruction in therapeutic intervention for adults in a mental health setting to include development of leadership skills necessary for a group setting, application of group process and use of purposeful activity and crafts as therapeutic tools. Emphasis is on adolescence through adulthood.
Prerequisites: 1024, 4600, 4620. Lab fee charged.

**4622 Therapeutic Media - Infants and Children** **0-4-2**
Instruction in therapeutic intervention with infants and children to include the use of play as a therapeutic tool, evaluation of other occupational performance skills, adaptive equipment, therapeutic techniques for positioning, handling, feeding, and basic developmental screening. Problem solving skills are emphasized.
Prerequisites: 4600, 4620, 4621. Lab fee charged.

**4623 Therapeutic Media for Occupational Therapy - Phys Disabilities** **0-4-2**
Instruction in therapeutic intervention for physically disabled

adults in acute care and rehabilitation settings to include techniques related to activities of daily living, therapeutic adaptations, orthotics, and use of adaptive/assistive equipment. Problem solving is emphasized.
Prerequisites: 4600, 4620, 4621, 4622. Lab fee charged.

**4624 Occupational Therapy Therapeutic Media - Gerontology** **0-4-2**
Instruction in therapeutic intervention for elderly individuals in a geriatric setting to include selection of role and age appropriate occupational performance, use of recreational/leisure activity, and application of group process. Occupational Therapy treatment approaches in non-traditional settings are explored.
Prerequisites: 4600, 4620, 4621, 4622, 4623. Lab fee charged.

**4625 Survey of Therapeutic Media for Occupational Therapy** **0-6-3**
Instruction in the use of various crafts and activities, cost analysis, and application in various clinical settings. Teaching and in-servicing skills are developed.
Prerequisites: 4621, 4622, 4623, 4624. Corequisites: 4631. Lab fee charged.

**4631 Occupational Therapy Fundamentals Practice** **2-0-2**
Issues concerning licensure, liability, professionalism, continuing education, and national registration are discussed. The relationships are explored and participation in the promotion of OT is discussed. Preparation is begun for Level 2 Field Work Experience.
Prerequisites: 4600, 4610. No lab fee charged.

**4651 Occupational Therapy Assisting Field Work 1 (Level 1)** **0-9-2**
Provides the opportunity for directed observation and participation in a community Occupational Therapy setting.
Prerequisites: 4600, 4610, 4620. Corequisites: 4007. Lab fee charged.

**4652 Occupational Therapy Assisting Field Work 2 (Level 1)** **0-9-2**
Provides the opportunity for directed observation and participation in a community Occupational Therapy setting.
Prerequisites: 4651, 4007, 4610, 4611, 4620, 4621. No lab fee charged.

**4653 Occupational Therapy Assisting Field Work 3 (Level 1)** **0-9-2**
Provides the opportunity for directed observation and participation in a community Occupational Therapy setting.
Prerequisites: 4007, 4651, 4652, 4610, 4611, 4612, 4620, 4621, 4622. No lab fee charged.

**4660 Occupational Therapy Assisting Field Work 4 (Level 2)** **2-32-6**
A clinical practicum in Occupational Therapy settings. An 8 week period of full time work experiences under the supervision of a registered occupational therapist provides the student with in-depth experience in the delivery of Occupational Therapy services to a variety of ages and conditions.
Prerequisites: Completion of all 46xx level courses and permission of instructor. Lab fee charged.

**4661 Occupational Therapy Assisting Field Work 5 (Level 2)** **2-32-6**
A clinical practicum in Occupational Therapy settings. An 8 week period of full time work experience under the supervision of a registered occupational therapist provides the student with in-depth experience in the delivery of Occupational Therapy service to a variety of ages and conditions.
Prerequisites: Completion of all 46xx level courses. No lab fee charged.

**4699 Special Studies - OTA** **Var-Var-1-4**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies. This course is approved for "S" and "U" grades.
Prerequisites: None. No lab fee charged.

**4700 Introduction to Respiratory Care** **1-0-1**
This introductory class gives the student an overall view of Respiratory Care. The subjects covered include the history of the profession, the curriculum and expectations, hospital organization, the role of the respiratory care practitioner and medical terminology and abbreviations used in Respiratory Care.
Prerequisites: Acceptance into Respiratory Therapy Program. No lab fee charged.

**4701 Respiratory Care Science 1** **4-3-2**
This course covers basic concepts of the atmosphere and all the gas laws as they relate to the field of Respiratory Care. Patient assessment, indication, hazards and administration of $O_2$ therapy, charting, policy and procedure manuals and infection control are covered in this class.
Prerequisites: 4014, 4700. Corequisites: 4020. Lab fee charged.

**4702 Respiratory Care Science 2** **2-3-3**
Respiratory procedures and equipment involved in humidity therapy, aerosol therapy, IPPB, chest physiotherapy and non-invasive monitoring. Pharmacology applicable to respiratory care procedures.
Prerequisites: 4711. Lab fee charged.

**4703 Respiratory Care Science 3** **5-2-6**
The course and lab cover the following areas as they pertain to Respiratory Care: X-Rays, infection control, IPPB machines, airway management, manual resuscitators, $0_2$ Analyzers and hyperbaric oxygenation, pharmacology pertaining to the field of Respiratory Care.
Prerequisites: 4702, 4711, 4015. Lab fee charged.

**4704 Respiratory Care Science 4** **3-3-4**
This course covers respiratory care of the ventilator patient. It includes a review of respiratory anatomy and physiology, assessment of the need for mechanical ventilation, classification and the use of most of the mechanical ventilators, the care of the patient on a mechanical ventilator, different modes of ventilation, and the discontinuance of mechanical ventilation. An in-depth discussion of acid base balance, $O_2$ transport and arterial blood gases will also be covered.
Prerequisites: 4703, 4712, 4718. Lab fee charged.

**4705 Respiratory Care Science 5** **3-2-4**
This course covers two areas of Respiratory Care, Pulmonary function testing at the bedside and in the laboratory and the care of the neonatal and pediatric patient.
Prerequisites: 4704, 4713, 4719. Lab fee charged.

**4706 Respiratory Care Science 6** **3-2-4**
This course is a review of cardiopulmonary anatomy and physiology. Care of the critically ill patient; the technique and signifi-

cance of hemodynamic monitoring techniques are also discussed.
Prerequisites: 4016, 4714, 4705. Lab fee charged.

**4707 Respiratory Care Science 7** **3-0-3**
In depth study of specialized areas of respiratory care including pulmonary rehab, pulmonary function testing, sleep studies, etc. These areas are subject to change each year to correspond to the changing job description of the respiratory therapist.
Prerequisites: 4706. Corequisites: 4715. Lab fee charged.

**4711 Respiratory Care Clinical Practice 1** **0-8-1**
An introduction to the hospital environment with practical application of 02 delivery systems, aerosol therapy, incentive spirmetry, patient assessment and positioning patients.
Prerequisites: 4701, 4720. Lab fee charged.

**4712 Respiratory Care Clinical Practice 2** **0-8-1**
Practical application of IPPB, humidity, aerosol therapy, chest physiotherapy and incentive spirometry.
Prerequisites: 4702, 4711. No lab fee charged.

**4713 Respiratory Care Clinical Practice 3** **0-24-4**
A continuation of 4712 plus Airway management, sterilization of equipment, introduction to ventilator care and the operating room.
Prerequisites: 4703, 4712, 4718. No lab fee charged.

**4714 Respiratory Care Clinical Practice 4** **0-32-5**
A clinical practicum in all phases of respiratory care with emphasis on patients requiring mechanical ventilation. Special rotations in pulmonary functions, equipment and pediatrics.
Prerequisites: 4713, 4719, 4704. No lab fee charged.

**4715 Respiratory Care Clinical Practice 5** **0-16-3**
Application of advanced respiratory care techniques. Emphasis on patients in the critical care setting. Specialized areas of practice are included. Use of computerized clinical simulations.
Prerequisites: 4706. Lab fee charged.

**4716 Respiratory Care Clinical Practice 6** **0-16-3**
A continuation of RT Clinical Practice V.
Prerequisites: 4707. No lab fee charged.

**4718 Pulmonary Diseases 1** **2-0-2**
In depth study of pulmonary disease, including pathophysiology, diagnosis and treatment. Emphasis placed on the role of respiratory therapy in the management of patients with pulmonary disease.
Prerequisites: 4702, 4711. No lab fee charged.

**4719 Pulmonary Diseases 2** **2-0-2**
Continuation of 4718.
Prerequisites: 4718, 4703, 4712. No lab fee charged.

**4720 Cardiopulmonary Anatomy & Physiology** **3-2-4**
Detailed anatomy and physiology of the respiratory and circulatory systems. Emphasis is placed on topics relevant to respiratory therapy; i.e., ventilation, diffusion, 02 and CO2 transport, red cell physiology and acid base balance.
Prerequisites: None. Lab fee charged.

**4723 Respiratory Care Seminar** **2-2-3**
Practice in NBRC testing techniques. Student presentation of research topic. Discussion of current issues relating to the respiratory care profession.
Prerequisites: 4707. Corequisites: 4716. Lab fee charged.

**4770 Basic Electrocardiography** **3-2-4**
An introduction to the principles of electrocardiography. Designed to acquaint students with cardiac anatomy and physiology, taking the ECG, patient preparation, recognizing and correcting distortion problems, mounting and filing of the ECG, special patients and other procedures.
Prerequisites: 4000 and acceptance into ECG program. Lab fee charged.

**4771 Arrhythmia Recognition** **3-0-3**
Advanced course in electrocardiography with emphasis on recognizing arrhythmias. Review of basic ECG principles and cardiac anatomy. Emphasis on measurement and calculation of ECG patterns for determining variations in heart patterns (Dyshrythmias).
Prerequisites: 4770 or experience with ECG. No lab fee charged.

**4780 Electrocardiography Clinical Practice** **0-20-2**
This course consists of clinical practice of electrocardiography in a local hospital. Students will be supervised by practicing ECG technicians employed by the hospital. Grade of Satisfactory or Unsatisfactory.
Prerequisites: 4770. Lab fee charged.

**4794 Workshops in Respiratory Therapy** **0-0-1-4**
Consideration and study of selected issues and topics in the respiratory therapy area designed to meet current needs. Content and emphasis varies from year-to-year.
Prerequisites: None. Lab fee charged.

**4795 Workshop in RT 2** **Var-Var-1-4**
Consideration and study of selected issues and topics in the respiratory therapy area designed to meet current needs. Content and emphasis varies from year to year.
Prerequisites: None. No lab fee charged.

**4909 Management of Client Care: NUR** **6-15-9**
This is the final course in the nursing program. Its focus is utilization of the nursing process as a framework for: Delivery of nursing care, effective interaction, decision making, and health promotion. The client focus is groups of adult inpatients and individual adults in acute physiological crisis. The practice focus is management of client groups on medical surgical units and individuals in critical care units. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 1521, 1024, 4907, 9372, 4001, 1001, 1002, and Current CPR certification. Corequisites: 1010 or prior credit for 1010. Lab fee charged.

**4911 Fundamentals of Nursing: NUR** **4-6-6**
his is the introductory course of the nursing program. It focuses on identifying and assessing the needs of individuals; identifying factors which influence communication with others; recognizing the roles of the Associate Degree Nurse in the scope of nursing practice; and assessing the health promoting behaviors of individuals. An overview of nursing process is presented with a focus on the assessment phase. The client focus is adults who may have self-care deficits. The practice focus is acquisition of skills in simulated laboratory experience and adult inpatient units. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisite: Acceptance into Nursing Program, current CPR certification and health records. Corequisites: 1505 and 4014 or prior credit. Lab fee charged.

**4912 Adult Nursing 1: NUR** **4-6-6**
This is the first of a series of three nursing courses which address common health problems of the adult. It focuses on: developing appropriate nursing diagnoses; utilizing appropriate communication techniques; demonstrating behaviors appropriate to the Associate degree nursing student; and planning nursing care based on nursing diagnoses as well as identified collaborative problems. The client focus is adults with selected common need interferences. The practice focus is simulated laboratory experiences and adult inpatient units. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4911, 1505, 4014, current CPR certification and health records. Corequisites: 4018 and 4015. Lab fee charged.

**4913 Gerontological Nursing: NUR** **4-6-6**
This nursing course addresses health problems associated with the gerontological client. It focuses on: utilizing a scientific and theoretical basis for care of the older adult; implementing communication techniques to support the gerontological client's expression of thoughts and feelings; using nursing process to organize, prioritize, and evaluate the plan of care; applying teaching-learning principles in gerontological settings; and utilizing the ANA Code for Nurses as a standard to measure client care. The client focus is simulated laboratory experiences, community and extended health care facility settings. A variety of teaching-learning experiences are utilized to assist in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4912, 4018, 4015, current CPR certification and health records. Corequisites: 1001, 4016 and 1521; or 4009 if taken after 4914. Lab fee charged.

**4914 Adult Nursing 2; NUR** **5-9-8**
This is the second nursing course which addresses additional common health problems of adults. It focuses on: using the nursing process as the organizing and prioritizing structure to implement care; selecting appropriate interaction techniques to establish nurse/client relationships; using the ANA Code of Nursing as a standard of care; evaluating mechanisms that promote continuity of care. The client focus is adults with selected common need interferences. The practice setting includes simulated laboratory experiences and adult inpatient units. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisite: 4912, 4018, 4915, current CPR certification and health records. Corequisites: 4009 or 1001, 4016 and 1521 if taken before 4913. Lab fee charged.

**4915 Mental Health Nursing; NUR** **5-6-7**
This nursing course addresses the needs of the emotionally distressed client. It focuses on: modifying nursing care; evaluating appropriate interactions utilized with individuals and groups; meeting standards of nursing care; and incorporating health promotion activities into the plan of care. Content includes the biological and psychosocial theories relating to mental illness. The client focus is the emotionally distressed adolescent and adult. The practice focus is primarily inpatient Mental Health facilities. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4913, 4914, 1001, 4016, 1521, 4009, current CPR certification and health records. Corequisites: 1024 and 1002. Lab fee charged.

**4916 Parent-Child Health Nursing; NUR** **7-12-11**
This course focuses on child bearing and child rearing families. It incorporates scientifie and theoretical bases for maternal and pediatric client care; promotes communication techniques for client and family self-understanding and growth; employs nursing process to deliver, prioritize and modify care; provides teaching experiences with family and group focus; plus, explores ethical dilemmas related to maternity or pediatric nursing. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4913, 4914, 1001, 4016, 1521, 4009, current CPR certification and health records. Corequisites: 1508. Lab fee charged.

**4917 Adult Nursing 3; NUR** **8-12-12**
This is the third of a series of three courses which stresses the needs of the adult client. The primary focus of this course is the comprehensive nursing care of two acutely ill adult clients. The course requires demonstration of the integration of concepts and principles in order to plan, prioritize and modify the nursing plan of care for clients. Problem solving for self-growth in nurse-client interactions is stressed. Client teaching is modified based upon client responses and outcomes. Advocacy to promote continuity of care is expected. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4915, 4916, 1024, 1002, 1508, current CPR certification and health records. Corequisites: 15XX. Lab fee charged.

**4919 Management of Client Care; NUR** **3-18-9**
This is the final course in the nursing program. Its focus is utilization of the nursing process as a framework for: delivery of nursing care, effective interaction, decision-making, and health promotion. It is a course to assist in acclimating the student to the real world work situation. The client focus is groups of adult inpatients. The practice focus is management of client groups on medical-surgical units. During this course the student is assisted to assume increasing accountability for delivered and delegated care. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4917, 15XX, current CPR certification and health records. Corequisites: 1010. Lab fee charged.

**4983 Gerontological Nursing; NURP** **1-1-2**
This mini course is specifically designed for the practicing LPN and corresponds to the 4913 NUR course. The majority of classroom content is learned through independent study guided by specific objectives. Selected content such as theories associated with aging are presented in class. Clinical lab experiences are provided to assist the LPN to attain new skills such as in-depth gerontological assessment and patient teaching.
Prerequisites: 4996 or 4911 and 4912, 4016, and 1521. Corequisites: 1010 and 1024. Lab fee charged.

**4984 Adult Nursing 2: NURP** **2-1-3**
This mini course is specifically designed for the practicing LPN and corresponds to the 4914 NUR course. The majority of classroom content is learned through independent study guided by specific objectives. Selected content related to adult client nursing is presented in class. Clinical lab experiences are provided to assist the LPN to attain new skills such as parenteral medication administration.
Prerequisites: 4983 or 4913, 1010 and 1024. Corequisites: 4009 and 1508. Lab fee charged.

**4985 Mental Health Nursing - NURP** **5-6-7**
This course is specifically designed for the practicing Licensed Practical Nurse. The majority of classroom content is learned through independent study using course materials and audiotapes. This nursing course addresses the needs of the emotionally distressed client. It focuses on: modifying nursing care; evaluating appropriate interactions utilized with individuals and groups; meeting standards of nursing care; and incorporating health promotion activities into the plan of care. Content includes the biological and psychosocial theories relating to mental illness. The client focus is the emotionally distressed adolescent and adult. The practice focus is primarily inpatient Mental Health facilities. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4984 or 4914, 4009, 1508, current CPR certification and health records. Corequisites: 15XX. Lab fee charged.

**4986 Parent-Child Health Nursing - NURP** **9-10-11**
This course is specifically designed for the practicing Licensed Practical Nurse. The majority of classroom content is learned through independent study using course materials and audio tapes. This course focuses on child bearing and child rearing families. It incorporates scientific and theoretical bases for maternal and pediatric client care; promotes communication techniques for client and family self-understanding and growth; employs nursing process to deliver, prioritize and modify care; provides teaching experiences with family and group focus; plus, explores ethical dilemmas related to maternity or pediatric nursing. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4984 or 4914, 4009, 1508, current CPR certification and health records. Lab fee charged.

**4988 Adult Nursing 3: NURP** **3-2-4**
This mini course is specifically designed for the practicing LPN and corresponds to the 4917 NUR course. The majority of classroom study is learned through independent study guided by specific objectives. Selected content related to advanced adult client nursing is presented in class. The clinical lab experience focuses on the comprehensive nursing care for acutely ill adult hospitalized clients.
Prerequisites: 4985 or 4915, 4986 or 4916, 15XX, current CPR certification and health records. Corequisites: 9372 or Advanced Standing Credit for work experience. Lab fee charged.

**4989 Management of Client Care: NURP** **3-18-9**
This course is specifically designed for the practicing Licensed Practical Nurse. The majority of classroom content is learned through independent study using course materials and audio tapes. This is the final course in the nursing program. Its focus is utilization of the nursing process as a framework for: delivery of nursing care, effective interaction, decision-making, and health promotion. It is a course to assist in acclimating the student to the real world work situation. The client focus is groups of adult inpatients. The practice focus is management of client groups in medical-surgical units. During this course the student is assisted to assume increasing accountability for delivered and delegated care. A variety of teaching-learning experiences are utilized to assist students in acquiring and applying classroom content to the clinical setting.
Prerequisites: 4988 or 4917, 9372 or Advanced Standing for work experience, current CPR certificate and health records. Lab fee charged.

**4996 Role Transition in Nursing: NURP** **3-1-4**
This course is specifically designed for the Licensed Practical Nurse entering the Associate Degree Nursing Program and serves practicing as an orientation to the program. It focuses on assisting the LPN to: Utilize the nursing process in planning nursing care for individuals with selected common need interferences; planning appropriate interactions with clients and health team members; developing behaviors appropriate to the roles of the Associate Degree Nurse; and planning health care promotion activities utilizing teaching-learning principles. Through the clinical laboratory component in this course, it is expected that written assignments reflect care given in the LPN's nursing practice. A variety of teaching-learning experiences is utilized to assist the student in acquiring and applying classroom content. Successful completion of this course results in the student obtaining credit for courses 4901 and 4902 plus serves as access to the nursing challenge system.
Prerequisites: 4014, 4015, 1001, 1002, 1505, 4018. Corequisites: 4016 and 1521. Lab fee charged.

**4997 Special Studies in Nursing 1** **1-17-1**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Assistant Dean/Nursing Program Chair.
Prerequisites: 4913, 1001, 1521, 4016, 4009, 4914. Corequisites: 4905 and/or 4906 or completion of either. No lab fee charged.

**4998 Nursing Cooperative Education Alternative** **1-24-1**
In special circumstances this course may be substituted for the Nursing Cooperative Education Experience 2, 9372. Students must have written permission from the Program Director to register for this course. Students permitted to take this course will participate in seminars conducted in 9372 and will satisfactorily complete a special project which is mutually agreed upon by the student and faculty advisor.
Prerequisites: 4915, 4916, 1024, 1002, 1508, current CPR certification and health records. Corequisites: Permission from the Program Chair. No lab fee charged.

**4999 Special Studies in Nursing 2** **Var-Var-1-4**
A student initiated academic pursuit, mutually agreed upon by the student and faculty member and carried on outside the classroom. Before registration, the student must have the plan of study approved by a supervising faculty member and the Dean of Health Technologies.
Prerequisites: 1002, 1024, 4915, 1508 and 4916. No lab fee charged.

**5001 Introduction to Technical Writing & Editing Careers** **1-2-2**
While introducing students to career requirements and options in technical writing and editing, this course also offers opportunities to assess prior life and work experience in order to set realistic career goals. Course activities include interviews with professionals in the field of technical communication; assessment of student learning style, personality type, and writing and editing capabilities; directed reading and journal-writing; and development of a resume, job application letter, portfolio of work samples, and other career-related support materials. Conferences with the instructor are required.
Prerequisites: None. No lab fee charged.

**5002 Introduction Computer Assisted Writing & Graphics** **2-2-3**

This course provides the beginning computer user an overview of skills needed to operate the personal computers in the CTC Writing Center, with emphasis on the use of word processing and graphics software. Laboratory work includes effective use of software applications to produce documents, integrate graphics with text, and produce documents on dot matrix and laser printers.
Prerequisites: 3007 or equivalent. Lab fee charged.

**5003 Macintosh™ Software Applications** **2-2-3**

This course presents an overview of skills needed to use advanced word processing, electronic spreadsheet, and data base management software on the personal computers in the CTC Writing Center. Laboratory work will include using software to format documents, learning basic techniques to design a spreadsheet and charts, and organizing information to generate a data base report.
Prerequisites: 5002 or equivalent experience. Lab fee charged.

**5004 Introduction to Hypercard™** **2-2-3**

This course presents an overview of skills needed to use Hypercard information management software on the personal computers in the CTC Writing Center. Topics will include: terminology and tools; using, modifying, and creating stacks; and the relationship between hypermedia and on-line documentation.
Prerequisites: 5002 or equivalent experience. Lab fee charged.

**5010 Planning and Preparing Illustrations** **2-2-3**

In this course students learn effective ways to display statistical data graphically and to use illustrations as integral parts of documents. Students will review methods of scientific inquiry; identify statistical methods and terminology; determine kinds and styles of illustrations; develop and maintain resource files for illustrations; review principles of design and typography; and prepare tables, charts, and graphs.
Prerequisites: 1017. No lab fee charged.

**5011 Advanced Illustration Software - Macintosh™** **2-2-3**

In this course students learn to operate illustration software for personal computers , including the features and components of Claris MacPaint®, Claris MacDraw®, Aldus Freehand®, and other popular application programs. Students will review the standards and principles of effective illustration and design, and will practice a variety of techniques for using illustration and design software.
Prerequisites: 5002, 5010. Lab fee Charged.

**5015 Technical Publication Production** **2-2-3**

An introductory course for writers and editors, covering the principles and techniques needed to professionally design and produce a variety of printed materials. Students will learn the vocabulary and practice the skills used by typesetters, printers, graphic artists, and other print publication specialists. Laboratory work includes both traditional and computer-assisted publication tools.
Prerequisites: None. Lab fee charged.

**5016 Desktop Publishing - Macintosh™** **2-2-3**

This course presents an in-depth study of how to operate page layout software for personal computers, emphasizing use of the Aldus PageMaker® program. Students will practice formatting text, positioning graphics, and providing appropriate typographic and design enhancements while they prepare materials such as brochures, posters, newsletters and reports.
Prerequisites: 5002. Lab fee charged.

**5017 Advanced Desktop Publishing - Macintosh™** **2-2-3**

This course continues the study of how to operate page layout software for personal computers, including Aldus PageMaker®, QuarkXPress®, and other popular application programs. Students will practice a variety of methods for manipulating textual and graphic elements of documents, while preparing brochures, newsletters, reports and other materials.
Prerequisites: 5002, 5016. Lab Fee Charged.

**5022 Technical Presentations** **3-2-4**

Technical communicators must use presentational communication to advocate points of view, report the outcomes of projects, or sell particular services or products. This course emphasizes the analysis, management, styles, and evaluation of various forms of presentational communication used in business and professional settings. Course work includes a variety of interpersonal, group, and public communication situations, using audio or visual aids.
Prerequisites: None. No lab fee charged.

**5032 Writing Instructional Documents** **3-2-4**

In this course, students focus on development of instructional materials for varied audiences. Topics include the requirements and restraints of the instructional process, audience analysis, and process and mechanism description. Students will prepare one or more manuals for general and technical products. Conferences with the instructor are required.
Prerequisites: 1018 & 5010. Lab fee charged.

**5033 Writing Promotional Documents** **3-2-4**

In this course, students analyze and practice writing narrative, expository, persuasive, and promotional prose as applied to a variety of technical communication projects. Topics include audience analysis, definitions, and marketing communication techniques. Students will produce memos and reports, solicited or unsolicited proposals, press releases, and brochures or newsletters.
Prerequisites: 1018 & 5010. Lab fee charged.

**5034 Preparing On-Line Documents** **2-2-3**

In this course, students study principles and techniques for preparing instructional materials that are delivered using a personal computer, rather than the printed page, as the medium of instruction. Topics include comparison of the strengths and liabilities of print and on-line media, analysis of audiences, application of visual literacy factors in on-line documents, and investigation of hardware and software tools needed to prepare and deliver on-line documents. Students will prepare one or more on-line documents dealing with general and technical subject matter.
Prerequisites: 5002, 5032. Lab fee charged.

**5037 Writing and Designing Newsletters** **2-2-3**

Newsletters are documents that combine good writing and appropriate design in order to provide needed information for a selected audience in business, industry, professional associations, or community organizations. In this course students will study and practice essential aspects of newsletter preparation. Topics include basic principles of journalism; techniques for writing news features, and human interest stories; planning publication content; developing effective page layouts with headlines and graphic elements; and business and legal issues that affect newsletter writing and production. Students will use desktop publishing software to prepare one or more newsletters for general and specialized audiences.
Prerequisites: 1018, 5002, 5016. Lab fee charged.

**5040 Critical and Creative Thinking 2-3-3**
Technical writers and editors must consider many options and implement many decisions as they plan, write, and edit documents. In this course students are encouraged to understand and practice using a variety of thinking tools, including analyzing, selecting, interpreting, grouping, evaluating, and establishing order and relation. Students will use these tools to assess and solve abstract and practical problems.
Prerequisites: 3 credits English composition. No lab fee charged.

**5041 Technical Editing Methods and Techniques 1 2-2-3**
This course explores skills and techniques that are essential to the editorial process. Topics include theory and application of the levels of edit approach, proofreading and copy marking, the editor/author relationship, the editorial assessment process, editorial stylebooks and other resource materials, and editorial behaviors. Students will proofread and edit a variety of manuscripts.
Prerequisites: 1620 & 1018. No lab fee charged.

**5042 Technical Editing Methods and Techniques 2 2-2-3**
Students will continue analyzing issues and practicing techniques of technical editing. Activities include understanding the interaction between editors and other publications specialists, editing large manuscripts, preparing stylebooks, and performing special editorial tasks such as preparation of abstracts, indexes, and bibliographies. Students will proofread and edit a variety of manuscripts.
Prerequisites: 5041. No lab fee charged.

**5051 Organizational Dynamics and Career Assessment 3-1-3**
This course analyzes organizational structures and management techniques. Topics include organizational development, leadership styles, and time and stress management. Students will assess their personal and career goals, compare these goals to organizational needs and practices, and review job-seeking skills.
Prerequisites: 1620 & 1018. No lab fee charged.

**5089 Technical Communication Seminar 2-3-3**
**- Review of Products and Processes**
In this course, which must be taken last in the Technical Writing & Editing program, each student prepares a professional portfolio developed from his or her previous academic, cooperative employment, and other experience. Students are required to review their portfolios, informally and through formal oral presentation, with a panel of professional technical communicators from local business and industry. The panel members will assess whether the individual students could be able to acquire entry-level positions as technical communicators. Students are expected to spend extensive time outside of scheduled class and laboratory sessions in order to complete their portfolios. Conferences with the instructor are required.
Prerequisites: Successful completion of all TWE core courses. No lab fee charged.

**5098 Workshops in Technical Writing & Editing Var-Var-1-4**
Group consideration and study of selected topics in technical writing & editing, designed to meet current needs. Course content and emphasis vary from year to year.
Lab fee charged.

**5099 Special Problems in Technical Writing Var-Var-Var**
Individual study and special projects pertaining to the student's technology are assigned. This course is open to students wishing advanced standing, independent study, or implementation of specialized writing projects. This course is arranged with the coordinator, with the approval of the Dean of the Humanities Division. Course grades are "S", "U", or "K."
Prerequisites: None. No lab fee charged.

**6101 Introduction to Artificial Intelligence 2-2-3**
**- Expert Systems**
This course presents the concepts central to Artificial Intelligence with emphasis on Expert Systems. Prolog/e is used as a laboratory vehicle to provide first-hand experience with rule-based programming. Backward and forward chaining, breadth-first and depth-first search, confidence
factors, heuristics, inference engine, knowledge base, knowledge representation are covered.
Prerequisites: Basic or Cobol, etc. Lab fee charged.

**6135 "C" Programming 2 2-2-3**
In this project-oriented class students will develop one or two larger programs. These projects will provide practice with the basic elements of the language learned in "C" programming. It will also provide an opportunity to use some of the advanced features of "C" including file I/0, library functions, structures and unions. Concepts of program design, module building, design documentation and testing will be introduced and applied.
Prerequisites: 1135. Lab fee charged.

**6198 Workshops In Computer Science Var-Var-1-4**
Study of selected topics in Computer Science designed to meet current needs. Content and emphasis varies year-to-year
Lab fee charged.

**6611 Chemistry 1 & Quantitative Analysis 3-3-4**
This course is the first of a three-term sequence in college chemistry. Topics include measurement systems, classifications of matter and energy, chemical reactions and their quantitative relationships. Laboratory techniques are emphasized and include burner and balance use, the handling and transferring of reagents, filtering and gravimetric analysis of samples.
Prerequisites: High school chemistry or equivalent and high school algebra or equivalent. Lab fee charged.

**6615 Biochemical Cellular Analysis 3-3-4**
A detailed study of the biochemistry of cell proteins, bioenergetics, kinetics, organelle structure and function transport, DNA structure transcription and translation.
Prerequisites: 2232, 6611.

**6619 Computer Analysis of Laboratory Data 1 2-2-3**
Examination of the Personal Computer and software as a laboratory tool for technicians. Course begins with introduction to DOS (Disk Operating System) and leads into applications programs with emphasis on Lotus 1-2-3 as data analysis package and Labtech Notebook for data acquisition. Much hands-on experience with the PC involved. Other software packages to be examined as well.
Prerequisites: None. Lab fee charged.

**6621 Chemistry 2 & Quantitative Analysis 3-3-4**
This course is the second of a three term sequence in college chemistry. Topics cover chemical equilibrium, acid base equilibrium, and solubility equilibrium. Oxidation reductions concepts complete the course. Laboratory experiments stress volumetric analytical techniques.
Prerequisites: 6611. Lab fee charged.

**6625 Biochemical Genetics 1 3-3-4**
Principles of inheritance as applied to organisms: Mendelian laws of segregation and independent assortment, mono-, di-, tri-

hybrid crosses, non-Mendelian inheritance, epistasis, developmental genetics, meiosis and mitosis, statistics, and Introductory Molecular Genetics.
Prerequisites: 6615, 1179

**6629 Industrial Materials Testing 1** **3-2-4**
A study of the physical and mechanical properties of engineering materials and of the tests that are used to determine those properties. The materials studied are primarily ferrous and nonferrous metals, woods, and polymers but there is some discussion of composites and ceramics. Tests include tensils, creep, hardness, torque and impact.
Corequisites: 1191. Lab fee charged.

**6631 Chemistry 3 & Quantitative Analysis** **3-3-4**
This course is the third of a three-term sequence in college chemistry. Topics include atomic structure, chemical bonding, kinetic molecular theory, thermodynamics and basic concepts of electrochemistry. Laboratory experiments contain to stress analytical techniques.
Prerequisites: 6621. Lab fee charged.

**6635 Biochemical Genetics 2** **3-3-4**
An in-depth examination of the chemical basis of mutation, genetic mapping, genetic code, transcription and translation, genetic regulation, molecular basis of DNA replication, repair, and recombination and bacterial genetics.
Prerequisites: 6625

**6639 Fundamentals of Physical Measurement** **3-2-4**
A study of measurement standards, error and uncertainty, propagation of uncertainty, accuracy and precision and basic statistics. Laboratory experiments are performed utilizing various measuring devices, then the data is analyzed and empirical equations developed through computerized data spreadsheets. Basic electricity is taught to the extent that the student can understand the fundamental operation of the laboratory equipment used.
Prerequisites: 6619, 6629, 1179, 1192. Lab fee charged.

**6641 Instrumental Chemical Analysis 1** **3-3-4**
This course is the first of a two-term sequence in the instrumental aspects of chemical analysis of both inorganic and organic compounds. Lab procedures include specific ion analysis using selective electrodes, potentiometric titrations, gas chromatography, visible and UV spectrophotometry, infrared spectrophotometry, high performance liquid chromatography and atomic absorption spectroscopy.
Prerequisites: 2232 and 6631. Lab fee charged.

**6645 Biochemical Analysis and Testing** **2-3-3**
This course is project oriented. Students will develop an experimental procedure, perform testing and apply statistical techniques to be included in a formal report. The project selected will pertain to the technical specialty area of the student.
Prerequisites: 6635.

**6649 Chemical/Physical Analysis & Testing** **3-2-4**
This course is project oriented where the student will develop an experimental procedure, perform testing and apply statistical techniques to be included in a formal report. The project selected will pertain to the technical specialty area of the student.
Prerequisites: 6639, 6651. Lab fee charged.

**6651 Instrumental Chemical Analysis 2** **2-3-3**
This course is the second of a two-term sequence in the instrumental aspects of chemical analysis. A more in depth study of the same instruments will be covered. Additional topics such as atomic absorption, spectroscopy and mass spectroscopy will be covered off campus with hands on experience.
Prerequisites: 6641. Lab fee charged.

**6659 Computerized Analysis of Laboratory Data 2** **3-2-4**
Use of electronic spreadsheets to analyze and summarize laboratory data on the microcomputer. Emphasis is on mathematical, statistical, and graphical manipulation of the data using Lotus 1-2-3 in order to check the accuracy of the results. Much hands-on experience with computers. No programming required.
Prerequisites: 1179, 1191, 6619, 6631. Lab fee charged.

**6661 Chemical Contaminants in the Environment** **3-0-3**
Characterization of contaminations, sources, dispersions, fate of contaminants, effects on human health, environmental quality and examination of exposure limits.
Prerequisites: Basic chemistry or equivalent. No lab fee charged.

**6665 Hazardous Materials Management** **3-0-3**
A practical guide discussing how hazardous materials are transported, regulated and managed to reduce human risk. This course will include current regulatory guidelines, emergency planning and response as well as analytical procedures used in characterizing hazardous wastes.
Prerequisites: None. No lab fee charged.

**6670 Introduction to Statistical Process Control** **4-0-4**
This course provides a fundamental, yet comprehensive, coverage of quality control/process control concepts. The course starts with the modern definitions, functions, philosophies, and responsibilities of quality control as they pertain to both products and services. Basic statistics are then reviewed to form the foundation for the techniques of statistical quality control/statistical process control (SPC) that follow. Specifics include fishbone and Pareto charts, histograms, control charts (X-bar, R, p, np, c, u), etc. Short run situations are examined as well as sampling strategies and quality costing. Reliability and experimental design (DOE) are briefly introduced. A sophisticated, through user friendly, SPC computer package is utilized hands-on in class.

**6672 Introduction to Design of Experiments** **3-2-4**
This statistically based course relates the ideas of quality engineering especially as popularized by noted Japanese electrical engineer Genichi Taguchi. The classical techniques involving one and two sample procedures are followed with an introduction to analysis of variance (ANOVA). Various experimental designs and corresponding ANOVA are explored with special attention to repetitions, interactions, blocking, randomization, etc. The main emphasis is the introduction to the methods of Taguchi including orthogonal arrays, linear graphs, and signal-to-noise ratio. Computer and graphical techniques are stressed throughout. The course culminates with each student presenting a final project.
Prerequisites: 1179

**6674 Introduction to Reliability** **3-2-4**
This course provides a statistically based approach to reliability with the emphasis on practical applications. Reliability, availability, maintainability, repairability and safety are all defined. Appropriate statistical models of reliability are explored (e.g. exponential, Weibull, etc.), including probability plotting and fitting techniques. A confidence interval approach is stressed. Additional topics include prediction, stress-strength interference, margin of safety, failure mode effect analysis (FMEA and FMECA), human factors, etc. Repairable and non-repairable parts and sys-

tems are considered. Hands-on computer and graphical techniques are stressed throughout. The material for this course is oriented toward the body of knowledge for ASQC certification as Reliability Engineer.
Prerequisites: 1179.

**6698 Workshops in Scientific Laboratory** **Var-Var-1-4**
Study of selected topics in scientific laboratory designed to meet current needs. Content and emphasis varies from year-to-year. Lab fee charged.

**6699 Technical Laboratory Problems** **Var-Var-Var**
Special problems, projects, seminars and individual study assignments pertinent to technical laboratory areas. Arranged only with approval of coordinator and dean. Approved for "IP" grade.
Prerequisites: None. No lab fee charged.

**6710 Introduction to Lasers** **3-3-4**
Emission and absorption of photons, elements of the laser, properties of laser light, optical cavities, helium-neon gas lasers, laser classifications and characteristics, introduction to laser safety.
Prerequisites/Corequisites: 1172 or 1191. Lab fee charged.

**6715 Laser Safety** **2-2-3**
Examination of: parts of the eye most susceptible to damage from laser light, point sources and extended sources, specular, diffuse and fresnel reflections, hazards of laser beam, laser classification, bioeffects, associated hazards, calculations of MPE, OD, nominal hazard zone, etc.
Prerequisites: 6710. No lab fee charged.

**6720 Geometrical and Wave Optics** **3-3-4**
Geom. Optics: reflection and refraction of light, mirrors, lenses and prisms. Wave Optics: reflection, interference, diffraction and polarization.
Prerequisites: 1191, 6710. Lab fee charged.

**6730 Optical Components and Devices** **3-3-4**
Optical Components: optical windows, flats, filters and beam-splitters. Laser-Optic Devices: photodetectors, laser power and energy detectors, collimators, autocollimators, beam expanders, spatial filters, electro-optic Q-switch and laser modulators.
Prerequisites: 6720. Lab fee charged.

**6740 Applications of Lasers** **3-3-4**
Cutting, drilling, welding, engraving, and surface modification. Holography (learning about the holograms).
Prerequisites: 6730. Lab fee charged.

**6741 Introduction to Fiber Optics** **3-3-4**
Optics Review-Lenses, Imaging, Numerical Aperature, Diffraction. Light wave fundamentals dispersion, pulse distortion, reflection at a plane boundary and critical-angle reflections. Wave guides-Modes in symmetric slab wave guide. Step index fiber, graded index fiber. Modes in step-index fiber, distortion in step-index fiber. Couplers and connectors, lateral misalignment, angular misalignment, end separations. Splices.
Prerequisites: 6710. Lab fee charged.

**6745 Optical System Design** **3-3-4**
Co-axial system of two thin lenses, thick lenses, cardinal points. Refraction matrix, translation matrix, lens matrix. System matrix of two thin lenses. System matrix of combination of lenses. Gaussian constants and their physical significance. Lens aberrations.
Prerequisites: 6720 Lab fee charged.

**6750 Laser Electro-Optic Measurements** **3-3-4**
Laser power and energy measurements; wavelength; dispersion and refractive index measurements; use of monochromators and spectrophotometers; use of Fabry-Perot. Michaelson. Nd: YAG Laser.
Prerequisites: 6740. Lab fee charged.

**6799 Social Problems Seminar - Lasers** **Var-Var-1-5**
Individual study and special projects pertaining to the particular technology in which the student is enrolled. The study may deal with an idea or concept normally not covered by existing courses at the college, or with a specific problem found in the industry in which the student is employed. Open to fourth and fifth term students by special arrangement with the instructor and program chair.
Prerequisites: fourth or fifth term status.

**6999 Special Project Seminar** **Var-Var-1-5**
Individual study and/or special project assigned in students' technical field of study. Available to fourth and fifth-term students by special arrangement with coordinator and dean.
Prerequisites: None. No lab fee charged.

**7001 Computer Concepts** **2-1-2**
Introduction to computers, including keyboarding, hardware, disk operating systems, basic word processing, elementary programming. Required for all Engineering Technology pre-tech students unless specifically waived by the dean of the Division.
Prerequisites: None. No lab fee charged.

**7002 Graphic Concepts** **1-2-2**
This course offers preliminary instruction in basic drafting techniques such as line quality, lettering and geometric construction. The primary objective is to prepare students for success in ET 7008 and CET 7024. Required for all Engineering Technology pre-tech students unless specifically waived by the dean of the Division.
Prerequisites: None. Lab fee charged.

**7003 Engineering Science Concepts** **2-0-2**
An introductory course to the principles of engineering technology. An overview of the various areas of engineering technology, including units of measurement and basic formula. Required for all Engineering Technology pre-tech students unless specifically waived by the dean of the Division.
Prerequisites: None. No lab fee charged.

**7004 Enrichment Seminar** **1-0-1**
Orientation to the Engineering Technologies Division and the associated support areas. This course is primarily designed to assist Engineering Technologies Pre-Tech students in the successful transition to their chosen technology. Required for all Engineering Technology pre-tech students unless specifically waived by the dean of the Division.
Prerequisites: None. No lab fee charged.

**7005 Introduction to Blueprint Reading and Sketching** **2-2-3**
Provides a working knowledge of machine-trades, Blueprint Reading and Shop Sketching. Technical terminology is defined and applied in a logical sequence.
Prerequisites: None. Lab fee charged.

**7008 Engineering Drawing 1** **2-3-3**
A beginning course which covers the techniques and functions of drafting. Topics include equipment, lettering, line quality, line types, orthographic projection, sectioning, dimensioning, and fastener hole types with tolerances.
Prerequisites: None. Corequisites: 1171 or 1191. Lab fee charged.

**7009 Engineering Graphics (Aviation) 1-4-2**
Read drawings, symbols and schematic diagrams. Draw sketches of repairs and alterations. Apply blueprint information. Use graphs and charts. Identify and select AN hardware.
Prerequisites: None. Lab fee charged.

**7010 Engineering Drawing 2 2-3-3**
Emphasis on continued development of drafting skills. Concepts include: secondary auxiliary views, sectioning, class of fit, surface finish designations, tolerancing, threads, fasteners and welding representations. Course projects will include various detail and assembly drawings. Stack-up analysis and geometric feature control will be introduced.
Prerequisites: 7008. Corequisites: 1192. Lab fee charged.

**7012 Engineering Drawing 3 2-3-3**
A study of the design process as it relates to Mechanical Engineering Technology. Emphasis is placed on working drawings, supporting documentation and selection of commercially available components. Geometric Feature Control and Stack Up Analysis are employed in establishing detail specifications which will provide product function at a reduced manufacturing cost (Design for Manufacturability). A major course project requires a complete set of assembly and detail drawings.
Prerequisites: 7010, 7165. Corequisites: 7111. Lab fee charged.

**7024 Architectural Drafting 1 3-4-4**
An open-forum drawing lab intended to introduce architectural drafting concepts and review the residential construction process. Through the preparation of a set of residential working drawings, the student will learn architectural symbols, details, abbreviations, and dimensioning methods. An emphasis will be placed on residential design and building materials with respect to aesthetics, economics, and their relation to energy efficiency.
Prerequisites: None. Lab fee charged.

**7025 Survey Drafting 2-3-3**
A beginning course in survey drafting to include contour maps from field notes, cross sections, grading plans and volume calculations. Deed abstracts, boundry plats and building permit drawings are also included.
Prerequisites: 7024, 7910. Lab fee charged.

**7026 Architectural Drafting 2 2-3-3**
A continuation course in drafting in which the student becomes familiarized with the level of detail and information required in a complete professional set of Architectural Working Drawings. The student then develops a selection of drawings for a small office building.
Prerequisites: 7024. Lab fee charged.

**7027 Beginning AutoCAD™ 2-3-3**
A first course in Computer Aided Design/Drafting in which the student will become familiar with AutoCAD™ drawing commands editing commands and display commands and will create various drawings on the computer. Students will also investigate other CAD/D techniques such as defining blocks, layering and plotting techniques.
Prerequisites: 7035. Lab fee charged.

**7028 Intermediate AutoCAD™ 2-3-3**
A second course in Computer Aided Design/Drafting in which the student will further explore CAD/D drawing techniques including external referencing, advanced features of CAD/D and will create drawings on the computer. Students will also investigate other CAD/D techniques such as block attributes, and prototype drawings.
Prerequisites: 7027. Lab fee charged.

**7029 Advanced AutoCAD™ 2-3-3**
A third course in Computer Aided Design/Drafting in which the student will further explore CAD/D drawing techniques including Isometric drawing, and 3 Dimensional drawing and Surfacing on the computer. Students will also learn how to customize the various types of AutoCAD™ Menus and work with Slides and create a Slide Show for presentations.
Prerequisites: 7027, 7028. Lab fee charged.

**7030 Computer Programming (BASIC) 3-2-4**
Study of the BASIC programming language as a vehicle to write and code computer programs. Course is problem-solving oriented. Emphasis is on good program design (flow charting and documents) and efficient, logical coding. Programs will be analyzed, designed and entered by use of a terminal to the computer. Output will be produced on terminal and printer.
Prerequisites: 1191. Lab fee charged.

**7035 Computer Applications 2-3-3**
Application software usage with emphasis on word processing, spreadsheets and data bases on microcomputer systems.
Prerequisites: None. Lab fee charged.

**7036 Technical Computer Programming 3-2-4**
The PASCAL computer programming language has gained wide acceptance in industry due to its "structured" control capabilities, simplicity, modularity, and self-documenting code. This course will use PASCAL language, writing of structured programs, and use of procedures and techniques.
Prerequisites: 1172 or 1191, 7712. Lab fee charged.

**7099 Special Studies - Engineering Technologies Var-Var-1-6**
Special studies which may occur on an individual basis to provide a student the opportunity to work on special technical topics in the field of Engineering Technologies. This course may be substituted for technical elective credits.
Prerequisites: None. No lab fee charged.

**7111 Engineering Materials 3-2-4**
The atomic arrangement and properties of common alloys are defined and discussed. Steel and cast iron are emphasized, including their response to industrial strengthening processes. Topics of study to include the crystalline structure of solid materials, physical and mechanical properties of materials and the tests which measure these properties, alloying and phase diagrams, heat treatment, and industrial material classifications. Characteristics and processing of plastics, ceramics, and composite materials are also discussed.
Prerequisites: None. No lab fee charged.

**7124 Manufacturing Process w/CADCAM 3-2-4**
Students evaluate a broad variety of manufacturing process capabilities as they relate to finished part configuration and function. High and Low Production processes are reviewed in terms of production cost and process capability to provide an end product. Conventional, Non-Conventional and Plastics manufacturing processes are explored for their intrinsic capabilities. Computer Numerical Control equipment is used in an extensive CAD/CAM Application. Precision measuring tools are used to evaluate manufacturing process capabilities.
Prerequisites: 7012, 7165. Lab fee charged.

**7130 Engineering Mechanics** **3-2-4**
Vector algebra is employed to calculate forces and moments and their effect on machine parts, frames, and structures in static equilibrium. Topics of study include free body diagrams, couples, equilibrium, trusses, frames, two and three-dimensional force systems, friction, centroids and moment of inertia.
Prerequisites: 1191, 2291. No lab fee charged.

**7132 Hydraulics & Pneumatics** **3-3-4**
Fluid transport and power studies of liquid and gas systems, emphasizing hydraulic and pneumatic pumps, compressors, control logic, actuators, motors, reservoirs, safety concerns and piping components. The student will create machine control schematics with ANSI symbols and use pressure, directional and flow control valves in those circuits.
Prerequisites: 1192 and 2292. No lab fee charged.

**7135 Fluid Power Systems** **3-3-4**
Basic principles of hydraulics and pneumatics. Covers the generation, distribution and control of fluid power and fluid transport systems. Includes graphical symbols and circuits. A comprehensive study in the fundamental concepts of servo-hydraulics, air logic, fluidics, machine and process control systems.
Prerequisites: 1191, 2291. No lab fee charged.

**7140 Strength of Materials** **3-3-4**
Through the application of force and moment analysis techniques acquired in Engineering Mechanics, Strength of Materials covers the analysis of stresses and strains which occur within machine and structural elements subjected to various types of loads. Machine element dimensions and material specifications will be determined or verified. Topics of study include simple, shear, torsional and bending stresses; deflection and combined stresses.
Prerequisites: 7130, 1192, 2292. No lab fee charged.

**7141 Kinematics & Dynamics of Machines** **3-2-4**
A course in the analysis of mechanisms. Mathematical, Computer Aided Design and graphical-calculus solutions, machine kinematics and dynamics. Topics include linear and angular/rotary displacement, velocity, acceleration, work, force, horsepower, harmonic motion, moment of inertia and dynamic balance. Emphasis is placed on piston machines with an introduction to cams and gear trains.
Prerequisites: 2292, 7165. Corequisites: 1193. No lab fee charged.

**7142 Mechanisms Analysis & Design** **3-2-4**
An introduction to mechanisms and machine drives. Mathematical and graphical solutions of problems involving the kinematics of mechanisms and drives. Analysis of linear and angular displacement, velocity, and acceleration of planar linkages such as crank-slider, four-bar, and other mechanisms. Analysis of quick-return mechanisms. Chair-sprocket, belt, and gear drives. Design of simple and compound gear trains. Students will complete one or more mechanisms projects.
Prerequisites: 2291, 7027, 7036. Corequisites: 1010, 1193, 2292, 7146. No lab fee charged.

**7144 Numerical Control Part Programming 1** **2-3-3**
Introduction to Numerical Control manual part programming of 2 1/2 axes N.C. milling machines, although the concepts would be applicable to other types of N.C. machines. Emphasis is on trigonometry and machine tool codes. Calculation of feeds and speeds is also considered.Prerequisites: 1191, 7417, 7035. Lab fee charged.

**7145 Statics & Strength of Materials** **3-2-4**
A survey course intended for the non-design oriented student. Effects of forces and stresses on materials in various forms and configurations found in engineering and mechanical construction. Use of mathematics in analyzing forces, stresses, moments and equilibrium by use of centroids and moments of inertia. Determination of dimensions and material specifications.
Prerequisites: 1192, 2292. No lab fee charged.

**7146 Electro-Mechanical Controls 1 (Servomechanisms)** **3-3-4**
This course is divided into two parts. Part 1 deals with electronic circuitry and devices used in industry. Topics include transistor drivers, resistive and inductive load considerations, power supply and power line conditioning and Triac Applications. Part 2 deals with programmable logic controllers. Topics include contact-coil ladder logic, and counter-timer and sequence logic as they apply to on/off control logic.
Prerequisites: 7036, 7730, 7738, 7758. Corequisites: 1010, 7142. Lab fee charged.

**7148 Applied Thermodynamics** **3-2-4**
The application of the first and second laws of thermodynamics, the energy equation of gases, mollier diagrams, energy utilization and heat transfer. Topics include specific heat, the carnot cycle, entropy, enthalpy and adiabatic processes. System studies include steam generation and turbines, internal combustion engines and mechanical refrigeration.
Prerequisites: 1193, 2292. No lab fee charged.

**7150 Machine Design 1** **3-3-4**
The application of the principles of engineering mechanics and strength of materials to the analysis and selection of mechanical elements and components. Topics include Treska's and Von Mises' theories of failure, tolerances and fits, keys and couplings, shaft design, columns, and springs. Emphasis will not be entirely on force analysis and calculations, but will also include: economics, installation, safety, servicing, and Computer Aided Design/Selection Applications.
Prerequisites: 7030, 7130, 7140. No lab fee charged.

**7154 CNC Programming 2** **2-3-3**
A continuation of Numerical Control 1 with emphasis on more complex problems, including part setup, and canned cycles. Programming of two axes lathes will also be introduced.
Prerequisites: 7144. Lab fee charged.

**7155 Machine Design 2** **4-2-5**
A continuation of Machine Design 1. Topics include: spur, helical, bevel and worm gearing; belts and chains, plain surface and rolling contact bearings, power and ball screws, bolted and welded connections, and machine frames and structures. Various short-term design problems are assigned.
Prerequisites: 7150. Corequisites: 7158. No lab fee charged.

**7156 Electro-Mechanical Project** **2-4-4**
This is an independent study course intended to provide the opportunity for students to work on various projects involving the design, fabrication, assembly, installation, modification, troubleshooting, or repair of electro-mechanical devices and systems. The projects offer the opportunity for students to exercise knowledge gained in their course of study. The purpose is to promote independent study, initiative, and creativity with minimal staff supervision.
Prerequisites: 7142, 7146. Corequisites: 7157, 1015. Lab fee charged.

**7157 Electro-Mechanical Controls 2 (Robotic Systems) 3-3-4**
This course develops the concepts of negative feedback for closed-loop servo systems. These techniques are vital to modern industry. Topics include: transducers for sensing system parameters, proportional feedback systems for positioning control (basic servo loop), stability analysis, velocity feedback for improved system response, mathematical models of systems, and system transfer functions. The latter part of the course deals with the problems and benefits of computer control of servo systems, with emphasis on simple closed-loop algorithms.
Prerequisites: 7146. Corequisites: 1015. Lab fee charged.

**7158 Mechanical Systems Design Project 1-6-3**
A parallel course to Machine Design 2 that requires the design, selection, fabrication, assembly and troubleshooting of a mechanical device or system. A final oral and written report encompassing the entire design, including a product demonstration is required.
Prerequisites: 7150, 7198, 7707. Corequisites: 7155. No lab fee charged.

**7160 Computer Aided Drafting 1 (MET) 2-3-3**
This course is designed to make the student an efficient CAD operator. The student can also expect to learn updated drawing and dimensioning techniques per ANSI Y14.5M-1982. The coursework will focus on 2-Dimensional machine and component drawings.
Prerequisites: None. Corequisites: 1171 or 1191, 7008. Lab fee charged.

**7165 Computer Aided Drafting 2 (MET) 2-3-3**
Techniques of creating both wireframe and surfaced 3 dimensional models with oblique surfaces and other CAD features to develop their understanding of 3 dimensional models. A final project consisting of separate detail and a final assembly will be required.
Prerequisites: 7160. Corequisite: 7010. Lab fee charged.

**7167 Robotics 1 2-2-3**
An introduction to basic concepts of robotics and factory automation where robots are used as a common tool for better quality and productivity. The course covers such topics as analysis of industrial robotics applications in an automated manufacturing environment, description of mechanical and electrical components, hands-on programming and operation of training robots, and principles of selection of a robot for an industrial application.
Prerequisites: 7036 or equivalent, 7730 or equivalent. Lab fee charged.

**7168 Robotics 2 2-2-3**
Continuation of Course 7167. The course covers robot operations and hands-on programming principles. Includes project work, such as programming for pick and place operations, palletizing operations, assembly operations, and material handling.
Prerequisites: 7150, 7707. Lab fee charged.

**7198 Introduction to Mechanical Systems Design 0-4-2**
An immediate prerequisite to the MET-7158 Mechanical System Design Project, this course includes the feasibility study, multiple concepts determination, design definition, design basis, and finally the start of preliminary design.
Prerequisites: 7150, 7707. No lab fee charged.

**7199 Special Problems Seminar - Mechanical Var-Var-2-4**
Individual and independent study and special projects pertaining to the particular technology in which the student is enrolled. The study may deal with an idea or concept normally not covered by existing courses at the college, or with a specific problem found in the industry in which the student is employed. Open to fourth and fifth-term students by special arrangements with the instructor and program chair.
Prerequisites: Varies. No lab fee charged.

**7412 Manufacturing Data Analysis 3-2-4**
This course is designed to acquaint the student with the fundamentals of dimensional metrology along with their applications to manufacturing. Topics include types and use of measuring equipment; geometric toleranceing; and analysis, reading and construction of charts and graphs.
Prerequisites None. Corequisites: 1171, 7035. Lab fee charged.

**7417 Manufacturing Processes 3-2-4**
Designed to acquaint students with the fundamental principles of fabricating materials. With emphasis on metal-removing processes of turning, milling, drilling and grinding. Lasers, edm and other nontraditional processes are covered along with iron and steel castings, dies and cutting tools.
Prerequisites: None. No lab fee charged.

**7420 CAD 1 - Manufacturing 2-3-3**
Introductory course in Computer Aided Drafting (CAD) in which the student will become familiar with drawing, editing, dimensioning and plotting of mechanical drawings as they apply to manufacturing.
Prerequisites: 7008, 7035. Lab fee charged.

**7422 Quality Control 1 3-2-4**
The course is designed to acquaint the student with the various quality control concepts necessary for a company to compete in the world wide market. To include quality history and evolution, Japanese quality circles, zero deflects, statistical process control, sampling plans, total quality control program which defines areas of responsibility for quality and machine vision and digital imaging applications.
Prerequisites: 1171, 7412. No lab fee charged.

**7427 Tool, Jig and Fixture 3-2-4**
Designed to acquaint students with the fundamental principles of tooling, jigs, fixtures and other hardware employed in the manufacture of consumer and industrial goods. With emphasis on cutting tools, tool holders, locating and clamping, fasteners and jig, fixture, gage and die designs.
Prerequisites: 7008, 7417 or equivalent.

**7428 CAD 2 - Manufacturing 2-3-3**
A continuation course in Computer Aided Design/Drafting (CADD) in which the student will explore some of the advanced features of drawing systems, such as isometric and 3-D drawing, bill of retrieval, importing and exporting files and customizing techniques for manufacturing drawing.
Prerequisites: 7420. Lab fee charged.

**7438 Work Methods and Measurement 3-2-4**
This course is designed to acquaint the student with some of the central functions of manufacturing management and the critical functions that provide information and control. To include general description and history of motion and time study, modern methods to reduce cost, how time standards are set, automatic processes, cost reduction, motivations and safety.
Prerequisites: 7417, 1171. No lab fee charged.

**7441 Statistical Process Control** **3-2-4**
Applications of statistics and probabilities to basic quality control problems with emphasis on variable attribute control charts. Techniques of fishbone and pareto charts along with a review of histograms and sampling plans applications to quality problems. Heavy computer usage in areas of data input and compiling of various charts for studies of results round out the course.
Prerequisites: 1179 or equivalent. No lab fee charged.

**7442 Reliability for the Technologies** **3-2-4**
Definitions of reliability, durability, availability, maintainability and safety as related to products/systems and their improvement. Principles of performance evaluation and prediction, failure mode effect analysis, reliability/life testing and field failures, and human factors in reliability. Both repairable and nonrepairable parts and systems are examined. Various mathematical models and computer and graphical techniques are emphasized throughout the course.
Prerequisites: 1179. No lab fee charged.

**7444 Manufacturing Process Planning and Estimating** **3-3-4**
A course designed to enable the student to process and estimate the cost necessary to produce a finished product per blueprint specifications. Techniques include the application of manufacturing processes, sequence of operations, durable and perishable tooling, material usage, quality considerations, direct and indirect labor rates and times, burden and overhead, applicable costs and "costimator" computer software to compile and process a detailed engineering process and cost analysis.
Prerequisites: 7035, 7008, 7417, 7420. Corequisites: 7422. No lab fee charged.

**7449 Computer Aided Manufacturing 1** **2-3-3**
This course is a continuation of Numerical Control (N.C.) Programming and introduces the student to writing programs using the APT programming language. Course covers geometry, cutter motion, and postprocessor statements for 2 1/2 axes N.C. milling machines but could be applicable to any numerically controlled machine.
Prerequisites: 7035, 7144. Lab fee charged.

**7455 Statistical Design Analysis** **3-2-4**
This course presents an introduction to quality engineering (off-line quality control) as it affects production quality engineering. Beginning with a brief review of elementary applied statistics, the course moves from one-sample to two-sample hypothesis testing to an introduction of analysis of variance (anova). One-way and two-way anova layouts are examined including repetitions, interactions, etc. An introduction to experimental design follows; the approach being that of orthogonal arrays and linear graphs as popularized in Japan by Taguchi. His signal to noise ratio is also explored.
Prerequisites: 1179 or equivalent. No lab fee charged.

**7458 World Class Manufacturing** **3-2-4**
This course is designed to acquaint the student with the strategies necessary to guide a company toward manufacturing excellence - from getting to know the customer to cutting the number of suppliers, reducing errors in production and deciding when and how to automate applications to include just-in-time and "Total Quality Control" concepts that recast relations among suppliers, purchases, producers, customers, employee involvement and interaction and maximum use of people and current machinery before automation.
Prerequisites: 7417, 7422. No lab charged.

**7459 Computer Aided Manufacturing 2** **2-3-3**
This course is a continuation of N.C. programming and introduces the student to writing N.C. programs using graphics-based Computer Aided Manufacturing (CAM) software. Mechanical parts are drawn using the graphics editor, or imported into the drawing from another graphics editor and coded into machine tool language.
Prerequisites: 7449, 7144, 7420. Lab fee charged.

**7700 Electrical Concepts** **3-2-4**
Designed for the student with limited formal background in electrical fundamentals. Introduces the concepts of electrical units, circuits and measurements, including series, parallel, series-parallel and basic inductance and capacitance concepts. Required for all students in the pre-BMET, pre-CPET, pre-EET, pre-EMET, an d pre-LEOT programs.
Prerequisites: Corequisites: 1171 or 1191. No lab fee charged.

**7701 Electronic Fundamentals 1** **4-2-5**
Introduces the basic laws of AC and DC electricity and their applications. In addition, power distribution, magnetic principles, control system fundamentals, component testing, and troubleshooting are covered.
Prerequisites: Corequisites: 1171 or 1191. No lab fee charged.

**7702 Electronic Fundamentals 2** **4-2-4**
A continuation of Fundamentals of Electronics 1 covering basic of AC Circuits, Linear and Digital Electronic Circuits and Microcomputers. Also covered will be oscilloscope use as a measuring device and introduction to Hardware Troubleshooting Techniques.
Prerequisites: 7701, 1191 or 1171. No lab fee charged.

**7703 Electrical Troubleshooting** **3-3-4**
Basic electrical theory; resistance and its measurement; voltage and its measurement; and current and its measurement. These are continually applied to control diagrams, circuits, and components. Also studied: electromagnetism, transformers, available electrical power, control circuit functions, DC and 3 0 AC motors and components replacement with emphasis on safe troubleshooting and repair of power and control circuits.
Prerequisites: None. Lab fee charged.

**7707 Electrical Applications** **3-2-4**
This course is designed for students in a non-electrical degree program. Topics include: electrical control components, reading schematic and wiring diagrams, applied electrical basics, electromagnetism, AC and DC motor characteristics and applications, typical factory power, connecting and checking motors, control and power circuit troubleshooting procedures, logic concepts and programmable controllers.
Prerequisites: 1192, 7132. No lab fee charged.

**7710 DC Circuit Analysis** **5-0-5**
This course introduces the concept of electricity, including current, voltage, power and energy. Series, parallel, and series-parallel circuits will be covered along with application of these circuits. Also, network analysis and an introduction to capacitance will be studied. PSPICE circuit simulation software will be used.
Prerequisites: Corequisites: 1191 or 1172, 7711. No lab fee charged.

**7711 DC Circuits Lab** **0-3-1**
Laboratory exercises, demonstrations, evaluations in the proper use of techniques and instruments commonly used by technicians in theory verification and troubleshooting of D.C. circuits. Major

emphasis on power supplies, and VOM's and VTVM's.
Prerequisites: None. Corequisites: 7710. No lab fee charged.

**7712 Electrical Circuit Analysis 1** **5-0-5**
This course introduces basic electrical concepts, laws, and devices. Topics covered include: charge, current, voltage, resistance, power, efficiency, Ohm's Law, Kirchoff's Laws, Thevenin's Theorem, Maximum Power Transfer Theorem, and various other circuit analysis principles. Analysis of direct current series, parallel, series-parallel, multiple source networks, and voltage sources and current sources. Also covered: circuit applications and troubleshooting concepts and techniques. Students must purchase an electrical project kit and a multimeter kit to be used as part of this course.
Prerequisites: 1191 or 1172, 7713. Lab fee charged.

**7713 Electrical Circuit Analysis 1 Lab** **1-3-2**
Hands-on laboratory exercises, projects, and evaluation in the proper use of techniques and instruments commonly used by electro-mechanical technicians. Included are safety considerations, soldering techniques, use of multimeters and power supplies, mechanical switches, schematic diagrams, circuit measurement and data collection and analysis, circuit fault analysis and troubleshooting, and preparation of reports.
Prerequisites/Corequisites: 7712. No lab fee charged.

**7717 Introduction to "C" Programming** **3-3-4**
This course is an introduction to the "C" language. Course covers: variable declarations, variable types, memory considerations, program looping, decision statements, arrays, strings and simple function calls.
Prerequisites: Knowledge of DOS. Lab fee charged.

**7720 AC Circuit Analysis** **5-0-5**
This course introduces inductance and covers capacitive and inductive time constants. AC signal generation, AC waveforms, reactance, and impedance will be studied. Series, parallel and series-parallel AC circuits will be covered along with applications of these circuits including filters and resonance. Transformers will be introduced. An emphasis in lab will be placed on the oscilloscope, function generator and VTVM for application in AC circuits. PSPICE circuit simulation software is used.
Prerequisites: 7710, 7711. Corequisites: 1192, 7721. No lab fee charged.

**7721 AC Circuits Lab** **0-3-1**
Laboratory exercises, demonstrations, and evaluations in the proper use of techniques and instruments commonly used by technicians in theory-verification and troubleshooting of AC circuits. Major emphasis on oscilloscopes, signal generators and VTVM's.
Prerequisites: 7710, 7711. Corequisites: 7720. No lab fee charged.

**7722 Electrical Circuit Analysis 2** **5-0-5**
This course is a continuation of 7712, Electrical Circuit Analysis 1, which includes capacitance and inductance, magnetic effects, transients in capacitive and inductive networks, time constants, sinusoidal alternating waveforms, and phase relationships of waveforms. Average and RMS values of waveforms, capacitive and inductive reactance, impedance and power factors. Analysis of series, parallel, and series-parallel circuits. Power in alternating current (AC) circuits. Power factor correction, resonance, filters, three-phase systems, and transformers.
Prerequisites: 7712, 7713. Corequisites: 7723. No lab fee charged.

**7723 Electrical Circuit Analysis 2 Lab** **0-4-2**
Hands-on laboratory exercises and evaluation in the proper use of electrical components, instruments, and techniques commonly used by electro-mechanical technicians. Includes safety considerations, use of signal generator, dual-channel oscilloscope, AC voltmeter and ammeter, schematic diagrams, circuit data collection and analysis, circuit fault
analysis, and report preparation.
Prerequisites: 7712, 7713 or 7710, 7711. Corequisites: 7722. No lab fee charged.

**7727 Advanced "C" and UNIX** **4-2-5**
This course is a continuation of 7717. Topics include: structured variables, character strings, string function, pointer, bit operations, preprocessor operation, and disk I/O routines.
Prerequisites: 7717. Lab fee charged.

**7728 Introduction to Digital Concepts** **3-2-4**
Number systems, codes and review of Boolean Algebra. Logic families, logic simplification methods and implementation of logic equations using NAND and NOR gates and Flip-flops.
Prerequisites: None. Corequisites: 1191 or 1172, 7710 or 7712. No lab fee charged.

**7730 Electronics 1** **5-2-6**
Semiconductor theory, PN junctions, and diodes. Introduction to basic power supply circuits. Operational amplifiers, positive and negative feedback, inverting and non-inverting amplifiers, comparators, differentiators and integrators, instrumentation and bridge amplifiers, active filters, slew rate limiting, and frequency response. PSPICE circuit simulation software will be used.
Prerequisites/Corequisites: 7720, 7721, or 7722, 7723, 7717. No lab fee charged.

**7733 Electronic Troubleshooting** **3-2-3**
Development of systematic analysis and troubleshooting techniques. Electronic device/circuit principles, analysis, failures and corrections. Possible modification of circuits and device specifications are studied to increase circuit reliability.
Prerequisites: None. Corequisites: 7730. No lab fee charged.

**7736 Electrical Power Systems** **4-2-4**
Covers the articles of the National Electrical Code which apply to electrical systems. Transformer principles and three phase systems. Also covers overcurrent devices, conductors, grounding, wiring methods, branch circuits, service entrances, load calculations and special topics.
Prerequisites: 7708. No lab fee charged.

**7738 Digital Systems 1** **3-3-4**
Includes edge-triggered circuitry: J-K flip-flops, Sync and Async Counters, shift registers, clock circuits, monostable theory. Also encoders, decoders, multiplexing (time base) displays. Circuit design techniques using MSI IC's will be discussed.
Prerequisites: 7728. Corequisites: 7720. Lab fee charged.

**7739 Introduction to Biomedical Instrumentation** **3-2-4**
Preseats a survey of the field of Biomedical Engineering Technology and the role of the BMET in the hospital. Also included is organization of the hospital, regulations, professional certifications, regulations, ethics, and professionalism. The computer will be introduced as a tool in the Biomedical Department.
Prerequisites: None. Corequisites: 7710, 7711, 7728. No lab fee charged.

**7740 Electronics 2** **5-2-6**
Rectifier circuits, zener diodes, light emitting diodes, power supply filtering, regulators, clippers and clampers. Bipolar transistor theory, bipolar switch, bipolar biasing circuits. Class A small signal and power amplifiers, class B amplifiers, field effect transistors, FET biasing, FET amplifiers, frequency response of amplifiers. PSPICE circuit simulation software is used.
Prerequisites: 7730. No lab fee charged.

**7742 Computer Aided Drafting (Electrical)** **2-3-3**
An introduction to Computer Aided Design and Drafting (CADD) for electronics based technologies. Use of computer graphics to create, store, copy, and alter schematic designs. Schematic capture, circuits simulation, printed circuit board layout, artwork generation, component libraries, bill of materials, cost, and related data for analysis of circuit designs.
Prerequisites: 7030, 7738. Lab fee charged.

**7743 Communication Systems 1** **3-2-4**
A basic course covering many of the various types of communications systems including AM, FM, TV, space and mobile systems. The course combines many of the circuit building blocks from previous courses into receiving and transmitting systems. The study will include tuned RF Amplifiers, oscillators, mixers, amplitude and frequency modulation, AM and FM detection, wave propagation, TV systems, antennas, and simple broadcasting station requirements.
Prerequisites: 7730. Corequisite: 7750. No lab fee charged.

**7747 Computer Instrumentation** **4-2-5**
This course is an introduction to basic transducers. In this course, students will apply analog-to-digital techniques to sensors for the purpose of creating data acquisition systems. The course also includes types of sensor-computer integration for the purpose of creating intelligent stand-alone sensors. Students will construct sensor-computer interfaces and write software to acquire sensor data. Course also includes techniques for manipulation of acquired data such as integration and differentiation.
Prerequisites: 7717, 7748. No lab fee charged.

**7748 Digital Systems 2** **3-3-4**
Microprocessor hardware and software for the Motorola 68000 family of chips. Topics include: basic microprocessor hardware, number systems, software architecture, introduction to the 68000 instruction set, addressing modes, subroutines, educational computer board, system hardware and timing, and memory and I/O expansion techniques. Students will be required to write software in assembly language and in the "C" language.
Prerequisites: 7717, 7738. Lab fee charged.

**7749 Biomedical Instrumentation 1** **3-2-4**
Covers basic medical instrumentation. To include: man-to-machine interface, medical terminology, hospital organization, heart and circulatory system, electrodes, transducers, bioelectric amplifiers, EKG's, mechanical recorders, ICU's and CCU's, electrical safety, and electro-surgery units.
Prerequisites: 4012, 7717, 7730, 7738. No lab fee charged.

**7750 Electronics 3** **4-3-5**
Discrete power amplifiers, integrated power amplifiers, SCR's, triacs, and power FET's. Switching regulators, integrated circuit filters, and other single chip devices. Modulation techniques, optical devices, phase locked loops, tone encoders, and decoders. PSPICE circuit simulation software is used.
Prerequisites: 7740. No lab fee charged.

**7758 Motors & Controls** **3-2-4**
Fundamentals, applications, selection, and control of DC and three-phase AC motors. Includes speed and torque characteristics, horsepower and efficiency calculations, control circuits, safety considerations, equipment and personal protection, across-the-line starting, acceleration methods, speed control, plugging, braking, and jogging. Introduction to programmable logic controllers. Weekly laboratory exercises include design, construction, and fault analysis/troubleshooting of motor control circuits.
Prerequisites: 7722 and 7723 or 7720 and 7721. No lab fee charged.

**7759 Biomedical Instrumentation 2** **3-2-4**
Course presents a survey of the more complex and specialized medical devices used for patient care and diagnosis. Advanced equipment malfunction isolation and test instrumentations ares presented. Maintenance management including records, stock level optimization, shop layout, forms and technician duties are discussed. Consideration is given to the ethics related to biomedical equipment servicing.
Prerequisites: 7749. No lab fee charged.

**7766 Computer Control Systems** **3-2-4**
Introduction of feedback and computer control techniques to accurately control DC motors and stepper motors using digital information obtained from sensors and transpulers.
Prerequisites: 7730, 7748. No lab fee charged.

**7767 Computer Communications** **4-2-5**
This course will discuss the various topics and methods of computer communications. The course will deal with the following topics: parallel communications, Async vs. Sync communications, serial communication standards, modems, networking techniques, fiber optic systems.
Prerequisites: 7717, 7768. No lab fee charged.

**7768 Digital Systems 3** **3-3-4**
Advanced topics on microprocessor hardware and software for the Motorola 68000 family of chips, including investigation of various higher level I/O devices. Basic introduction to serial communications using the RS232 format. Indepth discussion of the Motorola 6850 (ACIA) device. Course continues with the use of the Motorola 68230 parallel interface timer chip. Students will study various applications of parallel I/O, including analog to digital input, digital to analog output, seven segment display, and keyboard input techniques. The course concludes with a discussion of microcomputer interrupts. Software developed by students in the course will be written in assembly language and in the "C" language.
Prerequisites: 7748, 7717. No lab fee charged.

**7769 Real Time Applications** **3-3-4**
This course deals with the problems of programming for real time control. Discussions will include: interrupt driven tasks, timed control of tasks and data acquisition, introduction to real time operating systems, methods for writing software to respond to multiple interrupts, techniques for generating ROM based code and stand alone systems.
Prerequisites: 7747, 7768. No lab fee charged.

**7799 Special Problems Seminar-Electrical** **Var-Var-2-4**
Individual study and special projects pertaining to the particular technology that in which the student is enrolled. The study may deal with an idea or concept normally not covered by existing courses at the College, or with a specific problem found in the industry in which the student is employed. Open to fourth and

fifth term students by special arrangement with the instructor and program chair.
Prerequisites: None. No lab fee charged.

**7910 Surveying Measurements** **3-2-4**
Introductory course in field measurement techniques, with emphasis on units of measurement, field note format, instrument usage, differential leveling, three-wire leveling, profiles, cross sections, taping, E.D.M. usage, horizontal and vertical angles, bearings and azimuths.
Prerequisites: None. Corequisites: 1171 or 1191. No lab fee charged.

**7911 Introduction to Construction** **2-2-3**
Introduces the student to the construction industry analyzing the contractual relationships between the owner, architect/engineer, and contractor. Introduces the materials and methods of construction through the perspective of the CSI format. Material investigated include wood, concrete, masonry, and steel. Methods investigated include light framing, masonry, steel frame, and reinforced concrete.

**7913 Civil & Environmental Topics** **3-0-3**
A course introducing the student to important fundamentals of civil and environmental engineering. The course will provide an overview of the profession's various branches, as well as providing pertinent information regarding terminology, materials, and current problems. These objectives are accomplished through lecture, case studies, and references.

**7920 Surveying Calculations** **4-2-5**
Intermediate course in surveying calculations, with emphasis on traverse closures and adjustments, coordinate calculations, area determination by D.M.D. and coordinates, coordinate geometry, direct and inverse routines using "COGO" Computer Program.
Prerequisites: 7910. No lab fee charged.

**7927 CAD 1 (CET)** **2-3-3**
A continuation of Computer Aided Drafting (CAD) in which the student will become familiar with CAD drawing, editing and dimensioning commands as they apply to civil engineering drawings. Students will also investigate other CAD techniques such as block and new definitions.
Prerequisites: 7024, 7935. Corequisite: 1172, 1191. Lab fee charged.

**7928 CAD 2 (CET)** **2-3-3**
An advanced course that builds on material covered in CAD I (CET). Topics include isometric and three-dimensional drawing techniques, surfacing menu customization, DFXF files, slide and script commands for presentations.
Prerequisites: 7927.

**7930 Route Surveying** **3-2-4**
Advanced course in the elements of route surveying, with emphasis on design and layout of horizontal curves, vertical curves, spiral transition curves, calculation of super-elevation, and "COGO Program."
Prerequisites: 7920. Corequisite: 7025. No lab fee charged.

**7931 Light Construction** **3-2-4**
Introduces to the student concepts of residential planning. Investigates construction methods such as platform framing, brick veneer, lightweight steel, and masonry construction. Includes structural member selection, footing design, and typical construction detailing. Presents the dynamics of heat loss and heat gain.
Prerequisites: 1192, 7911. No lab fee charged.

**7934 Statics (CET)** **3-2-4**
A continuation of applying the principles of physics to engineering analysis. Topics of instruction are limited to force analysis and equilibrium of civil engineering structures, centroids, moment of inertia, and static friction. Course objectives are accomplished through lecture, visual aids, example calculations, and handouts.
Prerequisites: 1191, 2291. Corequisites: 1192. No lab fee charged.

**7935 Introduction to CAD (CET)** **2-3-3**
Introduction to microcomputer systems, including basics of DOS. Fundamentals of AutoCAD software, with emphasis on DRAW, LAYER, EDIT, PLOT, UTILITY, and SETTING commands.
Prerequisites: None. Lab fee charged.

**7940 Elements of Land Surveying** **3-3-4**
Advanced course in the elements of boundary surveys, with emphasis on: document research, deed descriptions, U.S. public lands survey system, Ohio land subdivisions, and legal aspects of land surveys.
Prerequisites: 7920. No lab fee charged.

**7942 Construction Management 1** **2-3-3**
The student will investigate the evolution of the construction management process and compare this process to the traditional method of general contracting. Topics discussed include advantages and disadvantages of construction management and services the construction manager provides. The student will examine the concepts of CPM scheduling and will manually create schedules for various projects. Additionally, the student explores the realm of computer aided scheduling and creates schedules with the computer.
Prerequisites: None. Lab fee charged.

**7943 Construction Estimating** **2-3-3**
A technical course designed to give the student a confident knowledge of estimating. Topics include quantity takeoff, types of estimates, bidding procedures, types of contracts, selecting the contractor, contract law, feasibility studies, and time-value of money. Each student will perform a detailed manual estimate from a set of working drawings prepare by the student in a previous course. Additionally, the student will explore computer aided estimating and develop a computer aided estimate of a commercial building.
Prerequisites: None. Lab fee charged.

**7944 Strength of Materials (CET)** **3-2-4**
A course investigating the behavior and ability of engineering materials to resist forces. Topics will include Hooke's Law, temperature effects, connection analysis, beam mechanics, shear and moment diagrams, and combines stress. Course objectives are accomplished through lecture, lab demonstrations, and example calculations.
Prerequisites: 7934. No lab fee charged.

**7946 Municipal Wastewater Treatment Systems** **3-2-4**
An introduction to the methods used in municipal and on-site wastewater processing. The course introduces the student to the basic environmental concerns surrounding wastewater organics, solids, and toxics as well as the fundamental design procedures surrounding the physical and biological units in a treatment plant. Course objectives are accomplished through lecture, field trips, visual aids, and handouts..
Prerequisites: None. Corequisites: 7948.

**7947 Drainage Control Systems** **3-2-4**
An introductory course in the design of drainage conduits for removal of storm runoff. Analysis of hydrologic problems by the rational method. Study of open channels, median swales, culverts, gutters, and pipe networks using computer application. Emphasis will be on control of erosion and sedimentation. Course objectives are accomplished through lecture, visual aids, example calculations, literature references, and handouts.
Prerequisites: 1191. No lab fee charged.

**7948 Subdivision Design 1** **2-3-3**
Introductory course in residential subdivision design with emphasis on general zoning and subdivision regulations such as lot, street and easement design using a coordinated geometry computer program.
Prerequisites: 7025, 7930. Corequisites: 7946, 7947. No lab fee charged.

**7949 Introduction to Geographic Information Systems** **3-2-4**
A introductory course in Geographic Information Systems to include basic concepts of GIS, terminology, data acquisition and applications. Lab work will include utilization of PC-ARC/INFO Software and Trimble Navigation Pathfinder Sattelite Receivers.
Prerequisites: 7935, 7920. Corequisites: 7940.

**7950 Surveying Field Project** **1-6-3**
Specialized project utilizing fundamental theories and standard practices involved in surveying. Includes courthouse research, field reconnaissance and measurements, resolution, platting and astronomic observations.
Prerequisites: 7930, 7940. No lab fee charged.

**7951 Heavy Construction** **3-2-4**
Heavy construction includes large commercial buildings, industrial facilities, and highway construction. This course includes construction techniques involving heavy timbers, structural steel, reinforced concrete, and combinations thereof. Particular attention is paid to commercial construction from site work and shoring to curtain walls, glazing, and interior finishes. The study and application of computer aided estimating is continued from a previous course with an emphasis on heavy construction.
Prerequisites: None. No lab fee charged.

**7953 Construction Management 2** **2-3-3**
The student will continue to study the construction management movement in the construction industry. A continuation of computer aided scheduling is emphasized with the student creating computer aided schedules for various projects including one that was designed and estimated with the aid of computers. Other topics include value engineering, project controls, labor relations, quality control, and safety management.
Prerequisites: 7942. No lab fee charged.

**7954 Reinforced Concrete Design** **3-2-4**
A course presenting the fundamentals of statics to reinforced concrete design. Topics of instruction include the design of flexural and shear reinforcing in beams and the design of columns using the ACI ultimate strength method. The laboratory demonstrates the standard testing procedures and introduces the student to the properties of concrete as a structural material.
Prerequisites: 7934, 7944, 1192. No lab fee charged.

**7955 Applied Soil Mechanics** **3-2-4**
This course is an introduction to the properties of soil as a construction material. Topics of instruction include routine laboratory tests, soil classification, compaction, settlement, soil strength and simplified foundation design. Course objectives are accomplished through lecture, laboratory testing, example calculations, and handouts.
Prerequisites: 7934, 7944. No lab fee charged.

**7956 Structural Steel Design** **3-2-4**
A design course in which the principles of statics are applied to the design of simple structures. Topics of instruction include tension member design, column behavior and design, and simple beam design. All design conforms to the Allowable Stress Design per the AISC code. A simple structure design project will introduce the student to the interrelationships of all aspects involved in design.
Prerequisites: 7934, 7944. No lab fee charged.

**7958 Control/GPS Surveying** **1-6-3**
Introduction to control surveying. Topics of instruction include: geodesy, state plane coordinates, astronomic observations, satellite positioning and network adjustments. Students will observe and adjust a horizontal control network with total stations and satellite receivers.
Prerequisites: 7927, 7930, 1192. No lab fee charged.

**7959 Subdivision Design 2** **2-3-3**
Second course in residential subdivision design with emphasis on road profiles, design of sanitary and storm sewer systems, grading plans, and earthwork calculations and record plats. All designs will utilize COGO and CAD computer programs.
Prerequisites: 7927, 7947, 7948. No lab fee charged.

**7960 Water & Waster Systems** **3-2-4**
Students will initially investigate the design of water supply and waste systems in buildings. Additional topics examined involved disposal of contaminated waste product, process piping, and hyperonic piping.
Prerequisites: 7964. No lab fee charged.

**7962 Architectural Environmental Systems** **3-2-4**
This course focuses on the thermal concepts and climatic condition that effect building design, and the control of the overall environmental performance of buildings. Heat transfers, ventilation requirements, and the selection of appropriate materials and systems are covered.
Prerequisites: None. No lab fee charged.

**7963 Electrical Design Systems** **3-2-4**
Students will investigate the electrical systems in buildings. Design topics include power distribution, wring, circuit layout, and fire protection. Other topics include communication, alarm, and security systems.
Prerequisites: 7026. No lab fee charged.

**7964 Thermal Control Systems** **2-3-3**
Students will investigate heat loss and heat gain; HVAC Design, distribution, controls, and equipment selection. Topics in acoustics will also be examined.
Prerequisites: 7026. No lab fee charged.

**7965 Architectural Design 1** **3-2-4**
An introduction to basic design concepts and the principles of form, space and order. Primary geometric elements and their applications in architecture are discussed through weekly exercises. Graphic techniques are refined.
Prerequisites: 7024, 7026. No lab fee charged.

**7966 Architectural Design 2** 2-3-3
A continuation course in design that further develops its functional and aesthetic aspects and stresses the design importance of combining them both into a cohesive design solution. The student will apply these concepts to the design of a small building.
Prerequisites: 7965. No lab fee charged.

**7967 Architectural Presentation Techniques** 3-2-4
This class will cover the different graphic techniques that can be used to enhance the presentation of a final feed architectural design. Though mostly two-dimensional, they also include building three-dimensional models.
Prerequisites: 7024, 7026. No lab fee charged.

**7968 Lighting Systems** 2-3-3
Students will investigate lighting design concepts such as illumination, footcandles, and surface reflectance and how they relate to room lighting, speciality lighting, site lighting, and fixture selection.
Prerequisites: 7963. No lab fee charged.

**7969 Building Systems Design** 3-2-4
Students will perform a design project integrating all mechanical systems into a predetermined building or space emphasizing a coordination and interfacing process between the design teams of the particular systems. Three dimensional CAD drawings and 3-D models will be used to implement this process and help reduce design interferences.
Prerequisites: 7963, 7964. Corequisites: 7960, 7968. No lab fee charged.

**7999 Special Problems Seminar - Civil** Var-Var-2-4
Individual and independent study and special projects pertaining to the particular technology in which the student is enrolled. The study may deal with an idea or concept normally not covered by existing courses at the College, or with a specific problem found in the industry in which the student is employed. Open to fourth and fifth term students by special arrangement with the instructor and program chair.
Prerequisites: None. No lab fee charged.

**8100 Aircraft Orientation** 4-4-5
Learn to perform ground engine run-up and flight control movement check and taxi procedure. Learn aircraft physical laws and perform numerical computations including aircraft weight and balance calculations.
Prerequisites: None. No lab fee charged.

**8101 Machine & Hand Tools** 2-3-3
Identify and select proper hand tools for particular applications. Hand form, layout and bend sheetmetal. Perform precision measurements.
Prerequisites: None. Lab fee charged.

**8102 Basic Aerodynamics & FAA Regulations** 3-2-3
This course covers required maintenance forms, and records and inspection report. Select and use FAA and manufacturer's aircraft maintenance specifications, data sheets, manuals, publications and related Federal Aviation Regulation (FAA) Lift, thrust and drag. Focus on stability of aircraft.
Prerequisites: None. No lab fee charged.

**8106 Engineering Graphics (Aviation)** 2-2-2
Student will read drawings, symbols and schematic diagrams. Draw sketches of repairs and alterations. Apply blueprint information. Use graphs and charts.
Prerequisites: 8100. No lab fee charged.

**8107 Materials & Processes** 5-5-5
Topics include identifying and selecting aircraft hardware. Students will perform basic heat-treatment processes, inspect and check welds, and fabricate and install rigid and flexible lines and fittings.
Prerequisites: 8100, 8101. Lab fee charged.

**8108 Aircraft Electricity** 3-2-3
Includes repair of aircraft electrical system components. Install, check and service airframe electrical wiring, controls, switches, indicators, and protective devices. Clean, inspect and service aircraft batteries. Read and interpret aircraft electrical wiring diagrams.
Prerequisites: 2221. No lab fee charged.

**8109 Cleaning & Corrosion Control** 2-3-3
This course covers identification and selection of cleaning materials. Students will perform cleaning and corrosion control. Protect interior surfaces of closed steel and aluminum tubing against corrosion. Remove corrosion products. Use paints and similar organic coatings for corrosion protection purposes. Perform penetrate, chemical etching and magnetic particle inspections. Identify and select appropriate nondestructive testing methods.
Prerequisites: None. No lab fee charged.

**8130 Airframe Structures** 3-7-5
Identification of wood defects, inspection of wood structures, service and repair of wood structures, fabric and fiberglass covering materials. Trim, lettering and touch-up paint. Includes cleaning and corrosion controls, and inspecting and identifying defects.
Prerequisites: 1191, 2221, 8102. Lab fee charged.

**8131 Welding Processes** 1-4-2
To include soldering, brazing and gas arc-welding steel. Fabrication of tubular structures, soldering of stainless steel, welding stainless steel and aluminums, magnesium and titanium. Inspect and check welds.
Prerequisites: 8102, 8107. Lab fee charged.

**8132 Airframe Electrical & Generating Systems** 5-5-5
Repair aircraft electrical system components. Install, inspect, check, troubleshoot, service, and repair alternating current and direct current electrical systems. Service compound and shut generators, alternators, starters, and starter-generators. Check and adjust generating output regulation. Repair and/or replace fuses, circuit-breaker, switches, high and low tension wiring, terminals and terminal blocks, magnetic switches and transformers.
Prerequisites: 8102, 8106, 8108. No lab fee charged.

**8140 Airframe Structures 2** 3-7-5
Students will install special rivets and fasteners, inspect bonded structures and inspect and repair plastics, honeycomb and laminated structures and sheet metal structures. Hand form, layout, bends sheet metal and install conventional rivets. Flush riveting. N.A.G.A. riveting, highshear rivets, cherry lock rivets.
Prerequisites: 8130. No lab fee charged.

**8142 Assembly & Rigging** 3-7-5
Rig fixed-wing aircraft. Assemble, balance and rig aircraft and control surface. Using inspection forms, perform a 100-hour inspection. Perform check of aircraft pertaining to specifications and A.D. note compliance. Make repairs and adjustments found to be necessary during inspection. Check and perform weight and balance of aircraft.
Prerequisites: 1191, 8102, 8107. Lab fee charged.

**8143 Airframe Hydraulic & Pneumatic Systems 1-4-2**
Repair hydraulic and pneumatic power system components. Inspect, check, service, troubleshoot and repair hydraulic and pneumatic power systems.
Prerequisites: 1191, 2222. No lab fee charged.

**8150 Airframe Electronic and Instrument Systems 4-6-6**
Introduction to electronic control devices and their application to aircraft systems. Students will remove, install, and troubleshoot radio transmitters, receivers, weather warning and auto pilot systems. Remove install and inspect radio aids for navigation to include VOR, ADF, DME, and ILS. Test and check pilot static and gyroscopic instrument systems. Inspect and check ice and rain control systems.
Prerequisites: 8107, 8132, 8140, 8143. No lab fee charged.

**8151 Airframe Systems, Hydraulic & Pneumatic Landing Gear 3-7-5**
Inspect, check, service and repair landing gear. Retraction systems, shocks, struts, brakes, wheels, tires and steering systems. Inspect, check and service of warning systems of anti-skid electrical brakes. Studies in controls, landing gear position, and indicating and warning systems.
Prerequisites: 8143. No lab fee charged.

**8152 Flightline Maintenance 1-4-2**
Identify and select cleaning materials, perform cleaning and corrosion control, protect battery compartment. Move aircraft employing hand signals and tie down aircraft. Perform airframe and powerplant conformity and airworthiness inspection. Inspect, check, service, and troubleshoot cabin environmental control systems.
Prerequisites: 1192, 2223, 8140, 8142. Corequisites: 8150, 8151. No lab fee charged.

**8154 Airframe Systems & Components 4-6-6**
Inspect, check, service and repair components of airframe fuel, environmental control, and ice and rain protection systems.
Prerequisites: 2222, 8100, 8140.

**8155 Airframe Comprehensive 2-1-2**
A comprehensive study and review of all the required subjects and subject material preparing the student for the Comprehensive Examination, demonstrating the proficiency required to be awarded the degree and be named a candidate for the Federal Aviation Agency written test.
Prerequisites: All general & airframe courses. No lab fee charged.

**8160 Powerplant Theory & Maintenance 1 5-5-5**
Introduction to the design, manufacture, overhaul, and repair of aircraft reciprocating engines. Overhaul of an opposed reciprocating engine. Inspect and repair reciprocating engines.
Prerequisites: 1172 or 1191, 2221, 8102. No lab fee charged.

**8161 Powerplant Lubrication 3-2-4**
Identify and select proper lubricants. Inspect, check, service, troubleshoot and repair reciprocating and turbine engine lubrication systems.
Prerequisites: 2221, 8102, 8106. Corequisites: 8160. No lab fee charged.

**8162 Propellers 4-4-4**
Inspect, check, service, and repair propeller synchronizing and ice control systems. Identify and select propeller lubricants. Balance propellers. Repair propeller control system components. Inspect, check, service, and repair fixed pitch constant speed and feathering propellers and propeller governing systems.
Prerequisites: 1191, 2221, 8109. Corequisite: 8161. No lab fee charged.

**8170 Powerplant Theory & Maintenance 2 5-5-5**
Inspect and repair reciprocating engines. Inspect, check, service, and repair opposed and radial reciprocating engines installations. Install, troubleshoot and remove reciprocating engines. Introduction to turbine engine theory and operation.
Prerequisites: 8160. No lab fee charged.

**8171 Powerplant Fuel Metering Systems 1 5-5-5**
Inspect, check and service water injection systems. Overhaul a carburetor. Repair fuel metering components. Inspect, check, service, troubleshoot and repair reciprocating carburetor systems and induction manifolds. Inspect, check, troubleshoot, service and repair reciprocating fuel injection systems.
Prerequisites: 8160. No lab fee charged.

**8172 Ignition Systems 5-5-5**
Overhaul magneto and ignition harness. Repair engine ignition system components. Inspect, check, service, troubleshoot and repair powerplant ignition systems.
Prerequisites: 8108, 8160. No lab fee charged.

**8180 Engine Systems & Inspection 5-5-5**
Inspect, check, troubleshoot, service and repair engine induction cooling exhaust and electrical systems and components.
Prerequisites: 8101, 8170. Corequisites: 8183. No lab fee charged.

**8182 Engine Instruments & Fire Protection 2-3-3**
Install, check and service engine electrical wiring, controls, switches, indicators, and protective devices. Inspect, check, service, troubleshoot and repair engine temperature, pressure and RPM.
Prerequisites: 8108, 8170. Corequisites: 8183. No lab fee charged.

**8183 Powerplant Theory & Maintenance 3 5-5-5**
Overhaul turbine engines. Inspect, check, service and repair turbine engine installations. Remove, install and troubleshoot turbine engines.
Prerequisites: 1192, 2223, 8170. No lab fee charged.

**8185 Powerplant Comprehensive 2-1-2**
A comprehensive study and review of all the required subjects and subject material preparing the student for the Comprehensive Examination; demonstrating the proficiency required to be awarded the degree and be named a candidate for the Federal Aviation Agency written test.
Prerequisites: All general and powerplant courses. No lab fee charged.

**8190 Aviation Make-Up 0-0-0**
Opportunity for students to make up N.A.A. required time. Laboratory, written or reading requirements or extra time on lab projects will be performed during this time.
Prerequisites: None. No lab fee charged.

**8191 General Comprehensive 3-2-4**
This course is designed to improve the student's performance on the FAA general written, oral, and practical tests. Subjects included are: FAR's, physics, electricity, weight and balance, and others. Note: Aviation Department approval is required to register

for this course.
Prerequisites: None. No lab fee charged.

**9000 Career Development 3-0-3**
A small group, self development, approach to career choice and development. This course will help the student to gain better self-understanding through the exploration of personal interests and aptitudes as they relate to career demands. The student will acquire skills in communications, establishing career goals and making decisions. Emphasis on job seeking techniques, the job application, the resume, the interview. Activities will include testing, group interaction exercises, guest lectures, and review of pertinent literature.
Prerequisites: None. No lab fee charged.

**9005 College Success Strategies for Returning Adults 3-0-3**
Are you afraid of failure; are you unsure about your career and personal goals; are you concerned about the adequacy of you academic and study skills for college success? We have an answer for coping with those fears and uncertainties. Beginning in the June term we will be offering a new class, "College Success Strategies," tailored to meet the needs of the adult student, to provide valuable support and dispel those crippling fears. This course will help you to learn more about yourself and your skill potential and will include: Library skills, values and goal setting, college support services, career exploration, decision making, taking control of your life, study skills, time management, self-esteem and confidence building activities, as well as skill assessment in math, English and reading.
Prerequisites: None. No lab fee charged.

**9010 Nontraditional Careers for Women 3-0-3**
The course is designed to meet the special needs of women, including single parents and homemakers who are searching for better paying jobs in male-dominated or nontraditional professions. Traditionally, men and women have selected specific careers based on socially defined traits. The student will acquire skills needed to overcome stereotypical barriers which prevent them from entering well paid nontraditional careers. Emphasis on overcoming Math/Science anxiety, how to study Math, Nontraditional career exploration reducing the home/career conflict.
Prerequisites: None. No lab fee charged.

**9014 College Study Skills 4-0-4**
A comprehensive course for the student who would like to get the most out of his or her courses. Attention is given to the development of positive attitudes toward good study habits and self-improvement of basic study skills (such as note-taking, memory, preparing for examinations). Individualized.
Prerequisites: None. No lab fee charged.

**9200 Professional Practices 1-0-1**
The purpose of this course is to prepare the students for the interview process, heighten the students' awareness of the work environment, and provide skills which will ensure the students' success as a professional.
Prerequisites: None. No lab fee charged.

**9210 Cooperative Employment - Business Technologies 1-40-2**
Usually on an alternating term basis, the business student is placed on a full-time (32-40) hour job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned form the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation in a cooperative employment seminar and related hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9230 Cooperative Employment Seminar 1 4-6-6**
Cooperative Employment Seminar 1 is designed as an alternative to participating in the Cooperative Education Program. The purpose of this course is to give the student who does not co-op an opportunity to enhance their employment chances in their chosen field.
Prerequisites: Co-op coordinator's permission. No lab fee charged.

**9231 Cooperative Employment Seminar 2 3-6-5**
Cooperative Employment Seminar 2 is designed as an alternative to participating in the Cooperative Education Program. The purpose of this course is to give the student who does not co-op an opportunity to enhance their employment chances in their chosen field.
Prerequisites: Co-op coordinator's permission. No lab fee charged.

**9300 Cooperative Employment - Health Technologies 1-40-2**
Usually on an alternating term basis, the health student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation in a cooperative employment seminar and related instructional assignments equivalent to five to ten class hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9301 Cooperative Employment 1-40-3**
Usually on an alternating term basis, the health student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation in a cooperative employment seminar and related instructional assignments equivalent to five to ten class hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9302 Cooperative Employment 1-40-3**
Usually on an alternating term basis, the health student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation in a cooperative employment seminar and related instructional assignments equivalent to five to ten class hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9303 Cooperative Employment 1-40-3**
Usually on an alternating term basis, the health student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation in a cooperative employment seminar and related instructional assignments equivalent to five to ten class hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9304 Cooperative Employment 1-40-2**
Usually on an alternating term basis, the health student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation in a cooperative employment seminar and related instructional assignments equivalent to five to ten class hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9305 Cooperative Employment 1-40-2**
Usually on an alternating term basis, the health student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation in a cooperative employment seminar and related instructional assignments equivalent to five to ten class hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9310 Cooperative Employment - Health Technologies 0-15-1**
Usually on an alternating term basis, the health student is placed on half time (15-20 hours) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Participation is a cooperative employment seminar and related instructional assignments equivalent to five to ten class hours per term is required to earn co-op credit.
Prerequisites: None. No lab fee charged.

**9371 Nursing Cooperative Education Experience 1 1-8-1**
Non mandatory elective. This experience provides the student an opportunity to make practical application of knowledge and skills acquired in previous courses within the nursing program. Placement is within a part-time paid beginning nurse technician position. The student functions under a faculty approved job description which excludes responsibilities requiring licensure or registration. A faculty advisor meets with the student on a bi-weekly basis for the purpose of assisting the student to meet objectives, clarify values and examine role relationships. The advisor also acts as a liaison between the student and employer when necessary and evaluates the student achievement of objectives and the appropriateness of the work experience. Due to the student's academic load, this experience is scheduled over two terms. The average number of hours of paid work experience per week is six. The grade report at completion of the first term will indicate the course is IP (In Progress). A satisfactory or unsatisfactory grade will be given after the second term is completed.
Prerequisites: 4913, 4914, 1001, 4016, 1521, 4009, current CPR certification and health records. Corequisites: 4915 and/or 4916, 1024 and 1002 and 1508. No lab fee charged.

**9372 Nursing Cooperative Education Experience 2 0-25-1**
This experience provides further opportunity for the student to make practical application of knowledge and skills acquired in previous courses within the nursing program. All positions are paid with an average of twenty-four hours per week. The student functions under a faculty approved nurse technician job description which excludes responsibilities requiring licensure or registration. The student is assigned a faculty advisor who meets with the student on a bi-weekly basis for the purpose of assisting the student to meet objectives, apply knowledge and skills to the work setting, clarify values and examine role relationships. The advisor also acts as a liaison between the student and employer when necessary and evaluates the student's achievement of objectives and the appropriateness of the work experience. A satisfactory or unsatisfactory grade will be given after the term is completed. The grade will be determined by the advisor with input from the employer.
Prerequisites: 4915, 4916, 1024, 1002, 1508, and current CPR certification and health records. No lab fee charged.

**9400 Co-op Employment - Engineering Technologies 1-40-2**
Usually on an alternating term basis, the technology student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the knowledge and skills acquired in his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Adherence to division co-op policies and procedures required to earn credit.
Prerequisites: None. No lab fee charged.

**9600 Cooperative Employment - Scientific Laboratory 1-40-2**
Usually on an alternating term basis, the Science Technology student is placed on full-time (32-40 hour) job that ideally relates to his or her class work. With each succeeding co-op term, the student ideally is able to assume more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Adherence to Divisional co-op policies and procedures required to earn credit.
Prerequisites: None. No lab fee charged.

**9610 Parallel Cooperative Employment - Scientific Laboratory 1-20-1**
The Science Technology students is placed on part-time (20 hours) job that ideally relates to his or her class work. With each succeeding co-op term the students ideally is able to assume

more responsibility and perform higher level duties on the job because of what he or she has learned from the previous term(s) of employment and the added knowledge and skills acquired in each school term. Adherence to Divisional co-op policies and procedures required to earn credit.
Prerequisites: None. No lab fee charged.

**9700 Cooperative Employment - Technical Writing & Editing** **1-40-2**
The Technical Writing & Editing student is placed on a full-time job (32 to 40 hours per week for one academic term) that provides the opportunity to apply knowledge and skills acquired in classes. The student must adhere to Humanities Division co-op policies and procedures to earn credit.
Prerequisites: 1018, 5002, 5016. No lab fee charged.

**9710 Parallel Cooperative Employment-Technical Writing & Editing** **1-20-1**
The Technical Writing & Editing student is placed on a part-time job (20 to 32 hours per week for one academic term) that provides the opportunity to apply knowledge and skills acquired in classes. The student must adhere to Humanities Division co-op policies and procedures to earn credit.
Prerequisites: 1018, 5002, 5016. No lab fee charged.

## Non-Credit Courses

**0130 Basic Security Training** **0-0-0**
Basic overview of primary security functions that are usually performed by contract guards. Topics covered are: nature and role of private security, note taking and report writing, the criminal justice system, types of security, patrol techniques and procedures, handling emergencies and other subjects as the employer's needs arise.
Prerequisites: None.

**0131 Basic Security Supervision** **0-0-0**
This course is an outlined overview of all the functions and responsibilities of a supervisor in the day-to-day operations of an agency.
Prerequisites: None.

**0133 Speedwriting 1** **2-3-0**
Designed for those students who have had no previous shorthand/ speedwriting training. Emphasis includes rapid reading of plate material, mastery of principles of theory, writing and transcribing.
Prerequisite: None. Lab fee charged.

**0192 English Conversation-English as a Second Language** **0-0-0**
Conversation and pronunciation class for students who speak English as their second language. The course is for intermediate to advanced students.
Prerequisites: None.

**0250 Civil Rights Seminar** **0-0-0**
Course will instruct on the History of Segregation, the Role of Government, Role of Private Industry. Fair housing Legislation especially relative to the Civil Rights Act of 1866, the Ohio Civil Rights Law enforcement and Relief Case Law. Included will be a Slide Show and the Practical Application of the Law to Sales Practices and typical Situations.

**0261 Graphic Art's Workshop** **0-0-0**
This course will consist of the lithographic process and papers' relationship to the flow of printing production.
Prerequisites: None.

**0262 Typesetting** **1-2-0**
Basic fundamentals of setting foundry type. Operation of the Intertype and Ludlow hot metal machines. Operation of the Comp/Set 510 & 504 and Compugraphic Editwriter 7500 phototypesetters. Emphasis is placed on operation of the phototypesetters and the preparation of camera ready art. Lab projects are required.
Prerequisites: None.

**0263 Color Separation** **0-0-0**
This course will require five (5) three (3) hour sessions. The first three (3) sessions will deal with color theory and color practices in the printing industry. The last two (2) sessions will be hands-on training of direct color separations using the horizontal camera.
Prerequisites: None. Lab fee charged.

**0264 Color Stripping** **0-3-0**
Hands-on training in advance color film assembly for the graphic art industry. Students will learn skills in 4 color stripping; choke and spread; screen tints; drop out drop in color type and pin register systems.
Prerequisites: None. Lab fee charged.

**0305 Photography** **0-0-0**
This course will provide the student with a working knowledge in color and black/white photography. Students will study composition, design, lighting, special effects and other elements of photography. Requirement is a 35 mm camera. Course is designed for beginners through advanced amateur.
Prerequisites: None.

**0500 Certification Review for Medical Assistants** **0-0-0**
This course will provide a basic review and study preparation for any Medical Assistant interested in preparing for the National Certification Examination given by the American Association of Medical Assistants or any Medical Assistant interested in updating skills and knowledge.
Prerequisites: None.

**0700 Small Business Start-Up** **18-0-0**
The course is designed for those interested in developing or acquiring a major management and equity position in a business venture. Emphasis will be on problems, techniques and methods relating to the search, screening, evaluation, negotiation and financing to initiate or purchase a company. Problems relating to career objectives and personal goals will be encountered.
Prerequisites: None.

**0701 Business Plan** **18-0-0**
A well-organized and carefully researched plan is necessary to attract potential partners and to insure that you have a reasonable chance to acquire funding. Sections of the business plan will include: market analysis, pricing and cost of product, locations considerations, management organization, business form, keys to success, pitfalls, and weaknesses, financial analysis.
Prerequisites: 0700

**0702 Small Business Management** **18-0-0**
This is a course in management and control of a small business. This course will include the functions of management as well as more information on your role as an entrepreneur.
Prerequisites: None

**0703 Small Business Marketing** **18-0-0**
This course is designed for those interested in developing or acquiring a major management and equity position in a business venture. Content will include: market and customer analysis, marketing concepts, trends, management and promotion.
Prerequisites: None.

**0704 Small Business Purchasing** **18-0-0**
This course is designed for those interested in developing or acquiring a major management and equity position in a business venture. Students will learn how sound buying and inventory management procedures will help them maintain a profitable and successful business enterprise.
Prerequisites: None.

**0705 Small Business Topics** **18-0-0**
This course is designed for those interested in developing or acquiring a major management and equity position in a business venture. Students will learn from practicing professionals in law, insurance and real estate.
Prerequisites: None.

**0706 Small Business Accounting and Finance** **18-0-0**
This course is designed for those interested in developing or acquiring a major management and equity position in a business venture. Content will include: budget forecasting and financial planning, accounting language and techniques; how to read and interpret financial statements.
Prerequisites: None.

FACULTY & STAFF
ONE DOLLAR
CINCINNATI TECHNICAL COLLEGE

## Faculty

**Acito, Joseph** .....Adjunct Instructor, Humanities Division
A.B., Xavier University
M.Ed., Xavier University

**Airaghi, JoAnn, R.D.** .....Adjunct Instructor, Health Technologies Division
B.S., Webster College
M.Ed., University of Cincinnati
R.D., University of Chicago Hospital

**Alexander, Genevieve, M.T. (ASCP)** .....Adjunct Instructor, Health Technologies Division

**Allen, Charalee, R.D., L.D.,** .....Coordinator, Health Technologies Division
B.S., Ohio State University
M.Ed., University of Cincinnati

**Angus, David L.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
A & P License

**Attenborough, Laura** .....Instructor, Pre-Tech
B.A. in Philosophy, Case Western Reserve University
M. Ed., Antioch University

**Baird, John** ..... Adjunct Instructor, Health Technologies Division
B.S., University of Cincinnati

**Barden, Debra** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College

**Barney, Michael** .....Adjunct Instructor, Sciences Division
B.S., Xavier University
M.Ed., Xavier University

**Barrett, Debra** .....Instructor, Sciences Division
B.S., Ohio University
M.Ed., Xavier University

**Baskind, Marc A.** .....Instructor, Business Technologies Division
B.A., Washington University
M.A., Indiana University

**Batcheller, Scott** .....Adjunct Instructor, Sciences Division
B.S., University of Miami
Ph.D., Massachusetts Institute of Technology

**Batra, Prem N.** .....Program Chair, Engineering Technologies Division
M.S., University of Cincinnati
Ph.D., University of Cincinnati

**Battistone, Carmen** .....Professor Emeritus, Humanities Division
B.A., Kent State University
M.Ed., Xavier University

**Battistone, John** .....Writing Center Manager, Humanities Division
B.A., Rutgers College

**Baum, Howard** .....Adjunct Instructor, Sciences Division
A.A.S., Ohio College of Applied Science
B.S., University of Cincinnati

**Bechtold, Diane, M.T. (ASCP)** .....Adjunct Clinical Instructor, Health Technologies Division
B.S., Xavier University

**Becker, Julius** .....Adjunct Instructor, Engineering Technologies Division
B.S.M.E., University of Iowa

**Bell, Athealia, R.D.H.** .....Counselor/Coordinator, Health Technologies Division
A.S., Raymond Walters College
B.S., University of Cincinnati
M.Ed., University of Cincinnati
Ed.D., University of Cincinnati

**Bender, Harry A.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S. Cincinnati Technical College
A & P License

**Beresford, Mike, R.R.T.** .....Adjunct Clinical Instructor, Health Technologies Division

**Besco, Fred, Jr., P.E.** .....Instructor, Engineering Technologies Division
B.E.E., Ohio State University
M.S.E.E., University of Cincinnati
Registered Professional Engineer, State of Ohio

**Boertlein, Earl** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Ohio College of Applied Science

**Bogenschutz, Debbie B.** ....Coordinator, Information Services, Learning Resources Center
A.B., Thomas More College
M.S.L.S., University of Kentucky

**Bonem, Stewart J.** .....Instructor, Business Technologies Division
B.A., Miami University
M.B.A., Miami University

**Bonner, Lois, M.T.** .....Adjunct Clinical Instructor, Health Technologies Division
B.S., Trenton State College

**Boswell, Mary C.** .....Instructor, Humanities Division
B.A., George Washington University
M.A.T., George Washington University
M.A., University of Cincinnati

**Brand, Joan** .....Instructor, Pre-Tech
B.S., Atlantic Christian College
M.Ed., Xavier University

**Breheim, David R.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College

**Bronstrup, James** .....Program Chair, Sciences Division
A.A.S., Cincinnati Technical College
A.B., Xavier University
M.Ed., Xavier University

**Brosz, Martha** .....Program Chair, Sciences Division
B.S., College of Mt. St. Joseph

**Brown, J. Terry** .....Assistant Dean, Cooperative Education & Graduate Placement, Engineering Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

**Brown, Richard D.** .....Instructor, Business Technologies Division
B.S., Franklin University
M.Ed., University of Cincinnati

**Brown, Sharon S.**.....Instructor,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Burns, Mary, R.N.**.....Instructor,
Health Technologies Division
B.S.N., D'Youville College
M.S.N., Boston University
**Burns, Tom, P.E.**.....Instructor,
Engineering Technologies Division
B.S.C.E., University of Cincinnati
M.S.C.E., University of Cincinnati
**Busken, Patrick J.**.....Adjunct Instructor,
Engineering Technologies Division
A.A.S., Cincinnati Technical College
A & P License
**Buttelwerth, John W.**.....Instructor,
Engineering Technologies Division
B.S.C.M., University of Cincinnati
M.Ed., Xavier University
**Cahall, James**.....Adjunct Instructor,
Sciences Division
A.A.S., University of Cincinnati
B.S., University of Cincinnati
M.S., University of Cincinnati
**Callahan, Paul**.....Dean,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., Xavier University
**Camm, Karen L.**.....Industry Trainer,
Business Technologies Division
B.S., Clemson University
**Campbell, Connie L.**.....Program Chair,
Business Technologies Division
B.S., Campbellsville College
M.Ed., University of Cincinnati
**Capal, David**.....Adjunct Instructor,
Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S.M.E.T., University of Cincinnati
**Carroll, Michael T.**.....Instructor,
Engineering Technologies Division
A.A.S., Cincinnati Technical College
**Cayse, Dan A., CPA**.....Instructor,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Chaney-Land, Pamela**.....Instructor,
Humanities Division
B.A., College of New Rochelle
**Chen, Jixing**.....Adjunct Instructor,
Engineering Technologies Division
B.S.E.E., Northern Jiaotong University
M.S.E.E., Northern Jiaotong University
I.M.S., University of Cincinnati
**Christen, Ellen, M.T. (ASCP)**.....Adjunct Clinical Supervisor,
Health Technologies Division
B.S., Wright State
M.S.A., Central Michigan University
**Clark, Rosemary V., R.R.A.**.....Professor Emeritus,
Health Technologies Division
B.A., Edgecliff College
M.A., Xavier University
R.R.A., St. Louis University

**Coad, Mark**.....Adjunct Instructor,
Humanities Division
B.A., University of Cincinnati
M.A., University of Cincinnati
**Coffe-Findlay, Eileen I., R.D., L.D.**.....Program Chair,
Health Technologies Division
B.S., University of Manitoba
R.D., University of Michigan
M.A., College of Mt. St. Joseph
**Coil, Robert**.....Instructor,
Business Technologies Division
A.A.S., Cincinnati Technical College
B.S., University of Cincinnati
M.B.A., University of Cincinnati
**Collier, Alan, MT (ASCP)**.....Adjunct Instructor,
Sciences Division
B.A., Miami University
MT, (ASCP), University Hospital
**Conover, Denis**.....Adjunct Instructor,
Sciences Division
B.S., University of Dayton
M.S., University of Dayton
Ph.D., University of Cincinnati
**Cook, Jeff**.....Adjunct Instructor,
Sciences Division
B.S.I.E., University of Cincinnati
**Cooney, Michele, CPA**.....Instructor,
Business Technologies Division
B.B.A., University of Cincinnati
**Cover, David W.**.....Learning Specialist,
Counseling Center
B.A., Morehead State University
M.H.Ed., Morehead State University
**Craigo, Robert W.**.....Dean Emeritus,
Engineering Technologies Division
B.S., West Virginia Institute of Technology
M.S., University of Cincinnati
**Cummings, Cheryl S.**.....Instructor,
Pre-Tech
B.S.E., Arkansas State University
**Curry, Janice, R.N.**.....Instructor,
Health Technologies Division
B.S.N., University of Cincinnati
M.S.N., University of Cincinnati
**Dadey, Donald**.....Professor Emeritus,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Daleiden, Judy, R.R.T.**.....Adjunct Instructor,
Health Technologies Division
A.A.S., Cincinnati Technical College
**Dantzler, Wanda, R.N.**.....Instructor,
Health Technologies Division
B.S.N., University of Cincinnati
**Davidson, Carolyn**.....Instructor,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., Xavier University
**Davidson, Ronald A., M.T. (ASCP)**.....Instructor,
Health Technologies Division
B.S., University of Cincinnati
M.Ed., Xavier University
**Davis, Paul**.....Assistant Dean, Academic Affairs,
Business Technologies Division
B.A., University of Cincinnati

**Decker, James, P.S.**.....Instructor,
Engineering Technologies Division
A.A.S., Cincinnati Technical College
Registered Professional Surveyor, State of Ohio
**DeNu, Paul A., P.S.**.....Instructor,
Engineering Technologies Division
B.S.C.E., University of Cincinnati
M.S.C.E, Purdue University
**Deutsch, Robert**.....Adjunct Instructor,
Sciences Division
B.S., University of Rhode Island
Ph.D., Indiana University
**DeVol, Vincent J.**.....Instructor,
Engineering Technologies Division
Certificate, Parks College of St. Louis University
Air Frame and Powerplant Technician License
**DeVore, Michael E.**.....Instructor,
Engineering Technologies Division
B.S., Ohio College of Applied Science
M.B.A., University of North Carolina
**DiPilla, Ray A.**.....Program Chair,
Engineering Technologies Division
B.S.A.E., Parks College of St. Louis University
M.S.A.E., Air Force Institute of Technology
**Disher, Teresa, M.T. (ASCP)**.....Adjunct Clinical Instructor,
Health Technologies Division
B.S., Georgetown College
**Dolan, Sue**.....Co-op Coordinator,
Engineering Technologies Division
B.S., Edgecliff College
M.Ed., Xavier University
**Donohue, Florence, R.N.**.....Instructor,
Health Technologies Division
Diploma, Bellevue Hospital
B.A., Columbia University
B.S.N., Long Island University
M.A., New York University
**Dunn, Barbara**.....Adjunct Instructor,
Sciences Division
B.S., University of Massachusetts
M.S., University of Cincinnati
**Dyer, Pamela, M.T. (ASCP)**.....Adjunct Clinical Instructor,
Health Technologies Division
B.S., Indiana University

**Ecker, Pamela S.**.....Program Chair,
Humanities Division
B.A., Hanover College
M.A., Bowling Green State University
**Ehrlinger, Claire**.....Program Chair,
Business Technologies Division
B.S., Michigan State University
**Eilers, Al**.....Adjunct Instructor,
Health Technologies Division
B.S.Ed., University of Cincinnati
M.Ed., University of Cincinnati
M.B.A., Xavier University
**Elder, Sr. Mary Clarita, ART**.....Adjunct Clinical Instructor,
Health Technologies Division
**Ellis, Pat**.....Adjunct Instructor,
Sciences Division
B.S., Case Western Reserve University
B.S., Ohio State University
M.B.A., University of Cincinnati

**Elmer, Robert V.**.....Professor Emeritus,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

**English, Eileen**.....Program Chair,
Engineering Technologies Division
B.S.B.A., Xavier University
M.Ed., Xavier University
**Enyeart, Peter, M.D.**.....Adjunct Clinical Instructor,
Health Technologies Division
M.D., University of Cincinnati
**Enzweiler, Philip**.....Adjunct Instructor,
Humanities Division
A.B., Xavier University
**Evert, Beverly, D.V.M.**.....Instructor,
Health Technologies Division
B.S., University of Cincinnati
D.V.M., The Ohio State University
**Eveslage, Robert W., R.R.T.**.....Instructor,
Health Technologies Division
B.S., University of Cincinnati
M.S., Indiana University
**Faessler, Judith, R.N.**.....Instructor,
Health Technologies Division
B.S.N., University of Cincinnati
M.S.N., University of Cincinnati
**Falcone, Robert**.....Adjunct Instructor,
Engineering Technologies Division
A.A.S., Ohio College of Applied Science
B.S., University of Cincinnati
B.S., University of Cincinnati U
M.S., University of Cincinnati
**Farrer, James A.**.....Instructor,
Sciences Division
A.E., Southern Technical Institute
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Feghali, Elias**.....Instructor,
Engineering Technologies Division
College of "FRERES" des Ecoles Chretinennes,
Beirut-Lebanon
B.A. in Secondary Education
College of Architectural Engineering, Lebanese University,
Beirut-Lebanon
Diploma in Architectural Engineering
**Fischer, Chris**.....Adjunct Instructor,
Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S., University of Cincinnati
**Fischvogt, Jeffrey W.**.....Adjunct Instructor,
Engineering Technologies Division
A.S.E.E., University of Cincinnati
B.A., Miami University, Oxford
M.B.A., Xavier University
**Flemming, Heidi, R.R.T.**.....Adjunct Instructor,
Health Technologies Division
A.A.S., Cincinnati Technical College
**Flodder, Beth, M.T. (ASCP)**.....Adjunct Clinical Supervisor,
Health Technologies Division
B.S., Indiana University
**Forsythe, Trish, RRA**.....Adjunct Clinical Instructor,
Health Technologies Division
B.S., The Ohio State University

**Funk, Hal G.** .....Professor Emeritus, Engineering Technologies Division
B.S., Ohio State University
M.Ed., University of Cincinnati

**Gar, Joseph** .....Adjunct Instructor, Sciences Division
B.S., Ahmadu Bello University
M.A., Western Michigan University

**Gateley, Joseph, M.T. (ASCP)** .....Clinical Adjunct Instructor, Health Technologies Division
B.S., Eastern Kentucky University
B.S.M.T., Eastern Kentucky University

**Gilbert, Tara, OTR/L** .....Adjunct Instructor, Health Technologies Division
B.S., Ohio State University

**Glenn, Terrence J.** .....Vice President, Administrative Services
B.S., Xavier University
M.Ed., Xavier University
Ed.D., University of Cincinnati

**Goelz, John F.** .....Adjunct Instructor, Sciences Division
B.S., University of Cincinnati
Ph.D., University of Cincinnati

**Gohn, A. Janelle, M.T. (ASCP) SM** .....Instructor, Health Technologies Division
B.S., Indiana University
M.A., College of Mt. St. Joseph

**Gohn, Robert, M.T. (ASCP)** .....Adjunct Instructor, Health Technologies Division
B.S., Indiana University

**Graff, Gary A.** .....Assistant Dean, Facilities & Extended Services, Engineering Technologies Division
A.A.S., Ohio College of Applied Science
B.S., University of Cincinnati
M.Ed., University of Cincinnati

**Gratton, Alfred** .....Professor Emeritus, Business Technologies Division
B.S., Clarkson College
M.B.A., Xavier University

**Green, Marcus M.** .....Assistant Dean, Academics, Humanities and Sciences Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

**Grooms, Sheila** .....Adjunct Clinical Instructor, Health Technologies Division

**Gross, Karl F.** .....Adjunct Instructor, Engineering Technologies Division

**Guntzelman, Sue, R.N.,** .....Instructor, Health Technologies Division
Diploma Good Samaritan Dayton
B.S.N., University of Cincinnati
M.S.N., Wright State University

**Haap, Donald H.** .....Adjunct Instructor, Engineering Technologies Division

**Haft, Jill** .....Instructor, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

**Hall, Michael S.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
Professional Land Surveyor

**Hancox, Jerelen, R.N.,** .....Instructor, Health Technologies Division
B.S.N., Ohio University
M.S.N., University of Cincinnati

**Harman, Steve E.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
A & P License

**Harrier, Peggy D.** .....Program Chair, Business Technologies Division
B.A., St. Mary's College/University of Notre Dame
M.Ed., Xavier University

**Hassan, James** .....Instructor, Humanities Division
B.A., Georgetown College
M.A., Eastern Kentucky University

**Hauck, Raymond A.** .....Adjunct Instructor, Sciences Division
B.A., Miami University
M.S., University of Cincinnati

**Hay, Donal L.** .....Assistant Dean, Engineering Technologies Division
B.A., Arizona State University
M.A., Arizona State University
Ph.D., Texas A&M University

**Heather, Christopher, R.N.** .....Instructor, Health Technologies Division
B.S., University of Cincinnati
N.D., Case Western Reserve

**Heck, Brenda, R.N.** .....Acting Program Chair, Health Technologies Division
A.A.S., University of Kentucky
B.S.N., University of Cincinnati
M.S.N., University of Kentucky

**Heink, Harry R.** .....Professor Emeritus, Humanities Division
A.B., Eastern Kentucky State College
M.Ed., Xavier University

**Hendrix, Richard E., C.H.A.** .....Program Chair/Coordinator, Business Technologies Division
B.S., Bowling Green State University
M.Ed., Xavier University

**Herr, Gregory, C.C.E.** .....Adjunct Instructor, Engineering Technologies Division
B.S.E.E., Purdue University
M.B.A., Xavier University

**Hess, Lydia A.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College

**Hester, John** .....Adjunct Instructor, Sciences Division
B.S.C.E., University of Cincinnati

**Hill, Susan** .....Adjunct Instructor, Sciences Division
B.S., University of Dayton
M.S., Case Western Reserve University

**Hils, Neal C.** .....Professor Emeritus, Business Technologies Division
B.S., University of Cincinnati

**Hirsch, Edward A.** .....Adjunct Instructor, Sciences Division
B.S., Salmon P. Chase College

**Hochmuth, Roberta, R.N.** .....Instructor, Health Technologies Division
B.S.N., Capital University
M.S.N., University of Cincinnati

**Hoeweler, Janice L.** ..... Instructor, Sciences Division
B.S., University of Illinois
M. Ed., Xavier University
**Holland, Barbara, OTR/L** .....Adjunct Instructor, Health Technologies Division
B.S., Simmons College
M.S., Xavier University
**Holland, Randy, R.N.** .....Adjunct Clinical Instructor, Health Technologies Division
**Hollstegge, Linda S.**.....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.A., University of Cincinnati
**Howes, Mary Lee**.....Instructor, Humanities Division
B.A., Edgecliff College
**Hubbard, John H., P.E.**.....Professor Emeritus, Engineering Technologies Division
B.S.C.E., Tufts University
M.S., University of Pittsburgh
**Huffman, Elodie, R.D.**.....Professor Emeritus, Health Technologies Division
B.S., Cornell University
M.Ed., University of Cincinnati
R.D., Oklahoma State University
**Huge, Terrence**.....Instructor, Sciences Division
B.S., University of Cincinnati
M.S., University of Cincinnati
A.S.Q.C. Certified Quality Engineer
A.S.Q.C. Certified Reliability Engineer
**Huller, Patricia**.....Instructor, Business Technologies Division
B.S., University of Kentucky
M.Ed., Xavier University
Certified Working Chef, American Culinary Federation
Certified Culinary Educator, American Culinary Federation
**Hunley-Belanger, Marcha**.....Program Chair, Humanities Division
B.S.Ed., University of Cincinnati
M.A.I.R., University of Cincinnati
**Hying, Debra, R.N.**.....Instructor, Health Technologies Division
B.S.N., Ohio State University
M.S.N., University of Cincinnati
**Iacobucci, Frank A.**.....Professor Emeritus, Sciences Division
B.S., United States Military Academy
M.Ed., Xavier University
**Jackobs, Miriam, R.D., L.D.**.....Adjunct Instructor, Health Technologies Division
B.S., Briar Cliff College
R.D., St. Louis University & University Hospital
M.S., Iowa State University
**Jackson, Joan**.....Instructor, Sciences Division
A.B., DePauw University
M.Ed., Virginia Commonwealth University
**James, Carol** .....Adjunct Faculty, Pre-Tech
A.B., Morehead State University
**James, Judd H., CMfgE**.....Program Chair, Engineering Technologies Division
B.S.M.E., University of Cincinnati
**Johnson, Joanne, R.N.**.....Instructor, Health Technologies Division
Diploma Good Samaritan Hospital
B.S.N., University of Cincinnati
M.S.N., University of Kentucky
**Jonas, Charles E.**.....Coordinator of Industry Training, Engineering Technologies Division
B.S., Ball State University
M.Ed., University of Cincinnati
**Jones, Michael H.** .....Instructor, Humanities Division
B.F.A., University of Cincinnati
**Keenan, Joseph N.** .....Instructor, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Kief, Cynthia, COTA/L**.....Instructor, Health Technologies Division
Certificate Columbus Adult Health Career Center
**Kilpatrick, Alan** .....Adjunct Instructor, Sciences Division
A.A.B., Cincinnati Technical College
B.A., Texas A & M University
**Kindle, Joyce** .....Instructor, Humanities Division
B.A., Nazareth College
M.A., New York University
**Kinsella, John**.....Instructor, Business Technologies Division
Certified Master Chef, American Culinary Federation
Certified Chef, City & Guilds of London Institute
Royal Institute of Public Health & Hygiene
Certified Chef, Irish Panel of Chefs
Certified Executive Chef, American Culinary Federation
Certified Culinary Educator, American Culinary Federation
National Secretary for the American Culinary Federation
**Kinzie, Paul W.** .....Professor Emeritus, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Knepp, Linda** .....Instructor, Pre-Tech
B.S., Capital University
B.Ed., Capital University
**Kobberdahl, Clyde E.** .....Instructor, Business Technologies Division
B.S., University of North Dakota
M.Ed., University of Cincinnati
**Kober, Thomas E.**.....Dean, Health Technologies Division
B.A., Earlham College
M.S., University of Cincinnati
Ph.D., University of Cincinnati
**Kocher, Elisabeth, ART** .....Adjunct Instructor, Health Technologies Division
A.A.S., Cincinnati Technical College
**Koester, Norbert** .....Adjunct Instructor, Sciences Division
A.A.S., Ohio College of Applied Science (O.M.I.)
B.S., University of Cincinnati
**Kornau, Eric**.....Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
A & P License, Cincinnati Technical College

**Kraus, Stephen, M.T. (ASCP)** .....Adjunct Clinical Instructor, Health Technologies Division
B.S., Eastern Kentucky University
**Krismer, Marianne, R.D.**.....Assistant Dean, Health Technologies Division
B.S., Edgecliff College
M.Ed., University of Cincinnati
R.D., University of Cincinnati General Hospital
**Kuehn, Irvin C.**.....Professor Emeritus, Business Technologies Division
B.S., Eastern Kentucky University
M.A., Eastern Kentucky University
**Laemmle, Carolyn G., M.T. (ASCP),**.....Program Chair, Health Technologies Division
B.A., Edgecliff College
M.T. (ASCP), St. Mary's Memorial Hospital School of Medical Technology
M.S., College of Mt. St. Joseph
Ed.D., University of Cincinnati
**Lalley, John**.....Professor Emeritus, Sciences Division
B.S., Thomas More College
**Lamey, Robert W.**.....Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S., University of Cincinnati
**Leicht, Albert G.**.....Program Chair, Business Technologies Division
B.S., West Virginia Institute of Technology
M.S., South Dakota State University
**Leininger, Donald**.....Adjunct Instructor, Sciences Division
B.S.M.E., University of Cincinnati
**Levy, Liliane**.....Adjunct Instructor, Health Technologies Division
Ed.D., Berkendael, Brussels Belgium
**Li, Dapeng**.....Adjunct Instructor, Engineering Technologies Division
B.S., Beijing University of Science and Technology
M.S., Beijing University of Science and Technology
**Lieberman, Hope**.....Instructor, Pre-Tech
B.S., Wright State University
M.Ed., University of Cincinnati
**Lierl, Debbie, R.R.T.**.....Program Chair, Health Technologies Division
B.S., University of Cincinnati
**Lower, Joe R.**.....Professor Emeritus, Business Technologies Division
B.S., Ohio State University
M.A., Ohio State University
**Macke, James**.....Co-op Coordinator, Business Technologies Division
B.S., Xavier University
B.A., Xavier University
M.B.A., Xavier University
**Mains, Keith G.**.....Industry Trainer, Business Technologies Division
Certification, Northern Kentucky University
**Mallett, Sherri A., ART**.....Instructor, Health Technologies Division
A.A.S., Cincinnati Technical College
B.S., Miami University

**Manheim, Michael**.....Adjunct Instructor, Health Technologies Division
B.S., University of Cincinnati
D.V.M., Ohio State University
**Mann, David**.....Adjunct Instructor, Engineering Technologies Division and Sciences Division
B.A., Dartmouth College
B.E., Thayer School of Engineering
**Marcotte, James A.**.....Assistant Dean, Educational Linkages Humanities and Sciences Divisions
A.A.S., Purdue University
B.S., Indiana State University
M.Ed., University of Cincinnati
Ed.D., University of Cincinnati
**Marcotte, Susan**.....Counselor/Coordinator, Health Technologies Division
B.S., University of Cincinnati
B.S.Ed., University of Cincinnati
M.A., University of Cincinnati
**Martin, John**.....Adjunct Faculty, Sciences Division
B.S., Xavier University
M.S., Ph.D., University of Cincinnati
**Mattoni, Joseph**.....Adjunct Instructor, Engineering Technologies Division
B.S., University of Cincinnati
**McDannold, Cathy, R.R.A.**.....Adjunct Clinical Instructor, Health Technologies Division
**Mc Donald, Robert Tim**.....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
**Mc Farland, Lester**.....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
**McGee, Gloria, A.R.T**.....Adjunct Clinical Instructor, Health Technologies Division
A.A.S, Cincinnati Technical College
**McLain, Robert, P.E.**.....Instructor, Engineering Technologies Division
B.S.E.E., University of Cincinnati
M.B.A., University of Cincinnati
**McMahon, Russell**.....Adjunct Instructor, Sciences Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Meador, Linda**.....Counselor/Women's Center Coordinator, Admissions and Counseling
B.S., Tuskegee University
M.S., Tuskegee University
**Mellinger, Daniel O.**.....Instructor, Humanities Division
A.B., University of Tennessee
M.Ed., University of Cincinnati
**Meyer, Stephen R.**.....Adjunct Instructor, Engineering Technologies Division
B.S.E.E., Purdue University
**Miller, Tom**.....Adjunct Instructor, Business Technologies Division
B.S., West Virginia Institute of Technology
**Mills, Jeff CMfgT**.....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College

**Mindhardt, Katye L.** .....Instructor,
Business Technologies Division
A.A.B., University of Cincinnati
B.S., University of Cincinnati
M.Ed., University of Cincinnati

**Moon, Robert** .....Instructor,
Sciences Division
B.S., East Tennessee State University
M.S., University of Cincinnati
M.S., University of North Carolina

**Morganroth, Patricia, R.N.** .....Instructor,
Health Technologies Division
B.S.N., Villanova University
M.S.N., University of Cincinnati

**Morris, Larry A.** .....Dean,
Engineering Technologies Division
A.A., Tacoma Community College
B.S.E.E., Ohio State University
M.A., Webster University
M.S.E.E., University of Texas

**Mullins, Billy D.**.....Instructor,
Engineering Technologies Division
B.S.E.E., University of Kentucky

**Myatt, James F.**.....Instructor,
Business Technologies Division
St. Helen's Technical College
Certified Chef, City & Guilds of London Institute
Royal Institute of Public Health & Hygiene
Chef Patissiere, Union of Lancashire & Cheshire Institute

**Nakoff, Mike**.....Coordinator of Academic Computing,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., Xavier University
Certified Systems Professional, Institute for Certification of
Computer Professionals

**Nicholson, William** .....Adjunct Instructor,
Sciences Division
B.S.E.S., University of Cincinnati

**Nolan, Timothy D.**.....Instructor,
Humanities Division
A.B., Xavier University

**Norton, Jude, PA, CST** .....Instructor,
Health Technologies Division
A.A.S., Cincinnati Technical College
B.A., Northern Kentucky University
M.S., University of Cincinnati

**Olubas, Paul E.** .....Instructor,
Humanities Division
B.A., Miami University
M.A., Miami University

**Ossman, Kathleen** .....Adjunct Instructor,
Sciences Division
B.S., Georgia Technical Institute
M.S., Georgia Technical Institute
Ph.D, University of Florida

**Otten, Thomas** .....Adjunct Instructor,
Sciences Division
A.B., Thomas More College
M.Ed., Xavier University

**Ottenweller, Kelly, RRA** .....Adjunct Clinical Instructor,
Health Technologies Division
B.S., The Ohio State University

**Palmer, Alice, R.N.**, .....Instructor,
Health Technologies Division
B.A., Earlham College
M.S.N., PACE University

**Pascho, Michael** .....Adjunct Instructor,
Sciences Division
B.S., University of Cincinnati

**Penn, Leonard R.** .....Instructor,
Business Technologies Division
B.A., University of Cincinnati
M.Ed., Xavier University

**Perry, Frances, R.N.** .....Adjunct Instructor,
Health Technologies Division
R.N., Georgia Baptist School of Nursing

**Peter, Timothy**.....Adjunct Instructor,
Humanities Division
B.A., Otterbein College
M.Ed., Xavier University

**Phillips, Verale W., CDP**.....Program Chair,
Business Technologies Division
A.A., University of Cincinnati
B.S., University of Cincinnati
M.B.A., Xavier University
Certificate, Data Processing, Institute for Certification
of Computer Professionals
Certificate, Data Education, Certification Council

**Pitman, Jr., Lloyd L.** .....Instructor,
Business Technologies Division
B.S., University of Cincinnati
M.Ed., Xavier University

**Pitts, Bessie** .....Counselor,
Health Technologies Division
A.S., University of Cincinnati
B.S., University of Cincinnati
M.A., University of Cincinnati

**Ploehs, John** .....Adjunct Instructor,
Humanities Division
B.A., Xavier University

**Portune, Alice** .....Adjunct Instructor,
Sciences Division
B.S., University of Cincinnati
B.E., University of Cincinnati
M.A.T. in Mathematics, University of Cincinnati

**Prantl, Sandra, OTR/L**.....Program Chair,
Health Technologies Division
B.S., Ohio State University

**Proffitt, Herbert** .....Adjunct Instructor,
Sciences Division
B.S., Cumberland College
M.A., Union College
M.M., Utah State University

**Pucke, Lawrence E.**.....Instructor,
Sciences Division
B.S., Xavier University
M.Ed., Xavier University

**Pursley, Philip** .....Adjunct Instructor,
Sciences Division
B.S., Morehead State University
M.Ed., University of Cincinnati

**Rahmes, Catherine M.** .....Dean,
Humanities and Sciences Divisions
A.B., Miami University
M.A., Miami University

**Rathbone, John P.**.....Adjunct Instructor,
Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S.E.E., University of Cincinnati

**Raymond, Robert** .....Adjunct Instructor,
Engineering Technologies Division

**Reardon, Martin** .....Adjunct Instructor, Humanities Division
B.S., Xavier University
M.Ed., Xavier University
**Recard, Diane June** .....Adjunct Instructor, Health Technologies Division
B.A. Shippensberg University
**Reinhart, James G.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S., University of Cincinnati
**Rhein, William G.** .....Professor Emeritus, Engineering Technologies Division
B.S.I.M., University of Cincinnati
M.B.A., University of Cincinnati
**Richter, Robert**.....Adjunct Instructor, Humanities Division
B.S., Xavier University
**Rieck, Alyce G.**.....Instructor, Humanities Division
A.B., San Diego State University
M.Ed., University of Cincinnati
**Rinck, H. Anthony** .....Professor Emeritus, Engineering Technologies Division
B.S., Xavier University
M.Ed., Xavier University
**Robinson, Daphne T., ART** .....Instructor, Health Technologies Division
A.A., University of Cincinnati
B.S., University of Cincinnati
**Romano, Robert** .....Instructor, Engineering Technologies Division
B.S.E.E., Ohio State University
**Rope, Alan**.....Adjunct Instructor, Sciences Division
B.S., University of Cincinnati
**Rost, Carolyn**.....Adjunct Instructor, Pre-Tech
B.S. University of Cincinnati
M.A. Northern Kentucky University
**Rowe, Samuel D. Jr., .....**Coordinator of Industrial Training, Humanities and Sciences Division
B.S., Northern Kentucky University
M.Div., Southern Baptist Theological Seminary
M.A., Southern Baptist Theological Seminary
**Rupp, Rodney** .....Program Chair, Sciences Division
B.S., University of Cincinnati
B.Ed., University of Cincinnati
**Samuel, Eugenia** .....Instructor, Pre-Tech
B.S., University of Cincinnati
**Saylor, Janet**.....Adjunct Instructor, Humanities Division
B.S., University of Cincinnati
**Schaffeld, Linda, CPA** .....Program Chair, Business Technologies Division
A.A.B., Cincinnati Technical College
B.B.A. University of Cincinnati
**Schaller, Roger N.**.....Co-op Coordinator, Engineering Technologies Division
A.A.S, Cincinnati Technical College
B.S., State University of Wisconsin
M.Ed., Xavier University
**Schlueter, Ralph C.** .....Professor Emeritus, Sciences Division
B.S., Xavier University
M.Ed., Xavier University
**Schmid, James E.**.....Program Chair, Engineering Technologies Division
B.S., Embry Riddle Aeronautical University
A&P License, Alabama Aviational Technical College
M.Ed., Xavier University
**Schmidt, Ronald, M.T. (ASCP)**.....Adjunct Instructor, Sciences Division
A.A.S., Alfred State Technical College
B.A., University of Buffalo
M.A., Central Michigan University
**Schulte, Clifford A., P.E.** .....Instructor, Engineering Technologies Division
B.S.E.E., University of Cincinnati
**Schultz, Patricia, R.N.** .....Instructor, Health Technologies Division
Diploma Deaconess Hospital School of Nursing
B.S.N., University of Cincinnati
M.S.N., University of Kentucky
**Schuster, Mary** .....Adjunct Instructor, Sciences Division
B.S., Cleveland State University
B.A., Cleveland State University
**Sefton, J. Richard**.....Instructor, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati
**Selenke, William** .....Adjunct Instructor, Health Technologies Division
A.B., Regis College
M.S., Creighton University
Ph.D., Creighton University
**Simmermon, David S.**.....Adjunct Instructor Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S., University of Houston
**Sketch, Connie J.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S., Tri State University
M.S., University of Cincinnati
**Sketch, Gregory, P.S., P.E.** .....Program Chair, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S.C.E., Ohio State University
B.S.S., Ohio State University
**Smith, David W., CMfgT**.....Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
**Smith, Gail, R.R.A.**.....Program Chair, Health Technologies Division
A.A., Eastern Kentucky University
B.S., Ohio State University
**Smith, Swanya d'Andre**.....Co-op Coordinator, Business Technologies Division
A.A.B., Cincinnati Technical College
**Sowers, James, A.M.T.**.....Adjunct Clinical Instructor, Health Technologies Division
A.M.T., U.S. Army Medical Service School
**Speller, Sandra, ART**.....Instructor, Health Technologies Division
A.A. Cincinnati Technical College

**Spraley, Judith, A., R.N., CNOR** .....Program Chair, Health Technologies Division
B.S.N., Mount St. Joseph College
M.Ed., University of Cincinnati

**Sprinkle, Russell** .....Instructor, Business Technologies Division
N.I.A.S.E. Certification

**Stanforth, Sherry, RRA** .....Adjunct Instructor, Health Technologies Division
B.S., Ohio State University

**Stark, Thomas J.** .....Dean, Humanities Division and Sciences Divisions
B.S., Xavier University
M.Ed., Xavier University

**Steidley, V. Kenneth**.....Professor Emeritus, Engineering Technologies Division
B.S., Northeast Missouri State University

**Stewart, Briggetta E.**.....Professor Emeritus, Business Technologies Division
A.A.B., Cincinnati Technical College
Certified Protection Personnel,
American Society for Industrial Security

**Stoll, Kenneth V.**.....Instructor, Engineering Technologies Division
B.S., Miami University
M.Ed., University of Cincinnati

**Stormer, Thomas, R.R.T.**.....Instructor, Health Technologies Division
A.A.S., Sinclair Community College
B.S., University of Cincinnati

**Stroud, Mary** .....Adjunct Instructor, Sciences Division
B.A., Converse College
M.S., University of Cincinnati

**Stump, Diane S.**.....Counselor, Admissions and Counseling
B.A., Eastern Kentucky University
M.A., Eastern Kentucky University

**Suddendorf, Lawrence R., M.T. (ASCP)** .....Instructor, Health Technologies Division
B.S.M.T., University of Cincinnati
M.T. (ASCP), Cincinnati General Hospital
School of Medical Technology
M.Ed., University of Cincinnati
Ed.D., University of Cincinnati

**Suer, Kenneth**.....Adjunct Instructor, Humanities Division
A.A., University of Cincinnati
B.S.Ed., University of Cincinnati
M.Ed., Xavier University

**Sulek, Carl E.**.....Professor Emeritus, Business Technologies Division
B.S., Ohio University
M.Ed., University of Cincinnati

**Sullivan, Elizabeth, CSP** .....Co-op Coordinator, Business Technologies Division
B.S., Miami University
M.Ed., Xavier University
Certified Systems Professional, Institute for Certification of Computer Professionals

**Sunderhaus, Edward** .....Instructor, Sciences Division
B.S., Xavier University

**Swanson, Richard** .....Instructor, Sciences Division
B.S., University of Cincinnati

**Swinford, Margaret, R.N.**.....Instructor, Health Technologies Division
Diploma Bethesda Hospital School of Nursing
B.S.N., Edgecliff College
M.S.N., University Of Kentucky

**Thomas, Jerri** .....Co-op Coordinator, Engineering Technologies Division
A.A.S., Northern Kentucky University
B.S., Northern Kentucky University
M.Ed., University of Cincinnati

**Tulloss, William S.** .....Program Chair, Sciences Division
B.E.E., Ohio State University
M.S.E.E., Ohio State University
M.S., Xavier University

**Turner, Robert L.**.....Adjunct Instructor, Engineering Technologies Division
B.S., Miami University

**Uhl, Robert, M.T. (ASCP)** .....Adjunct Clinical Instructor, Health Technologies Division
B.A., Thomas More College
M.Ed., Xavier University
M.T. (ASCP), Good Samaritan School of Medical Technology

**Van Camp, Clayton, M.**.....Professor Emeritus, Engineering Technologies Division
A.A.S., Ohio College of Applied Science

**Van Horn, Robert** .....Industry Trainer, Business Technologies Division
B.S., Northern Kentucky State University
Certified Master Automotive Technician

**Varchol, Dorothy, R.N.,** .....Instructor, Health Technologies Division
Diploma Nesbitt Memorial Hospital
B.S.N.E., Welkes Barre College
M.A., University of Scranton
M.S.N., University of Cincinnati

**Vetter, Jeffery A.**.....Instructor, Business Technologies Division
A.A.B., Cincinnati Technical College
B.S., Xavier University

**von Kampen, Karl N.** .....Instructor, Business Technologies Division
Certified Master Automotive Technician
B.S., Bradley University
M.S., Bradley University

**Von Volborth, Elizabeth, R.N.** .....Instructor, Health Technologies Division
B.S.N., University of Cincinnati
M.S.N., University of Cincinnati

**Vossmeyer, Philip** .....Industry Trainer, Business Technologies Division
A.A.S., Cincinnati Technology College
A.A.S., Northern Kentucky University

**Wagner, Jeanne, M.T. (ASCP)** .....Adjunct Clinical Supervisor, Health Technologies Division
B.S., University of Cincinnati

**Walters, Nancy L., M.T. (ASCP), CMA**.....Instructor, Health Technologies Division
A.B., Lindenwood College

**Walton, Gary**.....Instructor, Business Technologies Division
A.A.B., Cincinnati Technical College
B.S., University of Cincinnati

**Watts, Olivia, R.N.** .....Program Chair, Health Technologies Division
B.S.N., University of Cincinnati

**Weaver, Phyllis, R.R.T.** .....Adjunct Clinical Instructor, Health Technologies Division
B.S., University of Cincinnati
**Webster, Gary M., P.E.** .....Program Chair, Engineering Technologies Division
B.S.E.E., Ohio State University
Registered Professional Engineer, State of Ohio
**Weichold, A. Edward**.....Instructor, Engineering Technologies Division
A & P License, Cincinnati Technical College
A.A.S., Cincinnati Technical College
**Weingartner, Paul** .....Instructor, Engineering Technologies Division
B.S.E.E.T., University of Cincinnati
**Wendler, Marcia, RRA** .....Adjunct Clinical Instructor, Health Technologies Division
B.S., University of Alabama
M.Ed., University of Alabama
**White, Sharon** .....Instructor, Business Technologies Division
B.A., Fisk University
M.B.A., Xavier University
**Whyle, David J.** .....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
A & P License
**Wiebe, Harold, P.E.**.....Adjunct Instructor, Engineering Technologies Division
B.S.E.E., University of Cincinnati
M.S.E.E., University of Cincinnati
**Willmore, Sharman, R.D., L.D.** .....Program Chair, Health Technologies Division
B.S., Purdue University
M.S., Purdue University
**Wilson, Cornelius (Jack)** .....Co-op Coordinator, Business Technologies Division
B.S., University of Cincinnati
**Wilz, Mary E., M.T. (ASCP)**.....Adjunct Clinical Supervisor, Health Technologies Division
B.H.S., University of Kentucky
M.S., University of Cincinnati
**Winkle, LaVerne** .....Professor Emeritus, Engineering Technologies Division
E.E., University of Cincinnati
B.A., University of Cincinnati
**Wolf, Ann, R.D.**.....Adjunct Clinical Instructor, Health Technologies Division
R.D., Michael Ries Hospital
B.S., Incarnate Word College
**Wolfer, Katherine, R.N.**.....Adjunct Instructor, Health Technologies Division
R.N., The Christ Hospital School of Nursing
B.S.N., Northern Kentucky University
**Wolterman, Deborah, M.T. (ASCP)**.....Adjunct Clinical Supervisor, Health Technologies Division
B.S., University of Cincinnati
M.B.A., Xavier University
**Woods, Scott**.....Adjunct Instructor, Health Technologies Division
B.S., Xavier University
M.D., University of Cincinnati
**Wright, Ben R.**.....Instructor, Business Technologies Division
B.S., Murray State University
M.Ed., Murray State University
**Wright, Jeff L.**.....Adjunct Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
A & P License
B.S., Embry-Riddle University
**Wunderlich, William** .....Instructor, Sciences Division
B.S.M.E., University of Cincinnati
M.S.M.E., University of Cincinnati
M.S.E.D., Xavier University
**Wyatt, Walter W.** .....Instructor, Business Technologies Division
B.S., Ohio State University
**Wyder, Michael**.....Adjunct Instructor Sciences Division
B.S., University of Cincinnati
**Yelton, Steven J., P.E.**.....Program Chair, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S.E.E., Ohio State University
**Youngpeter, Donald, P.E.**.....Program Chair, Engineering Technologies Division
B.S.M.E., University of Cincinnati
M.S.M.E., University of Cincinnati
**Yust, Jill, R.N.** .....Instructor, Health Technologies Division
Diploma, Bethesda Hospital School of Nursing
B.S.N., Ohio University
M.S.N., Wright State University
**Zaffiro, Paul A.** .....Adjunct Instructor, Engineering Technologies Division
B.S.M.E., University of Cincinnati
M.S.M.E., Massachusetts Institute of Technology
**Zellner, Suzanne, R.N.**.....Instructor, Health Technologies Division
A.S.N., Triton College
B.S.N., Loyola University
M.S.N., Loyola University
**Ziegel, Kim T.** .....Instructor, Humanities Division
B.A., Columbia University
M.A., Indiana University
M.Ph., Yale University
**Ziegler, Immanuel**.....Professor Emeritus, Sciences Division
**Ziegler, Lawrence J.**.....Instructor, Humanities Division
B.A., Mount St. Mary Seminary
B.S., Mount St. Mary Seminary
M.Ed., Xavier University

## Professional Advisory Committees

**Administrative Services Technologies**
Ann Barnes.....Oak Hills High School
Randy Corgan.....General Electric Company
Sandi Gans.....DuBois Chemical
Renee Streder.....Plastic Moldings
Pamela Sparrow.....Chiquita Brands International
Marshall Wade.....City of Cincinnati

**Automotive Service Management Technology**

Allen Anderson.....Schaaf Tarpaulin Company
Jim Corbin....Jake Sweeney Chevrolet/Geo Chrysler Plymouth
Lester Kern.....Robke Ford, Inc.
Clifford Metzger.....Buick Motor Division (retired)
John Moll.....Honda East Inc.
Al Nagele.....Schultz Custom Wall
Lenny Pugh.....Superior Honda
Thomas Ruehl.....Westside Auto Service
Jim Sears.....Fairfield Buick & Kerry Ford
Irwin Sobul.....Cleveland Board Of Education
Carl Tedesco.....Greater Cincinnati Auto. Dealers Association
Robert Witterstartter.....McClusky Chevrolet, Inc.

**Aviation Maintenance Technology**

Robert Bennett.....Delta Airlines
Steven Darr.....T.W. Smith Engineering Company
William Hogan.....Hoganaire
Ralph Martin.....Comair
Richard Wartinger.....Commander-Aero, Inc.
David Whyle.....

**Biomedical Electronics Engineering Technology**

Barry Bruns.....Christ Hospital
Magrish James Coleman.....U.C. Medical Center
Greg Herr.....Christ Hospital
Bill Malloy.....St. Francis/St. George Hospital
Jim McGillen.....Clermont Mercy Hospital
Darrell Neuhausel.....Bethesda Hospitals
Don Smith.....Providence Hospital
Tom Wallenhorst.....American Laundry Machinery
Dan Webster.....Christ Hospital

**Chef Technology**

George Haidon.....Maisonette
Howard Jackson.....Camargo Country Club
Steve Jones.....
Luigi Lavalle.....Quality Inn Riverview
Pamela Lewis.....Procter & Gamble
B. Mays, CCE, CEC.....The Christ Hospital
Steve Nolan.....Seasons Retirement Center
Nelson Porta.....Clarion Hotel
Cheryl Schazman, CWC.....Holiday Inn
Jeff Sheldon.....

**Civil Engineering Technology**

Gary Appleton.....Daniel International Corporation
David Cox.....R.W. Consultants
Mark Frey.....Hickson
Mike Haney.....THP Limited Consulting Engineering
Terry Kohler.....American Land Surveys
Ralph Palmer.....Clermont County Engineer
Buford "Bud" Payne.....B.L. Payne & Associates
John Russell.....Cole & Russell Architects
Hans Stroeh.....Belcan
Burney Suer.....Frank Messer & Sons Construction Co.
James Viox.....Viox & Viox
William Viox.....Viox & Viox
Joan Tepe Wurtenberger.....Champlin/Haupt

**Computer Engineering Technology**

David Connitt.....Gee Tronics
Ken Foster.....Structural Dynamics Research Corp.
David Gilchrist.....Structural Dynamics Research Corp.
Steve Peters.....University of Cincinnati

**Computer Science Technology**

Robert Bartlett.....Savings & Loan Data Corp.
Chuck Clevenger.....Cap Gemini
Jim Dixon.....Star Bank
Dave Himes.....Cincom Systems
Paul Inderhees.....Champion International
James Rizzo.....Crocker-Fels
Matt Sutter.....Procter & Gamble Company
Joseph Willis.....Cincinnati Board of Education
Howard Wittsken.....Community Mutual
Bill Wong.....Cincinnati Gas & Electric Company

**Dietary Manager**

Macaira Conaton.....Consultant, Head Start Prog.
Pat Matre, RD, LD.....Cincinnati Public Schools
Kathleen Nemeth, RD, LD.....Sisters of Charity
Verinda Richter.....Wyoming School District
Algertha Thurman.....Bethesda Oak Hospital
Betty Turner, CDM.....Otterbein Retirement Village
Cynthia Walton, DTR.....Mt. Pleasant Retirement Village

**Dietetics Technology**

Randy Dunham.....Bethesda Scarlet Oaks
Mary Catherine Faller.....College of Mt. St. Joseph
Jane Gillis, R.D., L.D.....Christ Hospital
Susan Groeschen, D.T.R.....Shriner's Burns Institute
Lauren Niemes.....University of Cincinnati
Sandy Procopio, R.D., L.D.....Jewish Hospital
Saralee Silverglade, DTR Sycamore Senior Food Service Center
Cynthia Solomon.....Senior Corporate Dietition
Ann Wolf, R.D.....Communicare Incorporated
Carol Wright.....St. Francis Health Care System

**Electrocardiography Technology**

Jean Ackner.....Bethesda Hospital North
Martha Bernhard.....Jewish Hospital
Jessie Brown.....Good Samaritan Hospital
Rob Brown.....St. Francis/St. George Hospital
Bonnie Fair.....Christ Hospital
Lorenzo Law.....Veterans Administration Hospital
Marcia Miller.....Deaconess Hospital

**Electro-Mechanical Engineering Technology**

Mike Castor.....Control Parameters, Inc.
Bob Couch.....Heekin Can Company
Rick Fath.....Xtec, Inc.
Jeff Fischvogt.....Adjunct Instructor, CTC
Randy Kappesser.....Cincinnati Milacron
Joe Mousie.....Belcan Engineering Services
Mark Steinkamp.....The Buschman Company
Wayne Uhl.....R.A. Jones Co.
Robert Wilks.....Wilks Engineering Solutions

**Electronics Engineering Technology**

Alex Bell.....Hugin-Sweda
Jim Brooke.....Ohio State University
Max Cohen.....KDI Precision
Vern Dahl.....Cincinnati Electro-Systems
Jim Headrick.....Work Place, Inc.
Terri Perrino.....RK Electric Company Inc.
Tim Schulten.....Ameridata
Tom Wallenhorst.....American Laundry Machinery

**Graphic Communications/Flexography Communications**

Bob Abrams.....
Ron Dettmer.....Printing Ind. Assoc. of Ohio
Fred Manning.....Taussig's Graphic Supply, Inc.
Carol Meehan.....Mr. Label
Mark Mikolajczyk.....The Cincinnati Enquirer
Paul Riedel.....Bluegrass Printing Co., Inc.
Ron Schlensker.....Print Sales, Inc.
Ted Wahl.....Champion Screen Printing
James Wermes.....Gibson Greeting Card Co.
Robert Zschau.....S. Rosenthal Co.

**Health Careers Opportunity Program (HCOP)**

Louise Gerl.....Western Hills High School
Kathy Kaplan.....Aiken High School
Herb Kaulkbrenner.....Woodward High School-CAMAS
Bessie B. Pitts.....HCOP Coordinator, CTC
Ralph Powers.....HCOP Counselor, CTC
Ruth Ravenna.....Hughes Alternative Center
Debbie Rupp.....Woodward High School-CAMAS

**Health Information Management Technology**

Pam Berry, ART.....Peer Review Systems
Joann Blackwell, ART.....McCullough-Hyde Hospital
Deborah Borkowski, ART.....Providence Hospital
Trish Forsythe, RRA.....Clermont Mercy Hospital
Georgia Frison.....Student
Cindy Kneip, RRA.....Providence Hospital
Kelly Ottenweller, RRA.....St. Luke Hospital
Jan Richard, RRA.....Good Samaritan Hospital
Denise Shephard, RRA.....Good Samaritan Hospital

**Health Unit Coordinator Technology**

Susan Behymer.....Our Lady of Mercy Hospital
Rosetta Hull, RN.....University Hospital
Lilliane Levy.....
Marie Marks.....University Hospital
Elaine McGuire.....Good Samaritan Hospital
Brenda McMullen, CHUC.....University Hospital
Jo Ellen Monroe.....Shriners Burns Institute
Nancy Murphy, CHUC.....St. Elizabeth Hospital
Kathy Noyes, RN.....Jewish Hospital
Shirley Powell, CHUC.....Bethesda Hospital, Inc.
Vi Sparka.....St. Elizabeth Hospital
Bernice Sullivan, LSW.....Christ Hospital
Angela White, CHUC.....Children's Hospital Medical Center

**Hotel Restaurant Management Technology**

Suzanne Baele.....Terrace Hilton
Jonathan Carr.....Clarion Hotel
Jim Crane.....Sheraton-Springdale
Steve Deitsch.....Gold Star Chili
Shari Einsel.....GCRA
Jim Ellison.....Kings Island Resort
Jan Larsen.....Terrace Hilton
Susan Lincoln.....Westin Hotel
Tony Ricci.....Precinct Restaurant
Jim Wilman.....Drawbridge Motor Hotel

**Landscape Horticulture Technology**

Sherrie Mathis.....Down to Earth Interior Plantscaping
Joe Motz.....Motz, Inc.
Julia Murphy.....Ammon Landscape
Joseph T. Obermeyer.....Natorp's
Steve Sandfort R.F.....Urban Forest Mgt. Section
Bill Thornton.....Thornton Nursery
Dennis Warner.....Kenwood Country Club
Earl Wilson.....Thorton-Wilson, Inc.

**Laser Electro-Optics Engineering Technology**

Brown Cooper.....General Electric Company
Al Geiser.....Cincinnati Electronics
Dave Gilbert.....General Electric Company
Robert Hengehold.....Wright Patterson AFB
William H. Jones.....Monsanto Research Corp.
Gene Moss.....NIOSH
Norman Neal.....Cincinnati Milacron
Gary Neiheisel.....Armco Steel Corp.
Jim Rockwell.....Rockwell Associates, Inc.

**Law Enforcement - Part-time Faculty**
**Associate of Technical Study - Type B**

Col. Tom Ammann.....Cincinnati Police
Cpt. David Stanley.....Cincinnati Police
Lt. Charles Ross.....Cincinnati Police
Sgt. Michael Gardner.....Cincinnati Police
Sgt. Aaron Taylor.....Cincinnati Police
Police Officer Michael Broering.....Cincinnati Police
Police Officer Clarence Spencer.....Cincinnati Police
Police Officer Chuck Zimmerman.....Cincinnati Police

**Management/Marketing Technologies**

Joe Bauer.....Swallen's Inc.
Frank Broermann.....Cin-Fed Credit Union
Ron Heineman.....Frisch's
Frank Kurtz.....Sell, Inc.
Melinda Meridy.....
Michael Schuitemaker.....Cincinnati Milacron
Tina Shank.....
Gary Willig.....Parkway Products

**Managerial Accounting**

Nancy Baker.....Federal Home Loan Bank
John Bolger.....Bolger & Associates
Dave Britton.....Patrick J. Burke & Co.
Claudia Grimm.....Oliver-Berninger & Associates
Michael Lenihan.....Rudler & Associates
Joyce O'Reilly.....The Central Trust Company
Charles Ripperger.....Frisch's Restaurant, Inc.
Richard Thompson.....Internal Revenue Service
Robin Wilson.....

**Manufacturing Engineering Technology**

Jerry Barnes.....Electro-Jet Tool Co., Inc.
Tom Bellman.....American Power Equipment
Herman Kleine.....Cincinnati Milacron
Rob Mayer.....Queen City Forging
Gene Shelton.....Rotex, Inc.
Keith Wells.....Buschmann Conveyor

**Mechanical Engineering Technology**

Jim Balcom.....Little Design Company
Michael Brauer.....Litton Unit Handling Systems
Ken Frey.....BGP Services
Bill Gerard.....ITT AC Pump
Greg Hauck.....Gold Crown Machinery
Carl Koors.....Cincinnati, Inc.
Don McLennan.....Alexander & Associates, Inc.
Tom Tenkman.....American Laundry Corp.
Tom Wilkening.....Heekin Can, Inc.

**Medical Assisting Technology**

Sandra Carlson, C.M.A. ..... Dr. J. Schmidt's Office
Paulette Cunningham ..... Deaconess Hospital
JoAnn Dill, R.N. ..... Clifton Group Health Associates
Greg Ebner, DO .....
Gail Hennekes, PA-C ..... Hill Top Pharmatest
Lee Moeller, R.N. ..... Westwood Group Health Associates
Shirley Morton ..... Hill Top Pharmatest
Donna Percy, C.M.A. ..... University Hospital
Becky Petersen, C.M.A. ..... Drs. Wayne & Pordy
Alan Schulman - Attorney ..... Gregory Ebner, D.O. - Private Practice
Lori Seitzer, C.M.A. ..... Daugherty Medical Group
Sheila Stuckey, M.A. ..... Mayfield Neurological Institute

**Medical Laboratory Technology**

Lois Bonner ..... Shriners Burns Institute
Cathleen Callies ..... Shriners Burns Institute
Werner E. Donath, M.D. ..... St. Francis/St. George Hospital
Diana Fischer ..... Bethesda Oak Hospital
Mary Beth Kasper ..... St. Luke Hospital West
Paul Laemmle ..... Jewish Hospital
Dorothy Martin ..... Mercy Hospital Anderson
Carol McCray ..... Jewish Hospital
Jim Reynolds ..... Cincinnati Health Department
Robert Uhl ..... St. Francis/St. George Hospital
Jeanne Wagner ..... St. Francis/St. George Hospital
Deborah Wolterman ..... Jewish Hospital

**Nursing**

Patricia Hardy ..... Bethesda Hospital
Brenda Heck ..... CTC Bethesda Program in Nursing
Gerry Kaminski ..... Bethesda Hospital
Paula McGlothlin ..... Bethesda North
Judy Moss ..... Queen City Vocational
Sr. Patricia Reeb ..... College of Mt. St. Joseph
Linda Schaffner ..... Bethesda Hospital
Laura Tewes ..... St. Francis/St. George Hospital

**Occupational Therapy Technology**

Liz Buddlemeyer, OTR/L ..... Jewish Hospital
Karen Burhaus, OTR/L ..... Children's Hospital Medical Center
Linda Cooper ..... Student
Beth Dwyer ..... American Hospital for Rehabilitation
Cindy Kief, COTA/L ..... Cincinnati Technical College
Jane Osika ..... Christ Hospital
Sandra Prantl, OTR/L ..... Cincinnati Technical College
Kim Williams, COTA/L ..... University Hospital

**Pre-Tech Business Technologies Division**

Robert F. Ketterer ..... Ketterer & Associates
Betty Richard ..... Ohio Bureau of Employment Services
Willie F. White ..... Micro Mechanical Finishing Co.

**Pre-Tech Engineering Technologies Division**

Joanne Bonno ..... Hamilton County Office of Ed.
Lee Grant ..... International Business Machine
Helen Lucille Habig ..... Archdiocese of Cincinnati
Barbara Link ..... General Electric
Jim Marcotte ..... Cincinnati Technical College
Michael McCormick ..... Archdiocese of Cincinnati
Sharon Patterson ..... Aiken High School
Cathy Rahmes ..... Cincinnati Technical College
Earl Ross ..... General Electric
Thomas Stark ..... Cincinnati Technical College
Tremitchel Wright ..... Procter & Gamble

**Respiratory Care**

Sal Beccera, RRT ..... Jewish Hospital
Patty Branson, RRT ..... Children's Hospital Medical Center
Cyndi Campbell, RRT ..... University Hospital
Judy Daleiden, RRT ..... Providence Hospital
Sylvia Dodd-Gardner ..... Bethesda Hospital
Peter Enyeart, M.D. ..... Medical Director
Harry Fairman .....
Heidi Fleming, RRT .....
Robert Funk, RRT .....
Robert Jackson, RRT ..... Deaconess Hospital
Nancy Maschinot, RRT ..... Shriners Burns Institute
Mike Moore, RRT ..... Advance Home Health Services
Kimberly Patton, RRT ..... Christ Hospital
Tim Wilder, RRT ..... Bethesda North Hospital
Vicki Zandi .....

**Scientific Laboratory Technology**

Phillip Bates ..... Marion Merrell Dow Pharmaceuticals
Timothy Collins ..... Procter & Gamble
Robert Deutsch ..... General Electric Aircraft Engine Division
John Goelz ..... The Drackett Co.
Craig Meverden ..... Quantum Chemical Corp.
Jim McCarthy ..... Procter & Gamble
Judy Reid ..... Marion Merrell Dow Pharmaceuticals
Mario Tremblay ..... Procter & Gamble
Gary Walden ..... Procter & Gamble
Raphael Warren ..... Procter & Gamble, Miami Valley
Tony Zembrodt ..... The Drakett Company

**Surgical Technology**

Patty Bechtel ..... Student
Larry Bronnert, CST ..... Providence Hospital
Marvin Brower, SA ..... Fort Hamilton Hughes Hospital
David Cover, M.H. Ed. ..... Cincinnati Technical College
Judy Cunningham, RN ..... Clermont Mercy Hospital
Wanda Dantzler, RN ..... Cincinnati Technical College
Ellie DeLorenzo, RN ..... Christ Hospital
Marsha Ellington, M.Ed. ..... Right Associates
Jenny Gable ..... Student
Melodie Gillett, RN ..... Deaconess Hospital
Joan Hughes ..... Student
Tim Kincaid, CST ..... Christ Hospital
Dick Osborne, CST ..... Clermont Mercy Hospital
Judy Spraley, RN ..... Cincinnati Technical College
Ken Wilkens, CST ..... Providence Hospital

**Technical Writing/Editing Technology**

Mark Albert ..... Modern Machine Shop Magazine
Melvyn Berman ..... Mel Berman Associates
Charles Bickford ..... Monarch Marking Systems
Lilian Eliot ..... Independent Consultant
Michael Haap ..... GE Aircraft Engines
Anne Hamilton ..... NIOSH
Linda Hanzel ..... Editorial Consultant
S. Judith Harper ..... QED Systems
Lawrence McKinley ..... O'Neil & Associates
Thomas Milligan ..... O'Neil & Associates
Karen Mueller ..... Independent Consultant
Terri Parker-Halpin ..... CTR
Martha Phillips ..... Editorial Consultant
Kathy Reynolds ..... NCR Corporation
Wayne Wilkinson ..... Intercomputer Communications Corp.

**Small Business Advisory Committee**

Paul Davis .....Cincinnati Technical College
Gary Johns .....U.C. Dept. of Facility Management
Joe Kramer .....Service Corps. of Retired Executives
Gene O'Connell .....Small Business Administration
John Vorse .....Service Corps. of Retired Executives

**Educational Relations Advisory Committee**

Leisa Anslinger .....McNicholas High School
Carol Cooke .....Colerain Senior High School
Bill Feldman .....Newport Hill High School
Karen Irwin .....D. Russel Lee Vocational School
Kathy Kaplin.....Aiken High School
Juanita Lovelace .....Princeton High School
Nancy Luddeke .....Amelia High School
Mark Merchant .....Career Awarness Exploring
Dan Shay.....Fairfield High School
Don Shields.....Moeller High School

# 1992 - 1993 Calendar

**Early Fall Term 1992**
Monday, September 7 - College closed
Tuesday, September 8 - Classes begin
Monday, October 12 - College closed
Tuesday, November 10 - Classes end
Wednesday, November 11 - College closed
Thursday, November 12 - No classes, offices open
Friday, November 13 - No classes, offices open

**Late Fall Term 1992**
Monday, November 16 - Classes begin
Thursday, November 26 - College closed
Friday, November 27 - College closed
Thursday, December 24 -
Friday, January 1 - College closed
Monday, January 18 - College closed
Friday, January 29 - Classes end
Monday, February 1 -
Friday, February 5 - No classes, offices open

**Winter Term 1993**
Monday, February 8 - Classes begin
Monday, February 15 - College closed
Monday, April 12 - Classes end
Tuesday, April 13 -
Friday, April 16 - No classes, offices open

**Spring Term 1993**
Monday, April 19 - Classes begin
Monday, May 31 - College closed
Monday, June 21 - Classes end
Tuesday, June 22 -
Friday, June 25 - No classes, offices open

**Summer Term 1993**
Monday, June 28 - Classes begin
Monday, July 5 - College closed
Monday, August 30 - Classes end

# INDEX

CINCINNATI TECHNICAL COLLEGE

A
Academic Appeals Procedure ....26
Academic Divisions ....45
Academic Policies and Procedures....23
Academic Probation and Dismissal ....26
Accreditations and Memberships ....12
Activity Center ....39
Administrative Services Technologies....68
(Executive, Office Management, Office Information)
Advanced Standing, Gaining Credit ....24
Advisory Committees ....148
Athletics....38
Automotive Service Management Technology....59
Aviation Maintenance Technology....70
Aviation Mechanics Certificate Programs ....71

B
Biomedical Electronics Technology....71
Board of Trustees ....11
Members ....5
Books and Supplies ....18
Bookstore....39
Business Management Technology....61
Business Technologies Division ....57
Administrative Services Technologies ....68
(Executive, Office Management, Office Information)
Automotive Service Management Technology ....59
Business Financial Management Technology....61
Business Management Technology ....61
Chef Technology ....62
Computer Communications Technology....59
Computer Operations Technology....60
Computer Programming Technology ....60
Flexography Communications Technology ....63
Graphic Communications Technology ....62
Hotel-Restaurant Technology ....63
International Trade Management Technology....64
Landscape Horticulture Technology ....64
Managerial Accounting Technology ....65
Marketing Management Technology....66
Property Management Technology ....67
Purchasing Management Technology ....66
Real Estate Technology....67
Small Business Management Certificate....58
Small Business Management Technology ....58
Turfgrass Management Certificate....65
Business Financial Management Technology ....61

C
Calendar ....153
Central Service Technology Certificate....49
Changing Technologies....27
Chef Technology....62
Civil Engineering Technology — Architecture Major....72
Civil Engineering Technology — Construction Major....72
Civil Engineering Technology — Surveying Major....72
College Policies ....23
Computer Communications Technology ....59
Computer Engineering Technology ....73
Computer Operations Technology ....60
Computer Programming Technology....60
Conduct Policy ....28
Continuing Education....81
Cooperative Education Program ....11
Academic Requirements....23
Co-op Registration....23
Co-op Requirement ....23
Counseling....33
Course Descriptions ....85

D
Dean's List ....25
Desktop Publishing Certificate ....49
Dietary Management Certificate....50
Dietetic Technician - Nutrition Care ....50
Dining Facilities ....39
Directory....5

E
Electrocardiography Certificate ....51
Electro-Mechanical Engineering Technology....74
Electronics Engineering Technology....75
Employee and Labor Relations Certificate ....47
Engineering Technologies Division ....69
Aviation Maintenance Technology ....70
Aviation Mechanics Certification Programs ....71
Biomedical Electronics Technology ....71
Civil Engineering Technology — Architecture Major ....72
Civil Engineering Technology — Construction Major ....72
Civil Engineering Technology — Surveying Major ....72
Computer Engineering Technology....73
Electro-Mechanical Engineering Technology ....74
Electronics Engineering Technology ....75
Laser Electro-Optics Engineering Technology ....75
Manufacturing EngineeringTechnology....76
Mechanical Engineering Technology ....77
Executive Secretarial Technology ....68
Extended Services ....81

F
Facilities, Use of....39
Faculty....139
Office Hours....23
Fees ....18
Books and Supplies ....18
Co-op Employment Fees....18
Financial Aid....33
Flexography Communications Technology....63

G
General Information....11
Grade Reports....25
Grading System....23
Graduation Honors ....28
Graduation, Participation In ....28
Graduation Requirements ....27
Graphic Communications Technology ....62
Greater Cincinnati Consortium of Colleges & Universities..12
Gymnasium ....39

H
Handicap Facilities ....40
Health Information Management....51
Health Unit Coordinator Certificate....51
Health Technologies Division ....49

Central Service Technology Certificate ....49
Dietary Management Certificate ....50
Dietetic Technician - Nutrition Care ....50
Electrocardiography Certificate ....51
Health Information Management ....51
Health Unit Coordinator Certificate ....51
Medical Assisting Technology ....52
Medical Assisting Certificate ....52
Medical Laboratory Technician ....53
Nursing Technology ....53
Occupational Therapy Assisting Technology ....55
Respiratory Care Technology ....56
Surgical Technology ....56
History of Cincinnati Technical College ....12
Hotel-Restaurant Technology ....63
Humanities Division ....46
Desktop Publishing Certificate ....49
Employee and Labor Relations Certificate ....47
Technical Writing & Editing Technology ....47

I
Identification Cards ....23
Individualized Study, Associate of ....80
International Students ....17
International Trade Management Technology ....64

L
Landscape Horticulture Technology ....64
Laser Electro-Optics Engineering Technology ....75
Library, The Johnnie Mae Berry ....39
Living Accommodations ....33

M
Managerial Accounting Technology ....65
Manufacturing Engineering Technology ....76
Marketing Management Technology ....66
Mechanical Engineering Technology ....77
Medical Assisting Technology ....52
Medical Assisting Certificate ....52
Medical Laboratory Technician ....53
Mission of The Cincinnati Technical College ....11

N
Northern Kentucky Tuition Reciprocity ....19
Nursing Technology ....53

O
Occupational Therapy Assisting Technology ....55
Office Information Processing Technology ....69
Office Management Technology ....68

P
Parking ....40
Post-Secondary Enrollment Options ....17
Pre-technical Studies ....45
Property Management Technology ....67
Purchasing Management Technology ....66

Q
Quality Control/Assurance Certificate ....80

R
Real Estate Technology ....67
Refunds of Fees ....19
Registration ....23
Reinstatement Following Academic Dismissal ....26
Release of Information ....30
Residence of Students ....19
Respiratory Care Technology ....56
ROTC ....13

S
Schedule of Classes ....23
Scholarships ....36
Sciences Division ....77
Quality Control/Assurance Certificate ....80
Scientific Laboratory Technology ....79
Scientific Laboratory Technology - Biochemistry ....79
Scientific Laboratory Technology ....79
Scientific Laboratory Technology - Biochemistry ....79
Small Business Management Certificate ....58
Small Business Management Technology ....58
Staff ....5
Student Expenses ....18
Student Grievance Procedure ....29
Student Hearing ....29
Student Services ....33
Athletics ....38
Counseling ....33
Living Accommodations ....33
Organizations ....38
Student Senate ....38
Veterans Affairs ....33
Surgical Technology ....56
Swimming Pool ....39

T
Technical Study, Associate of ....80
Technical Writing & Editing Technology ....47
Traffic Regulations ....40
Transcripts ....28
Transfer Module, Policy ....25
Transfer Module, Curriculum ....45
Tutorial Services ....45
Turfgrass Management Certificate ....65

V
Veterans Affairs ....33

W
Withdrawal From and Readmission to a Program ....27
Writing Center, The ....46

# Notes

# Notes

# Customized Training for Business and Industry

Cincinnati Technical College can provide custom-designed programs, short and long-term training, credit and non-credit courses to business, industry, and professional organizations in a variety of areas including the following:

**Communications**
- Assertiveness Training
- Communications that Get Results
- Decision Making
- Goal Setting
- Group Dynamics
- Guest/Customer Relations
- Interpersonal Skills
- Listening Skills
- Motivating Your Employee
- Negotiating Skills
- Problem Solving
- Public Speaking & Technical Presentations

**Electrical/Electronics**
- Basic Industrial Electricity with Troubleshooting
- Electrical Maintenance
- Electrical Motors and Controls
- Electrical Power Distribution
- Electronic Troubleshooting
- Energy Management
- Process Control
- Programmable Logic Controller

**Finance**
- Basic Accounting Principles
- Fundamentals of Budgeting
- Finance and Accounting for Non-financial Managers
- Fundamentals of Financial Management

**Health**
- Central Supply Technician Training
- Certification Review
- EKG Training
- Food Service Management
- Health Care Management Techniques
- Medical Record Coding
- Surgical Techniques
- Unit Clerk Training

**Maintenance**
- Electrical Troubleshooting
- Mechanical Drives & Linkages
- Safe Use of Hand/Portable Power Tools
- Welding

**Management**
- Building Leadership Skills
- Career Assessment
- Coaching and Counseling Skills
- Conducting Effective Meetings
- Creative Problem Solving and Decision Making
- Executive Writing
- Increasing Employee Effectiveness
- Interviewing and Hiring the Best Employees
- Leading Productive Meetings
- Leadership Styles
- Management Skills and Techniques for the First Line-Supervisor
- Managing Change, Conflict and People

**Managing through Influence**
- Performance Appraisals
- Preparing a Business Plan
- Presenting a Positive Executive Image
- Principles of Learning
- Project Management
- Stress Management
- Supervisor Training Groups
- Team Building
- Time Management
- Training Needs Analysis
- Training the Trainer
- Transitional Management

**Manufacturing**
- Applied Statistics and Quality Design
- Blueprint Reading
- Computer Assisted Manufacturing (CAM)
- Costimator
- Design of Experiments/Taguchi Method
- Manufacturing Processes
- Materials Handling
- Measurement and Metrology
- NC/CNC Programming
- Product Design and Development
- Production Costs and Controls
- Smart CAM
- Statistical Process Control (SPC)
- Tool-Die-Jig and Fixtures

**Marketing/Sales**
- Fundamentals of Marketing
- Fundamentals of Sales Management for the Newly-Appointed Manager
- Principles of Professional Selling
- Sales Presentations and Demonstrations

**Mechanical Engineering Technology**
- Auto CAD
- Computervision Personal Designer
- Geometric Tolerancing
- Hydraulics and Pneumatic
- Intergraph Microstation
- Mechanical Drives & Linkages

**Printing Industry Training Programs**
- Bindery Method Procedures
- Cold Type Process
- Color Separation
- Color Stripping
- Computer Graphics
- Computer Graphics Typesetting
- Estimating
- Flexo Photography
- Graphic Arts Processes
- Layout and Design
- Offset Press Operation
- Photolithography I & II
- Proofreading and Copy Preparation
- Relief Presswork I & II
- Screen Printing
- Survey of Printing Inks

**Personnel Administration**
- Compensation and Benefits
- Basic Wage and Salary Administration
- Advanced Wage and Salary Administration
- Employee Discipline and Grievance Handling
- How to Practice Affirmative Action
- Issues and Personnel Law
- Negotiating and Administering the Labor Contract
- Simulated Collective Bargaining
- Termination at Will

**Programming**
- Basic
- "C"
- COBOL
- FORTH
- PASCAL

**Purchasing**
- Buyer Basics
- Advanced Buyer Basics
- Purchasing and Materials Management

**Secretarial**
- Communication Skills for Secretaries
- Office Procedures
- Secretary and Administrative Assistant as Manager
- Telephone Techniques

**Skills Assessment and/or Development**
- Reading Comprehension
- Grammar
- Literacy in the Workplace
- Writing
- Mathematics

**Software**
- Computer Literacy
- Displaywrite IV
- Lotus 1-2-3
- MultiMate
- Word Perfect
- dBase IV
- Wordstar
- Software Documentation
- UNIX (SCO)
- Additional software upon request

**Writing and Editing**
- Business Writing
- Desktop Publishing
- Executive Writing
- Instructional Writing
- Newsletter Design and Production
- Proposal Writing
- Technical Editing

**Other**
- Automotive Service Technical Training
- Culinary Arts
- Hotel-Restaurant Management
- Insurance Pre-Licensing Courses
- Landscape Maintenance
- Real Estate Principles and Practices
- Real Estate Law

Please contact the Director of Continuing Education and Extended Services for further information.

CINCINNATI TECHNICAL COLLEGE
3520 Central Parkway ■ Cincinnati, OH 45223
(513) 569-1500

Cincinnati Technical College
3520 Central Parkway
Cincinnati, Ohio 45223

NON-PROFIT
U.S. POSTAGE
**PAID**
CINCINNATI, OHIO
PERMIT #1218