

C A T A L O G
H A N D B O O K

86 / 87



Cincinnati Technical College

1986-1987

**Cincinnati Technical College
Catalog/Handbook**

Contents

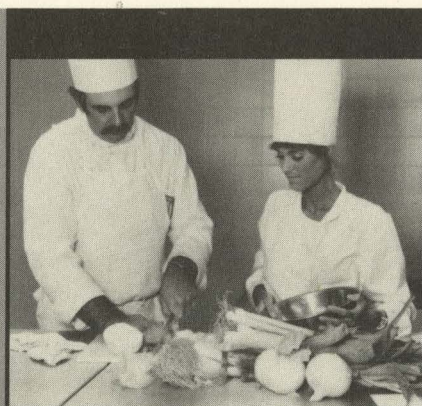
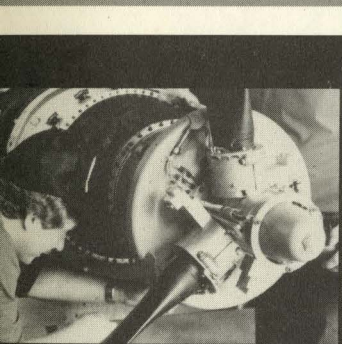
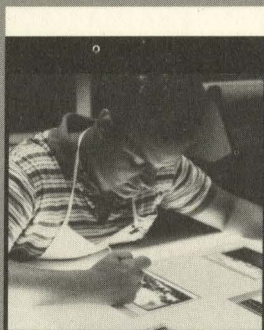
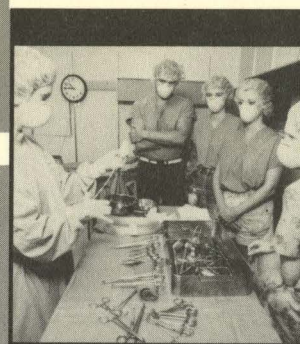
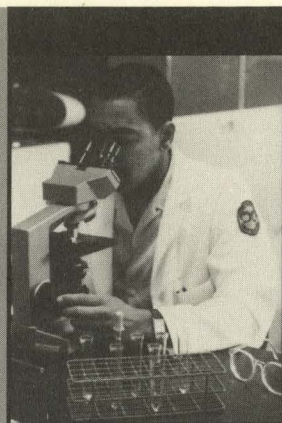
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All statements in this publication are announcements of present policy only and are subject to change at any time without prior notice. They are not to be regarded as offers to contract.

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.

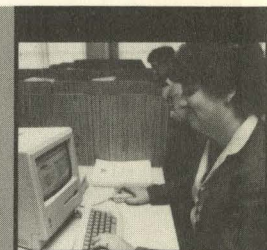
Cincinnati Technical College is an equal opportunity institution.

**Cincinnati Technical College
3520 Central Parkway
Cincinnati, Ohio 45223
(513) 559-1520
Admissions Office 559-1537**



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DIRECTORY

Academic Advising Program Coordinator
 Academic Probation and Dismissal Room 141
 Admissions Counseling Room 157
 Admissions Procedure Room 157
 Admission Test Dates Room 157
 Athletics Room 146A
 Advanced Standing Program Coordinator
 Applications Room 157
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 Consortium Registration Room 153
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 Drop Add Forms Room 153 and Division Offices
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 General Information Receptionist's Desk
 Grade Change Course Instructor
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 Graduation Petition Room 153
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 Housing Room 157
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 Library Information Learning Resource Center
 Notaries
 Herb Bom, Room 140
 Linda Cole, Cashier
 Wayne Vaughn, Room 137
 Gene Wieland, Room 153

Parking Decals POM Office, Room 15
 Parking Tickets Cashier's Office
 Payroll Checks Cashier's Office
 Personal Counseling Room 157
 Registration, Advisement
 Degree Student Program Coordinator
 Evening Division Student Room 141
 Part-time Day Student Room 157
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 Schedule Conflicts Room 153
 Student Activities Room 146A
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 Transfer of Credit Program Coordinator
 Transfer of Technology Program Coordinator
 Tutoring Room 150, Learning Resource Center
 Use of CTC Facilities Room 146A
 VA Checks Room 157
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 Withdrawal Forms Room 153 and Division Offices
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Office of the President

President Frederick B. Schlimm
 Executive Assistant Clarke J. Robinson
 Institutional Development Dr. John L. Henderson
 Development Johnnie F. Boggio
 Athletics & Activities John E. Hurley
 OTTO Roger Jansen
 Public Information & Publications Michele M. Imhoff
 Production Operations Elizabeth Bradley
 Graphic Arts (Duplicating) Edith Starbuck
 Affirmative Action, Human Resources &
 Staff Development Eleanor Bonner
 Executive Assistant Davie Cooper

Office of Academic Affairs

Vice President David C. Ballinger
 Executive Assistant Theresa Johnson
 Extended Services (Evening) Paul R. Callahan
 Clerical Assistant Karen Keller
 Registrar Eugene Wieland

Scheduling Supervisor Sue Erfttenbeck
 Registration Supervisor Carolyn Jones
 Academic Records Supervisor Treva Hanseman
 Clerical Assistant Karen Magness-Lewe
 Learning Resource Center James H. Horton
 Information Services Debbie Tucker
 Thelma Barnes
 Duane Gardner
 Gena James
 Technical Services Rose von Volborth
 Marianne Cramer
 Media Services Dave Evans
 Marcia Caulton
 William Shaw

Office of Financial & Business Affairs

Vice President A. Wayne Vaughn
 Executive Assistant Cheri Furlong
 Financial Services Carol Roth
 Receptionists Gloria Donaldson
 Carolyn Larose
 Purchasing Kathleen Austing
 Controller Bernard Stolz
 Accountants Herb Bom
 Harry Bradley
 Terry Taylor
 Cashier Linda Cole
 Marge Faulhaber
 Student Financial Aid Frank Barlag
 Counselors Naomi Cain
 Janice Lewis
 Tom Mann
 Facilities Dale McCarthy
 Facilities Services Leonard Bidwell

Student Services

Dean Ann I. Rasche
 Executive Assistant Gaby Boeckermann
 Counseling Services John Wagner
 Linda Meador
 Diane Stump
 Veterans Yolanda Lawrence
 Assistant Amy Linneman
 Donna Scofield
 Educational Relations Miriam Carle

Business Technologies

Dean Dan Cayse
 Executive Assistant to the Dean Barbara Kaiser
 Clerical Assistant Barbara Robbins
 Clerical Assistant Ronna Wright
 Assistant Dean Marc Baskind
 Director, Cooperative Education Walt Wyatt
 Coordinator Industrial Relations and Training Donna Bovard
 Acad. Support Specialist Data Processing Naomi Merlin
 Automotive Service Mgmt. Joe Keenan
 Karl von Kampen

Business Mgmt., Financial Mgmt., International
 Commerce Clyde Kobberdahl
 Jim Macke
 Chef Technology John Kinsella
 Jim Myatt

Computer Information Systems Programmer/
 Data Communications Technology Verale Phillips
 Mike Nakoff
 Jeff Vetter

Management Information Systems Elizabeth Sullivan
 Sharon White

Graphic Communications Al Leicht
 Tom Miller
 Gary Walton

Hotel-Restaurant Management Rich Hendrix
 Bill Stock

Loss Control Bea Stewart
 Managerial Accounting Sheryl Stewart
 Henry Williams

Ornamental Horticulture Claire Ehrlinger
 Ben Wright

Property Management/Real Estate Peggy Harrier
 Bob Kelly

Marketing Management/Industrial Sales Tom Brinkman
 Bob Elmer

Administrative Support Specialist/General Office
 Specialist/Word Processing Sharon Brown
 Connie Campbell
 Swanya Smith

Instructors	Stewart Bonem
	Richard Brown
	Karen Gambrell
	Tim Littell
	Keith Mains
	Katy Mindhardt
	Lou Owsley
	Doug Parman
	Len Penn
	Lloyd Pitman
	Rick Sefton
	Russell Sprinkle
	Robert Van Horn

Engineering Technologies

Dean	Ken Stoll
Executive Assistant	Pat Robbins
Director, Academic Affairs	Paul A. DeNu, P.S.
Director, Cooperative Education & Graduate Placement	J. Terry Brown
Director of Facilities	Hal G. Funk
Director of Industrial Training & Extended Services	Gary Graff
Aviation Technology	
Co-op & Grad Placement	James Schmid
Program Chair	James Schmid
Biomedical Electronics Technology	
Co-op & Grad Placement	J. Terry Brown
Program Chair	Steve Yelton
Civil Engineering Technology	
Co-op & Grad Placement	Jerri Thomas
Program Chair	John Hubbard, P.E.
Computer-Integrated Manufacturing Engineering Technology	
Co-op & Grad Placement	Jerry Froehlich
Program Chair	Judd James
Electro-Mechanical Engineering Technology	
Co-op & Grad Placement	Roger Schaller
Program Chair	Ray DiPilla
Electronics Engineering Tech	
Co-op & Grad Placement	Thomas Newbold
Program Chair	Billy Mullins
HVAC Design Engineering Technology	
Co-op & Grad Placement	Jerry Froehlich
Program Chair	Clifford A. Schulte, P.E., P.S.
Mechanical Engineering Technology	
Co-op & Grad Placement	Jerri Thomas
Program Chair	Don Youngpeter
Instructors	John Buttelwerth
	Mike Carroll
	Vince Devol
	James Farrer
	Chuck Jonas
	Don Meyer
	Tony Rinck
	Robert Romano
	Greg Sketch, P.S.
	Connie Van Mouwerick
	Gary Webster
	Dock Winkle

Health Technologies

Dean	Dr. Gerry Kaminski
Executive Assistant	Claudia Penn
Clerical Assistant	LaTressa James
Assistant Dean	Dr. Tom Kober
Admissions Counselor	Susan Marcotte
Dietetics	Eileen Coffe-Findlay
	Elodie Huffman
	Marianne Krismer
Medical Assisting	Nancy Walters
	Olivia Watts
Medical Laboratory	Janelle Gohn
	Carolyn Laemmle
Medical Records	Rosemary Clark
	Janette Richard
Respiratory Therapy	Bob Eveslage
	Sally Blocher
Surgical Technology	Wanda Hodges
	Judith Spraley
Unit Clerk/Coordinator	Daphne Robinson
Instructors	Ron Davidson
	Dr. Tina Feghali
	Jude Norton
Lab Manager	John Szasz

Physical Sciences/Mathematics Technologies

Dean	Thomas Stark
Executive Assistant	Faye McCreddie
Division Co-op Coordinator	Dr. Daniel W. Rosenfield
Industrial Laboratory Technology	Martha Brosz
Industrial Software Technology	Douglas Bennett
Laser/Optics Technology	Dr. Prem Barta
Instructors	Martha Brosz
	Terrence Huge
	Frank Iacobucci
	Joan Jackson
	John Lalley
	Robert Moon
	Lawrence Pucke
	Rodney Rupp
	Thomas Stark
	Edward Sunderhaus
	Richard Swanson
	William Tulloss
Adjunct Faculty	Michael Barney
	Lois Brauntz
	Robert Duffy
	Linda Ford
	Linda Hoog
	Ann Lampe
	Alice Portune
	Michael Thomas
	Jerome Weber

Communication Skills/Social Sciences

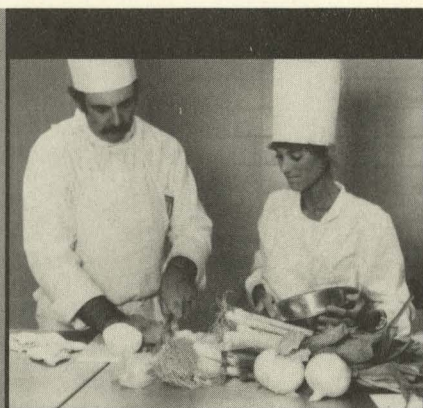
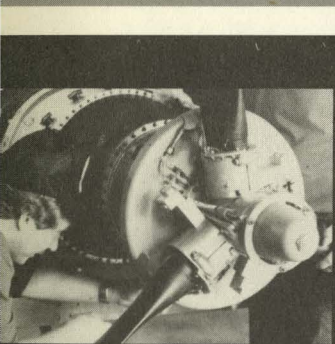
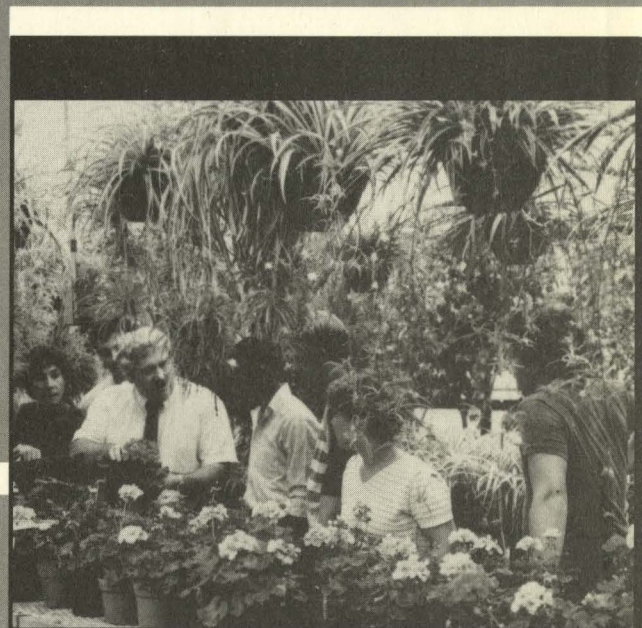
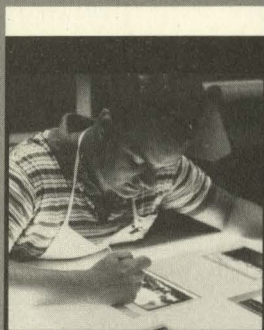
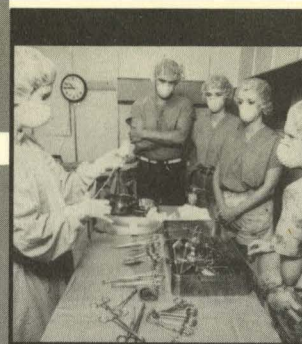
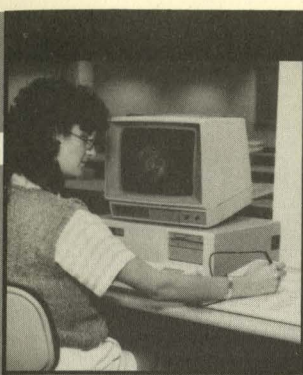
Dean	Thomas Stark
Executive Assistant	Faye McCreddie
Assistant Dean	Catherine Wiesner
Writing Center Manager	John Battistone
Technical Writing and Editing	Pam Ecker
	Marc Green
Instructors	John Battistone
	Marcus Green
	James Hassan
	Harry Heink
	Mary Lee Howes
	Marcha Hunley-Belanger
	Mike Jones
	Daniel Mellinger
	Timothy Nolan
	Catherine Wiesner
	Kim Ziegel
	Mary C. Ziegel
	Lawrence Ziegler
Adjunct Faculty	Philip Enzweiler
	Patricia H. Hope
	Joseph Libis, Jr.
	Kenneth Suer

Developmental Education

Director	Dr. James Marcotte
Clerical Assistant	Bonnie Brown
Para-Professional	Debbie Greenlee
Counselor	Sharon Davis
Counselor, JTPA	Dr. Effie Dennis
Instructors	Joan Brand
	Grace A. Davis
	Janice L. Hoeweler
	Linda Knepp
	Hope Page Lieberman
	Susan Madsen
	James Marcotte
	Roberta Nabor
	Thomas Otten
	Kathleen Resnick
	Carolyn Rost
	Cyra D. Sanborn

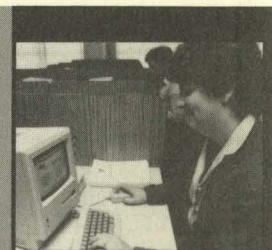
Administrative Services

Senior Assistant to the President	Dr. Terrence J. Glenn
Management Information Service	
Director, Computer Systems, Programming & Operations	Vicki J. Candella
System Programmer/Analyst	Diane Schrand
	Randy Woodall
Computer Operator/Problem Coordinator	Ronald Young
Computer Operator	Joy Sunderman
	Tony Hover



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GENERAL INFORMATION

Philosophy and Mission of the 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 too little precious 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 semi-professional. And, to prepare this semi-professional to work with the scientist, or 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 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 sixteen technical colleges, all created in the last twenty years or so as a result of federal, state and local initiatives.

Cooperative Education

Cincinnati Technical College's "Co-opportunity" Plan

The Boards of Trustees, the administrative staff and the faculty of the Cincinnati Technical College share a profound conviction that the school's distinctive plan of cooperative education offers the soundest possible approach to technical education. The objective of any associate degree program in technical education is to prepare the student for immediate employment and potential advancement as a technician. The classroom can provide valuable laboratory experience but it cannot duplicate an employment environment. Because many Cincinnati Technical College students spend every other term in supervised cooperative employment they are exposed to such an environment at regular intervals. The practical training received in such employment enriches the academic experience.

The College is offering 44 associate degree programs and majors and seven certificate programs in 1986-87. Each program was developed to meet a specific need for technicians in local industry demonstrated by a formal or informal feasibility study and supported by the counsel of an advisory committee representing the potential employers of such technicians.

Outcomes of Cincinnati Technical College's Cooperative Education Plan

Cincinnati Technical College, with regard to its mission and philosophy, has developed a cooperative education plan of combining solid academic and technical education with alternating terms of work experience. The following are the outcomes of the plan as they affect the student, the College and the community.

Outcomes for the Student

- (1) Educational—Students support what they learn in class with "real life" work experience. These two learning situations complement each other.
- (2) Career Clarification—The technical classwork and on-the-job experience help the student focus on particular career areas and decide if those areas are appropriate for them.
- (3) Social and emotional—Students develop maturity by experiencing a responsible position in the real world with support and guidance to insure that learning takes place.
- (4) Financial—Most full-time students are able to earn money while gaining work experience. These earnings enable many students to help finance their education. Also, the work experience the students receive offers the opportunity for better positions and better pay upon graduation.

Outcomes for the College

- (1) Comprehension of employment needs—The efforts by the College to establish cooperative education jobs and place graduates have enabled the College to be more sensitive to the needs of the area.
- (2) Utilization of the physical plant—The alternating work experience terms enable the College to double its student capacity and make more efficient year-round use of the physical plant.

- (3) Employment involvement—Employers actually become directly involved in the educational process of the College through the cooperative education plan. They also share in the cost of education by providing on-the-job training.
- (4) Faculty awareness—Faculty stay current on activities in their fields through contact with business and industry.

Outcomes for the Community & Business

- (1) Supply of technicians—The College's programs produce a supply of trained, experienced technicians for the employment community. This makes the community more attractive for business development.
- (2) Staffing—Employers have the opportunity to train and observe students and to evaluate their suitability for full-time employment before they make the commitment to hire full-time.
- (3) Economic gain—Increased earning potential of the graduates benefits the community in terms of productivity, taxes paid and contributions made.
- (4) Citizen productivity—Graduates enter the workforce with well-clarified career goals and experience which enable them to be more productive and motivated workers.

History of Cincinnati Technical College

Because a great and growing 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 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. This past year it enrolled 4100 students in 45 degree and certificate programs and options; has a staff of 220 plus 100 part-time instructors; and has 500 co-op employers.

Accreditations & Memberships

Ohio Board of Regents

Division of Vocational Education, State Department of Education

North Central Association of Colleges and Secondary Schools

Ohio Technical and Community College Association

FAA—Approved Aircraft Maintenance Technician School

Member of the American Society of Allied Health Professions

Member of the Ohio Organization of Technical Colleges

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

Greater Cincinnati Consortium of Colleges and Universities

Twelve 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 is 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 Records Office for information.

Members of the Consortium are the Art Academy of Cincinnati, The Athenaeum of Ohio, Chatfield College, Cincinnati Technical College, College of Mount St. Joseph on the Ohio, Hebrew Union College—Jewish Institute of Religion, Miami University, Northern Kentucky University, St. Thomas Institute, Thomas More College, University of Cincinnati, and Xavier University.

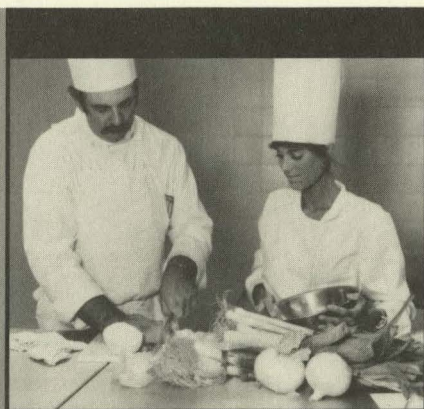
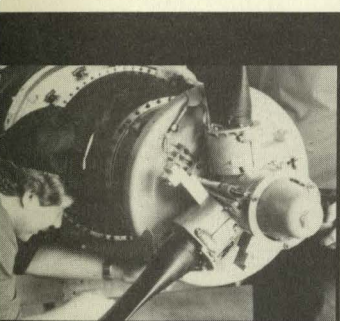
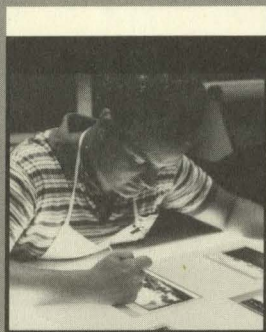
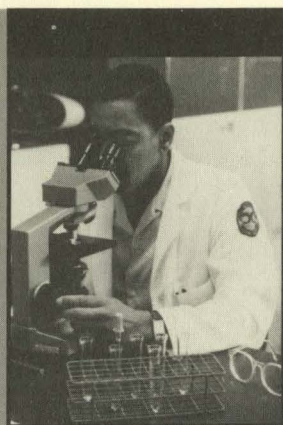
Reserve Officers Training Corps

Cincinnati Technical College offers Army ROTC military science courses on campus. It also has a cross-enrollment agreement with the 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 and uniforms for these courses are provided free to the student.

Also, there are two programs within each branch. The four-year program is for the student who will go on to a four-year institution after graduation from Cincinnati Technical College. The student would attend classes and drill periods on the host campus while attending regular classes on campus at Cincinnati Technical College. The two-year program is for the veteran who will be continuing after graduation from the Cincinnati Technical College to earn his or her bachelors degree. The veteran would apply for this program during his or her fourth in-school term at Cincinnati Technical College. If selected, the student would enter upon graduation from Cincinnati Technical College.

Details may be obtained from the Veterans Affairs Office, room 157.



CATALOG HANDBOOK

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ADMISSIONS & FEES

Admissions Information

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. He or she should have a copy of his or her high school transcript and college transcript, if applicable, sent directly to the College's Records Office. (With a GED, the applicant should submit a copy of scores.)
3. The applicant will be notified of acceptance. Before the program major can be approved:
4. The applicant should take the placement tests.
5. After the applicant's file is complete and has been reviewed by the program coordinator/advisor, the applicant will be notified as to the admission interview status.
6. The applicant should call the Admissions Office for an interview appointment.

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.

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 if the applicant decides not to enter Cincinnati Technical College.

Credit for the fee deposit may be extended for 1) twelve months when an applicant fails to register due to illness or other causes entirely beyond the applicant's control or 2) the period of active duty when an applicant enlists in military service.

Application for credit must be made in writing at the time of the admission cancellation. Proof of any extenuating circumstances may be required. The Vice President for Finance and Business Affairs is authorized to make decisions on these matters in accordance with school regulations.

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 \$2000 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.

Placement Tests

All applicants for admission to the Cincinnati Technical College must satisfy the placement test requirement before final approval of a program major and enrollment as a degree/certificate student. The tests are administered at the College.

At the discretion of the program coordinator/advisor, other test results or previous college experience may be reason to waive the placement test requirement. Contact the Admission Records Office to request that a waiver be processed.

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.)

Fees are non-refundable other than the Instructional Fee.

Fees and Charges

Resident Status	Instructional Fee		General Fee 2		Cost per Credit Hour
State of Ohio Resident	\$28	+	\$3	=	\$31
Out-of-State Resident	\$46	+	\$3	=	\$49

Other Charges:

Application Fee	\$20
Matriculation Fee	\$30
*Credit By Examination Fee per course (prior to enrollment in course)	\$25
Graduation Cap, Gown, Invitations	Purchased in Bookstore
Late Registration:	
(1st day after the beginning date of term)	\$10
(2nd day after the beginning date of term)	\$20
(3rd day after the beginning date of term)	\$30
Partial Payment of Fees	\$10
Transcript Fee	\$3
Vehicle Registration Fee, per term, lower lot	\$7
Campus Parking Permit Fee, per term	\$25
Check Fee (check returned by bank)	\$10
Part-time Registration	\$5
Identification Card	\$1

Laboratory Fees on a per course basis

*If a student has already enrolled in a course and wishes to take a proficiency exam to receive credit, the student must submit a request form to the appropriate division dean. The tuition payment will cover the cost of the examination. However, if a student fails the exam and must continue in the course, a \$5 fee will be charged.

Fees are subject to change.

²The General Fee finances non-instructional services to students for which instructional subsidies cannot be used.

Co-op Employment

Three (3) credit hours for approved cooperative work experience are granted for terms 1, 2, and 3, and two (2) credit hours for terms 4 and 5 in most technologies. 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 range of expenses for books and supplies is \$300 per year.

Senior Citizens

Senior citizens may register free of charge to audit courses as space is available. 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 and who has resided in Ohio for at least one year prior to registering.

Refunds

1. Fees are not refundable including the \$30 matriculation fee. A refund of basic tuition may be requested by any student who withdraws from the College according to the schedule detailed below.
2. Requests for refunds will only be considered if the student completes and signs the official college student transaction form in conjunction with the coordinator of that student's technology.
3. **Students who do not follow the established withdrawal procedures of the College will not be eligible for a refund.**
4. Withdrawal of a student who has been permitted to make only a partial payment at registration will be handled precisely as it would have been had complete payment been made.
5. If a student has a financial obligation or balance due the College and leaves without following the established withdrawal procedure, the entire balance is due immediately and no refund or credit is possible.

6. The official date of total withdrawal is the date recorded on the student transaction form when it is signed by the student and coordinator. Tuition refunds for total withdrawal, when allowed, are made on basic tuition only at the following rates:

During the first week of term 80%

Second week 60%

Third week 40%

Fourth week 20%

7. If a student drops a course during the first or second week of the academic term and signs a course withdrawal form, the student will be entitled to an 80% refund of the instructional fee for that course in the first week and 60% of the instructional fee in the second week. Students must process an Add/Drop transaction form.

The Cincinnati Technical College reserves the right to revise this statement of tuition refunds at any time.

Residence of Students

In determining whether or not an enrolled student at Cincinnati Technical College is an Ohio resident, a determination of fact shall 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. (Copies are available in the Admissions Office.) A non-resident student may request a review of his or her residency status after living for twelve consecutive months in Ohio.

A review of a student's residency status will be made upon proof of proper documentation that the student has been a resident of the state of Ohio for twelve (12) consecutive months prior to the request for residency review. A form for residency review is available in the Office of the Dean of Student Services. The completed form and documentation of one year residency in Ohio should be presented to the dean for consideration and evaluation. The Vice President for Finance and Business Affairs makes the final determination.

Students who move from Ohio to another state retain their Ohio residency status for one year.

Vehicle Registration Fee (per year)	\$25
Campus Parking Permit Fee (per year)	\$10
Check Fee (check returned by bank)	\$2
Part-time Registration	\$1
Identification Card	
Laboratory Fees on a per course basis	

*If a student has already enrolled in a course and wishes to take a proficiency exam to receive credit, the student must submit a request form to the appropriate division dean. The tuition payment will cover the cost of the examination. However, if a student fails the exam and must continue in the course, a \$25 fee will be charged. Fees are subject to change.

The General Fee Schedule for non-technical services to students for which instructional facilities cannot be used.

Co-op Employment

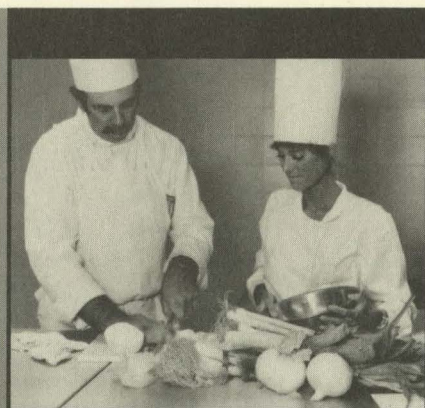
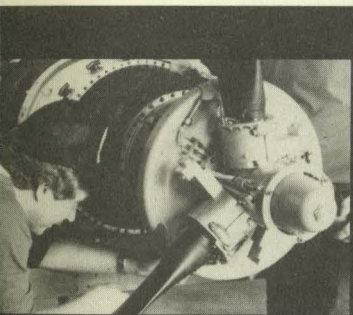
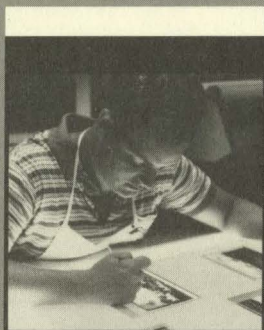
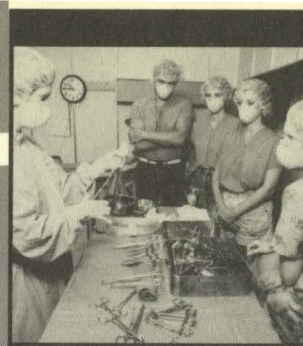
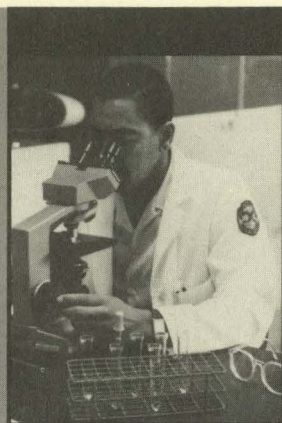
Three (3) credit hours for approved cooperative work experience are granted for terms 1, 2, and 3, and two (2) credit hours for terms 4 and 5 in most technologies. Please refer to the specific curriculum to determine exact co-op credits required. Charges for co-op credit must be paid in advance on the established registration date.

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 Eligibility (Form I-20) will be issued to the College before a Certificate of Eligibility (Form I-20) will be issued. Likewise, an international student must submit a \$2500 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.

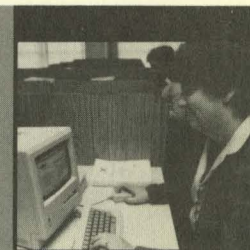
Placement Tests

All applicants for admission to the Cincinnati Technical College must satisfy the placement test requirement. (A final approval of a program major and enrollment as a degree/certificate student. The tests are administered at the College.) At the discretion of the program coordinator/advisor, other test results or previous college experience may be reason to waive the placement test requirement. Contact the Admission Records Office to request that a waiver be processed.



C A T A L O G
H A N D B O O K

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ACADEMICS, POLICIES & PROCEDURES

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, and attain at least a 2.0 core grade point average (GPA) and 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 no less than 50 percent of the total non-co-op/non-clinical credit hours required by his or her program and maintain a 2.0 core GPA and a 2.0 cumulative GPA.

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.

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 core grade point average (GPA) and 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 core GPA and a 2.0 cumulative GPA.

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 of study is subject to the requirements of the program as published at the time of admission, or those requirements approved by the division dean, provided the student's credits which are over two years old are evaluated as current by the student's coordinator.

Graduation Petition (A Graduation Requirement)

Any matriculated student may file a graduation petition if 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 course work.

Petition Filing Time Frame	Term Degree Requirement Completed
May 21-July 9, 1986	September, 1986
August 13-September 17, 1986	November, 1986
October 22-November 24, 1986	January, 1987
January 9-February 10, 1987	April, 1987
March 18-April 21, 1987	June, 1987

Participation in Commencement

The following defines which students may participate in the September commencement ceremonies:

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

*Students needing no more than nine credit hours (including co-op) who can complete all degree or certificate requirements during the September term may participate based on the following:

1. Students must register and pay for all remaining courses by the close of the advance payment date and present a paid registration receipt to the Vice President for Academic Affairs
2. The Vice President for Academic Affairs approves the student's participation.

*Students in this category will be noted in the commencement program that they will complete their academic program as scheduled at the end of the September Term. Students will not, at commencement, be eligible for honors.

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

Academic Probation and Dismissal

"Academic Probation" means that a student has not maintained the required TGPA. Such a student is given a period during which he/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 (TGPA) 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	TGPA*	Core GPA
I	18 through 35	1.75	**N.A.
II	36 through 53	2.00	2.00
III	54 through 71	2.00	2.00
IV	72 and over	2.00	2.00

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

**Note: The core GPA is not considered at credit level I.

A student not maintaining the above cumulative averages will be placed on academic probation. Each student placed on academic probation will be officially notified in writing of this status and be given an opportunity to respond to the notification.

A student designated as on academic probation is subject to the following:

- the student may not enroll for more than twelve (12) credit hours or four (4) courses without the permission of the student's program coordinator/faculty advisor.
- the student may not be eligible to enroll for cooperative education or clinical experience/directed practice without the permission of the program coordinator.
- a student placed on academic probation will be subject to academic dismissal from the program if the student 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 for a student 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

A procedure allowing a student to appeal academic decisions is on file in the Office of the Vice President for Academic Affairs.

Grades and Credit Earned

Grading System

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

Grade	Quality	Points Per Credit Hour
A	Excellent	.4
B	Good	.3
C	Average	.2
D	Poor	.1
F	Failing	.0
I	Incomplete	Not Computed
IP	In Progress	Not Computed
V	Withdrawal (Unofficial)	.0
W	Withdrawal (Official)	Not Computed
X	Audit	Not Computed
K	Transfer Credit	Not Computed
S	Satisfactory	Not Computed
U	Unsatisfactory	Not Computed
N	No Grade Reported	Not Computed
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
VO	Vocational Teacher Referral Credit	Not Computed

If a course is repeated, only the highest grade is computed in the calculation of the TGPA. If a student earns the same grade upon repeating a course, only one grade will be computed in the calculation of the TGPA.

Incomplete (I)

When circumstances beyond the control of the student prevent the completion of course requirements during the quarter, an "I" (Incomplete) is recorded until the final grade is established. An "I" can be assigned only when a student makes arrangements for subsequently fulfilling the course requirements with the instructor prior to the end of the term. The work must be completed by Friday of the fifth week of the following term in which the grade of "I" was assigned. Otherwise, a final grade of "F" is automatically recorded.

In Progress (IP)

An instructor of a self-paced course may assign a grade of "IP" (In Progress) to a student who has been unable to complete all of the modules within the normal ten weeks. The student will then be allowed until the last day of the following term to complete the course. Students should not register for the same course during the following term. If the "IP" is not removed within the additional term, a grade of "F" will be 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)

A student desiring 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 drop/add 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 "V" may be assigned as the final grade in a course if a student discontinues attendance without officially dropping the course.

Audit (X)

A student must initiate and inform the Registrar's Office in writing that he or she is taking a class for audit.

A student who audits a course should understand that the course is for information purposes only and that no college credit may be earned or later claimed for the course audited. Class attendance, completing assignments, taking exams, etc. are the prerogatives of the student in an audit course. Regular tuition is charged for audit registration.

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

Transfer of Credit (K)

(A minimum of 50 percent of the total non-co-op/non-clinical credit hours required by the program curriculum must be earned at Cincinnati Technical College.)

A matriculated 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 the college catalog. 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 post-secondary education listed by the American Council of Education and if they are evaluated as current by the student's coordinator/faculty advisor.

A matriculated student should apply for credit transfer with the program coordinator 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 coordinator before the end of the first week of the term. After the CTC Transfer of Credit Form is completed and is approved by the division dean, the student will receive a copy of the approved credits.

Advanced Standing Credit

(A minimum of 50 percent of the total non-co-op/non-clinical credit hours required by the program curriculum must be earned at Cincinnati Technical College.)

Advanced standing credit may be earned in the following ways and substitutes for taking the course at CTC:

- Credit Through Proficiency Examinations
- 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.

- **CTC Exams (EC)**

Proficiency examinations are offered by each of the academic divisions at CTC. Such exams may be taken prior to or after enrollment in a specific course. If a student has already enrolled in a course and wishes to take a proficiency exam to receive credit, the student can obtain a request form in the Registrar's Office and submit it to the appropriate division before the completion of the second week of the academic term. The tuition payment will cover the cost of the examination. However, if a student fails the exam and must continue the course, a \$5.00 fee will be charged.

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 fee is charged for the examination.

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

Each academic division will evaluate written documentation which either:

- indicates course content and hours such as that provided by military programs, industrial programs and hospital programs, or
- provides 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 coordinators. No charge is made for the courses for which credit is received.

Other Academic Policies

Registration

A student registering for the first time will receive detailed information in advance of the first term. Class scheduling, advisement and registration will take place on registration/orientation days for first term students.

An enrolled student pre-registers for classes during his or her current term in preparation for the next term and/or the alternate term if the student will be out on co-op. (Please refer to the Calendar Section in the rear of the catalog for dates of pre-registration, billing and payment due.)

The student must make or arrange tuition payments at least one week prior to the beginning of the term. A student who fails to make payments before the start of on-line registration cannot be assured of class schedules consistent with his or her planned program curriculum.

A matriculated student may be assigned to either classes or cooperative education for the first term depending on individual program requirements and the student's date of acceptance.

Late Registration

Academic—The last day to add or register for a course is the fifth day of the term for courses meeting during the day, Monday through Friday. However, students wishing to add or register for a course after the third day of the term **MUST HAVE written permission** of the instructor. Failure to obtain said permission would prohibit a student from registering for that particular course.

The last day to register or add an evening or Saturday course shall be the fifth day of the term (or first Saturday). However, students wishing to add or register for a course after the first meeting **MUST HAVE written permission** of the instructor or the division dean responsible for the course. Failure to obtain said permission would prohibit a student from registering for that particular course.

Co-op Work Experience—The last day to add or register for co-op is the tenth working day from the start of the term.

Administrative Withdrawal

A matriculated student who fails to enroll for three (3) 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 Total Grade Point Average (TGPA) and his or her core Grade Point Average (GPA). The original course grade will continue to be shown on the transcript even though it is not calculated in the TGPA or GPA. Courses which are removed from the calculation of the TGPA or the core GPA 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.

Dean's List

In recognition of academic excellence, a Dean's List is compiled each academic term. To qualify, a student must be unconditionally accepted in a program and earn an average of 3.5 or greater and completed 12 or more credit hours in that term.

Changing Technologies

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

Only courses which are applicable to the new program curriculum will be computed in the student's TGPA and core average.

Cooperative Education Program

The College's growth and development is due, in part, to the institution's strong commitment to cooperative education. The cooperative education experience is an integral part of the curriculums of many technologies. The cooperative education program is considered vital to the strength and continued success of

the College.

Cooperative Education Requirements

Students attending Cincinnati Technical College having a cooperative education requirement may fulfill the requirement one of three ways:

1. Alternate full-time terms in the classroom with full-time terms of cooperative education employment over a ten term period.
2. Attending classes on a half-day schedule for ten consecutive terms while working in a half-time (or longer) position.
3. Academic courses and/or previous work experience may occasionally be substituted in lieu of cooperative education experiences with prior divisional approval.

Academic Requirements

A student desiring cooperative education placement must maintain the required grade point average as stated in the College catalog (see Academic Probation and Dismissal). Students must also demonstrate satisfactory proficiency in core or other requisite courses.

A student who does not maintain the required GPA will not be eligible to enroll in cooperative education courses or clinical experiences/directed practice without the permission of the program coordinator.

See Division Section for additional rules and regulations.

Cooperative Education Experience

The College has been quite successful in placing most students in cooperative jobs; however, there is **NO ABSOLUTE GUARANTEE**. Initial cooperative employment and continued employment depends on what the individual student can offer employers.

The employer is solely responsible for decisions regarding hiring, retention, dismissal, promotion or demotion of a cooperative education student.

Cooperative Education Credit Through Documented Valid Work Experience

Valid prior work experiences may be used in lieu of cooperative education placements.

College Policies

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 shall also adhere 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.

Conduct Policy

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, or 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.

Student Hearing

3357:4-52 Right to fact finding hearing.

- (A) When an allegation is made that a student, member of the faculty, or staff member 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 affirmative action officer, 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 affirmative action officer 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.

When a student is in disciplinary difficulty, a faculty/staff committee shall be convened by the Director Affirmative Action 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 appropriate Vice President who will then make a final recommendation. The student has the right to appeal the decision within three (3) working days to the President.

Student Grievance Procedures

Cincinnati Technical College has established grievance procedures to address the rights of students. A complete copy of the procedures can be obtained from the Office of Affirmative Action:

Ms. Eleanor Bonner, Director
Affirmative Action and Human Resources
Room 139

Grievance Procedure

Step 1—The employee discusses the grievance with his or her immediate supervisor(s). The student should discuss problems with his/her instructor or faculty advisor at this step.

Step 2—If the problem is not resolved at Step 1, a written grievance statement should be submitted to the Director of Affirmative Action and Human Resources. A Grievance Response form with a copy of the grievance statement shall be forwarded to the person against whom the complaint is made.

The Affirmative Action Officer will then schedule a meeting within five (5) days with both parties to seek an equitable resolution. This meeting will be chaired by a chief officer of the division or a designee who shall also respond in writing to the grievant.

Step 3—If the complaint is not resolved at Step 2, the grievant may request a fact-finding hearing under the provisions of 3357:4-52.

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

Scheduling of Classes

Classes are scheduled during the week between 7:00 a.m. and 10:00 p.m. On occasion, classes may be held on Saturday and Sunday.

In the event of adverse weather conditions, it may be necessary to announce a delayed schedule for the day. **The College will rarely close completely.**

Local radio and TV stations will begin announcing CTC's operating status no later than 6:15 a.m. on the day involved.

If an announcement is made that CTC will be operating on a delayed basis, the following will be in effect for daytime courses:

NORMAL TIME	DELAYED TIME
7:00 - 7:50	8:00 - 8:50
8:00 - 8:50	9:00 - 9:50
9:00 - 9:50	10:00 - 10:50
10:00 - 10:50	11:00 - 11:50
11:00 - 11:50	12:00 - 12:50
12:00 - 12:50	1:00 - 1:50
1:00 - 1:50	2:00 - 2:50
2:00 - 2:50	3:00 - 3:50
3:00 - 3:50	4:00 - 4:50

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

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.

Grade Reports

It is the student's responsibility to check his or her grade report for accuracy. Any errors/discrepancies should be reported to his or her coordinator/faculty advisor; any omissions should be reported 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.

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.

The first transcript is free, each additional transcript is \$3.00. Please allow five working days for processing transcripts.

Faculty Office Hours

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

I.D. Cards

Each student is required to obtain a card showing identity 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, gymna-

sium, voting in campus elections, anything dealing with the Consortium of Colleges and also many other purposes which may be designated by the administration, or various other departments or 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

Release of Information

A student's record contains information which is classified as confidential or public. At CTC, the following data are considered public information but the College may exercise its discretion regarding the release of any information.

1. Name
2. Address
3. Birthday (verify only)
4. Honors/Deans List
5. Technology/Division
6. Co-op Employer
7. Current Course Schedule
8. Full or Part Time Status

9. Parents' Name and Address

10. Dates of Attendance

11. Telephone Number

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.

Personal Telephone Messages

Personal telephone messages can be accepted only in the event of an extreme emergency. Students are asked to advise their parents and friends of this restriction. Office telephones are provided for College business only. Public telephones are located in the main lobby, student activity center and cafeteria.

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

Absences

Each student is expected to attend all classes as scheduled. On consecutive 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.

Grade Reports

It is the student's responsibility to check his or her grade report for accuracy. Any errors/discrepancies should be reported to his or her coordinator/faculty advisor. Any omissions should be reported 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.

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. The first transcript is free, each additional transcript is \$3.00. Please allow two working days for processing transcripts.

Faculty Office Hours

All College faculty maintain office hours. Students should check with each instructor or the secretary in the instructors' office area for appointments.

I.D. Cards

Each student is required to obtain a card showing identity 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, etc.

Step 1—The employee discusses the grievance with his or her immediate supervisor(s). The student should discuss problems with his/her instructor or faculty advisor at this step.

Step 2—If the problem is not resolved at step 1, a written grievance statement should be submitted to the Director of Affirmative Action and Human Resources. A Grievance Response form with a copy of the grievance statement shall be forwarded to the person against whom the complaint is made.

The Affirmative Action Officer will then schedule a meeting within five (5) days with both parties to seek an equitable resolution. This meeting will be chaired by a chief officer of the division or a designee who shall also respond in writing to the grievant.

Step 3—If the complaint is not resolved at step 2, the grievant may request a fact-finding hearing under the provisions of 3357-4-52.

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.

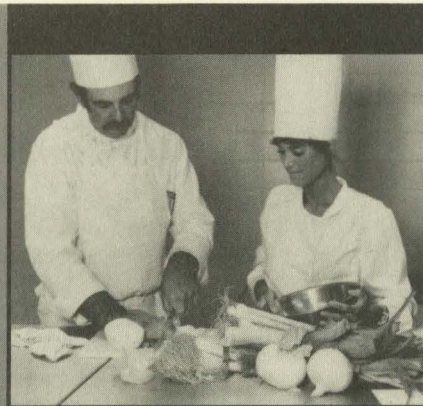
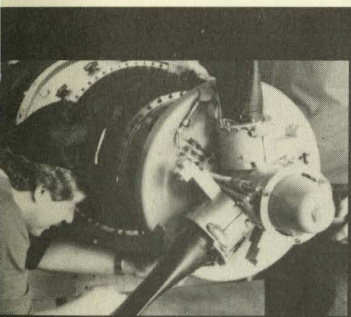
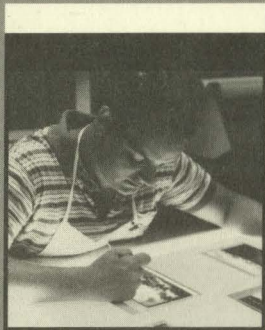
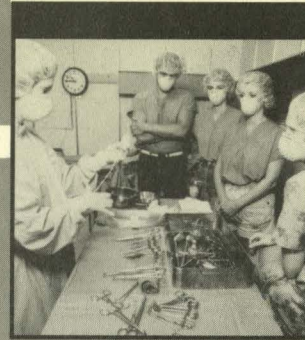
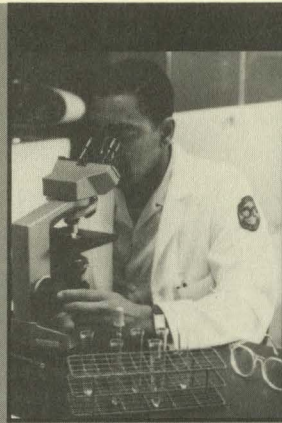
Title VII of the Civil Rights Act of 1964 and Title IX of the Educational Amendments of 1972 as interpreted by Federal Regulations prohibit sexual harassment.

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 or 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.

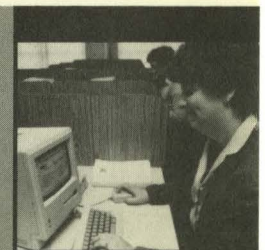
Such conduct may include:

- verbal harassment or abuse
- subtle pressure for sexual activity
- sexual 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



C A T A L O G
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STUDENT SERVICES

Student Services

As a service to students and to the community, Cincinnati Technical College maintains a staff of professional counselors to assist students in making intelligent decisions regarding their career, educational and personal-social plans. Special services provided by the Student Services staff include counseling, financial aids and veterans affairs.

Counseling

The Office of Counseling Services 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 course work.

Admissions Advising—advise students regarding general admissions; assisting students in choosing programs; and refer students to program coordinators.

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, i.e., Job Corps and JTPA.

Information—provide students with information regarding College policies, health insurance, housing, etc.

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

The Office of Counseling Services is located in room 157. Office hours are 8:00 a.m. to 8:00 p.m. Monday through Thursday, until 5:00 p.m. on Friday, and Saturday by appointment.

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, reputable, efficiently-operated living accommodations are available at reasonable costs. For information concerning housing facilities, contact the Office of Admissions and Counseling.

Veterans

Cincinnati Technical College has a Veterans' Affairs Coordinator to aid persons attending school on V.A. benefits. The Veterans' Affairs personnel 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 Veterans Administration 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 personnel 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 under the 1966 GI Bill and orphans of veterans under Public Law 634 and 88-361.

Financial Aid

The purpose of Cincinnati Technical College's financial aid award is to provide financial assistance to those qualified students who, without such aid, would be unable to attend college.

Financial aid is the assistance available to help students meet the difference between what they can afford to pay and what it actually costs to attend school.

All students must be fully accepted into the College before financial aid can be awarded.

The Award Year

The financial aid award year begins with the June Term and extends through the April Term.

Students are notified of their aid award via the Award Notification Letter. If the student accepts the aid award, the Award Letter must be signed and submitted to the Financial Aid Office within two weeks of receipt.

Procedures for Applying for Financial Aid include—

- Apply for admission to Cincinnati Technical College
- File an institutional application for financial aid
- File a Financial Aid Form (FAF)
- Ohio residents file an application with Ohio Board of Regents for an Ohio Instructional Grant

Deadlines—All applications for financial aid should be completed by March 15 to receive full consideration for all forms of financial aid. Applications completed after March should not expect consideration for campus-based funds.

Pell Grant—The **Pell Grant** is available to full-time and half-time undergraduate students. It is a grant that does not have to be repaid. The amount of the grant varies for each student.

Supplemental Educational Opportunity Grant (SEOG)—The SEOG program is for students of exceptional financial need who, without the grant, would be unable to continue their education. The Supplemental Educational Opportunity Grant cannot be less than \$200 a year.

National Direct Student Loan (NDSL)—The NDSL is for students who are enrolled at least half-time and who need a loan to meet their education expenses.

Money advanced under the NDSL Program represents federal funds in the form of a LOAN, and must be repaid in accordance with the terms of the NDSL Promissory Note. The rate of interest charged on the loan will be five percent (5%) and repayment period will begin six (6) months after the student leaves the College.

College Work-Study—The purpose of Cincinnati Technical College's federally-funded College Work-Study program is to provide meaningful employment to any eligible student as part of a financial aid package to help defray educational expenses and to serve as an educational tool to increase the student's job skills and enhance career opportunities.

Cincinnati Technical College arranges jobs on-campus and off-campus with a public or non-profit agency.

In arranging a job and determining how many hours a week a student may work, these things are taken into account: (1) **need** (2) **class schedule** and **academic progress**. Students are paid at least minimum wage.

CWS students may not work more than forty hours per week.

Guaranteed Student Loan Program/Federally Insured Student Loan—The GSL, or FISL enables the student to borrow directly from a bank, credit union, savings and loan association, or other participating lender who is willing to make the educational loan. The loan is guaranteed by a state or private non-profit agency, or insured by the federal government.

The **maximum** a dependent student may borrow as an undergraduate is \$2,500 a year. An independent student may borrow \$3000 a year. The interest for new borrowers is eight percent (8%).

The loan must be repaid. Payments normally begin six months after graduation or withdrawal from school.

Other Financial Aid Programs

Ohio Instructional Grant (OIG)—The OIG is a state grant program which can only be used for tuition and fees. Students must apply to the Ohio Board of Regents, and carry a minimum of 12 credit hours to receive an OIG grant.

State of Ohio Scholarship Programs

Ohio Academic Scholarship Program—This program is funded by the State of Ohio to assist undergraduate students who exhibit exceptional academic ability. High school students who are residents of Ohio and who plan to attend an approved Ohio institution of high learning on a full-time basis (twelve credits or more per term) may apply. Recipients are chosen by the Board of Regents on the basis of grade point average and performance on a competitive examination. These scholarships are awarded in the amount of \$1000 per year for four years of undergraduate education.

Ohio War Orphans Scholarship—This program is funded by the State of Ohio to aid dependents of veterans of the armed services who died or were disabled during their period of service. Applicants must be residents of the State of Ohio who are enrolled full-time (twelve credits or more per term) as undergraduate students. Eligibility is determined by the Board of Regents on the basis of need. Awards cover the cost of instructional and general fees for four years of study. More detailed information and applications are available from the Ohio Board of Regents.

National Guard Scholarship Program—This program is funded by the State of Ohio to assist persons who enlist in the Ohio National Guard after September 1, 1977 for at least six years. Awards are determined by the Board of Regents and cover the cost of instructional and general fees. Eligible guardsmen should contact the Adjutant General's office to apply for this program.

Institutional Aid Programs

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

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 technical education. CTC awards both academic and need-based scholarships. Eligibility requirements include:

1. Applicants must meet priority deadline of April 1;
2. Applicants must be U.S. citizens;
3. Applicants must be fully accepted and matriculated into a certificate or degree program;
4. Applicants must be ranked in the upper 20 percent of their high school graduating classes 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 TGPA and 3.0 core average if applicable;
5. Need-based applicants must have on file in the Financial Aid Office a CTC Financial Aid Application and a completed Confidential Financial Statement.

Application deadline is April 1, and all recipients must reapply each year.

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.

The Emergency Student Loan Program (CINTECH, LINKS and Avon) is designed to serve as an institutional short-term loan with emphasis on repayment within ninety (90) days. The program will provide emergency assistance for tuition, fees, books and supplies and should be administered as such. For those students who meet eligibility requirements, awards will be made upon availability of funds.

The maximum CINTECH and Avon loan amount is \$200 and the maximum LINKS loan is \$100 with repayment within ninety (90) days at a six (6) percent interest rate.

The Emergency Student Grant Program, LINKS, is an institutionally administered program drawing its funds from the contributions of the LINKS Organization. The program is designed to help students with extreme emergency financial needs. Grants awarded at a maximum of fifty dollars (\$50) and do not require repayment.

Emergency Aid Eligibility Requirements

1. Student must be a U.S. Citizen or an eligible non-citizen.
2. Student must be fully 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 an NDSL, GSL or PLUS Loan or any institutional loan.

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 authorization of 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. This disbursement occurs on the Friday of the fifth week of each term. It is disbursed by check and proper student identification is required by the Cashier.

Students who participate in the College Work-Study Program are paid every two weeks 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.

Cincinnati Technical College's refund policy for students withdrawing or dropping credit hours is outlined in this catalog. Federal regulations require a proportionate refund of federal student aid funds (programs sponsored by the U.S. Dept. of Education). The federal formula used to determine the portion of the fee to be refunded as applied to federal student aid is as follows:

$$\frac{\text{total amount of federal student aid funds} \\ \text{(excluding employment) awarded for the payment period}}{\text{total amount of aid (excluding employment)} \\ \text{awarded for the payment period}}$$

Cincinnati Technical College will refund back to the U.S. Dept. of Education's federal aid programs using the following priority distribution: 1) National Direct Student Loan, 2) Supplemental Educational Opportunity Grant, 3) Pell Grant and 4) Guaranteed Student Loan.

Other refund distribution priority is as follows: 1) state grants/scholarship programs, 2) institutional scholarships and 3) emergency student loans.

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. 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 and payback procedures, and what portion is grant aid.

6. All students have the right to know the College's refund policy and how it effects their financial aid packages.

7. All students have the right to know what the College's Satisfactory Progress policy is.

Student 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 of aid which they are receiving, including any part-time employment of income benefits.

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 course withdrawal and repayment of funds if applicable.

6. All students who are awarded any type of loan are responsible for arranging pre-loan counseling, an entrance interview and an exit interview.

AID WHICH IS IN THE FORM OF A LOAN WILL NOT BE ISSUED WITHOUT THE SIGNING BY THE STUDENT OF A PROMISORY NOTE.

7. All students who are awarded a CWS award are responsible for attending a JOB-PLACEMENT seminar, and signing a CWS work agreement.

8. All students have the responsibility of understanding and complying with the College's Standards of Satisfactory Progress.

Satisfactory Progress

All CTC students, including financial aid recipients, must maintain satisfactory academic progress as stated in the CTC catalog. In addition, financial aid recipients must carry to full successful completion 60 percent of the credits for which they have registered each term. The monitoring of satisfactory progress will be done on a term basis. Students will be notified when they fall below the minimum standards. Three consecutive terms in which the student does not meet minimum standards will result in termination of aid.

Course Withdrawals

Students who register for 12 credit hours but withdraw from courses could be liable to repay the overaward.

College Work Study

Students awarded College Work-Study must contact the Financial Aid Office regarding job placement. College Work-Study is not a grant or a loan. Students must work for the dollars awarded. Students are only permitted to work 20 hours per week while attending classes. All on-campus employment must be cleared through the Financial Aid Office. Failure to do so could result in a reduction of the award or the student's liability for overpayment of funds.

National Direct Student Loan

All National Direct Student Loan recipients must sign a promissory note in the Financial Aid Office before the loan and the award become official. Additionally, all advancements on the total loan must be signed for prior to the beginning of each term. All NDSL awards must be repaid.

Other Aid

Financial aid recipients must notify the Financial Aid Office of any other sources of aid. All employment earnings must be reported. This includes co-op earnings or other part-time employment not reported on the student's financial aid application.

Notification of Changes

All aid recipients must notify the Financial Aid Office of the following changes, as they occur: change of term, change of credit hour load, change of technology, or change of family circumstances which may affect the recipient's eligibility. The Financial Aid Office should be notified of address changes, or change of family name (marriage) within one week of the change.

Registration

Financial aid recipients must follow the regular registration process.

Please Note: If a student defaults on unpaid tuition, the Cincinnati Technical College has the right to dismiss that student for financial deficiency and take legal action against that student and/or co-signer to satisfy the outstanding balance. If a student withdraws or leaves the College, that student and/or co-signer are still financially responsible for all unpaid tuition and fees. Furthermore, if the student fails to meet all conditions and responsibilities regarding the awarding and disbursement of financial aid, previously awarded aid may become void and the student will be held responsible for the unpaid balance of the student's tuition charges.

No degree will be granted or transcript provided until all financial obligations are completely paid.

Student Activities

Student Senate

One student and an alternate are chosen from each technology. Officers are elected by the Senate for each of the two student sections.

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 are working to build a winning tradition in athletics. As members of the National Junior College Athletic Association (NJCAA), the Tigers compete in an ever-expanding intercollegiate sports program.

On the horizon at Cincinnati Tech is an expanding athletic program in both men's and women's sports. At the present time CTC offers intercollegiate men's basketball.

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

Along with the intercollegiate competition, Cincinnati Technical College offers an expanding intramural program. Class competi-

tion is intense in basketball, softball and volleyball. More programs will be added in the future. The gymnasium and swimming pool are open for student use each day.

VIP Association

This is a volunteer organization of students who act as hosts or hostesses, serve as tour guides, usher at Commencement and participate in a variety of activities as their schedules permit. All students with a 2.5 TGPA are eligible and can apply by contacting Miriam Carle in room 156.

Student Organizations

Students are encouraged to join organizations designed for special interests. Business Technology students can apply for membership in the Office Education Association (OEA). There are others 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 Litho Club. For additional information check with the Student Senate Office or program coordinator.

Alumni Association

The students at Cincinnati Tech have always displayed a special type of loyalty and support.

Upon graduation, many continue to support the school's philosophy of cooperative career education and the traditions established in CTC's brief history.

Following the school's fourth graduating class, the graduates of CTC formed the Cincinnati Technical College Alumni Association in early 1972. The association was organized to promote the general welfare of the College and to create and maintain an active interest among the alumni in extending the influence of the College. The association also provides a means of perpetuating friendships among alumni and in the future will aid the College in providing facilities to meet the educational needs of society.

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 Student Activities.

Learning Resource Center

The Learning Resource Center includes the Johnnie Mae Berry Library and the Instructional Media Center. The LRC is open from 7:30 a.m. to 9:30 p.m. Monday through Thursday and from 7:30 a.m. to 4:30 p.m. Fridays. The spacious new three-level LRC is both functional and attractive.

Johnnie Mae Berry Library

The Johnnie Mae Berry Library, named for CTC's first librarian, contains a growing collection of books and periodicals in various technologies as well as in general areas. A courteous and friendly

staff is available for assistance at all times to assist in finding information.

The library includes a computer terminal room, group study rooms, a typing area, carrels equipped for audio-visual equipment and carrels and tables for quiet study.

All students enrolled in the Cincinnati Technical College are encouraged to use the Learning Resource Center. Please observe the following rules and regulations:

Quiet Zones—An atmosphere of quietness conducive to good study habits shall prevail.

Group Study—Students who wish to study together must use the rooms set aside for group study.

Smoking, Eating & Drinking—Smoking is not permitted. Neither food nor drink may be brought into the Center.

Inspection—Upon leaving, all bags, briefcases and parcels are subject to inspection.

Proper Charging—No books may be taken from the LRC without being charged out and signed for at the Circulation Desk.

Overdues—Fines—No books will be issued to students who repeatedly keep books overtime. A fine of \$.10 per day is charged for each circulation book kept overtime. Reserve books are charged ten cents an hour if not returned by 8:00 a.m. the following morning on school days.

Lost Books—Lost or damaged books must be paid for by the borrower. A \$5.00 processing fee will be added to the cost.

Circulation Policies and Procedures

To Borrow a Book—To borrow a book a student presents his or her I.D. card. The Librarian or Assistant will stamp the DUE DATE on the card beside the borrower's signature and on the book's DATE DUE SLIP letting the student know when the book is to be returned.

Length of Loan—Circulating Books may be kept three weeks. They may be renewed if there are no requests for them.

Reserve Books circulate according to faculty members' instructions who place them on reserve. **Overnight Reserve Books** which are used during the day may be checked out after 3 p.m. and must be returned by 8 a.m. the following school day.

Restricted Materials—Closed Reserve Books, Periodicals, and Reference Books may not be charged out and may be used only in the LRC.

Return of Books—Library books must be returned to the Circulation Desk by the borrower on or before the DATE DUE. Each borrower is responsible for all books signed out.

Book Depository—The Book Drop is located to the right of the Main Entrance. It is to be used for book returns when the Learning Resource Center is CLOSED.

Instructional Media Center

The Instructional Media center provides audio-visual support for faculty, students and administrative staff. Students have access to various forms of audio-visual materials such as audio tapes, slides, filmstrips, videotapes, etc. The materials are to be used with the appropriate piece of equipment within the LRC. Materials may be borrowed at the charging counter of the Media Services area.

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, various tools used in labs, etc.

Used books are purchased by the bookstore during the two week period prior to the start of each new academic term.

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 booklists can be returned as used books and refunded accordingly.

Regular hours of the Bookstore are 9:30 a.m. to 4:00 p.m. Monday through Friday. During registration periods hours are extended.

Dining Facilities

The College's new cafeteria offers a wide selection of vending machines, drinks, foods, hot and cold—also a microwave oven. This area is open from 6:30 a.m. to 10:00 p.m. daily.

The cafeteria is operated by Canteen, Inc.

Gymnasium

The gymnasium is open to "free play" from 8:00 a.m. to 5:00 p.m. Monday through Friday. Facilities available include volleyball, basketball, tumbling mats, footballs, soccer balls, and softball equipment. I.D.'s are required to acquire equipment.

Pool

The pool is open for free swimming Monday through Friday from 10:30 a.m. to 5:30 p.m.

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 4:30 p.m. & 5:30 p.m. to 8:30 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 Handicapped

The College has renovated areas to make its facilities more accessible to handicapped 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 April Term, students

must remove locks and contents from their lockers so that general cleaning and maintenance can be performed.

Parking & Traffic Regulations

CTC provides on campus parking for students on a first come, first served basis. All vehicles parking on school premises must be registered and display a decal on the lower left side of the windshield. The parking plans and rates are as follows:

1. The Term Reserved Space Plan (TRS)

This plan permits a student to park in any of the four areas marked in yellow lines on campus. The TRS plan can be purchased for \$25 per term. Those areas open to the TRS parking plan are the lower lot, some hilltop spaces, the gravel lot and front and back drive.

2. The Registered Vehicle Plan (RVP)

This plan permits a student to park in the stadium parking lot. The fee for this plan is \$7 plus 50¢ per day.

3. The Registered Vehicle (RVM)(Motorcycle)

The RVM plan permits students to park motorcycles on campus. Students must park motorcycles in the areas specifically marked. The fee for this plan is \$10 per term.

4. Upper lot parking for night school will be 50¢ per car, per night, if paid at the guard house or a parking card can be purchased for \$5 when a student registers. This card entitles the student to park for 13 nights. These cards will be punched upon entry by the gate attendant.

Stadium parking for night school is 50¢ per car, per night, or students can purchase a \$4 coupon book good for ten parking privileges.

Traffic Regulations

Traffic Regulations will be strictly enforced. Violators will face monetary fines and possible loss of parking privileges and/or transcript withheld until fines are paid; also prevention from purchasing on-campus parking for future terms.

The following policies and procedures will be in effect on the first day of classes and will apply to all person driving vehicles on to campus.

- One-way traffic is in effect up the entire front drive around A & B wings, and down the back exit drive.
- One-way traffic is also in effect across the front of the building going north around the back of F & G wings, (across from the gravel lot) continuing around the rear of the building and down the exit drive.
- Only those students with current parking decals will be able to bring their vehicles on campus.

Parking regulations will be strictly enforced. Violators face monetary fines and possible loss of parking privileges and/or tow away for chronic offenders.

The following are violations and the fines that accompany them:

Parking

- | | |
|--|---------|
| 1. Cross walk | \$ 3.00 |
| 2. Blocking Driveway | 5.00 |
| 3. Parking in or blocking fire lane | 10.00 |
| 4. Overtime parking, limited parking area | 2.00 |
| 5. Disregarding posted signs: no stopping,
no parking, loading, tow away zone | 5.00 |
| 6. Parking in a manner to use two stalls | 5.00 |
| 7. Parking disregarding painted curbs | 3.00 |
| 8. Parking outside permitted decal areas | 3.00 |
| 9. Parking in reserved area(s) | 5.00 |

Moving

- | | |
|---|-------|
| 10. Wrong direction on one-way street | 15.00 |
|---|-------|

Other

11. No parking permit (decals) or not displayed	5.00
12. Vehicle not registered	5.00
13. Towing and impoundment	Cost
14. Disregard of barricades	10.00
15. Reproducing, altering or defacing parking decal or permit. Using stolen or revoked permit or decal (Tow & Impound)	Cost
16. Other	5.00

Failure to pay fines will result in the holding of transcripts until such fines are paid; also prevention from purchasing on-campus parking for future terms.

LOCK YOUR CAR

Cincinnati Technical College assumes no responsibility for any loss or theft of any automobile or any part thereof; or for any article left therein; or for any damage which may be caused by fire, trespassers, collision, etc.

CTC provides on-campus parking for students on a first come, first served basis. All vehicles parking on school premises must be registered and display a decal on the lower left side of the windshield. The parking plan and rates are as follows:

1. **The Reserved Space Plan (RSP)**
This plan permits a student to park in any of the lot areas marked in yellow lines on campus. The RSP plan can be purchased for \$15 per term. These areas are to the left of the parking lot and are the lower lot, some hilltop areas, the lower lot and front and back drive.

2. **The Registered Vehicle Plan (RVP)**
This plan permits a student to park in the stadium parking lot. The fee for this plan is \$7 plus 50¢ per day.

3. **The Registered Vehicle (RVN) Plan**
The RVN plan permits students to park motorcycles on campus. Students must park motorcycles in the designated parking area. The fee for this plan is \$10 per term.

4. **Upper lot parking for night school** will be 50¢ per car per night. It is paid at the guard house or a parking and can be purchased for \$2 when a student registers. This card entitles the student to park for 11 nights. These cards will be punched upon entry by the gate attendant.

Stadium parking for night school is 50¢ per car per night or students can purchase a \$4 coupon book good for ten parking privileges.

Traffic Regulations

Traffic regulations will be strictly enforced. Violation will incur monetary fines and possible loss of parking privileges and a transcript withheld until fines are paid; also prevention from purchasing on-campus parking for future terms.

The following policies and procedures will be in effect on the first day of classes and will apply to all person driving vehicles on campus.

- One-way traffic is in effect up the entire front drive around A & B wings, and down the back exit drive.
- One-way traffic is also in effect across the front of the building going north around the back of F & G wings, across from the gravel lot continuing around the rear of the building and down the exit drive.
- Only those students with current parking decals will be able to bring their vehicles on campus.

Parking regulations will be strictly enforced. Violation will incur monetary fines and possible loss of parking privileges and a transcript withheld until fines are paid; also prevention from purchasing on-campus parking for future terms.

The following are violations and the fines that accompany them:

1. Cross walk	\$ 5.00
2. Blocking driveway	\$10.00
3. Parking in no parking zone	\$10.00
4. Overtime parking, limited parking area	\$10.00
5. Obstructing posted signs, no stopping	\$10.00
6. No parking, loading, tow away zone	\$10.00
7. Parking in a manner to use two stalls	\$10.00
8. Parking disregarding painted curbs	\$10.00
9. Parking outside permitted decal areas	\$10.00
10. Parking in reserved areas	\$10.00

Moving

10. Wrong direction on one-way street	\$15.00
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Gymnasium

The gymnasium is open to "free play" from 8:00 a.m. to 2:00 p.m. Monday through Friday. Facilities available include volleyball, basketball, tumbling mats, footballs, soccer balls, and soft ball equipment. I.D.'s are required to secure equipment.

Pool

The pool is open for free swimming Monday through Friday from 10:30 a.m. to 2:30 p.m.

Activities Center

This area features a game room with pool tables, ping pong, loose 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 4:30 p.m. & 5:30 p.m. to 8:30 p.m.

Activities Center, Pool, Gym Rules

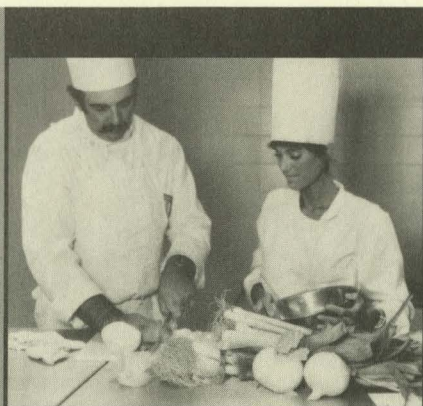
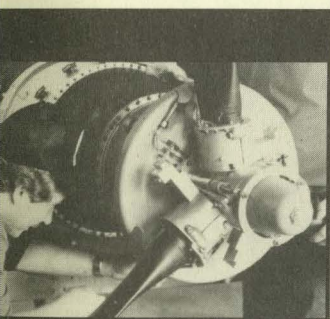
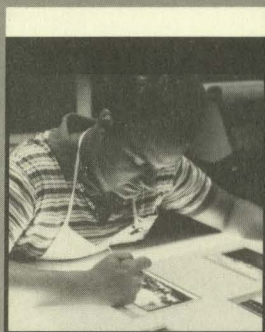
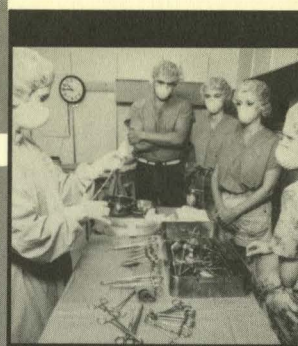
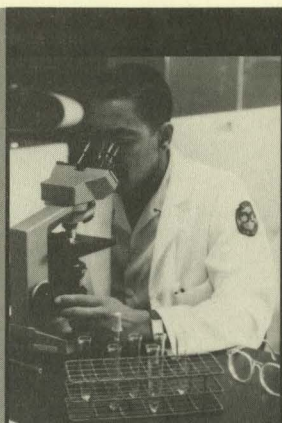
- Students using the center must have their CTC I.D. card and Driver's License and show them upon request.
- Food and drink will not be allowed in the gym, exercise room or pool.
- No smoking allowed in the gym, exercise room or pool.
- No street clothes allowed in pool area.
- No swimming suits allowed in other activities areas.
- Students must present I.D. to lifeguard while using pool area.
- Please place all cigarettes in ashtrays and all trash in trash containers.
- I.D.'s must be presented to use equipment.
- Loose or disruptive behavior will not be tolerated.
- All students are encouraged to shower after activity.
- Gym shoes must be worn when using the gymnasium. (Street shoes with soft soles are not permissible.)
- It is recommended that gym clothes be worn when using the gymnasium.

Facilities for the Handicapped

The College has renovated areas to make its facilities more accessible to handicapped 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 locker. 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 April term, students



C A T A L O G
H A N D B O O K

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**ACADEMIC DIVISIONS, DEGREE
& CERTIFICATE PROGRAMS**

**& CERTIFICATE PROGRAMS
ACADEMIC DIVISIONS, DEGREE**

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Academic Divisions

Cincinnati Technical College has six academic divisions and departments which offer credit courses: Health Technologies, Business Technologies, Communication Skills/Social Sciences, Developmental Education, Engineering Technologies and Physical Science/Mathematics.

Communication Skills/ Social Sciences Division

Philosophy of Communication Skills

The Communication Skills Division recognizes that each individual is a unique combination of attitudes, beliefs, values and experiences. Sharing this uniqueness with others is a basic need; however, individual differences can cause barriers to communication. Therefore, the Division offers students a proven process with identifiable stages: 1) planning the message, 2) the initial verbalizing of the message and 3) refining techniques to produce a final written or oral presentation of the message. This process will enable each student to break down the barriers to communicate more effectively with others.

Goals of Communication Skills

Students will be able to:

1. Understand the elements of problem solving.
2. Employ various research techniques including the development of a thesis.
3. Distinguish between logical and fallacious arguments.
4. Understand written and oral communications.
5. Analyze the audience for a communication.
6. Write various types of business and technical communications.
7. Present information and technical material in a clear, organized speech.
8. Use clear, concise language at the level acceptable in business, industry and health professions.

Philosophy of the Social Sciences

Cincinnati Technical College has as its mission the provision of quality technical education. In order to function successfully on the job, technicians must have both a practical knowledge of their fields and a grasp of the framework within which they work. Essentially, it is the "social world" that forms the framework with which technical skills develop and are applied. Each of the social sciences provides a distinctive perspective of this framework. The social sciences allow the students to see the relationship of their technical skills to industry, community and country, thus making for both a more productive worker and a more contented person.

Goals of Social Sciences

Students will be able to:

1. Understand the basic conceptual framework of the social sciences.
2. Develop the relationship between the individual and the social/psychological processes so that each student can see his or her role within the ever present-social/psychological networks.
3. Grasp the analytical and methodological tools necessary to either control or adapt to changes in a social/psychological environment.

The Writing Center

Individualized Courses—Currently, Communication Skills courses 1002, 1009, 1010 and 1011 are also offered on an individualized basis. Individualized courses being offered each term are designated by the letters IND.

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 (559-1520, extension 133) answers questions about business communications, technical writing, grammar, punctuation, spelling, capitalization and word usage. The hours are 9:00 a.m. to 4:00 p.m., Monday through Friday.

Requirements

To qualify for the associate degree, a student must complete at least 21 credit hours; 12 must be in communication skills and 9 in 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 will select a minimum of three courses (9 credit hours) from at least two of the four areas: psychology, economics, sociology and community relations. The following is a list of the courses which constitute each of the areas:

Communication Skills

Composition:

- 1001 English Composition I
- 1002 English Composition II
- 1007 Research and Argumentative Writing
- 1009 Business English

Technical Writing and Business Communications:

- 1010 Technical Writing
- 1011 Business Communications
- 1015 Technical Writing II
- 1017 Project Research
- 1018 Writing the Project Copy I

Oral Communication:

- 1020 Effective Speaking
- 1024 Group Dynamics and Problem Solving

Composition Classes Using Microcomputers

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.

Social Sciences

Psychology:

- 1502 Human Relations - Applied Psychology
- 1505 Introduction to Psychology: Internal World
- 1506 Introduction to Psychology: External World
- 1507 The Psychology of Color
- 1508 Child Psychology
- 1509 Psychology of Human Development - Adolescence through Aging

Economics:

- 1512 Micro Economics
- 1513 Macro Economics

Sociology:

- 1521 Introduction to Sociology
- 1523 Social Institutions
- 1524 Stress Management
- 1525 Changing Roles for Men and Women

Community Relations:

1531 Introduction to Political Science

1535 Introduction to Labor Management Relations

1539 Public Policy and the American Worker

New Associate Degree Program Technical Writing & Editing Technology (TWET)

Technical communication is the work performed by technical writers, editors, and illustrators who put scientific or technical information into readily understandable language for a specific audience. 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. Technical communication is the language of high technology. In our society, where understanding technical information is increasingly important to our everyday lives, technical writers and editors play a vital role.

The Technical Writing & Editing Technology program was created after extensive research and feedback from professional technical communicators. The core courses help students master the writing and editing skills required to enter the profession. In addition, students gain technical competence by earning at least 26 credit hours in a technical specialty area. These technical specialty courses may be from any of the other technologies offered at Cincinnati Technical College.

The Technical Writing & Editing Technology program is in the process of establishing a formal articulation agreement with the Florida Institute of Technology. This agreement will enable graduates who choose to continue their studies to apply all their credits toward a Bachelor of Science degree in Technical Communication.

Technical Writing and Editing Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
*xxxx Technical Specialty Requirement	3	3	4
1001 English Composition I	3	0	3
3005 Administrative Typing	2	3	3
5001 Portfolio Development	1	2	2
*xxxx Technical Specialty Requirement	3	3	4
	12	11	16
■ Second Term			
*xxxx Technical Specialty Requirement	3	3	4
1017 Project Research	3	3	4
1018 Writing the Project Copy I	2	5	4
1401 Layout & Design	3	0	3
3061 Word/Information Processing I	1	4	3
	12	15	18
■ Third Term			
9701 Co-Op Employment TWET Technology	1	40	3
■ Fourth Term			
*xxxx Technical Specialty Requirement	3	3	4
1512 Micro Economics	3	0	3
3063 Word/Information Processing II	1	4	3
5010 Planning the Illustration	2	2	3
5040 Project Organization	2	3	3
	11	12	16
■ Fifth Term			
9702 Co-Op Employment TWET Technology	1	40	3
■ Sixth Term			
*xxxx Technical Specialty Requirement	6	6	8
1024 Group Dynamics & Problem Solving	3	0	3

5032 Writing the Project Copy II	2	5	4
5041 Editing the Project Copy I	2	2	3
	13	13	18

■ Seventh Term

9703 Co-Op Employment TWET Technology	1	40	3
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■ Eighth Term

*xxxx Technical Specialty Requirement	3	3	4
5022 Technical Presentations	3	2	4
5033 Writing the Project Copy III	2	5	4
5042 Editing the Project Copy II	2	2	3
5051 Project Planning	3	1	3
	13	13	16

■ Ninth Term

9704 Co-Op Employment TWET Technology	1	40	2
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■ Tenth Term

*xxxx Technical Specialty Requirement	3	0	3
15xx Social Science Elective	3	0	3
15xx Social Science Elective	3	0	3
5089 Conducting Project Reviews	1	6	3
	10	6	12

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Students whose test scores or previous experience indicate advanced standing may substitute another communication skills course.

Recommended substitutes: 1007, 1009.

Recommended Social Science Electives: 1505, 1506, 1524, 1527.

*Coordinator/Advisor approval required.

Sample Technical Specialty Requirements

The Technical Writing & Editing Technology advisors/coordinators help students plan an appropriate curriculum in their preferred technical specialty area. The samples that follow show the technical courses required for a few technical specialty areas. Consult with the Technical Writing & Editing Technology advisors for information about other technical specialty areas.

Sample A - Computer Systems Documentation Writing

	Hours Per Week		Credit
	Class	Lab	Hours
1701 Introduction to Data Processing	3	0	3
1702 Introduction to BASIC Programming	2	3	3
1721 Programming Logic & Methods	2	3	3
1124 Business Algebra	4	0	4
1742 COBOL I	3	7	6
1763 Systems Analysis & Design	3	7	5
1127 Business Statistics	4	0	4
6110 Software Documentation	2	2	3
1135 "C" Programming Language	2	2	3

Sample B - Health Technologies Documentation and Report Writing

	Hours Per Week		Credit
	Class	Lab	Hours
2232 Organic Chemistry	3	2	4
2233 Biochemistry	3	2	4
4000 Medical Terminology	3	1	3
4001 Introduction to Health Care Systems	2	0	2
4014 Anatomy & Physiology I	3	2	4
4016 Anatomy & Physiology II	3	2	4
4009 General Microbiology	3	3	4
4015 Anatomy & Physiology III	3	2	4
4408 Advanced Medical Terminology	3	0	3

Sample C - Engineering Documentation and Report Writing

	Hours Per Week		Credit Hours
	Class	Lab	
7010 Engineering Drawing I	2	4	3
1191 Algebra & Trigonometry I	4	0	4
7160 Computer Aided Design/Drafting	2	3	3
2291 Physics I	3	2	3
1192 Algebra & Trigonometry II	4	0	4
7130 Engineering Mechanics (Statistics)	3	2	3
7132 Hydraulics & Pneumatics	4	2	4
7142 Mechanisms Analysis & Design	3	2	3
7708 Electrical Fundamentals & Controls	3	3	4

Sample D - Industrial Testing and Research Report Writing

	Hours Per Week		Credit Hours
	Class	Lab	
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
2293 Physics III	3	2	3
6611 Technical Laboratory Chemistry I	3	3	4
6621 Technical Laboratory Chemistry II	3	3	4
6629 Science of Materials	3	2	4
6631 Technical Laboratory Chemistry III	3	3	4
6639 Fundamentals of Physical Measurement	3	2	4

Developmental Education Program

The Developmental Education program consists of three component parts to assist students in preparing for their technical programs.

Courses

Each Developmental Education 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.

Developmental Education courses are designed to develop specific minimum competencies in each subject area. The grades for courses numbered from 0001 to 0057 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 an 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 ascertaining progress.

The following courses are offered:

	Credits
#0001 English Grammar	4
#0002 College Spelling	3
#0003 Basic Writing I	4
#0004 Basic Writing II	4
#0007 Telephone Techniques	1
#0008 Oral Reports	2
#0010 College Reading I	4
#0011 College Reading II	4
#0012 Technical Reading I	4
#0013 Technical Reading II	4

#0014 College Study Skills	4
#0017 Speed Reading	4
#0020 Basic Mathematics I	4
#0021 Basic Mathematics II	4
#0022 Essentials of Mathematics	6
#0024 Basic Algebra I	4
#0025 Basic Algebra II	4
#0030 Basic Concepts of Biology	4
#0031 Basic Concepts of Chemistry	4
#0040 Interpersonal Development	4
#0041 Interpersonal Communications	4
#0042 Interpersonal Skills	4
#0057 Pre-Accounting	4

Laboratory

Developmental Education also serves students who have been accepted into technical programs and are pursuing a full or part-time schedule of classes. On the mezzanine floor of the Learning Resource Center there is a well-equipped, open laboratory where students may increase their skills in reading, English and mathematics, etc.

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 during the hours of 8:30 A.M. and 3:00 P.M., Monday through Friday, also Monday evenings from 6:00 P.M. till 9:00 P.M.

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. There is no cost to students as the College pays for the student-tutors.

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 several associate degree and certificate programs. 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 forty different hospitals and other health care agencies and institutions to provide clinical experiences for health students.

Prerequisites for all programs are available at CTC.

Dietetic Programs

Cincinnati Technical College Dietetic programs train students in various aspects of health related to food service and nutrition care.

Cincinnati Technical College offers one certificate and two associate degree options to meet a variety of career choices and employment opportunities. All programs include unpaid directed practice at area hospitals, health agencies and extended care facilities. The associate degree programs also include paid coop-

erative experience.

Dietetic Technician - Nutrition Care (DTNC)

This program prepares the student to provide nutritional screening assessment and diet instruction to the patient/client under the supervision of a Registered Dietitian.

This includes data gathering from the patient's record and verbal history, preliminary assessment of nutritional status and the management of the nutritional care plan for patients/clients not at nutritional risk.

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 Nutrition Care Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
4000 Introduction to Medical Terminology	3	1	3
4001 Introduction to Health Care Systems	2	0	2
4100 Fundamentals of Nutrition	4	0	4
4111 Diet Orientation & Dir Practice I	1	3	1
4121 Food Management	2	6	4
	15	10	17

■ Second Term			
9301 Co-Op Employment Health Technology	1	40	3

■ Third Term			
1502 Human Relations	3	0	3
4031 Health Care Management	3	0	3
4102 Nutrition for Lifecycle	4	0	4
4112 Dietetics Directed Practice II	0	6	1
4124 Food Service Sanitation Certification	2	0	2
4133 Food Science	3	2	4
	15	8	17

■ Fourth Term			
9302 Co-Op Employment Health Technology	1	40	3

■ Fifth Term			
2231 Fundamentals of Inorganic Chemistry	3	2	4
4014 Anatomy and Physiology I	3	2	4
4030 Technology of Ed for Health	1	3	2
4104 Clinical Nutrition I	4	0	4
4113 Dietetics Directed Practice III	0	8	1
4122 Introduction to Food Systems	2	3	3
	13	18	18

■ Sixth Term			
10xx Communications Elective	3	0	3
2232 Fundamentals of Organic Chemistry	3	2	4
4015 Anatomy and Physiology II	3	2	4
4106 Clinical Nutrition II	4	0	4
4114 Dietetics Directed Practice IV	0	10	2
	13	14	17

■ Seventh Term			
102x Oral Communication Elective	3	0	3
2233 Fundamentals of Biochemistry	3	2	4
4016 Anatomy and Physiology III	3	2	4
4107 Clinical Nutrition III	4	0	4
4115 Dietetics Directed Practice V	0	10	2
	13	14	17

■ Eighth Term			
9303 Co-Op Employment Health Technology	1	40	2

■ Ninth Term			
101x Technical Writing Elective	3	0	3
15xx Social Science Elective	3	0	3
15xx Social Science Elective	3	0	3
4108 Community Nutrition	4	0	4
4109 Dietetics Seminar	2	0	2
4116 Dietetics Directed Practice VI	0	8	1
4117 DTNC Homecare Directed Practice	0	5	1
	15	13	17
			112

Communications Electives: 1002, 1007, 1008, 1010

Oral Communications Electives: 1020, 1024

Technical Writing Elective: 1010, 1015

Social Science Electives: (at least 2 groups shall be represented)

Group 1 - Psychology: 1505, 1506, 1508, 1509

Group 2 - Economics: 1512, 1513

Group 3 - Sociology: 1521, 1523, 1525, 1527

Group 4 - Government: 1531, 1535, 1536, 1539

Articulation with Mt. St. Joseph College

The Dietetic Technician Nutrition Care program has a formal articulation agreement with the College of Mount St. Joseph Dietetics program. This agreement enables graduates to apply all of their credits toward a Bachelor of Science degree in Dietetics. Any student interested in pursuing an advanced degree should see the program director for information and counseling.

Dietary Manager Certificate (DMC)

This program prepares students to perform supervisory functions in health care facilities. These may include tray line supervision, employee scheduling, inventory control and other duties as assigned.

The dietary manager program can be completed primarily in the late day and evening. The program is approved by the Dietary Managers Association.

Dietary Manager Technology Certification Curriculum

		Hours Per Week		Credit
		Class	Lab	Hours
■ First Term				
4131	Developmental Nutrition	2	0	2
4141	Dietary Manager's Orientation	1	3	2
		3	3	4
■ Second Term				
4121	Food Management	2	6	4
4124	Food Service Sanitation Certification	2	0	2
		4	6	6
■ Third Term				
4112	Dietetics Directed Practice II	0	6	1
4122	Introduction to Food Systems	2	3	3
4132	Basic Diet Therapy	2	0	2
		4	9	6

■ Fourth Term			
4125 Quantity Food Production	2	5	4
4147 Dietetic Manager Seminar	1	0	1
4155 Basic Mgt Tech Food Service	2	0	2
	5	5	7

■ Fifth Term			
4143 Food Systems Mgt Direct Practice III	1	8	2
			25

Dietetic Technician Food Systems Management (DTFM)

The Dietetic Technician Food Systems Management will prepare graduates to enhance and extend the functions of the health care food service systems Management and Extended Care Dietitians. The program will train technicians in areas of menu writing and management, human resources management, quantity food procurement, control and preparation, and time and systems management.

Dietetic Technician Food Systems Management Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
First Term			
1001 English Composition I	3	0	3
4000 Introduction to Medical Terminology	3	1	3
4001 Introduction to Health Care Systems	2	0	2
4100 Fundamentals of Nutrition	4	0	4
4111 Diet Orientation & Dir Practice I	1	3	1
4121 Food Management	2	6	4
	15	10	17
Second Term			
9301 Co-Op Employment Health Technology	1	40	3
Third Term			
1502 Human Relations	3	0	3
4031 Health Care Management	3	0	3
4102 Nutrition for Lifecycle	4	0	4
4112 Dietetics Directed Practice II	0	6	1
4124 Food Service Sanitation Certification	2	0	2
4133 Food Science	3	2	4
	15	8	17
Fourth Term			
9302 Co-Op Employment Health Technology	1	40	3
Fifth Term			
4030 Technology of Ed for Health	1	3	2
4105 Introduction to Clinical Nutrition	4	0	4
4122 Introduction to Food Systems	2	3	3
4125 Quantity Food Production	2	5	4
4143 Food Systems Mgt Dir Practice III	1	8	2
	10	19	15
Sixth Term			
10xx Communications Elective	3	0	3
1539 Public Policy/American Worker	3	0	3
1850 Computerized Business Application	2	3	3
2911 Principles of Accounting I	3	2	3
4123 Institution Menu Planning	1	2	2
4144 Food Systems Mgt Dir Practice IV	2	8	3
	14	15	17
Seventh Term			
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
2802 Food & Beverage Cost Control	3	0	3
2903 Survey of Marketing	3	0	3
2912 Principles of Accounting II	3	2	3
4145 Food Systems Mgt Dir Practice V	2	8	3
	17	10	18
Eighth Term			
9303 Co-Op Employment Health Technology	1	40	3
Ninth Term			
101x Technical Writing Elective	3	0	3
2804 Catering Banquets Beverage Mgt	3	0	3
4061 Contemporary Health Care ISU	3	0	3
4109 Dietetics Seminar	2	0	2
4127 Institutional Food Service	2	3	3

4146 Food Service Mgt Dir Practice VI	2	8	3
	15	11	17
			110

Communications Electives: 1002, 1007, 1008, 1009, 1010

Oral Communications Electives: 1020, 1024

Social Science Electives: 1505, 1506, 1508, 1509, 1512, 1513, 1521, 1523, 1525, 1527, 1531, 1537

Medical Assistant Technology (MAC) (MA)

The Medical Assistant program trains students to work in physicians' offices providing patient care and performing administrative tasks. Administrative tasks include filing, scheduling appointments, handling correspondence, maintaining patient records and reports, and processing insurance forms. Clinical duties involve recording of histories, taking vital signs, preparing patients for examinations, giving injections and performing routine tests.

The Medical Assistant program offers two options: students must complete the first year for a technical certificate and then may elect to continue through the second year for an associate degree. 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 of Allied Health Education and Accreditation (CAHEA) in collaboration with the American Association of Medical Assistants (AAMA).

Upon successful completion of the program, graduates are eligible to take the Certified Medical Assistant Examination given by the AAMA.

Medical Assisting Certificate Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
First Term			
4000 Intro to Medical Terminology	3	1	3
4041 Integrated Science I	3	2	4
4200 Medical Office Practice I	2	3	3
4202 Clinical Procedures I	2	3	3
4204 Medical Lab Procedures I	2	3	3
	12	12	16
Second Term			
1009 Business English	3	0	3
4042 Integrated Science II	3	2	4
4201 Medical Office Practice II	2	3	3
4203 Clinical Procedures II	2	3	3
4441 Medical Word Processing Operations I	1	3	3
	11	11	16
Third Term			
4211 MA Clinical Experience I	0	21	3
Fourth Term			
4007 Emergency Medical Procedures	1	2	2
4043 Integrated Science III	3	2	4
4205 Medical Lab Procedures II	2	3	3
4208 Insurance/Patient Records	2	2	3
	8	9	12
Fifth Term			
1502 Human Relations	3	0	3
2909 Office Accounting I	3	2	3
4209 Medical Assistant Seminar	2	4	3
4212 MA Clinical Experience II	0	21	3
	8	27	12

Medical Assistant Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
100x English Composition Elective	3	0	3
4001 Introduction to Health Care Systems	2	0	2
4224 Advanced Clinical Procedure	2	3	3
4408 Advanced Medical Terminology	3	0	3
4442 Medical Word Processing Operations II	1	3	3
	11	6	14
■ Second Term			
1011 Business Communications	3	0	3
1024 Group Dynamics & Problem Solving	3	0	3
1527 Technical & Ethical Decisions	3	0	3
4131 Developmental Nutrition	4	0	4
4206 Medical Laboratory Procedures III	2	3	3
	15	3	16
■ Third Term			
4213 MA Clinical Experience III	0	32	4
■ Fourth Term			
15xx Social Science Elective	3	0	3
1509 Human Development-Adolescence-Aging	3	0	3
4031 Health Care Management	3	0	3
4209 Medical Assistant Seminar	2	4	3
	11	4	12
			46

English Composition Electives: 1001, 1002

Social Science Electives: 1505, 1506, 1508, 1521, 1523, 1525

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 bank 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 cooperation 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		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
11xx Math Elective	4	0	4
2231 Fundamentals of Inorganic Chemistry	3	2	4
4014 Anatomy and Physiology I	3	2	4
4301 Basic Laboratory Techniques	1	3	2
	14	7	17
■ Second Term			
2232 Fundamentals of Organic Chemistry	3	2	4
4015 Anatomy and Physiology II	3	2	4
4302 Basic Hematology & Urinalysis	4	6	6
4350 Orientation to the Clinical Lab	1	9	2
	11	19	16
■ Third Term			
2233 Fundamentals of Biochemistry	3	2	4
4016 Anatomy and Physiology III	3	2	4
4304 Clinical Chemistry	4	6	6
	10	10	14
■ Fourth Term			
15xx Social Science Elective	3	0	3
4001 Introduction to Health Care Systems	2	0	2
4023 Immunology	3	0	3
4315 Laboratory Practicum I	0	12	4
	8	12	12
■ Fifth Term			
4353 Medical Lab Clinical Practice	1	40	6
■ Sixth Term			
10xx Communications Elective	3	0	3
15xx Social Science Elective	3	0	3
4009 General Microbiology	3	3	4
4305 Blood Banking - Serology	4	6	6
	13	9	16
■ Seventh Term			
9302 Co-Op Employment Health Technology	1	40	3
■ Eighth Term			
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
4306 Clinical Microbiology	4	6	6
	10	6	12
■ Ninth Term			
9303 Co-Op Employment Health Technology	1	40	3
■ Tenth Term			
101x Technical Writing Elective	3	0	3
4020 Fundamentals of Pathophysiology	5	0	5
4316 Laboratory Practicum II	0	12	4
	8	12	12
			111

Math Electives: 1151, 1153, 1154, 1191

Social Science Electives: (at least two groups shall be represented)

Group 1 - Psychology: 1502, 1505, 1506, 1508, 1509

Group 2 - Economics: 1512, 1513

Group 3 - Sociology: 1521, 1522, 1523, 1525, 1527

Group 4 - Government: 1531, 1535, 1537, 1539

Communication Electives: 1007, 1007, 1008, 1009, 1010

Oral Communication Electives: 1020, 1024

Technical Writing Electives: 1010, 1015

Medical Record Technology (MR)

CTC's program is accredited by the Committee on Allied Health Education and Accreditation (CAHEA) in cooperation with the Council on Education of the American Medical Record Association (COE-AMRA).

Medical Record Technicians are responsible for preparing, analyzing and preserving health information in hospitals, clinics, nursing homes, insurance companies and health maintenance organizations.

Students spend every other term in paid cooperative education experience.

Graduates are eligible to take the National Accreditation Examination of the American Medical Record Association for the designation A.R.T (Accredited Record Technician).

Medical Records Technology Curriculum

	Hours Per Week	Credit	
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
4000 Introduction to Medical Terminology	3	1	3
4001 Introduction to Health Care Systems	2	0	2
4014 Anatomy and Physiology I	3	2	4
4414 Record Science, File Sys/Rec Analysis	4	3	5
	15	6	17
■ Second Term			
9301 Co-Op Employment Health Technology	1	40	3
■ Third Term			
10xx Communications Elective	3	0	3
4015 Anatomy and Physiology II	3	2	4
4400 Medical Word Processing	3	6	6
4408 Advanced Medical Terminology	3	0	3
4415 Legal Aspects of Rec in Health Care	3	1	4
	15	9	20
■ Fourth Term			
9302 Co-Op Employment Health Technology	1	40	3
■ Fifth Term			
102x Oral Communication Elective	3	0	3
4016 Anatomy and Physiology III	3	2	4
4031 Health Care Management	3	0	3
4416 Coding Diagnoses, Operations & Proc	5	5	7
	14	7	17
■ Sixth Term			
9303 Co-Op Employment Health Technology	1	40	3
■ Seventh Term			
101x Technical Writing Elective	3	0	3
15xx Social Science Elective	3	0	3
1502 Human Relations	3	0	3
1850 Computerized Business Application	2	3	3
4417 Medical Statistics & Record Abstract	3	2	4
4428 Medical Record Directed Practice I	0	16	3
	14	21	19
■ Eighth Term			
9304 Co-Op Employment Health Technology	1	40	2
■ Ninth Term			
15xx Social Science Elective	3	0	3
4020 Fundamentals of Pathophysiology	5	0	5
4409 Medical Record Seminar	3	0	3
4418 Tumor Registry, Util Rev & Qual Assu	4	0	4
4429 Medical Records Directed Practice II	0	16	3
	15	16	18

■ Tenth Term

9305 Co-Op Employment Health Technology	1	40	2
			104

Communications Electives: 1002, 1007, 1008, 1009, 1010

Oral Communications Electives: 1020, 1024

Technical Writing Elective: 1010, 1015

Social Science Electives: (at least two groups shall be represented)

Group 1 - Psychology: 1505, 1506, 1508, 1509

Group 2 - Economics: 1512, 1513

Group 3 - Sociology: 1521, 1523, 1525, 1527

Group 4 - Government: 1531, 1535, 1539

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 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 its 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.

This program will be approved by the American Occupational Therapy Association. Upon successful completion of the associate degree Occupational Therapy Program, the graduate will be qualified to take the certification exam and be licensed as a certified occupational therapy assistant.

Occupational Therapy Assisting Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1505 Intro to Psychology: Internal World	3	0	3
4000 Introduction to Medical Terminology	3	1	3
4001 Introduction to Health Care Systems	2	0	2
4600 Introduction to OTA	2	3	3
	13	4	14
■ Second Term			
1002 English Composition II	3	0	3
1506 Intro to Psychology: External World	3	0	3
4014 Anatomy and Physiology I	3	2	4
4610 Theory of OT	3	0	3
4620 Techniques of OT	0	4	2
	12	6	15

■ Third Term

1024 Group Dynamics & Problem Solving	3	0	3
4015 Anatomy and Physiology II	3	2	4
4611 OT Concepts - Psychiatric	3	0	3
4621 Media for OT - Psychiatric	0	4	2
4651 OTA Field Work I (Level I)	0	8	2
	9	14	14

■ Fourth Term

1508 Child Psychology	3	0	3
4016 Anatomy and Physiology III	3	2	4
4612 OT Concepts - Pediatrics	3	0	3
4622 Media for OT - Pediatrics	0	4	2
4652 OTA Field Work II (Level I)	0	8	2
	9	14	14

■ Fifth Term

1509 Human Development Adolescence-Aging	3	0	3
4020 Fundamentals of Pathophysiology	5	0	5
4025 Kinesiology	5	0	5
4613 OT Concepts - Physical Disabilities	3	0	3
4623 Media for OT - Physical Disabilities	0	4	2
	16	4	18

■ Sixth Term

1010 Technical Writing I	3	0	3
1521 Introduction to Sociology	3	0	3
4007 Emergency Medical Procedures	1	2	2
4614 OT Concepts - Geriatrics	3	0	3
4624 Media for OT - Geriatrics	0	4	2
4653 OTA Field Work III (Level I)	0	8	2
	10	14	15

■ Seventh Term

1502 Human Relations	3	0	3
4625 Surv of Therapeutic Media OT	0	6	3
4631 OT Fundamentals Practice	3	0	3
	6	6	9

■ Eighth Term

9304 OTA Field Work IV (Level II)	1	40	8
			107

Respiratory Therapist (RT)

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

Students are trained to administer gas therapy, humidity therapy, aerosol therapy and intermittent positive pressure breathing techniques. Graduates should be able to assist with long-term, continuous artificial ventilation and special diagnostic and therapeutic procedures.

The program is twenty-two months in duration. This program does not include paid cooperative education as students spend their time in course work and unpaid clinical experiences.

The program is accredited by the American Medical Association's Committee of 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 Therapy Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
11xx Math Elective	4	0	4
4001 Introduction to Health Care Systems	2	0	2

4005 Chemistry for Health Technology	3	2	4
4007 Emergency Medical Procedures	1	2	2
4014 Anatomy and Physiology I	3	2	4
	13	6	16

■ Second Term

1001 English Composition I	3	0	3
4015 Anatomy and Physiology II	3	2	4
4701 Respiratory Therapy Science I	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 III	3	2	4
4702 Respiratory Therapy Science II	2	3	3
4711 RT Clinical Practice I	0	8	2
	8	16	13

■ Fourth Term

10xx Communications Elective	3	0	3
4018 Essentials of Pharmacology	3	0	3
4703 Respiratory Therapy Science III	3	2	4
4712 RT Clinical Practice II	0	8	2
4718 Pulmonary Diseases I	2	0	2
	11	10	14

■ Fifth Term

102x Oral Communication Elective	3	0	3
4704 Respiratory Therapy Science IV	3	2	4
4713 RT Clinical Practice III	0	24	5
4719 Pulmonary Diseases II	2	0	2
	8	26	14

■ Sixth Term

15xx Social Science Elective	3	0	3
4705 Respiratory Therapy Science V	3	2	4
4714 RT Clinical Practicum I	0	32	4
	6	34	11

■ Seventh Term

101x Technical Writing Elective	3	0	3
2244 Health Physics I	3	2	3
4020 Fundamentals of Pathophysiology	5	0	5
4706 Respiratory Therapy VI	3	2	4
	14	4	15

■ Eighth Term

15xx Social Science Elective	3	0	3
15xx Social Science Elective	3	0	3
4707 Respiratory Therapy Science VII	3	0	3
4715 RT Clinical Practice IV	0	16	2
	9	16	11

■ Ninth Term

4716 RT Clinical Practicum II	0	16	2
4723 Respiratory Therapy Seminar	2	2	3
	2	18	5
			114

Math Electives: 1131, 1151, 1171, 1191

Communications Electives: 1002, 1007, 1008, 1009, 1010

Course 4000, Intro to Medical Terminology is suggested in the first term.

Oral Communications Electives: 1020, 1024

Social Science Electives: (at least two groups will be represented)

Group 1 - Psychology: 1502, 1505, 1506, 1508, 1509

Group 2 - Economics: 1512, 1513

Group 3 - Sociology: 1521, 1523, 1525, 1537

Group 4 - Government: 1531, 1535, 1539

Surgical Technology (ST)

A surgical technologist is a health care practitioner assisting with the care of the surgical patient and other related patient services. Employment opportunities include hospitals, outpatient surgical centers and private surgeons. Areas of practice include

operating room departments, obstetrical departments, medical supply/processing departments, outpatient surgical centers and physicians' office practices.

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

Surgical technology is an associate degree program which focuses upon a basic understanding of General Surgery and Surgical Specialties. Approximately sixteen area hospitals are affiliated with the program.

The first year of the curriculum concentrates upon surgical concepts, theory and operative procedures. Theory and practice is integrated through the use of simulated laboratory experiences and hospital operating room experiences. During this year students will also take supportive course-work in basic sciences, communication skills and social sciences.

The emphasis of the second year is directed towards intensive practical hospital experience, consisting of forty hours per week, for three consecutive terms. These clinical terms provide additional clinical application and practical problem solving experiences for the student. Students are not paid during these learning experiences.

The surgical course work is taken in sequential terms throughout the curriculum.

The program is accredited by the American Medical Association's Committee of 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		Credit
	Class	Lab	Hours
■ First Term			
100x English Composition Elective	3	0	3
4000 Intro to Medical Terminology	3	1	3
4001 Introduction to Health Care Systems	2	0	2
4009 General Microbiology	3	3	4
4505 Introduction to Surgery I	4	0	4
	15	4	16
■ Second Term			
100x English Composition Elective	3	0	3
4014 Anatomy and Physiology I	3	2	4
4408 Advanced Medical Terminology	3	0	3
4506 Introduction to Surgery II	5	0	5
	14	2	15
■ Third Term			
1020 Effective Speaking	3	0	3
15xx Social Science Elective	3	0	3
4015 Anatomy and Physiology II	3	2	4
4531 General Surgery	4	0	4
4541 ST Surgery Lab	0	2	1
	13	4	15
■ Fourth Term			
15xx Social Science Elective	3	0	3
4016 Anatomy and Physiology III	3	2	4
4018 Essentials of Pharmacology	3	0	3
4532 General Surgery II	4	0	4
4542 ST Clinical Experience I	0	5	2
	13	7	16
■ Fifth Term			
1010 Technical Writing I	3	0	3

15xx Social Science Elective	3	0	3
4007 Emergency Medical Procedures	1	2	2
4533 Surgical Specialties I	4	0	4
4543 ST Clinical Experience II	0	5	2
	11	7	14

■ Sixth Term

4031 Health Care Management	3	0	3
4534 Surgical Specialties II	4	0	4
1524 Stress Management	3	0	3
4544 ST Clinical Experience III	0	5	2
	10	5	12

■ Seventh Term

4551 St Clinical Practice I	1	40	7
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■ Eighth Term

4552 St Clinical Practice II	1	40	7
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■ Ninth Term

4553 ST Clinical Practice III	1	40	7
			109

English Composition Electives: 1001, 1002, 1007, 1008

Social Science Electives: (at least two groups shall be represented)

Group 1 - Psychology: 1502, 1505, 1506, 1508, 1509

Group 2 - Economics: 1512, 1513

Group 3 - Sociology: 1521, 1523, 1525, 1527

Special Offerings in Health Technologies Health Unit Coordinator (UCMA)

The Health Unit Coordinator's role is **non-nursing**. The Health Unit Coordinator performs the clerical, reception, communication and coordination tasks for the nursing unit thus giving the nursing staff more time to perform the clinical and patient care duties.

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 records, forms and lists; requisitioning of services and supplies; 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, be able to organize and prioritize and have an understanding of the legal and ethical implications of their jobs.

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 Clerks/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 Certification Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
4000 Intro to Medical Terminology	3	1	3
4001 Introduction to Health Care Systems	2	0	2
4270 Orient Health Unit Coordination	3	0	3
	8	1	8

■ Second Term

3002 Typewriting II	2	3	3
4271 Health Unit Coordinating I	2	4	4
4408 Advanced Medical Terminology	3	0	3
	7	7	10

■ Third Term

1009 Business English	3	0	3
1502 Human Relation	3	0	3
4272 Health Unit Coordinating II	2	4	4
	8	4	10

■ Fourth Term

4273 Health Unit Coordinating III	2	0	2
4280 Health Unit Coordinating Practicum	0	20	4
	2	20	6
			34

Electrocardiograph Technician (EGRT)

The ECG Technician is the entry level position of 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 ECG's 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 a ECG technician in the hospital, clinic, or private physician's office.

For additional information about the program contact the Health Technologies Division at 559-1520, Extension 143 or 193.

Electrocardiograph Technology Curriculum

	Hours Per Week		Credit Hours
	Class	Lab	

■ First Term

1502 Human Relations	3	0	3
4000 Introduction to Medical Terminology	3	1	3
	6	1	6

■ Second Term

4770 Basic Electrocardiography	3	2	4
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■ Third Term

4771 Arrhythmia Recognition	3	0	3
4780 ECG Clinical Practice	0	20	1
	3	20	4
			14

Phlebotomy Certificate Training

Basic Phlebotomy (#4390)

Basic phlebotomy is a 50-hour course of lecture and lab covering terminology, anatomy and physiology appropriate to phlebotomy, phlebotomy techniques, and attitude and professionalism. The course is approved by the National Phlebotomy Association for continuing education credit.

Phlebotomy Clinical Practice (#4391)

The course consists of 100 hours of clinical practice of blood drawing in a local hospital. Students will be supervised by practicing phlebotomists employed by the hospital. A "C" or better in course #4390 is a prerequisite. Course #4391 is approved by the National Phlebotomy Association for continuing education units.

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-one 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-one 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 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 experience the application of their majors in the business world. All students in the Business Technologies Division are required to earn 13 credit hours in cooperative education (Horticulture, 11 credit hours). Those students with prior business experience, who do not wish to participate in the cooperative education program, may apply through their coordinators for the following co-op alternatives:

1. A thorough portfolio review of past work experience.
2. Substitution of business courses in lieu of co-op.

All students are strongly urged to participate in the co-op program.

Through cooperative education students will approach their first full-time employment after graduation with extensive experience in the business field.

To prepare students for a successful job interviews and continued success on their co-op jobs, all students are required to successfully complete the Professional Practices class offered by the Business Technologies Division before or concurrent with co-op class #9201 or #9501.

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 by today's business world.

Automotive Service Management Technology (AS)

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, technical centers, etc., they receive practical experience under the direction of qualified technicians or experienced managers.

Automotive Service Management Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1120 Intro to Business Mathematics	4	0	4
2501 Automotive Technology I	5	10	8
2506 Machine & Hand Tool Lab	3	2	3
	15	12	18
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1002 English Composition II	3	0	3
1170 Intro to Technical Mathematics	4	0	4
2221 Technical Physics I	2	3	3
2502 Automotive Technology II	5	10	8
	14	12	18
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1512 Micro Economics	3	0	3
2222 Technical Physics II	2	3	3
2503 Automotive Technology III	2	8	5
2510 Automotive Management I	2	3	3
2909 Office Accounting I	3	2	3
2925 Business Principles	3	0	3
	15	16	20
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1010 Technical Writing I	3	0	3
1505 Intro to Psych: Internal World	3	0	3
1535 Intro to Labor Management Relations	3	0	3
2504 Automotive Technology IV	2	8	5
2508 Techniques of Welding	1	4	2
2511 Automotive Management II	2	3	3
	14	15	19
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2

■ Ninth Term			
1020 Effective Speaking	3	0	3
1823 Business Law I	3	0	3
1850 Computerized Business Applications	2	3	3
2505 Automotive Technology V	5	10	8
2903 Survey of Marketing	3	0	3
	16	13	20
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	40	2
			108

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Management Information Systems (MIS) (Formerly Business Data Management Technology)

In the Management Information Systems program at Cincinnati Technical College, students learn the principles of both management and data processing. Management Information Systems training fills the need for personnel who can administer data processing operations.

Management Information Systems Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
112x Math Elective	4	0	4
1701 Introduction to Data Processing	3	0	3
1711 Introduction to Computer Operations	2	3	3
1712 Data Entry Systems	2	3	3
2911 Principles of Accounting I	3	2	3
	17	8	19
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1002 English Composition II	3	0	3
112x Math Elective	4	0	4
1731 Peripheral-Equipment Operations	2	3	3
1732 Microcomputer Systems	3	0	3
2912 Principles of Accounting II	3	2	3
2925 Business Principles	3	0	3
	18	5	19
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
15xx Social Science Elective	3	0	3
1702 Introduction to Basic Programming	2	3	3
1721 Programming Logic & Methods	2	3	3
1754 Data Communications	3	2	3
2913 Principles of Accounting III	3	2	3
2926 Principles of Management	3	0	3
	16	10	18
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1010 Technical Writing I	3	0	3
1512 Micro Economics	3	0	3
1740 Operating Systems I	2	3	3
1742 COBOL Programming I	3	7	6
1823 Business Law I	3	0	3
	14	10	18

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

1020 Effective Speaking	3	0	3
1502 Human Relations	3	0	3
1741 Operating Systems II	2	3	3
1761 Introduction to RPG 2	3	7	6
1771 Data Base Management Systems	2	3	3
2903 Survey of Marketing	3	0	3
	16	13	21

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
			108

Math Electives: 1124, 1126, 1127, 1128, 1141

Social Science Electives: 1502, 1505, 1506, 1507, 1508, 1509, 1512, 1513, 1521, 1523, 1524, 1525, 1527, 1531, 1535, 1536, 1537, 1539, 1599

*A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

For 15xx electives refer to the 15xx series section in course descriptions. Electives subject to approval of program coordinator.

Computer Information Systems Programming (CISP)

(Formerly Business Data Processing Technology)

The objective of the Computer Information Systems Programming at Cincinnati Technical College is to provide the student with the technical training necessary to function effectively as a computer programmer/analyst and to make a significant contribution to the co-op employer during training and to the information systems community after graduation.

Computer Information Systems Programming Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours

■ First Term

1001 English Composition I	3	0	3
112x Math Elective	4	0	4
1701 Introduction to Data Processing	3	0	3
1702 Introduction to Basic Programming	2	3	3
1721 Programming Logic & Methods	2	3	3
2911 Principles of Accounting I	3	2	3
	17	8	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1002 English Composition II	3	0	3
112x Math Elective	4	0	4
1722 Advanced Basic Programming	2	3	3
1761 Introduction to RPG 2	3	7	6
2912 Principles of Accounting II	3	2	3
	15	12	19

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1505 Intro to Psych: Internal World	3	0	3
1512 Micro Economics	3	0	3
1742 COBOL Programming I	3	7	6
1781 Advanced RPG 2	2	3	3
2913 Principles of Accounting III	3	2	3
	14	12	18

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1010 Technical Writing I	3	0	3
1754 Data Communications	3	2	3
1762 COBOL Programming II	3	7	5
1763 Systems Analysis & Design	3	7	5
2903 Survey of Marketing	3	0	3
	15	16	19

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

1020 Effective Speaking	3	0	3
15xx Social Science Elective	3	0	3
1739 Operating Systems	2	3	3
1752 Real-Time Systems/Data Comm I	2	3	3
1771 Data Base Management Systems	2	3	3
1823 Business Law I	3	0	3
2926 Principles of Management	3	0	3
	18	9	21

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
			109

Math Electives: 1124, 1126, 1127, 1141

Social Science Electives: 1502, 1505, 1506, 1507, 1508, 1509, 1512, 1513, 1521, 1523, 1524, 1525, 1527, 1531, 1535, 1536, 1537, 1539, 1599

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their experience and aptitude.

*Electives subject to approval of program coordinator.

For 15xx electives refer to the 15xx series section in course descriptions. Electives subject to approval of program coordinator.

Data Communications Technology (DCT)

As the data processing industry continues to grow and mature, more specialists are needed each year to control and manage the information explosion.

Data communications technicians are those specialists who provide the expertise to insure that the information gets from its source to the place where it is needed. Utilizing a unique array of communication tools and trouble-shooting techniques, the data communications specialist installs and maintains the links of information.

Courses will include: Programming, Data Communications I and II, Networking, and Electronic Fundamentals.

Data Communications Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours

■ First Term

1001 English Composition I	3	0	3
112x Math Elective	4	0	4
1701 Introduction to Data Processing	3	0	3
1702 Introduction to Basic Programming	2	3	3
1721 Programming Logic & Methods	2	3	3
7701 Electrical Fundamentals I	2	3	3
	16	9	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1002 English Composition II	3	0	3
112x Math Elective	4	0	4
1722 Advanced Basic Programming	2	3	3

1754 Data Communications I	3	2	3
2911 Principles of Accounting I	3	2	3
7702 Electrical Fundamentals II	4	2	4
	19	9	20

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1512 Micro Economics	3	0	3
1723 Assembler Language I	2	4	4
1742 COBOL Programming I	3	7	6
1764 Data Communications II	3	2	4
2912 Principles of Accounting II	3	2	3
	14	15	20

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1010 Technical Writing I	3	0	3
1502 Human Relations	3	0	3
1762 COBOL Programming II	3	7	5
1763 Systems Analysis & Design	3	7	5
1771 Data Base Management Systems	2	3	3
	14	17	19

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

1020 Effective Speaking	3	0	3
15xx Social Science Elective	3	0	3
1752 Real-Time Systems/Data Comm I	2	3	3
1784 Networking	3	2	4
1823 Business Law I	3	0	3
2926 Principles of Management	3	0	3
	17	5	19

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
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Math Electives: 1124, 1126, 127, 1128, 1141

Social Science Electives: 1502, 1505, 1506, 1507, 1508, 1509, 15123, 1513, 1521, 1523, 1524, 1525, 1527, 1531, 1535, 1536, 1537, 1539, 1599

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 work experience, students learn to assume managerial responsibilities, handle directions and gain valuable insights into solving management problems.

Financial Management Technology (FM)

Financial Management is a new option of Business Management designed specially 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 the necessary background for careers in the financial industry.

Business Management Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours

■ First Term

1001 English Composition I	3	0	3
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1122 Financial Analysis	4	0	4
1850 Computerized Business Applications	2	3	3
2901 Principles of Marketing I	3	0	3
2911 Principles of Accounting I	3	2	3
2925 Business Principles	3	0	3
	18	5	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1002 English Composition II	3	0	3
1123 Computerized Financial Analysis	3	1	4
1810 Principles of Salesmanship	3	0	3
2902 Principles of Marketing II	3	0	3
2912 Principles of Accounting II	3	2	3
2926 Principles of Management	3	0	3
	18	3	19

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1007 Research & Argumentative Writing	3	0	3
1512 Micro Economics	3	0	3
*1732 Microcomputer Systems	3	0	3
1832 Personnel Management	3	0	3
2905 Money and Banking	3	0	3
2913 Principles of Accounting III	3	2	3
	18	2	18

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1011 Business Communications	3	0	3
1535 Intro. to Labor Management Relations	3	0	3
1823 Business Law I	3	0	3
2921 Managerial Accounting	3	0	3
2960 Principles of Finance	3	0	3
2970 Contemporary Management Concepts	3	0	3
	18	0	18

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
1804 Risk and Insurance	3	0	3
1824 Business Law II	3	0	3
2917 Federal Taxation I	3	0	3
2975 Business Management Seminar	3	0	3
	18	0	18

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
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*Course 1850 is a prerequisite for course 1732.

Oral Communication Electives: 1020, 1024

Social Science Electives: 1502, 1505, 1521, 1539

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Financial Management Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours

■ First Term

1001 English Composition I	3	0	3
1122 Financial Analysis	4	0	4
1850 Computerized Business Applications	2	3	3

2901 Principles of Marketing I	3	0	3
2911 Principles of Accounting I	3	2	3
2925 Business Principles	3	0	3
	18	5	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1002 English Composition II	3	0	3
1123 Computerized Financial Analysis	3	1	4
1810 Principles of Salesmanship	3	0	3
2902 Principles of Marketing II	3	0	3
2912 Principles of Accounting II	3	2	3
2926 Principles of Management	3	0	3
	18	3	19

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1007 Research & Argumentative Writing	3	0	3
1512 Micro Economics	3	0	3
1732 Microcomputer Systems	3	0	3
1832 Personnel Management	3	0	3
2905 Money and Banking	3	0	3
2913 Principles of Accounting III	3	2	3
	18	2	18

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1011 Business Communications	3	0	3
1823 Business Law I	3	0	3
2921 Managerial Accounting	3	0	3
2960 Principles of Finance	3	0	3
2962 Investment Management I	3	0	3
2970 Contemporary Management Concepts	3	0	3
	18	0	18

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

102x Oral Communication Elective	3	0	3
1513 Macro Economics	3	0	3
1535 Intro to Labor Management Relations	3	0	3
1826 Financial Law	3	0	3
2963 Investment Tax	3	0	3
2975 Business Management Seminar	3	0	3
	18	0	18

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
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Oral Communication Elective: 1020, 1024

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, garnes manger 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		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3

1037 Technical French-Culinary Prof	2	2	3
112x Math Elective	4	0	4
2801 Food & Bev Sanitation/Safety/Service	3	0	3
2822 Chef Basic Cookery I	2	4	3
2827 Butchery & Fish Management	2	4	3
	16	10	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1002 English Composition II	3	0	3
112x Math Elective II	4	0	4
2802 Food & Beverage Cost Control	3	0	3
2808 Food and Beverage Lab I	0	4	1
2823 Chef Basic Cookery II	2	4	3
2911 Principles of Accounting I	3	2	3
2925 Business Principles	3	0	3
	18	10	20

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1521 Introduction to Sociology	3	0	3
2803 Menu Production/Purchasing	3	0	3
2809 Food & Beverage Lab II	0	4	1
2824 Chef Advanced Cookery	2	4	3
2912 Principles of Accounting II	3	2	3
4130 Introduction to Nutrition	3	0	3
	14	10	16

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1020 Effective Speaking	3	0	3
1502 Human Relations	3	0	3
1512 Micro Economics	3	0	3
1850 Computerized Business Applications	2	3	3
2825 Pastry & Confectionary	4	8	6
2928 Hotel Restaurant Accounting	3	0	3
	18	11	21

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

1011 Business Communications	3	0	3
1825 Hotel Law	3	0	3
2805 Food & Beverage Supervision	3	0	3
2821 Sales Techniques	3	0	3
2826 Classical Cookery	4	8	6
	16	8	18

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
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Math Elective I: 1120, 1121

Math Elective II: 1121, 1122

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Graphic Communications Technology (GC)

At CTC, modern computerized typesetting equipment, letterpress and offset presses, screen printing, 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

also provides mid-management training, as well as technical knowledge.

Flexography is a new option of the Graphic Communications program. Flexography is used to print on plastic, corrugated boxes and pressure sensitive labels. Students will become familiar with delicate halftone and color process printing, laser etched continuous print cylinders and photopolymer coated cylinder.

Graphic Communications Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1170 Introduction to Technical Mathematics	4	0	4
1401 Layout & Design	3	0	3
1403 Advertising Typography	2	6	4
1415 Graphic Arts Processes	2	3	3
2925 Business Principles	3	0	3
	17	9	20
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1002 English Composition II	3	0	3
1421 Cold Type Process	1	9	4
1449 Estimating Preparation	2	3	3
1460 Bindery Method/Procedures	2	3	3
1512 Micro Economics	3	0	3
1850 Computerized Business Applications	2	3	3
	13	18	19
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1020 Effective Speaking	3	0	3
1429 Screen Printing	1	9	4
1450 Estimating	2	3	3
1502 Human Relations	3	0	3
1810 Principles of Salesmanship	3	0	3
2263 Physical Science for GC	3	4	5
	15	16	21
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1007 Research & Argumentative Writing	3	0	3
1419 Survey of Printing Inks	3	0	3
1430 Relief Presswork I	1	9	4
1480 Photolithography I	2	3	3
1823 Business Law I	3	0	3
2909 Office Accounting I	3	2	3
	15	14	19
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
1010 Technical Writing I	3	0	3
1428 Management Survey	3	0	3
1440 Offset Press Operation	2	13	6
1481 Photolithography II	2	3	3
1521 Introduction to Sociology	3	0	3
	13	16	18
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	40	2
			110

Flexographic Communications Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1170 Introduction to Technical Mathematics	4	0	4
1401 Layout & Design	3	0	3
1403 Advertising Typography	2	6	4
1415 Graphic Arts Processes	2	3	3
2925 Business Principles	3	0	3
	17	9	20
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1002 English Composition II	3	0	3
1421 Cold Type Process	1	9	4
1449 Estimating Preparation	2	3	3
1460 Bindery Method/Procedures	2	3	3
1512 Micro Economics	3	0	3
1850 Computerized Business Applications	2	3	3
	13	18	19
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1020 Effective Speaking	3	0	3
1429 Screen Printing	1	9	4
1450 Estimating	2	3	3
1502 Human Relations	3	0	3
1810 Principles of Salesmanship	3	0	3
2263 Physical Science for GC	3	4	5
	15	16	21
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1007 Research & Argumentative Writing	3	0	3
1419 Survey of Printing Inks	3	0	3
1430 Relief Presswork I	1	9	4
1482 Flexo Photography	2	3	3
1823 Business Law I	3	0	3
2909 Office Accounting I	3	2	3
	15	14	19
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
1010 Technical Writing I	3	0	3
1428 Management Survey	3	0	3
1431 Relief Presswork	2	13	6
1481 Photolithography II	2	3	3
1521 Introduction to Sociology	3	0	3
	13	16	18
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	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 on the type of career they wish to follow in industry.

Hotel-Restaurant Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1120 Intro to Business Mathematics	4	0	4
2801 Food & Bev Sanitation/Safety/Service	3	0	3
2811 Introduction to Hotel Management	3	0	3
2925 Business Principles	3	0	3
3005 Administrative Typing	2	3	3
	18	3	19
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1002 English Composition II	3	0	3
1121 Business Mathematics	4	0	4
1502 Human Relations	3	0	3
2802 Food & Beverage Cost Control	3	0	3
2808 Food and Beverage Lab I	0	4	1
2812 Hotel Front Office Night Audit Proc	3	2	3
2911 Principles of Accounting I	3	2	3
	19	8	20
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1011 Business Communications	3	0	3
2803 Menu Production/Purchasing	3	0	3
2809 Food & Beverage Lab II	0	4	1
2813 Hotel Executive Housekeeping	3	2	3
2815 Princ and Practices of Hotel Mgmt	3	0	3
2912 Principles of Accounting II	3	2	3
4130 Introduction to Nutrition	3	0	3
	18	8	19
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1512 Micro Economics	3	0	3
1521 Introduction to Sociology	3	0	3
1850 Computerized Business Applications	2	3	3
2804 Catering Banquets Beverage Mgmt	3	0	3
2814 Hotel Maintenance	3	0	3
2928 Hotel Restaurant Accounting	3	0	3
	17	3	18
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
1020 Effective Speaking	3	0	3
1825 Hotel Law	3	0	3
1832 Personnel Management	3	0	3
2805 Food & Beverage Supervision	3	0	3
2807 Basic Food Hotel/Restaurant	2	4	3
2821 Sales Techniques	3	0	3
	17	4	18
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	40	2

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A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Loss Control - Security Technology (LC)

CTC's Loss Control program is one of the first of its kind in the country. The curriculum was established in collaboration with the tri-state chapter of the American Society of Industrial Security. The program offers classroom instruction and practical training requirements of private security practitioners.

Because of the nature of co-op work schedules, the student can attend classes during the day or evening.

Loss Control Technology Curriculum

	Hours Per Week	Lab	Credit
	Class		Hours
■ First Term			
1001 English Composition I	3	0	3
1201 Private Police Officer Training	4	8	8
1210 Intro to LC Security Administration	3	0	3
1216 Security Administration I	3	0	3
2926 Principles of Management	3	0	3
	16	8	20
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1002 English Composition II	3	0	3
1120 Introduction to Business Mathematics	4	0	4
1211 Industrial Security	3	0	3
1217 Security Administration II	3	0	3
1220 Fundamentals of Fire Protection	3	0	3
2927 Security Management	3	0	3
	19	0	19
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1010 Technical Writing I	3	0	3
1020 Effective Speaking	3	0	3
1121 Business Mathematics	4	0	4
1203 Security Investigation	3	0	3
1208 Criminal Law I	3	0	3
1230 Safety Management	3	0	3
	19	0	19
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
xxxx Social Science Elective	3	0	3
1204 Personnel Security System	2	3	3
1209 Criminal Law II	3	0	3
1218 Executive Protection	3	0	3
1535 Intro to Labor Management Relations	3	0	3
1823 Business Law I	3	0	3
2909 Office Accounting I	3	2	3
	20	5	21
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
1205 Criminal Interrogation	3	0	3
1505 Intro to Psych: Internal World	3	0	3
1506 Intro to Psych: External World	3	0	3
1521 Introduction to Sociology	3	0	3
1850 Computerized Business Applications	2	3	3
2903 Survey of Marketing	3	0	3
	17	3	18
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	40	2

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Managerial Accounting Technology (MG)

Managerial Accounting, for those with a high degree of skill in accounting, provides knowledge of business fundamentals and an understanding of accounting skills, and how these systems are applied in small and large businesses and in industrial systems.

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

Managerial Accounting Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1121 Business Mathematics	4	0	4
1804 Risk and Insurance	3	0	3
1850 Computerized Business Applications	2	3	3
2911 Principles of Accounting I	3	2	3
2925 Business Principles	3	0	3
	18	5	19
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
100x English Composition Elective	3	0	3
1122 Financial Analysis	4	0	4
1823 Business Law I	3	0	3
1861 Electronic Spreadsheets	2	2	3
2912 Principles of Accounting II	3	2	3
2917 Federal Taxation I	3	0	3
	18	4	19
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1007 Research & Argumentative Writing	3	0	3
1512 Micro Economics	3	0	3
1824 Business Law II	3	0	3
2913 Principles of Accounting III	3	2	3
2914 Cost Accounting I	3	0	3
2926 Principles of Management	3	0	3
	18	2	18
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ 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 II	3	0	3
2918 Federal Taxation II	3	0	3
2919 Intermediate Accounting I	3	0	3
	18	0	18
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
1851 Auditing	3	0	3
2920 Intermediate Accounting II	3	0	3
2921 Managerial Accounting	3	0	3

2960 Principles of Finance	3	0	3
	18	0	18

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
			105

English Composition Electives: 1002, 1008, 1009, 1010

Social Science Electives: 1502, 1505, 1506, 1508, 1509, 1521, 1523, 1525, 1527

Ornamental Horticulture Technology (OH)

The Ornamental Horticulture program prepares students for positions in the Landscape Horticulture industry. 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 requirements of horticulturally related jobs, this program follows a different co-op schedule. Ornamental Horticulture students spend two terms (during the growing season) in cooperative employment during each of the two years in the program.

Ornamental Horticulture Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
11xx Math Elective	4	0	4
1502 Human Relations	3	0	3
3500 Orient to Horticulture Occupation	1	0	1
3502 Horticulture Science	2	2	3
3504 Woody Plant Materials I	2	3	3
	15	5	17
■ Second Term			
1002 English Composition II	3	0	3
22xx Chemistry Elective	3	2	4
2925 Business Principles	3	0	3
3510 Small Engine Maintenance & Repair	2	3	3
3532 Landscape Management	2	3	3
	13	8	16
■ Third Term			
15xx Social Science Elective	3	0	3
2911 Principles of Accounting I	3	2	3
3501 Soils & Plant Nutrition	3	0	3
3509 Principles of Landscape Design	2	3	3
3528 Greenhouse Management	2	3	3
3530 Horticulture Seminar I	1	1	1
	14	9	16
■ Fourth Term			
9501 Co-Op Employment OH Tech	1	40	3
■ Fifth Term			
1010 Technical Writing I	3	0	3
3505 Herbaceous Plant Material	2	2	3
3508 Turfgrass Management	2	3	3
3511 Landscape Construction	1	5	3
3521 Entomology/Plant Pathology	2	2	3
	10	12	15
■ Sixth Term			
9502 Co-Op Employment OH Tech	1	40	3
■ Seventh Term			
102x Oral Communication Elective	3	0	3
151x Economics Elective	3	0	3
1850 Computerized Business Applications	2	3	3
2926 Principles of Management	3	0	3

35xx Technical Elective	-	-	3
3515 Woody Plant Materials II	2	3	3
	13	6	18

■ Eighth Term

1810 Principles of Salesmanship	3	0	3
1823 Business Law I	3	0	3
35xx Technical Elective	0	0	3
3518 Advanced Landscape Design	2	4	3
3531 Horticulture Seminar II	1	1	1
35xx Technical Elective	-	-	3
	9	5	16

■ Ninth Term

9503 Co-Op Employment OHOF Tech	1	40	2
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■ Tenth Term

9504 Co-Op Employment OHOF Tech	1	40	2
			108

Oral Communication Electives: 1020, 1024

Math Electives: 1170, 1171, 1172, 1173, 1179, 1191, 1192, 1193, 1194, 1195

Technical Electives: 3506, 3507, 3519, 3533, 3534, 3535, 3540, 3544

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.

Students receive instruction from certified property managers. The curriculum includes required courses for the Ohio real estate license.

In many cases co-op employment requires a state real estate license. The program is such that an academic half-day schedule may be maintained until degree requirements are satisfied.

As in most technologies, co-op employment is conditioned upon the availability of job sites.

Property Management Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1121 Business Mathematics	4	0	4
2925 Business Principles	3	0	3
2931 On-Site Property Management I	3	1	3
2951 Real Estate Principles & Practices	3	0	3
3005 Administrative Typing	2	3	3
	18	4	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1007 Research & Argumentative Writing	3	0	3
112x Math Elective	4	0	4
1850 Computerized Business Applications	2	3	3
2926 Principles of Management	3	0	3
2932 On-Site Property Management II	3	1	3
2953 Real Estate Law	3	0	3
	18	4	19

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1011 Business Communications	3	0	3
1502 Human Relations	3	0	3
2911 Principles of Accounting I	3	2	3
2933 Executive Level Property Mgmt	3	1	3

2955 Real Estate Appraisal I-Residential	3	0	3
7931 Light Construction	3	3	3
	18	6	18

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1513 Macro Economics	3	0	3
1732 Microcomputer Systems	3	0	3
2901 Principles of Marketing I	3	0	3
2912 Principles of Accounting II	3	2	3
2936 Institutional Property Management	3	0	3
2954 Real Estate Finance	3	0	3
	18	2	18

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
1524 Stress Management	3	0	3
1832 Personnel Management	3	0	3
2902 Principles of Marketing II	3	0	3
2935 Property Management Case Study	3	0	3
	18	0	18

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
			105

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience.

Real Estate Technology (RE)

Recommended courses: College Prep and Business courses, Typing, Math

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. In addition, all coursework for the GRI designation is offered as an integral part of the curriculum.

Real Estate positions are available through local and national real estate firms, financial institutions, insurance companies and most major corporations. Many students combine this program with the Property Management curriculum to increase employment opportunities.

Real Estate Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1121 Business Mathematics	4	0	4
2925 Business Principles	3	0	3
2951 Real Estate Principles & Practices	3	0	3
2953 Real Estate Law	3	0	3
3005 Administrative Typing	2	3	3
	18	3	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1007 Research & Argumentative Writing	3	0	3
112x Math Elective	4	0	4
1850 Computerized Business Applications	2	3	3

2926 Principles of Management	3	0	3
2940 Real Estate Sales	3	0	3
2954 Real Estate Finance	3	0	3
	18	3	19

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1011 Business Communications	3	0	3
1502 Human Relations	3	0	3
2901 Principles of Marketing I	3	0	3
2905 Money and Banking	3	0	3
2911 Principles of Accounting I	3	2	3
2955 Real Estate Appraisal I - Residential	3	0	3
	18	2	18

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1513 Macro Economics	3	0	3
1732 Microcomputer Systems	3	0	3
1804 Risk and Insurance	3	0	3
2902 Principles of Marketing II	3	0	3
2912 Principles of Accounting II	3	2	3
2952 Real Estate Brokerage	3	0	3
	18	2	18

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

102x Oral Communications Elective	3	0	3
15xx Social Science Elective	3	0	3
1524 Stress Management	3	0	3
1832 Personnel Management	3	0	3
2956 Real Estate Appraisal II-Income	3	0	3
2957 Real Estate Seminar: Special Topics	3	0	3
	18	0	18

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
			105

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Marketing Management/Industrial Sales Technologies (MMT/SI)

The process or scope of marketing is very broad and complex.

The casual observer sees marketing only in terms of promotion. While promotion is an important component of marketing, it is far from being the only component.

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		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1020 Effective Speaking	3	0	3
1121 Business Mathematics	4	0	4
1505 Intro to Psych: Internal World	3	0	3

*1850 Computerized Business Applications	2	3	3
2925 Business Principles	3	0	3
	18	3	19

■ Second Term

9201 Co-Op Employment Business Tech	4	40	3
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■ Third Term

1002 English Composition II	3	0	3
1122 Financial Analysis	4	0	4
1512 Micro Economics	3	0	3
**1732 Microcomputer Systems	3	0	3
1804 Risk and Insurance	3	0	3
2926 Principles of Management	3	0	3
	19	0	19

■ Fourth Term

9202 Co-Op Employment Business Tech	4	40	3
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■ Fifth Term

1011 Business Communications	3	0	3
1024 Group Dynamics & Problem Solving	3	0	3
1123 Computerized Financial Analysis	4	0	4
1823 Business Law I	3	0	3
2901 Principles of Marketing I	3	0	3
2911 Principles of Accounting I	3	2	3
	19	2	19

■ Sixth Term

9203 Co-Op Employment Business Tech	4	40	3
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■ Seventh Term

1513 Macro Economics	3	0	3
1810 Principles of Salesmanship	3	0	3
1824 Business Law II	3	0	3
2902 Principles of Marketing II	3	0	3
2905 Money and Banking	3	0	3
2912 Principles of Accounting II	3	2	3
	18	2	18

■ Eighth Term

9204 Co-Op Employment Business Tech	3	40	2
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■ Ninth Term

1832 Personnel Management	3	0	3
1817 Industrial Purchasing	3	0	3
1845 Principles of Retailing	3	0	3
2921 Managerial Accounting	3	0	3
2923 Market Concepts & Applications	3	0	3
2960 Principles of Finance	3	0	3
	18	0	18

■ Tenth Term

9205 Co-Op Employment Business Tech	3	40	2
			106

*3005 to be taken in place of 1850 if student has not taken high school typing.

**1850 to be taken if 3005 was taken in Term I.

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Industrial Sales (SI) Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1020 Effective Speaking	3	0	3
1120 Intro to Business Mathematics	4	0	4
1810 Principles of Salesmanship	3	0	3
2925 Business Principles	3	0	3
3005 Administrative Typing	2	3	3
	15	3	16

■ Second Term				
9201 Co-Op Employment Business Tech	4	40	3	
■ Third Term				
1001 English Composition I	3	0	3	
1121 Business Mathematics	4	0	4	
1813 Industrial Sales	3	0	3	
1823 Business Law I	3	0	3	
2926 Principles of Management	3	0	3	
2960 Principles of Finance	3	0	3	
	19	0	19	
■ Fourth Term				
9202 Co-Op Employment Business Tech	4	40	3	
■ Fifth Term				
1002 English Composition II	3	0	3	
1024 Group Dynamics & Problem Solving	3	0	3	
1505 Intro to Psych: Internal World	3	0	3	
1521 Introduction to Sociology	3	0	3	
1814 Case Studies-Industrial Sales	3	0	3	
1850 Computerized Business Applications	2	3	3	
	17	3	18	
■ Sixth Term				
9203 Co-Op Employment Business Tech	4	40	3	
■ Seventh Term				
1011 Business Communications	3	0	3	
1512 Micro Economics	3	0	3	
1815 Audiovisual Sales Techniques	3	2	4	
1817 Industrial Purchasing	3	0	3	
1846 Industrial Product Marketing I	3	0	3	
2911 Principles of Accounting I	3	2	3	
	18	4	19	
■ Eighth Term				
9204 Co-Op Employment Business Tech	3	40	2	
■ Ninth Term				
1010 Technical Writing I	3	0	3	
1804 Risk and Insurance	3	0	3	
1820 Sales Management	3	0	3	
1824 Business Law II	3	0	3	
1847 Industrial Product Marketing II	3	0	3	
2912 Principles of Accounting II	3	2	3	
	18	2	18	
■ Tenth Term				
9205 Co-Op Employment Business Tech	3	40	2	

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A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Office Specialist Technologies (Secretarial)

Three majors are available in the office specialist area: Administrative Support, General Office, and Word Processing. The curricula include not only technical skill development but also courses in business principles and management.

The Administrative Support Specialist (ADSS) curriculum emphasizes the art of oral and written communication in office procedures, shorthand, typing, word processing, and management techniques.

The General Office Specialist (GOS) curriculum emphasizes learning skills in typing, data entry, word processing and management.

The Word Processing Specialist (WP) curriculum prepares an individual to be a word/information processing operator or a word/information processing supervisor. In this program, hands-on classroom training is provided on personal computers, electronic typewriters, stand-alone display text-editing equipment and shared-logic equipment. Word processing management tech-

niques and procedures are emphasized.

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

Administrative Support Specialist Technology Curriculum

	Hours Per Week		Credit Hours
	Class	Lab	
■ First Term			
1001 English Composition I	3	0	3
1120 Intro to Business Mathematics	4	0	4
2925 Business Principles	3	0	3
3001 Typewriting I	2	3	3
3021 Office Procedures	3	2	3
308x Shorthand I Elective	2	3	3
	17	8	19
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1009 Business English	3	0	3
1121 Business Mathematics	4	0	4
1850 Computerized Business Applications	2	3	3
308x Shorthand II Elective	2	3	3
3002 Typewriting II	2	3	3
3022 Word Processing Office Applications	2	3	3
3032 Office Proc/Professional Development	2	3	3
	17	15	22
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1002 English Composition II	3	0	3
1823 Business Law I	3	0	3
2926 Principles of Management	3	0	3
3003 Typewriting III	2	3	3
3023 Machine Transcription	2	3	3
3086 Shorthand III-Speedwriting/C21/Gregg	2	3	3
	15	9	18
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1011 Business Communications	3	0	3
1502 Human Relations	3	0	3
2911 Principles of Accounting I	3	2	3
3024 Secretarial Procedures	2	3	3
3061 Word/Information Processing I	1	4	3
3087 Trans I-Speedwriting/C21/Gregg	2	8	5
	14	17	20
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
1020 Effective Speaking	3	0	3
1512 Micro Economics	3	0	3
1521 Introduction to Sociology	3	0	3
2912 Principles of Accounting II	3	2	3
3088 Trans II-Speedwriting/C21/Gregg	2	8	5
	14	10	17
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	40	2

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Shorthand I Elective: 3080, 3082, 3084

Shorthand II Elective: 3081, 3083, 3085

General Office Specialist Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1120 Intro to Business Mathematics	4	0	4
1850 Computerized Business Applications	2	3	3
2925 Business Principles	3	0	3
3001 Typewriting I	2	3	3
3021 Office Procedures	3	2	3
	17	8	19
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1009 Business English	3	0	3
1121 Business Mathematics	4	0	4
3002 Typewriting II	2	3	3
3022 WP Office Applications	2	3	3
3032 Office Proc/Prof Development	2	3	3
3061 Word/Information Processing I	1	4	3
	14	13	19
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1002 English Composition II	3	0	3
1823 Business Law I	3	0	3
2905 Money and Banking	3	0	3
2926 Principles of Management	3	0	3
3003 Typewriting III	2	3	3
3023 Machine Transcription	2	3	3
	16	6	18
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1011 Business Communications	3	0	3
1502 Human Relations	3	0	3
1832 Personnel Management	3	0	3
2911 Principles of Accounting I	3	2	3
3004 Typewriting IV	2	3	3
3024 Secretarial Procedures	2	3	3
	16	8	18
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
1020 Effective Speaking	3	0	3
1512 Micro Economics	3	0	3
1521 Introduction to Sociology	3	0	3
1712 Data Entry Systems	2	3	3
2903 Survey of Marketing	3	0	3
2904 Office Management	3	0	3
	17	3	18
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	40	2

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Word Processing Specialist Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1120 Intro to Business Mathematics	4	0	4
1850 Computerized Business Applications	2	3	3
3001 Typewriting I	2	3	3
3021 Office Procedures	3	2	3
3060 Intro to Word/Information Processing	2	0	2
3061 Word/Information Processing I	1	4	3
	17	12	21
■ Second Term			
9201 Co-Op Employment Business Tech	4	40	3
■ Third Term			
1009 Business English	3	0	3
1121 Business Mathematics	4	0	4
2925 Business Principles	3	0	3
3002 Typewriting II	2	3	3
3032 Office Proc/Prof Development	2	3	3
3062 Information Records Processing	1	4	3
	15	10	19
■ Fourth Term			
9202 Co-Op Employment Business Tech	4	40	3
■ Fifth Term			
1002 English Composition II	3	0	3
1512 Micro Economics	3	0	3
2926 Principles of Management	3	0	3
3003 Typewriting III	2	3	3
3023 Machine Transcription	2	3	3
3063 Word/Information Processing II	1	4	3
	14	10	18
■ Sixth Term			
9203 Co-Op Employment Business Tech	4	40	3
■ Seventh Term			
1011 Business Communications	3	0	3
1502 Human Relations	3	0	3
2903 Survey of Marketing	3	0	3
2911 Principles of Accounting I	3	2	3
3064 Word/Information Process Simulation	1	4	3
3065 Advanced Word/Information Processing	1	4	3
	14	10	18
■ Eighth Term			
9204 Co-Op Employment Business Tech	3	40	2
■ Ninth Term			
1020 Effective Speaking	3	0	3
1521 Introduction to Sociology	3	0	3
1823 Business Law I	3	0	3
2904 Office Management	3	0	3
2912 Principles of Accounting II	3	2	3
3066 Text Processing	1	4	3
3067 Word/Information Processing Admin	2	3	3
	18	9	21
■ Tenth Term			
9205 Co-Op Employment Business Tech	3	40	2

A competency-based math test will be administered to all entering Business Technology students. Its purpose is to start students into a math sequence which is more compatible to their level of experience and aptitude.

Engineering Technologies Division

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

The curriculum followed in each program provides the specialized technical instruction in the student's major area of concentration and the 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 the student to express ideas in speech and writing, and to better understand himself or herself and others and society.

As available, related co-op work experience plays an important part in the student's technical education. The co-op credit hours identified in each curriculum are required for the associate degree. Students wishing not to co-op must make up the co-op credits with approved academic credits. Students with valid work experience prior to acceptance into an engineering technology program can receive up to 13 advance standing co-op credits. Students with prior work experience who wish to apply for advance standing co-op credits should contact their advisor during their first term at the College.

Upon successful completion of the two-year program the student is awarded an associate degree in applied science.

In order to insure a high degree of success in the technology selected, the student must be able to perform at established academic levels in mathematics, communication skills and reading comprehension. To aid in determining these levels it is required that all students planning to enter an engineering technology program, except those with appropriate transfer credits, take the college placement tests.

If the tests indicate that a student does not meet certain academic levels, the student may be advised to take appropriate preparatory courses before acceptance is granted. Students are encouraged to test and finalize the admissions process as soon as possible. If any preparatory courses are needed, students may be able to enroll in them in the summer term, thereby bettering their chance to enter the technology in the September and/or November terms when most of the technologies' course work begins.

Aviation Technology (AV)

Aviation Technology is geared towards persons interested in aviation maintenance. The program prepares students to take the tests necessary to receive the aircraft mechanic's license. Half the college time is spent in classes learning how electrical, mechanical, and physical concepts relate to aviation. The other half is spent with hands-on experience working on the six aircraft owned by CTC. A degree in Aviation Technology prepares a student to work in aircraft manufacturing, maintenance, or management.

Aviation Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1191 Algebra & Trigonometry I	4	0	4
2221 Technical Physics I	2	3	3
8100 Aircraft Orientation	4	4	5
8101 Machine & Hand Tools	1	4	3
8102 Basic Aerodynamics & FAA Regulations	3	2	3
	14	13	18

Second Term			
1192 Algebra & Trigonometry II	4	0	4
2222 Technical Physics II	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 I	3	0	3
2223 Technical Physics III	2	3	3
8130 Airframe Structures I	3	7	5
8131 Welding Processes	1	4	2
8132 Aircraft Electric/Generating Systems	5	5	5
	14	19	18

Fourth Term			
1002 English Composition II	3	0	3
8140 Airframe Structures	3	7	5
8141 Airframe Fuel Systems	1	4	2
8142 Assembly & Rigging	3	7	5
8143 Airframe Hydraulics & Pneumatic System	1	4	2
	11	22	17

Fifth Term			
1502 Human Relations	3	0	3
1513 Macro Economics	3	0	3
8150 Instr, Comm, Nav, Util Systems	5	5	5
8151 Airframe Sy, Hyd & Pneu Landing Gear	3	7	5
8152 Flightline Maintenance	1	4	2
	15	16	18

Sixth Term			
15xx Social Science Elective	3	0	3
1850 Computerized Business Applications	2	3	3
8160 Powerplant Theory and Maintenance I	5	5	5
8161 Powerplant Lubrication	4	3	4
8162 Propellers	4	4	4
	18	15	19

Seventh Term			
9404 Co-Op Employment Engineering Tech	1	40	2

Eighth Term			
102x Oral Communication Election	3	0	3
8170 Powerplant Theory and Maintenance II	5	5	5
8171 Powerplant Fuel Metering System	5	5	5
8172 Ignition Systems	5	5	5
	18	15	18

Ninth Term			
1010 Technical Writing I	3	0	3
8180 Engine Systems	5	5	5
8182 Engine Instruments/Fire Protection	1	4	3
8183 Powerplant Theory & Maintenance III	5	5	5
	14	14	16

Tenth Term			
9405 Co-Op Employment Engineering Tech	1	40	2
			148

Aviation Maintenance Certificate Programs

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

Airframe Certificate Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1010 Technical Writing I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2221 Technical Physics I	2	3	3
2222 Technical Physics II	3	2	3
2223 Technical Physics III	2	3	3
8100 Aircraft Orientation	4	4	5
8101 Machine & Hand Tools	1	4	3
8102 Basic 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 I	3	7	5
8131 Welding Processes	1	4	2
8132 Aircraft Electrical/Generating System	5	5	5
8140 Airframe Structures	3	7	5
8141 Airframe Fuel Systems	1	4	2
8142 Assembly & Rigging	3	7	5
8143 Airframe Hydraulic & Pneumatic System	1	4	2
8150 Instr. Comm, Nav, Utilities Systems	5	5	5
8151 Airframe Systems, Hyd & Pneu Land Gr	3	7	5
8152 Flightline Maintenance	1	4	2
8155 Airframe Comprehensive	2	1	2
	65	85	83

Powerplant Certification Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1010 Technical Writing I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2221 Technical Physics I	2	3	3
2222 Technical Physics II	3	2	3
2223 Technical Physics III	2	3	3
8100 Aircraft Orientation	4	4	5
8101 Machine & Hand Tools	1	4	3
8102 Basic 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 I	5	5	5
8161 Powerplant Lubrication	4	3	4
8162 Propellers	4	4	4
8170 Powerplant Theory and Maintenance II	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 III	3	2	3
8185 Powerplant Comprehensive	2	1	2
	76	69	84

Biomedical Electronics Technology (BMET)

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

This person is employed by hospitals as well as 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 with a broad background in electronics and instrumentation that will make the graduate an asset to any organization.

Biomedical Electronics Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2231 Fundamentals of Inorganic Chemistry	3	2	4
7030 Computer Programming - Basic	2	2	3
7710 DC Circuit Analysis	6	0	5
7711 DC Circuits Lab	0	3	1
	18	7	20
■ Second Term			
9401 Co-Op Employment Engineering Tech	1	40	3
■ Third Term			
1002 English Composition II	3	0	3
1192 Algebra and Trigonometry II	4	0	4
4014 Anatomy and Physiology I	3	2	4
7720 AC Circuit Analysis	6	0	5
7721 AC Circuits Lab	0	3	1
7728 Introduction to Digital Concepts	3	2	3
	19	7	20
■ Fourth Term			
9402 Co-Op Employment Engineering Tech	1	40	3
■ Fifth Term			
1193 Analytic Geometry and Calculus I	4	0	4
2293 Physics III	3	2	3
4015 Anatomy and Physiology II	3	2	4
7730 Electronics I	6	3	5
7738 Digital Systems I	3	3	4
	19	10	20
■ Sixth Term			
9403 Co-Op Employment Engineering Tech	1	40	3
■ Seventh Term			
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
1502 Human Relations	3	0	3
7740 Electronics II	4	2	4
7748 Digital Systems II	3	3	4
7749 Biomedical Instrumentation I	3	2	3
	19	7	20
■ Eighth Term			
9404 Co-Op Employment Engineering Tech	1	40	2
■ Ninth Term			
1010 Technical Writing I	3	0	3
1513 Macro Economics	3	0	3
7750 Electronics III	4	2	4
7759 Biomedical Instrumentation II	3	2	3
7768 Digital Systems III	3	3	4
	16	7	17
■ Tenth Term			
9405 Co-Op Employment Engineering Tech	1	40	2
			110

Courses 7749 and 7759 are normally offered only one term per year in late afternoon or evening.

Civil Engineering Technology (CET) (A TAC/ABET accredited program)

Recipient of a 1984 Ohio Board of Regents Program Excellence award.

Civil Engineering Technology is a single program from which a student may select one of two majors.

Surveying Major

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

Students train on state-of-the-art electronic surveying and computing equipment. Topics covered include: instrument usage, computer graphics, documented research and resolution, highway design, control surveying and site planning.

Construction Management Major

Early in the curriculum, students are exposed to materials and methods of construction, architectural drafting, elements of structures, statistics, and light construction principles.

Later in the curriculum principles such as heavy construction, project controls and construction management are investigated. Other topics include scheduling, contracting, and estimating. Civil Engineering Technology fundamentals are carried in Strength of Materials, Structural Design I and II and Soil Engineering Technology.

Many of the courses are supplemented by the use of computers with an emphasis on Computer Aided Design.

Civil Engineering Technology Curriculum Surveying Major

	Hours Per Week		Credit
	Class	Lab	Hours
First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
7024 Architectural Drafting	2	4	3
7910 Surveying Measurements	3	3	3
7911 Introduction to Construction	3	1	3
	18	10	19
Second Term			
9401 Co-Op Employment Engineering Tech	1	40	3
Third Term			
1002 English Composition II	3	0	3
1192 Algebra and Trigonometry II	4	0	4
2292 Physics II	3	2	3
7025 Surveying Drafting	2	4	3
7032 Introduction to Computer Program -CET	2	2	3
7920 Surveying Calculations	4	2	3
	18	10	19
Fourth Term			
9402 Co-Op Employment Engineering Tech	1	40	3
Fifth Term			
1179 Applied Statistics	4	0	4
1502 Human Relations	3	0	3
7930 Route Surveying	3	3	3
7931 Light Construction	3	3	3
7934 Statics	3	2	3
7935 Computer Applications (Civil)	2	2	3
	18	10	19

Sixth Term			
9403 Co-Op Employment Engineering Tech	1	40	3
Seventh Term			
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
2293 Physics III	3	2	3
7940 Elements of Land Surveying	3	2	3
7943 Estimation & Inspection	3	2	3
7947 Drainage Control Systems	3	2	3
7948 Subdivision Design	3	2	3
	21	10	21
Eighth Term			
9404 Co-Op Employment Engineering Tech	1	40	2
Ninth Term			
1010 Technical Writing I	3	0	3
1513 Macro Economics	3	0	3
7950 Surveying Field Project	1	6	3
7955 Soils Engineering Technology	2	3	3
7957 Environmental Engineer Technology	3	1	3
7958 Control Surveying	3	3	3
	15	13	18
Tenth Term			
9405 Co-Op Employment Engineering Tech	1	40	2
			109

Civil Engineering Technology Curriculum Construction Management Major

	Hours Per Week		Credit
	Class	Lab	Hours
First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
7024 Architectural Drafting	2	4	3
7910 Surveying Measurements	3	3	3
7911 Introduction to Construction	3	1	3
	18	10	19
Second Term			
9401 Co-Op Employment Engineering Tech	1	40	3
Third Term			
1002 English Composition II	3	0	3
1192 Algebra and Trigonometry II	4	0	4
2292 Physics II	3	2	3
7025 Surveying Drafting	2	4	3
7032 Introduction to Computer Program -CET	2	2	3
7920 Surveying Calculations	4	2	3
	18	10	19
Fourth Term			
9402 Co-Op Employment Engineering Tech	1	40	3
Fifth Term			
1193 Analytic Geometry and Calculus I	4	0	4
1502 Human Relations	3	0	3
7930 Route Surveying	3	3	3
7931 Light Construction	3	3	3
7934 Statics	3	2	3
7935 Computer Applications (Civil)	2	2	3
	18	10	19
Sixth Term			
9403 Co-Op Employment Engineering Tech	1	40	3
Seventh Term			
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3

2293 Physics III	3	2	3
7027 CAD Architectural	2	3	3
7943 Estimation & Inspection	3	2	3
7944 Strength of Materials (Civil)	3	2	3
7945 Structural Design I	3	2	3
	20	11	21

■ Eighth Term

9404 Co-Op Employment Engineering Tech	1	40	2
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■ Ninth Term

1010 Technical Writing I	3	0	3
1513 Macro Economics	3	0	3
7941 Heavy Construction	3	2	3
7953 Construction Management & Operations	3	2	3
7954 Structural Design II	2	4	3
7955 Soils Engineering Technology	2	3	3
	16	11	18

■ Tenth Term

9405 Co-Op Employment Engineering Tech	1	40	2
			109

Computer Engineering Technology (CPET)

The purpose of the Computer Engineering Technology program is to educate students in the areas of computer hardware-software design and testing. Course work 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 as well. The introduction to computer communications systems will enable the graduate to install, test, and troubleshoot digital communications 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		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
6106 Modular programming	2	2	3
7710 DC Circuit Analysis	6	0	5
7711 DC Circuit Lab	0	3	1
7728 Introduction to Digital Concepts	3	2	3
	18	7	19
■ Second Term			
9401 Co-Op Employment Engineering Tech	1	40	3
■ Third Term			
1192 Algebra and Trigonometry II	4	0	4
2291 Physics I	3	2	3
7720 AC Circuit Analysis	6	0	5
7721 AC Circuits Lab	0	3	1
7727 Programming in "C"	3	3	4
7738 Digital Systems I	3	3	4
	19	11	21
■ Fourth Term			
9402 Co-Op Employment Engineering Tech	1	40	3
■ Fifth Term			
1193 Analytic Geometry & Calculus I	4	0	4
1502 Human Relations	3	0	3
2292 Physics II	3	2	3
7730 Electronics I	6	3	5

7748 Digital Systems II	3	3	4
	19	8	19

■ Sixth Term

9403 Co-Op Employment Engineering Tech	1	40	3
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■ Seventh Term

1010 Technical Writing I	3	0	3
102x Oral Communication Elective	3	0	3
2293 Physics III	3	2	3
7742 Computer Aided Drafting (Electrical)	2	3	3
7747 Computer Instrumentation	2	2	3
7768 Digital Systems III	3	3	4
	16	10	19

■ Eighth Term

9404 Co-Op Employment Engineering Tech	1	40	2
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■ Ninth Term

7xxx Technical Elective	0	0	3
1015 Technical Writing II	3	0	3
15xx Social Science Elective	3	0	3
1513 Macro Economics	3	0	3
7767 Computer Communications	3	2	3
7769 Real Time Applications	3	3	4
	15	5	19

■ Tenth Term

9405 Co-Op Employment Engineering Tech	1	40	2
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Technical Electives: 1194, 1195, 6710, 7144, 7146, 7157, 7743, 7753, 7758, 7740

Computer-Integrated Manufacturing (CIM) Engineering Technology

Computer-Integrated Manufacturing Engineering Technology prepares students for the influx of computers in today's manufacturing industry. Classes emphasize the computer's role in both planning and processing, covering subjects such as Numerical Control and manufacturing processes. Students are able to work on the Computer-Integrated Manufacturing equipment owned by the college. Graduates are prepared to enter positions in areas such as Numerical Control and Computer Numerical Control Programming, Statistical Process Control, Processing, Methods, Standards and Cost Estimating.

Computer-Integrated Manufacturing Engineering Technology Curriculum

	Hours Per Week	Credit	
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
7010 Engineering Drawing I	2	4	3
7412 Introduction to Data Analysis	3	2	3
7416 Manufacturing Processes & Material I	3	2	3
	18	10	19
■ Second Term			
9401 Co-Op Employment Engineering Tech	1	40	3
■ Third Term			
1002 English Composition II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II	3	2	3
7030 Computer Programming - Basic	2	2	3
7160 Computer Aided Drafting I	2	3	3
7426 Manufacturing Processes & Material II	3	2	3
	17	9	19

■ Fourth Term

9402 Co-Op Employment Engineering Tech	1	40	3
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■ Fifth Term

1010 Technical Writing I	3	0	3
1179 Introduction to Applied Statistics	4	0	4
1512 Micro Economics	3	0	3
7144 NC/CNC Programming I	2	3	3
7438 Industrial Engineering Concepts	2	2	3
7449 Computer Aided Manufacturing I	3	2	4
	17	7	20

■ Sixth Term

9403 Co-Op Employment Engineering Tech	1	40	3
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■ Seventh Term

1535 Intro to Labor Management Relations	3	0	3
2293 Physics III	3	2	3
7145 Statics & Strength of Materials	3	2	3
7154 NC/CNC Programming II	2	3	3
7441 Quality Assurance/Static Process Ctrl	3	2	4
7444 Manufacturing Process Planning	2	2	3
	16	11	19

■ Eighth Term

9404 Co-Op Employment Engineering Tech	1	40	2
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■ Ninth Term

7xxx Technical Elective	0	0	3
102x Oral Communications Elective	3	0	3
15xx Social Science Elective	3	0	3
7450 Production Cost and Control	3	0	3
7454 CAD/CAM Project	3	2	4
7708 Electrical Fundamentals & Control	3	3	4
	15	5	20

■ Tenth Term

9405 Co-Op Employment Engineering Tech	1	40	2
			110

Technical Electives: 1135, 1180, 7132, 7165

Electronics Engineering Technology (EET)

Electronics Engineering Technology details 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 or Service Technician.

Electronics Engineering Technology Curriculum

	Hours Per Week		Credit Hours
	Class	Lab	
■ First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
7030 Computer Programming - Basic	2	2	3
7710 DC Circuit Analysis	6	0	5
7711 DC Circuits Lab	0	3	1
	18	7	19

■ Second Term

9401 Co-Op Employment Engineering Tech	1	40	3
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■ Third Term

1002 English Composition II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II	3	2	3
7720 AC Circuit Analysis	6	0	5

7721 AC Circuits Lab	0	3	1
7728 Introduction to Digital Concepts	3	2	3
	19	7	19

■ Fourth Term

9402 Co-Op Employment Engineering Tech	1	40	3
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■ Fifth Term

1193 Analytic Geometry & Calculus I	4	0	4
1502 Human Relations	3	0	3
2293 Physics III	3	2	3
7730 Electronics I	6	3	5
7738 Digital Systems I	3	3	4
	19	8	19

■ Sixth Term

9403 Co-Op Employment Engineering Tech	1	40	3
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■ Seventh Term

7xxx Technical Elective	0	0	3
102x Oral Communications Elective	3	0	3
7740 Electronics II	4	2	4
7742 Computer Aided Drafting (Electrical)	2	3	3
7748 Digital Systems II	3	3	4
	12	8	17

■ Eighth Term

9404 Co-Op Employment Engineering Tech	1	40	2
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■ Ninth Term

7xxx Technical Elective	0	0	3
1010 Technical Writing I	3	0	3
15xx Social Science Elective	3	0	3
1513 Macro Economics	3	0	3
7750 Electronics III	4	2	4
7768 Digital Systems III	3	3	4
	16	5	20

■ Tenth Term

9405 Co-Op Employment Engineering Tech	1	40	2
			107

Technical Electives: 1194, 1195, 6710, 6741, 7031, 7033, 7146, 7157, 7160, 7165, 7743, 7753, 7758

Electro-Mechanical Engineering Technology (EMET)

Recipient of a 1986 Ohio Board of Regents Program Excellence award.

The Electro-Mechanical Engineering Technology program is a unique program that combines 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.

The curriculum includes theory and applications of analog and digital (computer) electronics, industrial hydraulics and pneumatics, servomechanisms, electric motors and controls, analysis of mechanisms, and microprocessor-based computer control.

Electro-Mechanical Systems Technicians test, install, maintain, troubleshoot, repair, modify, and operate automated systems such as industrial robots, computer-controlled machine tools, and other machine and process systems used in industry. Graduates are equipped to enter such careers as Robotics Technician, Field Service Technician, Electro-Mechanical Technician, and similar fields.

Electro-Mechanical Engineering Technology Curriculum

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1024 Group Dynamics and Problem Solving	3	0	3
1191 Algebra & Trigonometry I	4	0	4

2291 Physics I	3	2	3
7008 Basic Engineering Drawing	2	4	3
7712 Electrical Circuits I	6	0	5
7713 Electrical Circuits I Lab	0	3	1
	18	9	19

■ Second Term

9401 Co-Op Employment Engineering Tech	1	40	3
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■ Third Term

10xx Communications Elective	3	0	3
1192 Algebra & Trigonometry II	4	0	4
7030 Computer Programming - Basic	2	2	3
7722 Electrical Circuits II	6	0	5
7723 Electrical Circuits II Lab	0	3	1
7728 Introduction to Digital Concepts	3	2	3
	18	7	19

■ Fourth Term

9402 Co-Op Employment Engineering Tech	1	40	3
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■ Fifth Term

1193 Analytic Geometry & Calculus I	4	0	4
2292 Physics II	3	2	3
7730 Electronics I	6	3	5
7738 Digital Systems I	3	3	4
7758 Motors and Controls	3	3	3
	19	11	19

■ Sixth Term

7104 Introduction to Machine Tool Process	3	2	3
9403 Co-Op Employment Engineering Tech	1	40	3

■ Seventh Term

1010 Technical Writing I	3	0	3
1502 Human Relations	3	0	3
2293 Physics III	3	2	3
7135 Fluid Power Systems	4	2	4
7142 Mechanisms Analysis and Design	3	3	3
7146 Electro-Mechanical Controls I	3	3	4
	19	10	20

■ Eighth Term

9404 Co-Op Employment Engineering Tech	1	40	2
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■ Ninth Term

1015 Technical Writing II	3	0	3
1513 Macro Economics	3	0	3
1527 Technical and Ethical Decisions	3	0	3
7156 Electro-Mechanical Design	2	4	4
7157 EM Controls 2/Robotic Systems	3	3	4
	14	7	17

■ Tenth Term

9405 Co-Op Employment Engineering Tech	1	40	2
			110

- Recommended Technical Electives: 7133, 7144, 7167, 7740, 7748 (see program chairman for other electives).
- Courses 7008, 7030, 1502 and 1527 may be taken during the previous or following co-op term.
- Courses 7146 and 7157 are available to students in other programs only on a space-available basis.

Heating, Ventilating and Air Conditioning Design Engineering Technology (HVAC)

Preparing students for the design and management of commercial and industrial Heating, Ventilating and Air Conditioning systems is the major objective of the HVAC Design program.

An HVAC designer must be familiar with all types of building materials and structures and the various mechanical systems to heat, ventilate and air condition. In addition, he or she must understand the types of controls employed to operate these systems (electrical, hydraulic, pneumatic and electronic) in order to design the noise-free, energy-efficient, comfortable and safe

environment which modern buildings demand.

An HVAC manager must be capable of assisting plant engineers who oversee the operation of these high-tech systems after they have been installed. This requires a working knowledge of not only HVAC systems but also power distribution, plumbing, process piping and emergency backup systems. HVAC managers have the responsibility of planning and implementing the programs to properly operate and maintain large modern buildings for reliability and efficiency.

Heating Ventilation and Air Conditioning Design Engineering Technology Curriculum

	Class	Lab	Hours Per Week	Credit
■ First Term				
1001 English Composition I	3	0	3	3
1191 Algebra & Trigonometry I	4	0	4	4
2291 Physics I	3	2	3	3
7024 Architectural Drafting	2	4	3	3
7525 Introduction to HVAC Principles	3	2	3	3
7911 Introduction to Construction	3	1	3	3
	18	9	19	
■ Second Term				
9401 Co-Op Employment Engineering Tech	1	40	3	3
■ Third Term				
1002 English Composition II	3	0	3	3
1192 Algebra & Trigonometry II	4	0	4	4
2292 Physics II	3	2	3	3
7016 Construction Drawing	2	4	3	3
7030 Computer Programming - Basic	2	2	3	3
7708 Electrical Fundamentals and Control	3	3	4	4
	17	11	20	
■ Fourth Term				
9402 Co-Op Employment Engineering Tech	1	40	3	3
■ Fifth Term				
1193 Analytic Geometry & Calculus I	4	0	4	4
1502 Human Relations	3	0	3	3
7138 Fluid Mechanics	3	2	3	3
7160 Computer Aided Drafting I	2	3	3	3
7535 HVAC Systems I	3	2	3	3
7758 Motors & Controls	3	3	3	3
	18	10	19	
■ Sixth Term				
9403 Co-Op Employment Engineering Tech	1	40	3	3
■ Seventh Term				
102x Oral Communications Elective	3	0	3	3
2293 Physics III	3	2	3	3
7xxx Technical Elective	0	0	3	3
7027 CAD Architectural	2	3	3	3
7545 HVAC Systems II	3	2	3	3
7547 Pumps and Piping System Design	3	2	3	3
	12	8	18	
■ Eighth Term				
9404 Co-Op Employment Engineering Tech	1	40	2	2
■ Ninth Term				
1010 Technical Writing I	3	0	3	3
15xx Social Science Elective	3	0	3	3
1513 Macro Economics	3	0	3	3
7755 HVAC Systems III	3	3	4	4
7557 Controls and Safety System Design	3	2	3	3
7736 Electrical Power Systems	4	2	4	4
	19	7	20	
■ Tenth Term				
9405 Co-Op Employment Engineering Tech	1	40	2	2
				109

Mechanical Engineering Technology (MET)

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, and solve problems of existing machine and product designs. Classes concentrate heavily on mathematics and problem solving skills. Computervision, CTC's computer design facility, is used to teach students computer aided design and computer aided drafting. Graduates of the MET program assume positions such as CAD/CAM system operator, machine and product design technician, and mechanical systems design technician.

NOTE: An established evening school program exists where the evening school student can complete all of the courses in the MET curriculum in 3 years, attending class two nights per week.

Mechanical Engineering Technology Curriculum

	Hours Per Week	Credit	
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
7010 Engineering Drawing I	2	4	3
7104 Introduction to Machine Tools Process	3	2	3
7160 Computer Aided Drafting I	2	3	3
	17	11	19
■ Second Term			
9401 Co-Op Employment Engineering Tech	1	40	3
■ Third Term			
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II	3	2	3
7030 Computer Programming - Basic	2	2	3
7111 Engineering Materials	3	2	3
7130 Engineering Mechanics	3	2	3
7165 Computer Aided Drafting II	2	3	3
	17	11	19
■ Fourth Term			
9402 Co-Op Employment Engineering Tech	1	40	3
■ Fifth Term			
1193 Analytic Geometry & Calculus I	4	0	4
1512 Micro Economics	3	0	3
7132 Hydraulics and Pneumatics	4	2	4
7140 Strength of Materials	4	2	4
7170 Computer Aided Design	3	2	3
	18	6	18
■ Sixth Term			
9403 Co-Op Employment Engineering Tech	1	40	3
■ Seventh Term			
1010 Technical Writing I	3	0	3
15xx Social Science Elective	3	0	3
2293 Physics III	3	2	3
7142 Mechanisms Analysis and Design	3	3	3
7148 Basic Thermodynamics	3	2	3
7150 Machine Design I	4	2	4
	12	9	19
■ Eighth Term			
9404 Co-Op Employment Engineering Tech	1	40	2
■ Ninth Term			
1015 Technical Writing II	3	0	3
102x Oral Communications Elective	3	0	3

1535 Intro to Labor Management Relations	3	0	3
7155 Machine Design II	4	2	4
7158 Mechanical Systems Design Project	3	0	3
7708 Electric Fundamentals and Control	3	3	4
	19	5	20

■ Tenth Term

9405 Co-Op Employment Engineering Tech	1	40	2
			108

Recommended Technical Electives:

1135 "C" Programming Language
1136 Forth Programming
1137 Pascal Programming
1179 Intro to Applied Statistics
1194 Analytic Geometry and Calculus II
2294 Physics II
7031 Computer Programming - Fortran
7144 NC/CNC Programming I
7167 Introduction to Robotics
7199 Special Problems Seminar—
7449 Computer Aided Manufacturing Mechanical

Physical Sciences and Mathematics Division

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

- 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
- providing in-depth instruction to the applied sciences leading the student to a career in industrial laboratory, industrial software development or laser-electro-optic systems.

It is important to note that course recommendations in physical sciences and mathematics at CTC are determined by the readiness of each student. Readiness is determined during the admission process through testing and an interview. Faculty are chosen for their abilities to communicate effectively with students, for 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.

Mathematics Readiness and Placement Service

Since it is not unusual for a college student to experience math anxieties as he or she faces a technical career, the mathematics department is happy to offer the services of a mathematics placement test designed for the specific type of technology of interest to the student. It is important for students to realize that the test cannot be failed. The placement test is designed to be a placement tool, and students are strongly encouraged to take advantage of this service before registration occurs. There is no charge for the test. The results of the test assist the student in choosing a sequence of math courses suited to his or her technology major and general area of interest.

Students wishing to brush up on skills prior to enrolling in a regular course sequence should refer to the Developmental Education courses listed in this catalog.

Service to the Community - Industrial Training

Faculty in the Physical Sciences and Mathematics Division welcome inquiries involving retraining from individuals and corporations. A program may vary from a single course to a series of programs. Resources are available to assist and advise individuals

toward solving their problems in these areas.

Mathematics and Physical Sciences Offerings

Each sequence of mathematics course 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:

- 1132 Statistics
- 1151 Pre-Calculus Math: Algebra
- 1152 Pre-Calculus Math: Trigonometry
- 1153 Elementary Analysis
- 1154 Calculus I
- 1155 Calculus II

Sequence of Courses Serving Chemical and Health Technology Students:

- 1105 Health Mathematics
- 1150 Introduction to Science Mathematics
- 1170 Introduction to Technical Mathematics
- 1171 Technical Mathematics I
- 1180 Applied Statistical Analysis

Sequence of Courses Serving Business Technology and Business Programming Students:

- 1120 Introduction to Business Mathematics
- 1121 Business Mathematics
- 1122 Financial Analysis
- 1123 Computerized Financial Analysis
- 1124 Business Algebra
- 1126 Computer Mathematics
- 1127 Business Statistics
- 1128 Business Calculus

Sequence of Courses Serving Computer Science Technology Students

- 1126 Computer Mathematics
- 1140 Introduction to Linear Algebra
- 1141 Matrix Algebra
- 1142 Probability & Introduction to Quantitative Analysis
- 1143 Quantitative Approach to Operations Research

Sequences of Courses Serving Engineering Technology & Physical Sciences Technology Students:

- 1170 Introduction to Technical Mathematics
- 1171 Technical Mathematics I
- 1172 Technical Mathematics II
- 1173 Technical Mathematics III
- 1179 Introduction to Applied Statistics
- 1180 Applied Statistics Analysis
- 1191 Algebra & Trigonometry I
- 1192 Algebra & Trigonometry II
- 1193 Analytic Geometry & Calculus I
- 1194 Analytic Geometry & Calculus II
- 1195 Analytic Geometry & Calculus III

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 mind of the students. The sciences department therefore places much emphasis on the laboratory. Care is taken to ensure all laboratories are well supplied with equipment. The laboratory experiences, pointing the way for students, assist them to organize an attack on the problem, encourage the students to use their own ingenuity and thoughts while carrying the investigation to a conclusion; and, finally, prepare a report of the findings.

Introductory Courses Serving General Student Interests:

- 2200 Basic Chemistry
- 2270 Introduction to Physics

Sequence of Courses Serving General Student Interests:

- 2231 Fundamentals of Inorganic Chemistry
- 2232 Fundamentals of Organic Chemistry

- 2233 Fundamentals of Biochemistry
- 2241 College Physics I
- 2242 College Physics II

Sequence of Courses for Students With Specific Needs:

- 2221 Technical Physics I
- 2222 Technical Physics II
- 2223 Technical Physics III
- 2244 Health Physics I
- 2245 Health Physics II
- 2263 Physical Science for Graphic Communications

Sequence of Courses Serving Engineering Technology & Physical Sciences Technology Students:

- 2291 Physics I
- 2292 Physics II
- 2293 Physics III
- 2294 Physics IV

Computer Science Courses:

- 1133 BASIC 2 for Science & Engineering Technologies
- 1134 Macro FORTRAN & Microcomputers
- 1135 "C" Programming I
- 1136 FORTH Programming I
- 1137 PASCAL Programming I
- 1138 Introduction to Computer Graphics & Modeling
- 1139 Introduction to XENIX/UNIX

For the student who relates strongly to the sciences and is excited by expanding technology, skilled faculty are proud to offer degree programs focusing on the latest information and techniques leading to careers in industrial laboratory and materials testing services or in the dynamic new fields of laser-electro-optic systems and industrial software development. Technical core courses for these fields are described in courses numbered in the range of 6600 to 6999.

Laser/Optics Technology (LOT)

CTC's Laser/Optics program is the first of its kind in Ohio and one of the few associate degree programs in laser technology in the country. The curriculum includes the basic aspects of laser-electro-optics theory.

Co-op opportunities are very limited at this time.

Recommended courses from high school are algebra I and II, chemistry, geometry and programming.

Students who have not successfully completed the recommended high school courses prior to acceptance into the laser/optics program may take qualifying course work at CTC and should plan to study longer than two years to meet graduation requirements.

Laser Optics Technology Curriculum

Admissions Requirements: Two years of algebra; geometry, chemistry

	Hours Per Week		Credit
	Class	Lab	
■ First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
6710 Introduction to Lasers	3	2	4
7710 DC Circuit Analysis	6	0	4
7711 DC Circuits Lab	0	3	1
	19	7	19
■ Second Term			
9601 Co-Op Employment PST Technology	1	40	3

■ Third Term

100x English Composition Elective	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II	3	2	3
6720 Geometrical & Wave Optics	3	3	5
7720 AC Circuit Analysis	6	0	4
7721 AC Circuits Lab	0	3	1
	19	8	20

■ Fourth Term

9602 Co-Op Employment PST Technology	1	40	3
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■ Fifth Term

1193 Analytic Geometry & Calculus I	4	0	4
151x Economics Elective	3	0	3
6730 Optical Components/Devices	3	3	5
7030 Computer Programming - Basic	2	2	3
7730 Electronics I	6	3	5
	18	8	20

■ Sixth Term

9603 Co-Op Employment PST Technology	1	40	3
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■ Seventh Term

xxxx Elective/Coord Approval Required	3	2	3
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
6740 Applications of Lasers	3	3	5
7740 Electronics II	4	2	4
	16	7	18

■ Eighth Term

9604 Co-Op Employment PST Technology	1	40	2
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■ Ninth Term

xxxx Elective/Coord Approval Required	3	2	3
101x Technical Writing Elective	3	0	3
15xx Social Science Elective	3	0	3
6750 Laser/Electronics Optic Measurement	3	3	5
1150 Electronics III	4	2	4
	16	7	18

■ Tenth Term

9605 Co-Op Employment PST Technology	1	40	2
			108

English Composition Electives: 1002, 1007, 1009, 1010

Economics Electives: 1512, 1513

Elective/Coordinator Approval Required: 1194, 1195, 2294, 6741, 6745, 6999, 7728, 7738, 7743, 7748, 7768

Oral Communication Electives: 1020, 1024

Social Science Electives: 1502, 1505, 1506, 1508, 1509, 1521, 1523, 1524, 1525, 1527, 1531, 1535, 1536, 1599

Industrial Laboratory Technology

The Industrial Laboratory Technician major is designed to prepare the student for employment in a testing laboratory in which the physical and chemical properties of materials are measured. As a well-prepared lab technician, the graduate will apply the concepts from statistics and science to the planning and execution of tests and to the taking, recording, compiling and reporting of measurement data.

Recommended courses from high school are algebra I and II, biology, chemistry, geometry and physics.

Students who have not successfully completed the recommended high school courses prior to acceptance into the industrial laboratory program may take qualifying course work at CTC and should plan to study longer than two years to meet graduation requirements.

Industrial Laboratory Technology Curriculum

Admissions Requirements: algebra I, algebra II, geometry, chemistry, biology

	Hours Per Week		Credit
	Class	Lab	Hours

■ First Term

1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I	3	2	3
6611 Technical Laboratory Chemistry I	3	3	4
6629 Science of Materials	3	2	4
	16	7	18

■ Second Term

9601 Co-Op Employment PST Technology	1	40	3
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■ Third Term

100x English Composition Elective	3	0	3
113x Programming Elective	2	2	3
1192 Algebra & Trigonometry II	4	0	4
15xx Social Science Elective	3	0	3
2292 Physics II	3	2	3
6621 Technical Laboratory Chemistry II	3	3	4
	18	7	20

■ Fourth Term

9602 Co-Op Employment PST Technology	1	40	3
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■ Fifth Term

xxxx Elective/Coord Approval Required	3	2	3
1179 Introduction to Applied Statistics	4	0	4
2293 Physics III	3	3	3
6631 Technical Laboratory Chemistry III	3	3	4
6639 Fundamentals of Physical Measure	3	2	4
	16	9	18

■ Sixth Term

9603 Co-Op Employment PST Technology	1	40	3
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■ Seventh Term

101x Technical Writing Elective	3	0	3
1180 Applied Statistical Analysis	4	0	4
1193 Analytic Geometry and Calculus I	4	0	4
6641 Technical Laboratory Chemistry IV	3	3	4
6649 Materials Testing	3	4	5
	17	7	20

■ Eighth Term

9604 Co-Op Employment PST Technology	1	40	2
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■ Ninth Term

xxxx Elective/Coord Approval Required	3	2	4
102x Oral Communication Elective	3	0	3
15xx Social Science Elective	3	0	3
151x Economics Elective	3	0	3
2294 Physics IV	3	2	3
6659 Analysis of Materials Project	0	5	3
	15	9	19

■ Tenth Term

9605 Co-Op Employment PST Technology	1	40	2
			108

English Composition Electives: 1002, 1007, 1010

Programming Electives: 1133, 1134, 1135, 1136, 1137, 1138, 7030

Social Science Electives: 1502, 1505, 1506, 1508, 1509, 1521, 1523, 1524, 1525, 1527, 1531, 1535, 1536, 1599

Elective/Coordinator Approved Request: 1194, 1195, 4000, 4009, 6661,

6670, 6710, 7031, 7441, 7704, 7708, 7710, 7711

Technical Writing Elective: 1010, 1015, 1017, 1018

SQC/SPC Training

Increasing demands on industry to implement statistical process control (SPC) as an essential component in the production and manufacturing process have served to place Cincinnati Technical College at the leading edge in the technical educational community. The CTC faculty, with experience in manufacturing, quality control and applied statistics, is certified to teach state-of-the-art theory and practices of SPC. Currently, the College offers courses covering the relevant topics of applied statistics, SPC, reliability, experimental design and quality circles; and by 1986-1987, CTC will have formalized a full-fledged program in the SPC. Considering the time and location constraints of the numerous industries in the Cincinnati area, CTC also offers SPC in a customized plant-site modular format for direct company implementation. Contact the Manufacturing Engineering Technologies or Statistics Department for detailed information.

A certificate of recognition is awarded upon completion of each module.

Module I Introduction to Statistical Reasoning

An introduction to descriptive and inferential statistics as applied to industry. Collection and organization of data including mean, median, range, standard deviation, z-scores, etc., including graphical displays. Basic concepts of probability, probability distributions (bionomial, normal, etc.) and the central limit theorem. Testing hypotheses concerning means and proportions. Simple linear regression ("forecasting") and correlation. Many applied problems from a wide variety of industrial settings will be examined. A scientific calculator (preferably with STAT capabilities) is required.

Module II Introduction to Statistical Process Control

An introduction to modern industrial quality control—statistically oriented with emphasis on the "continuous improvement" philosophy. Preparation and analysis of histograms, Pareto charts, cause and effect (fishbone) charts, etc. Statistical control charting (X, R, p, np, c, u, etc.) applied to process stability and capability with emphasis on data collection, measurement concepts (including geometric tolerancing), chart preparation and chart interpretation. Many applied problems from a wide variety of industrial settings will be examined. A scientific calculator (preferably with STAT capabilities) is required.

Module III Applied Statistics and Quality Design

A continuation of modules I and II, the emphases here being the statistical methods to assure that products are designed properly. The "power tools" of statistics are introduced: testing hypotheses concerning two or more samples, analysis of variance (ANOVA), experimental design and orthogonal arrays, multiple regression, reliability and nonparametrics. As in the previous modules, the applied programs come from a wide variety of industrial settings.

Module IV Group Dynamics and Quality Circles

This module 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.

Industrial Software Technology

The Industrial Software Technology major is designed to provide for employment in technical software programming. The graduate will have a technical background that includes math and science; knowledge of the various capabilities and limitations of mini and micro computers; and selected low and high-level languages. The graduate will be a valuable team member in the developing, modifying, maintaining and documenting of technical systems/programs for commercial and industrial applications.

Recommended courses from high school are algebra I and II, geometry, chemistry, typing.

Students who have not had sufficient high school preparation prior to acceptance into this major may take qualifying course

work at CTC and should plan to study longer than two years to meet graduation requirements.

Industrial Software Technology Curriculum

Prerequisite skills for entering students: algebra I, algebra II, geometry, chemistry, typing

	Hours Per Week		Credit
	Class	Lab	Hours
■ First Term			
1001 English Composition I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
6106 Modular Programming	2	2	3
6110 Software Documentation	2	2	3
6611 Technical Laboratory Chemistry I	3	3	4
	14	7	17

■ Second Term			
9601 Co-Op Employment PST Technology	1	40	3

■ Third Term			
1141 Matrix Algebra	4	0	4
1192 Algebra & Trigonometry II	4	0	4
6111 PL/M Programming	2	2	3
6112 Device Control Software	2	2	3
6621 Technical Laboratory Chemistry II	3	3	4
	15	7	18

■ Fourth Term			
9602 Co-Op Employment PST Technology	1	40	3

■ Fifth Term			
102x Oral Communication Elective	3	0	3
1193 Analytic Geometry and Calculus I	4	0	4
151x Economics Elective	3	0	2
2291 Physics I	3	2	2
6113 Real Time Programming	2	2	3
6137 Pascal Programming II	2	2	3
	17	6	19

■ Sixth Term			
9603 Co-Op Employment PST Technology	1	40	3

■ Seventh Term			
xxxx Elective/Coordinator Approved Request	3	2	3
1010 Technical Writing I	3	0	3
15xx Social Science Elective	3	0	3
2293 Physics III	3	2	3
6115 Micro/Mini Operating Systems	2	2	3
7031 Computer Programming - Fortran	2	2	3
	17	7	18

■ Eighth Term			
9604 Co-Op Employment PST Technology	1	40	2

■ Ninth Term			
xxxx Elective/Coordinator Approved Request	3	2	3
1015 Technical Writing II	3	0	3
113x Programming Elective	2	2	3
1179 Introduction to Applied Statistics	4	0	4
150x Psychology Elective	3	0	3
6118 Systems Implementation Project	1	4	3
	16	8	19

■ Tenth Term			
9605 Co-Op Employment PST Technology	1	40	2
			104

Oral Communications Elective: 1020, 1024

Economics Electives: 1512, 1513

Elective/Coordinator Approved Requests: 1133, 1135, 1136, 1138, 1139,

1194, 1195, 1752, 1763, 2233, 2292, 2294, 6135, 6136, 6629, 6631,

6639, 6641, 6670, 6710, 6720, 6741, 6745, 7728, 7738, 7748

Social Science Electives: 1502, 1505, 1506, 1508, 1509, 1521, 1523,

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 the consideration of total individual educational needs and, in cooperation with career consultants from the business/industrial community, provides planning for 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 at least a minimal 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 at such time as 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 the A.I.S. program.)

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 and A.I.S. program.

Continuing Education and Extended Services

As more students with greater diversity of needs enroll, the College has developed different and improved ways of serving those needs. The recent trends being experienced may be categorized in the following ways:

Changes in Academic Needs

There has been a large increase in the number of students who have already started a career and wish to develop it further through more education. Typically, these students also feel a need to update their technical education and possibly attempt different career directions without interruption to their current employment.

CTC can respond to the business-industrial-professional communities' requests to provide off-campus courses to up-grade

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.

Change in Scheduling

Since there is an increase in the number of students who are employed full-time, the College has increased the evening and Saturday offerings so that different career aspirations can be pursued while the students continue to work during regular daytime hours.

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

Business Technologies Division

business management
computer information systems programming
loss control
management information systems
managerial accounting
marketing management
real estate/property management
industrial sales marketing
office specialist

Engineering Technologies Division

electronics engineering technology
electro-mechanical engineering technology
biomedical electronics technology
computer integrated manufacturing engineering technology
mechanical engineering technology

Health Technologies Division

medical record technology
unit clerk/coordinator certificate
electrocardiography certificate

Physical Sciences/Mathematics Division

industrial laboratory technology - industrial lab &
industrial software
laser/optics technology

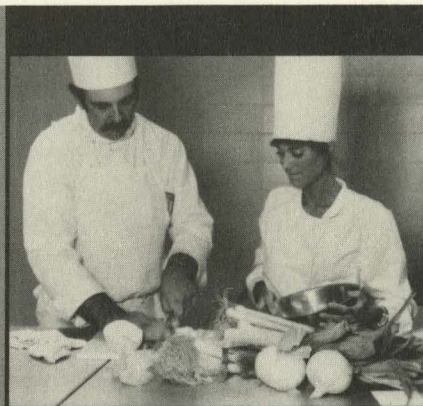
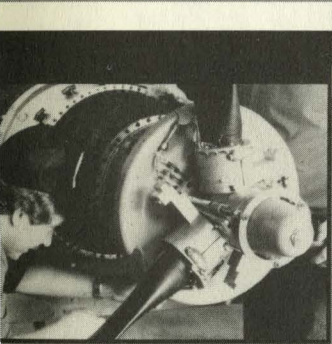
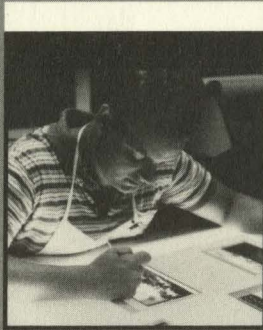
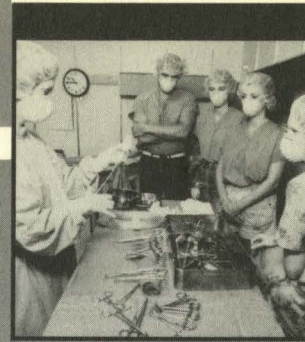
To pursue a degree program at night, the student should apply for admission and meet the admissions criteria for that program.

Change in Locational Needs

The trend toward more students who are working full-time also means that these students have generally more compacted daily schedules. Travel time and the energy expense of 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 increasing its degree and certificate program offerings in evening and in convenient locations. Cincinnati Technical College provides concurrent course offerings through its extension centers located within the College service area. CTC extension centers are located at Anderson High School, Colerain Vocational Center, Northwest Vocational Center and Oak Hills High School.

The continuing education operations also include recreational and leisure-time courses offered for the more casual interests of students.



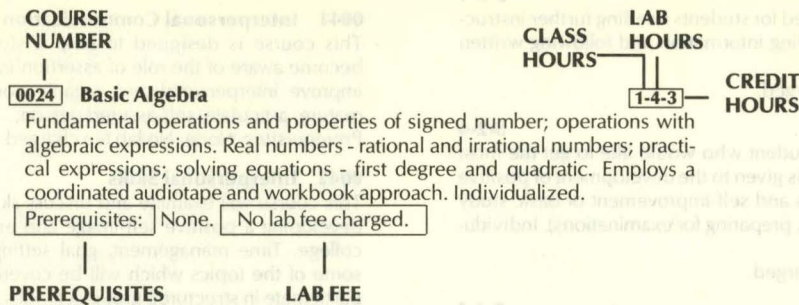
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COURSE DESCRIPTIONS

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.

0142 Basic Home Maintenance & Repairs 2-0-0

A five week course for the first time homeowner. This course presumes nothing, that is, we presume you know nothing or little about tools and how to use them. Emphasis is on showing you which repairs you can take on and which you ought to get help for. Topics will include: plumbing, heating and insulation, painting, electricity, general repairs inside and outside.

Prerequisites: None

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.

0261 Graphic Arts 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 boundry 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 advanced color film assembly for the graphic arts industry. Students will learn skills in 4 color stripping; choke and speed; 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.

0307 Advanced Camera & Darkroom Operation 0-0-0

Types and uses of photocopy and process cameras. General and special uses of films, uses and application of screens. Uses of precise measuring calibration darkroom instruments and darkroom techniques including chokes and spreads. Making line and half-tone negatives. Contacting and making multiple proofs. Simple stripping with step and repeat. This course is designed to meet needs of people currently working in lithographic related industry and artwork (\$15 lab fee), which is included in the total fee.

Perequisites: See description.

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.

0001 English Grammar 3-2-4

This course deals with the words and language of the grammatical system of standard English. Correct usage is stressed.

Prerequisites: None. No lab fee charged.

0002 College Spelling 3-2-4

An individualized spelling improvement program. Uses multisensory approach to develop desirable spelling attitudes and habits. Also stresses word analysis and proofreading.

Prerequisites: None. No lab fee charged.

0003 Basic Writing I 3-2-4

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. No lab fee charged.

0004 Basic Writing II 3-2-4

Emphasizes paragraph organization and transitional devices in longer composition; punctuation.

Prerequisites: 0003 or equivalent. No lab fee charged.

0007 Telephone Techniques 1-2-2

Develops confidence and accuracy in the use of the telephone for business. Stresses clarity and enunciation.

Prerequisites: None. No lab fee charged.

0008 Oral Reports 2-2-3

Enlarges student's concept of skill in oral communication. Provides means for each student to develop clear and accurate reports.

Prerequisites: 0003 or equivalent. No lab fee charged.

0010 College Reading I 3-2-4

Instruction and practice to develop flexibility in reading, improve vocabulary; and sharpen comprehension. Diagnostic and prescriptive testing; individualized, multi-media.

Prerequisites: None. No lab fee charged.

0011 College Reading II 3-2-4

Continuation of 0010. Recommended for students needing further improvement in reading skills.

Prerequisites: 0010 or equivalent. No lab fee charged.

0012 Technical Reading I 3-2-4

Develops skills and vocabulary needed to succeed in a particular tech-

nology through an individualized curriculum drawn from the reading required. Emphasizes purposeful reading.
Prerequisites: 0010 or equivalent. No lab fee charged.

0013 Technical Reading II 3-2-4
Continuation of 0012. Recommended for students needing further instruction and practice. Emphasizes finding information and following written directions.
Prerequisites: 0012. No lab fee charged.

0014 College Study Skills 3-2-4
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.

0017 Speed Reading 2-4-4
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 I-Individualized 3-2-4
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 II-Individualized 3-2-4
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 3-6-6
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 1-4-3
Individualized instruction in basic concepts of Geometry. Focuses on the study of the measurement and relationships of lines, angles, plane (flat) figures, and solid figures. Included is the study of angles, triangles, perpendicular lines, tangents, and the study of distance, area, and volume.
Prerequisites: None. No lab fee charged.

0024 Basic Algebra I-Individualized 3-2-4
Fundamental operation and properties of signed numbers. Operations with algebraic expressions. Real numbers - rational and irrational numbers. Practical expressions, solving equations - first degree and quadratic, graphing. Employs a coordinated audiotape and workbook approach.
Prerequisites: None. No lab fee charged.

0025 Basic Algebra II-Individualized 3-2-4
Continuation of 0024. Recommended for students needing further instruction and practice.
Prerequisites: 0024. No lab fee charged.

0030 Basic Concepts Biology 3-2-4
A survey of the study of life processes. Included: terminology, basic principles of biology, laboratory experiences.
Prerequisites: None. Lab fee charged.

0031 Basic Concepts Chemistry 3-2-4
A survey of general chemistry. Included: terminology, basic principles of chemistry, laboratory experiences.
Prerequisites: None. Lab fee charged.

0036 Basic Concepts of Medical Terminology 3-2-4
Course will provide an introduction to major medical word parts, this will include word roots, prefixes and suffixes. Emphasis will be placed on medical word building, compounding medical word parts and special emphasis on saying, listening to and spelling words as an aid to study procedures.
Prerequisites: None. No lab fee charged.

0040 Interpersonal Development 3-2-4
Focuses on the development of the total person; develops an awareness

of the personal skills needed to succeed in college and of those habits which inhibit success; each student plans and implements a workable schedule for self.
Prerequisites: None. No lab fee charged.

0041 Interpersonal Communication 3-2-3
This course is designed to help a student become self-directed, to become aware of the role of assertion in the communication process, to improve interpersonal and organizational skills and to develop as a mature, articulate, self-assured person.
Prerequisites: None. No lab fee charged.

0042 Interpersonal Skills 3-2-4
This course will examine and discuss skills which will aid the student in developing a positive self-image and enable the student to succeed in college. Time management, goal setting and communication skills are some of the topics which will be covered. Students will be required to participate in structured group activities.
Prerequisites: None. No lab fee charged.

0043 Interpersonal Skills II 1-2-2
This course is an extension of Interpersonal Skills I. The student develops an individual project to demonstrate mastery of concepts discussed in Interpersonal Skills I.
Prerequisites: 0042. No lab fee charged.

0049 College Orientation 1-0-1
This course is designed to give students an in-depth orientation into the college, its programs and all student services functions. Representatives from various departments will present their programs to the students. Also college survival skills will be discussed in the class (role playing, class participation). This course is primarily for Developmental Education students.
Prerequisites: None. No lab fee charged.

0050 Orientation to Business 1-0-1
A basic introduction to the language, principles and practices of business. The course is designed to introduce students to the very basic elements of business.
Prerequisites: None. No lab fee charged.

0057 Pre-Accounting 3-2-4
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.

1001 English Composition I 3-0-3
Syntax, the composition of clear and effective sentences; paragraphs and usage; the composition of a theme.
Prerequisites: None. No lab fee charged.

1002 English Composition II 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 Research and Argumentative Writing; 1/4x3-0-3
Organization and development of argumentative writing, including research and logical and fallacious reasoning.
Prerequisites: 1001 or 1002. No lab fee charged.

1008 Composition: Science Fiction 3-0-3
The composition course includes a study of masters of science fiction. Reading will include short stories and novels. Essays and research paper(s) will be required.
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 I 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.

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. Lab fee charged.

1015 Technical Writing II**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**3-3-4**

Technical communicators must research the projects that they manage; therefore, this course will address the tasks that technical writers and editors perform as they research projects. Major tasks to be mastered include: data gathering methods, interviewing skills and techniques, questionnaire design, observation, simulation, pilot projects and walk-throughs. Literature searches using data bases will also be employed. The student will be able to identify, select and use the most appropriate method that corresponds to the project. Prerequisite: 1007 or Equivalent Preferred

1018 Writing the Project Copy I**2-5-4**

This introduction to technical communications examines the formats, conventions, and rhetoric of technical writing as opposed to expository writing. Topics include audience analysis, the problem solving process, readability criteria, and language editing. Students will be required to define technical terms and analyze equipment related to their technical field. Students will have their writing analyzed for both style and structure, and will be required to conduct a language edit of a document. Prerequisite: 3 credits of English Composition.

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.

1031 Technical Spanish**2-2-3**

This course will provide the student with an introduction to the fundamentals of Spanish grammar with an emphasis on technical vocabulary. Prerequisites: None. No lab fee charged.

1032 Technical Spanish II**2-2-3**

This course continues the study of Spanish grammar and syntax with an emphasis on technical vocabulary. Prerequisites: 1031 or equivalent. No lab fee charged.

1033 Technical German**2-2-3**

This course will provide the student with an introduction to the fundamentals of German grammar and syntax with an emphasis on technical vocabulary. Prerequisites: None. No lab fee charged.

1034 Technical German II**2-2-3**

This course continues the study of German grammar and syntax with emphasis on technical vocabulary. Prerequisites: 1033 or equivalent. No lab fee charged.

1035 Technical Japanese**2-2-3**

This course will provide the student with an introduction to the fundamentals of Japanese grammar and syntax with an emphasis on technical vocabulary. Prerequisites: None. No lab fee charge.

1036 Technical Japanese II**2-2-3**

This course continues the study of Japanese grammar and syntax with an emphasis on technical vocabulary. Prerequisites: 1035 or equivalent. 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.

1099 Special Problems in Communication Skills**1-5--0-1-5**

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.

1100 Math Placement Test**0-1-4**

The student who registers for this test will take a basic mathematics skills test. The results of the test will enable a faculty advisor to make the proper course recommendation for each student. Following the test, students will be advised to take the mathematics course which is most appropriate for their individual skill level. The final decision ultimately lies with each student. There is no additional fee for this service and the four(4) credit hour tuition will be credited to the course selected. Prerequisites: None. No lab fee charged.

1103 Mathematics of Finance**4-0-4**

Application of mathematical concepts to business activities: bank records, financial charges (including "Truth in Lending" legislation), payrolls and taxes, financial statements and inventories, statistics and computers. (Students who test out of 1101 Business Mathematics will take this course.) Completion of this course plus 4 elective credit hours will satisfy graduation requirements of 1101 and 1102. Prerequisites: None. No lab fee charged.

1104 Financial and Statistical Analysis**4-0-4**

Application of statistical analysis as related to business and an in-depth study of the mathematical analysis of business financial information in decision making. Prerequisites: None. No lab fee charged.

1105 Health Mathematics**2-0-2**

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: Applications of elementary math; metric, apothecary and household systems; dosage calculations. Prerequisite: Recommendation of coordinator. No lab fee charged.

1120 Introduction to Business Mathematics**4-0-4**

A review of the basic computational skills needed for success in business mathematics especially those involving fractions, decimal fractions and ratios. Applied topics such as payroll, present value, simple interest, mark up, work down, etc. Use of an electronic calculator having the floating decimal point is encouraged. Students should register for this course after taking the math placement test. Offered as independent study or traditional lecture. Prerequisites: 0020 or equivalent. No lab fee charged.

1121 Business Mathematics**4-0-4**

A review of introductory topics such as payroll, present value, simple interest, mark up, mark down. Mathematics of business and banking to include promissory notes, trade and cash discounts, inventories, taxes, compound interest, finance charges. Use of an electronic calculator having the floating decimal point is encouraged. Offered as independent study or traditional lecture. Prerequisites: 1120 or equivalent. No lab fee charged.

1122 Financial Analysis**4-0-4**

Review of discounts and taxes, compound interest, present value, revolving charges. Annual percentage rate, depreciation, mortgages, amortization, insurance. Offered as independent study or traditional lecture. Prerequisites: 1121 or equivalent. No lab fee charged.

1123 Computerized Financial Analysis**3-1-4**

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: 1122 and 2911. 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. Prerequisites: 0024 or equivalent. No lab fee charged.

1126 Computer Mathematics and Business Data Structures**4-0-4**

Review of Business Algebra. Matrices with applications in Business. Number systems and arithmetic used in computing, including an analysis of errors. Algorithms, logic and sets as applied to the design of computer programs. Boolean Algebra. Prerequisites: 1124 or math placement. No 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. 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 and decision making. Forecasting, linear regression and correlation. This course is business application oriented. A scientific calculator (preferably with STAT capabilities) is required.

Prerequisites: 1124 or equivalent. No lab fee charged.

1128 Business Calculus 40004

Algebraic emphasis on functions and applications. An overview of limits. Derivatives and antiderivatives with their applicability to business situations. Decision making involving maximum and minimum conditions using calculus as an analytical and predictive tool.

Prerequisites: 1124 or 1131 or 1140. No lab fee charged.

1130 Introduction to Microcomputer Systems 2-2-3

Intended for anyone interested in microcomputers. A how to use and how to make use of microcomputer systems. The technical vocabulary associated with microcomputers with emphasis on tape and diskette routines. Assistance with tracking error messages. The specific microcomputer used will depend upon the models available at the campus offering the course.

Prerequisites: None. Lab fee charged.

1131 College Algebra 4-0-4

This course presents important algebraic relationships that provide supportive skills for all students in technical programs dependent on algebra. Prerequisites: Previous course work in algebra. No lab fee charged.

1132 Statistics 4-0-4

Descriptive statistics (mean, median, standard deviation, etc.) and organization of data, including graphical displays. Probability and probability distributions. Testing statistical hypotheses. Sampling techniques. Confidence intervals. Simple linear regression and correlation. A scientific calculator (preferably with STAT capabilities) is required.

Prerequisites: Algebra. No lab fee charged.

1133 BASIC II for Science and Engineering Technologies 2-2-3

An intermediate course in the use of the computer in science and engineering technologies. Computation techniques including various mathematical algorithms, use of files and simple graphics are introduced and applied. BASIC language is used.

Prerequisites: 1192, 7030. Lab fee charged.

1134 Macrofortran/Microcmpters 3-2-3

Techniques to implement large scientific and engineering programs in FORTRAN on the microcomputer, fooling the microcomputer into processing like a mini/supermini computer using large FORTRAN programs. Interaction among the microcomputer, discs, and the mini/supermini computer. Special consideration will be given to system (program) design of the large program, use of overlays, virtual arrays, memory utilization, I/O techniques, user friendly programming, etc.

Prerequisites: FORTRAN. Lab fee charged.

1135 "C" Programming Language 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 operating systems.

Prerequisites: BASIC or COBOL, etc. Lab fee charged.

1136 FORTH Programming 2-2-3

FORTH is a flexible, powerful and different programming language used for systems, graphics, and machine control. Using FORTH is also a good way to learn about how compilers and interpreters work and how a computer handles data. This course is an overview of FORTH, covering simple arithmetic through extending the compiler. It is both an introduction to FORTH and a look at the inner workings of languages in general.

Prerequisites: None. Lab fee charged.

1137 PASCAL Programming 2-2-3

Since its introduction in the early 70's, PASCAL has gained popularity in both scientific and business applications due to its combination of "structured" control facilities, powerful data structures, and simplicity of expression. PASCAL can serve as an introduction to advanced programming techniques. This course is intended for students who have already had an introductory course in high level language programming.

Prerequisites: Any high level language such as BASIC, COBOL, etc. Lab

fee charged.

1138 Introduction to Computer Graphics and Modeling 2-2-3

The hardware, software, and data structure considerations for utilizing ready made graphics packages; the mathematical and programming techniques for displaying and manipulating graphical objects; the fundamentals and limitations of mathematics and computer algorithms for development of modeling and graphics programs.

Prerequisites: BASIC or FORTRAN. Lab fee charged.

1139 Introduction to XENIX/UNIX 2-2-3

XENIX is Microsoft's adaptation of the UNIX operating system for microcomputers. Highly regarded for its power and portability, UNIX systems have been implemented in micro-, mini-, and mainframe environments. This course introduces the tree-type file system, basic I/O, system commands, and shell programming. Familiarity with these techniques is ensured through laboratory exercises.

Prerequisites: Some programming experience. Lab fee charged.

1140 Introduction to Linear Algebra 4-0-4

Review of the basic laws of algebra. Polynomials, quadratics, exponents and roots. Linear equations and inequalities. Sets and set operations. Linear and polynomial functions. Students should register for this course after taking the math placement test.

Prerequisites: 0024 or equivalent. No lab fee charged.

1141 Matrix Algebra 4-0-4

Selected topics from business and banking applicable to matrix modeling. Matrix operations. Systems of linear functions. Systems of linear functions. Systems of linear inequalities. Linear programming techniques.

Prerequisites: 1140 or equivalent. No lab fee charged.

1142 Probability and Introduction to Quantitative Analysis 4-0-4

Definition of Qualitative analysis, its development and typical applications. Probability; basic concepts, classical, conditional, Bayes Theorem, expectations, binomial distribution. Normal distribution, definition of quantitative analysis, introduction to decision making. Forecasting, data analysis.

Prerequisites: 1140 or equivalent. No lab fee charged.

1143 Quantitative Approach to Operations Research 4-0-4

Decision Theory, Model Construction: network, transportation, simplex and other programming, dynamic programming, queuing, Markov analysis, past, present, future methods.

Prerequisites: 1141 and 1142 or equivalent. No lab fee charged.

1150 Introduction to Science Mathematics 4-0-4

Fundamental skills of mathematics as applied to the Health profession: interpretation of data and calculations, decimals, fractions, ratios and proportions, percents; measurement calculations and conversions: English, metric, S.I., Apothecary, household, temperature, medical dosages, concentrations, etc. Offered as either independent study or traditional lecture.

Prerequisites: Math Placement Test. No lab fee charged.

1151 Pre-Calculus Math: Algebra 4-0-4

Properties of real numbers and algebraic expressions, algebraic operations, functions, simultaneous equations, determinants, exponents and roots, inequalities.

Prerequisites: High school algebra. No lab fee charged.

1152 Pre-Calculus Math: Trigonometry 4-0-4

Basic geometric concepts, trigonometric functions, radians and circular functions, angles in various quadrants, right and oblique triangles, trig. identities and equations, inverse trig. functions, polar coordinates.

Prerequisites: 1131 or 1151. No lab fee charged.

1153 Elementary Analysis 4-0-4

Review of coordinate systems, exponents, fractional expressions, linear and quadratic equations and inequalities. Functions and their graphs, variation, rational functions, exponential and logarithmic functions, conic sections.

Prerequisites: Two years of high school math. No lab fee charged.

1154 Calculus I 4-0-4

Functions and functional notation, limits and continuity. Tangents, slope and the derivative. Basic derivative operations. Maximum and minimum values and inflection points. Related rates. The antiderivative, indefinite and definite integrals, area under a curve.

Prerequisites: 1153. No lab fee charged.

1155 Calculus II 4-0-4

Review. Derivatives of implicit functions. Area between curves. Derivatives and integrals of trigonometric, logarithmic and exponential functions. Integration by parts, by separation of variables, by trigonometric substitution. Partial derivatives. Multiple integration.

Prerequisites: 1152, 1154. No lab fee charged.

1170 Introduction to Technical Mathematics

4-0-4

Calculations using signed numbers, decimals, roots, powers, scientific notation, empirical data, dimensional unit conversions, proportions, formulas. Manipulation of formulas and equations. Reading and using various measuring devices. Deciphering angular and parallel relationships. Using geometric and trigonometric relationships. Applications using the tools of many engineering technologies: diagrams, formulas, graphs, meters, micrometers, calipers, etc. Students should expect to purchase a scientific calculator for the second half of the course. Offered as either independent study or traditional lecture.

Prerequisites: 0020, 0024 or equivalent. No lab fee charged.

1171 Technical Mathematics I

4-0-4

Order of calculation, scientific notation, rounding off, measurement conversions, formula and equation manipulation, ratio and proportion, direct and inverse variation, area and volume calculation, simultaneous equations, similar triangles and right triangle trigonometry. Applications on the Ohm's Law, pulley and gear speed ratios, horsepower, torque, tapers, components of forces, etc. Students in this sequence should expect to use a scientific calculator.

Prerequisites: 1170 or equivalent. No lab fee charged.

1172 Technical Mathematics II

4-0-4

Logarithmic and exponential functions, Law of Sines, Law of Cosines, complex number operations, the quadratic equation, force and phasor systems, applications include concepts from 1171, Kirchoff's Laws, mechanical systems in equilibrium, density, specific gravity, area and volume viewed as functions of dimensions, radian-degree conversions, interpolation of tabular data, etc.

Prerequisites: 1171. No lab fee charged.

1173 Technical Mathematics III

4-0-4

Introduction to Analytic Geometry, manipulation and graphical analysis of trigonometric, logarithmic, quadratic, power functions, etc Three dimensional functions and figures, Statistics, Introduction to Boolean Algebra (optional). Applications using Gas Laws, power ratio/decibel conversions, A.C./D.C. circuit analysis, empirical data analysis.

Prerequisites: 1171, 1172. No lab fee charged.

1179 Introduction to Applied Statistics

4-0-4

Descriptive and inferential statistics—application oriented. Organization of data including mean, median, standard deviation, Z scores, etc.—including graphical displays. Probability and probability distributions (binomial, normal, etc.) Testing hypotheses concerning means and proportions. Linear regression ("forecasting") and correlation. Sampling techniques including determination of sample size.

Prerequisites: College Algebra. No lab fee charged.

1180 Applied Statistical Analysis

4-0-4

A continuation of the applied statistical topics presented in course 1179. Testing statistical hypotheses concerning two or more samples, analysis of variance (ANOVA), experimental design, multiple regression, reliability, and nonparametric statistics, etc. A final project consists of a complete statistical study from design to collection of data to analysis to typewritten report with graphics. A scientific calculator with STAT capabilities is required.

Prerequisites: 1179. No lab fee charged.

1191 Algebra and Trigonometry I

4-0-4

Order of calculations, meaning of equations, trigonometric ratios, oblique triangle trig, geometric design, equation manipulation, exponents and roots, simultaneous linear equations, introduction to Boolean Algebra. Some applications using series and parallel circuits, forces on mechanical systems. Students enrolled in this course should expect to utilize an electronic calculator having Scientific Notation, Trig and Log functions.

Prerequisites: 1170 or equivalent. No lab fee charged.

1192 Algebra and Trigonometry II

4-0-4

Common logarithms and natural logarithms, exponential equations, Trigonometric graphs, identities and equations, direct and inverse variation, quadratics, complex numbers. Applications to power conversions, radian-degree conversions, pulley and gear speed-ratios, vibrations, resolutions of logic networks. Students enrolled in this course should expect to utilize an electronic calculator having Scientific Notation, Trig and Log functions.

Prerequisites: 1191. No lab fee charged.

1193 Analytic Geometry & Calculus I

4-0-4

Topics from analytic geometry involving conic sections, etc. Graphs of some first and second degree functions, derivative concept, applications of derivatives including related rates, maximum and minimum points. Indefinite and definite integrals with applications including areas and vol-

umes. Students enrolled in this course should expect to utilize an electronic calculator having Scientific Notation, Trig, and Log functions.

Prerequisites: 1192. No lab fee charged.

1194 Analytic Geometry & Calculus II

4-0-4

A continuation of Analytic Geometry and Calculus I. Derivatives and integrals of transcendental functions. Integration using Integral Tables. Double integration. Partial derivatives with applications including Least Squares Curve Fitting. Integration using the computer. Students enrolled in this course would find a pocket computer helpful. The student should expect to utilize an electronic calculator having Scientific Notation, Trig, and Log functions.

Prerequisites: 1193. No lab fee charged.

1195 Analytic Geometry & Calculus III

4-0-4

A continuation of Analytic Geometry and Calculus II. Maclaurin Series Expansions and Taylor, Fourier Series; 1st Order Differential Equations, Linear Differential Equations and Applications; 2nd Order Differential Equations; Repeated Roots and Nonhomogeneous Equations; Numerical Methods; Laplace Transforms.

Prerequisites: 1194. 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 Physical Sciences/Mathematics Technologies. (Grades S or U.)

Prerequisites: None. No lab fee charged.

1201 Private Police Officer Training Course

4-8-8

This complete 120-hour training course fulfills the requirements for certification for Peace Officers Training Council for Private Security Police.

Prerequisites: None. Lab fee charged.

1202 First Aid

3-0-3

First-aid instruction including Red Cross Multi-Media Standard First Aid course, including instructor's certification; CPR instruction, including instructor's certification.

Prerequisites: None. 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.

Prerequisite: None.

1204 Personnel Security Systems

2-3-3

All areas to be secured require organization of system, manpower and equipment. This course describes types of physical equipment needed to provide security in three lines of defense.

Prerequisites: None. 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 I

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 II

3-0-3

This covers all areas dealing with Ohio codes and statutes (H.B.511).

Prerequisites: None. No lab fee charged.

1210 Introduction to Loss Control & Security Administration

3-0-3

An overview of the significance of security and loss prevention programs in areas of industrial business and government complexes. Review of examples of effective loss control programs in existence; a study of career opportunities in the field, personnel requirements, standards, and current remuneration levels.

Prerequisites: None. No lab fee charged.

1211 Industrial Security

3-0-3

A study of every area of industrial security...to recognize and prevent threats to key industry from violence, sabotage, and espionage.

Prerequisites: None. No lab fee charged.

1213 Hospital Security

3-0-3

Develop a concept of security in the health care environment and provide sufficient operational details to make possible the establishment of a protection system or the refinement of existing systems.

Prerequisites: None. No lab fee charged.

1216 Security Administration I 3-0-3

A study of security problems: Loss prevention to increase a business profit; areas covered include shoplifting, robbery, burglary, forgery and identification, apprehension and prosecution of people.

Prerequisites: None. No lab fee charged.

1217 Security Administration II 3-0-3

An analysis of special internal problem areas, particularly employee theft.

Prerequisites: None. No lab fee charged.

1218 Executive Protection 3-0-3

This course will provide participants with an understanding of terrorism and the threat it poses to business people, government representatives and other professionals and the companies they represent. It explains modern terrorism, the general characteristics of terrorist organizations and their members, their motivation, strategy tactics and modus operandi and activities of specific groups that target business interest. Particular attention is paid to the lessons learned from past terrorist operations, so that personal, family and corporate security is improved.

Prerequisites: None. No lab fee charged.

1220 Fundamentals of Fire Protection 3-0-3

This course deals primarily with fires, fire fighting equipment, and how to properly use or apply this equipment...setting up fire brigades, train, and use them.

Prerequisites: None. Lab fee charged.

1224 Fundamentals of Fire Prevention 3-0-3

Organization and function of the fire prevention organization; chemistry of fire; inspections, surveying and mapping procedures, recognition of fire hazards, engineering a solution of the hazards, enforcement of the solution. Public relations as affected by fire prevention efforts.

Prerequisites: 1220. Lab fee charged.

1230 Safety Management 3-0-3

Organization of safety and accident prevention programs. Study of leading causes of business and industrial accidents. The principles of cause analysis and scientific accident prevention.

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.

1234 O.S.H.A. I (Occupational Safety & Health Act) 3-0-3

To familiarize the student with the functions, terminology, and procedures of the Occupational Safety and Health Act.

Prerequisites: None. No lab fee charged.

1235 O.S.H.A. II (Occupational Safety & Health Act) 3-0-3

A study of the Federal Register.

Prerequisites: None. No lab fee charged.

1236 Vehicle Safety 3-0-3

A study and analysis of the problems and practices of motorfleet and industrial vehicle safety programming and hazardous situations, such as tow motors, trucks, and forklifts.

Prerequisites: None. No lab fee charged.

1237 Safety Training Methods and Techniques 2-3-3

To equip the student with proper techniques for teaching employees, supervisors or upper-level management who are concerned with the development of in-depth training programs. To equip the student with communication skills and the management functions of safety.

Prerequisites: None. No lab fee charged.

1238 Ergonomics 3-0-3

The scientific approach to problems of design and construction of machines vs. man's human factors engineering. The stress of machines on the human body.

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.

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 folders, broadsides

and booklets.

Prerequisites: None. Lab fee charged.

1402 Typography 2-6-4

History of the alphabet; evolution and development of movable type. Methods of typesetting - hand and machine composition. Copyfitting of text matter to space allocation. Basic requirements of hot metal, punched tape for cold composition (photographic and strikeon composition), hot metal and cold type display for composition.

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.

Prerequisite: None. Lab fee charged.

1405 Proofreading and Copy Preparation 2-0-2

Checking the typesetter's work; use of special symbols to mark changes, corrections, additions, or eliminations. How to check copy for errors. Duties of the proofreader and the copyholder. Reference books for the proofreader. Rules of syllabication of words. Acquiring speed and accuracy in proofreading.

Prerequisites: None. No lab fee charged.

1410 Machine Composition and Newspaper Designing 1-9-4

An extended study of various typesetting machines, both magnetic tape controlled and punched tape controlled, utilizing hot metal machines. Analysis, evaluation and recommendations based on individual research in order to select the best method for a particular kind of work. The basic operations of manually operated machines are also investigated. Fundamentals and techniques of sound newspaper designing are presented through general problems of page size, news head selection, from page make-up, illustration, etc.

Prerequisites: 1402. 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 phototypesetting; photo-lettered displays. Principles and operation of various keyboards. The use of electronics, computers, and tape operated controls.

Prerequisites: 1402. 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 I 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 II 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. Advanced 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 press-room 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, ie, 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' catalogues and price books.
Prerequisites: 1449. No lab fee charged.

1460 Bindery Method/Procedures 2-3-3
Drilling, stitching and cutting. Investigations into the more complex operations of page imposition. Automatic signature assembly and book finishing. Automatic tape operated cutters demonstrated and explained. Automatic folders with pile feed and continuous feed.
Prerequisites: None. Lab fee charged.

1480 Photolithography I 2-3-3
Types and uses of photo-copy and process camera. General and special uses of films. Uses of precise measuring darkroom instruments. Dark-room techniques. Making line and half-tone negatives. Comparing and making single color proofs. Simple stripping.
Prerequisites: None. Lab fee charged.

1481 Photolithography II 2-3-3
Follow-up of Photolithography I using advanced techniques. Making color separations and color proofs. Stripping techniques related to multi-color jobs.
Prerequisites: 1480 or 1482. Lab fee charged.

1482 Flexo Photography 2-3-3
Introduction to types of camera copy and styles of process cameras. General and special use of films. Uses of precise measuring darkroom instruments. Learn how to calculate distortion factors for negatives to produce flexo plates. Darkroom techniques. Making line and halftone negatives. Produce single and multi-color proofs.
Prerequisites: None. 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: Internal World 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: External World 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: None. No lab fee charged.

1507 The Psychology of Color 2-2-3
The meaning of color is studied as it relates to its perceptual impact on people. Colors will be analyzed for their subliminal message and significance. The physics of light and the chemistry of inks will be contrasted and discussed. Cultural differences and the symbolism of color will also be presented. Even a color test will be used to analyze the psychosocial conflicts in students' lives. People who must select and/or use colors for sales marketing or graphic designing may be interested in this course.
Prerequisites: 1505 or 1506 recommended. No lab fee charged.

1508 Child Psychology 3-0-3
The child's life 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 recommended. No lab fee charged.

1509 Psychology of Human Development- Adolescence Through Aging 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: None. 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 applied coping techniques for effective management of typical on-the-job crises for managers. This course encompasses communication principles and techniques, control of stressful situations, developing coping techniques and role playing of pertinent management situations.
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.

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.

1531 Introduction to Political Science 3-0-3
A survey of the nature of political science; its various branches; methods of analysis used; basic characteristics and problems of government and politics; the theories and practices which describe and explain man's behavior in the national and international community.
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.

1536 Practical Government: Dealing with Regulatory Agencies 3-0-3
Introduces students to the practical workings of typical government agencies that average citizens must deal with during their lives. Agencies to be covered include U.S. Department of Labor, Equal Employment Opportunity Commission, Social Security, and the Veterans' Administration.
Prerequisites: None. No lab fee charged.

1539 Public Policy and the American Worker 3-0-3
Covers three major areas of concern to the worker - Collective Bargaining Rights, Employment Rights and Workplace Protection - from the view-

point of management and labor. Topics include EEO, Workers Compensation, OSHA, Bargaining, Hiring and Firing Laws, etc.
Prerequisites: None. No lab fee charged.

1541 Role of the Army Officer 1-1-1
Introduces the student to the ROTC Program and gives the student a better understanding of the role of the military structure. Benefits and requirements of the ROTC Program are discussed.
Prerequisites: None. No lab fee charged.

1542 Introduction to Leadership 1-1-1
Study and application of basic principles and techniques of counseling, communication skills and human relations skills.
Prerequisites: None. No lab fee charged.

1543 Fundamentals of Leadership 1-1-1
Introduces the student to a better understanding of organizational leadership. Improves the student's understanding of sociological and psychological influences on human behavior. It discusses human needs, motivation, and the nature of groups and members of the groups. Emphasis is placed on application in the military.
Prerequisites: None. No lab fee charged.

1546 Leadership in Small Unit I 1-1-1
This course emphasizes the functional approach to the study of leadership. The course is composed of lecture and discussion. The course also contains an introduction to the basic organization of Army units, Company, Platoon and Squad. This knowledge will assist the students in further studies and also enable them to understand the organizational structure of the Army at small unit level.
Prerequisites: 1541, 1542, 1543. No lab fee charged.

1547 Leadership in Small Unit II 1-1-1
Provide the student with information on leadership topics through lecture, conference and analytical discussions of prerecorded TV tapes. Also during this course, students will review and expand upon basic map reading knowledge.
Prerequisites: 1541, 1542, 1543. No lab fee charged.

1548 Today's Army 1-1-1
This course is designed to give the student an overview of today's Army and show the trends in improving the quality of the soldier's life. It explains the mission, organization, and deployment of the regular and reserve Army forces. Each student will have the opportunity to familiarize himself with Army career fields, customs and traditions of military service, service benefits, and the Army Officer as a professional.
Prerequisites: 1541, 1542, 1543. No lab fee charged.

1599 Special Problems in Social Science 1/5-0-1/5
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.

1701 Introduction to Data Processing 3-0-3
This course is designed to provide first-term students with an overview of the entire field of data processing. Terminology and concepts for hardware and software are introduced. Future trends are discussed.
Prerequisites: None. No lab fee charged.

1702 Introduction to BASIC Programming 2-3-3
This course is designed to provide first-term students with an introduction to the BASIC language and programming techniques.
Prerequisites: High school typing or 3001. Corequisites: 1701, 1721. 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.

1712 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.

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 and the BASIC language is used to reinforce the concepts covered in the course. Typical business applications are assigned as problems.
Prerequisites: "C" or better in 1701. Lab fee charged.

1722 Advanced BASIC Programming 2-3-3
The full range of BASIC language instructions and coding techniques are introduced with programs written using DASD, screen formatting, and table processing. All programs are tested and thoroughly documented. Program linkage and operating systems are introduced.
Prerequisites: "C" or better in 1701, 1721 and 1702. Lab fee charged.

1723 Assembler Language I 2-4-4
The first course in assembler coding techniques utilizing micro-computer 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 Peripheral-Equipment Operations 2-3-3
Instruction is given in the operating procedures of both on-line and off-line equipment. Laboratory work will reinforce the above instruction by providing exposure to normal operator maintenance functions.
Prerequisites: "C" or better in 1701 and 1711. Lab fee charged.

1732 Microcomputer Systems 3-0-3
This course is meant to fulfill the need for students majoring in the area of data processing. It will make the student aware of the potential of the microcomputer with much hands-on experience with actual microcomputers.
Prerequisites: "C" or better in 1701 or 1850. Lab fee charged.

1739 Operating Systems 2-3-3
The standard functions of supervisory routines, including introduction to: run control, I/O 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 I 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 II 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 COBOL Programming I 3-7-6
COBOL programming with emphasis on American National Standard compatibility. The student will write several programs ranging from basic to complex using punched card, magnetic tape, and sequential disc files.
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 telecommunications 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 I 3-2-3
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: 15 credit hours of CISP courses. Lab fee charged.

1761 Introduction to RPG II 3-7-6
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 COBOL Programming II 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 3-7-5
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. Lab fee charged.

1764 Data Communications II 3-2-4

The course is designed to follow 1754 Data Communications I. The student will understand how communication protocols operate and how Local Area Networks and office automation are designed and installed. These concepts will be reinforced by practical laboratory problems.

Prerequisites: 7702, 1754. 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.

1772 Programming Technical Mathematics 3-2-3

Terminology and basic concepts of automation. Introduction to Fortran programming and its application to the applied sciences. Laboratory experience in writing programs.

Prerequisites: None. Lab fee charged.

1773 Data Preparation & Control 2-1-2

Instruction is given in the efficient coding and editing of source documents and use of desk controls applied to data processing documents. Input-output control functions are emphasized. Laboratory work will reinforce above instruction.

Prerequisites: 1711. No lab fee charged.

1781 Advanced RPG II 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.

1782 Installation Management 3-0-3

Instruction in basic management principles leads to detailed analysis of the data processing environment and effective methods of managing it.

Prerequisites: None. No lab fee charged.

1783 Research Project 1-3-2

Independent research is conducted by each student. The only limitations applied are that the research must be directly related to data processing and must not concern itself directly with any other material covered by the curriculum.

Prerequisites: 15 credit hours of 1700 courses, including 1701 and 1721. No 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: 1746, 1771. Corequisites: 1752. Lab fee charged.

1798 Survey of Data Processing 2-1-2

Terminology and basic concepts of data processing with emphasis on the application of the electronic computer system.

Prerequisites: None. No lab fee charged.

1799 Survey of Data Processing 4-1-4

Introduction to the three principal data processing systems; manual, unit record, and electronic computer, with practical applications.

Prerequisites: None. 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 Salesmanship 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.

1811 Introduction to Salesmanship 4-0-4

Provides broad preparation in the principles and practices of professional selling. Also helps to round out the education for those students whose major interest is in some other area of marketing.

Prerequisites: None. No lab fee charged.

1812 Salesmanship II 2-0-2

Study of the selling process. A point by point observation of the steps of a sale and an introduction to industrial and wholesale selling.

Prerequisites: None. No lab fee charged.

1813 Industrial Sales 3-0-3

Emphasis on salesmanship fundamentals as they apply to industrial selling. Discuss company, customer and product knowledge; the selling formulas and techniques and building of goodwill; confidence in self, product and company.

Prerequisites: None. No lab fee charged.

1814 Case Studies - Industrial Sales 3-0-3

A course concentrating on the analysis of cases involved in various selling situations. Cases will involve an analysis of sales marketing areas including consumer behavior, product strategy, distribution, promotional and pricing strategy.

Prerequisites: Completion of 1846, 1847, 1813, 1817 or by permission of coordinator. No lab fee charged.

1815 Audiovisual Sales Techniques 3-2-4

Planning and executing sales presentations using audiovisual media. Emphasis is placed on video camera/playback equipment and other equipment employing sight and sound.

Prerequisites: None. 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.

1820 Sales Management 3-0-3

A study of the many and varied duties and responsibilities of the sales manager including selection of sales personnel, leadership, records, and reports, training, motivation, as well as the sales function in the structure of the company.

Prerequisites: None. No lab fee charged.

1823 Business Law I 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 II 3-0-3

A continuation of Business Law I 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 Personnel 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.

1836 Principles of Wholesaling 3-0-3

A comprehensive analysis of the wholesaling function and guidance in the treatment of practical difficulties that arise in the course of applying textbook principles to operational situations.

Prerequisites: None. No lab fee charged.

1840 Retail Merchandising & Operations 4-0-4

Presents a meaningful and realistic body of information about the complex and dynamic field of merchandising and operations as it pertains to retailing.

Prerequisites: Completion of 1845 or by permission of coordinator. No lab fee charged.

1842 Advertising & Display 3-2-4
Advertising media and their effects upon business. Practical applications of display theories as they relate to window and internal displays. Display and its relation to interior decorating and design.
Prerequisites: None. 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 midmanagement employment. Case studies are introduced to give the students practical operating experiences.
Prerequisites: None. No lab fee charged.

1846 Industrial Product Marketing I 3-0-3
Study of the nature and characteristics of industrial markets, procedures involved in industrial purchases and sales, psychology in industrial buying, distribution channels, and service policies and operating plans.
Prerequisites: None. No lab fee charged.

1847 Industrial Product Marketing II 3-0-3
Techniques for pricing industrial products and services; product line planning; product policy, short-range and long-range planning; market research and development.
Prerequisites: Completion of 1846 or by permission of coordinator. No lab fee charged.

1850 Computerized Business Applications 2-3-3
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: None. Lab fee charged.

1851 Auditing 3-0-3
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.

1852 EDP & Auditing 2-3-3
A study of methods of accounting control and the application of computerized audit techniques. The person taking this course is one of two types: (1) a practicing auditor or manager with a limited background in computers; or (2) a student usually of fourth or fifth term standing.
Prerequisites: 1851. Lab fee charged.

1860 Management Software for Professionals 2-2-3
Microcomputer applications for small to large-scale businesses. Specific areas to be studied include dBase II, Lotus 1-2-3 and Multimate Word Processing as well as other special application packages.
Prerequisites: Basic knowledge of microcomputer operations. 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: 1850 or 1860 or permission of instructor. Lab fee charged.

1999 Special Problem Seminar Var-Var-Var 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.

2000 Industrial Hygiene Recognition 3-0-3
Recognition of environmental factors and stresses which influence health.
Prerequisites: None. No lab fee charged.

2010 Industrial Hygiene Measurements 2-3-3
Gas and vapor volume calculations and sampling, sampling for particulates, air flow measurements and quality standards, toxic concentrations. To include: area ventilation, heat stress, noise characteristics, electromagnetic energy measurements and illumination.
Prerequisites: 2000. Lab fee charged.

2011 Industrial Hygiene Control 3-1-3
General methods of controlling environmental factors and stresses which influence health.
Prerequisites: None. No lab fee charged.

2199 Special Problems Seminar Var-Var-2/4
Individual and independent study and special projects pertaining to the

particular technology in which the student is enrolled. Open to fourth and fifth term students, by special arrangement with the coordinator and division dean.

Prerequisites: None. No lab fee charged.

2200 Basic Chemistry 3-2-4
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; radioactivity; 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.)
Corequisites: 1150 or 1170 (Competency test may be waived.) Lab fee charged.

2209 Technical Chemistry Survey 3-2-4
Substances, pure and impure; chemical bonding; crystals; chemical reactions; acids and bases; oxidation and reduction; polymer formation.
Prerequisites: None. Lab fee charged.

2221 Technical Physics I 2-3-3
Fundamental principles of heat and electricity treated with emphasis on heat, electronic theory, circuits and instruments with special application to everyday devices such as the motor vehicle. Students enrolled in this course should expect to spend at least two hours per week gaining actual hands-on laboratory experience.
Prerequisites: None. Lab fee charged.

2222 Technical Physics II 2-3-3
Fundamental principles of mechanics, treated with emphasis on the kinematics and dynamics of machines and fluids with special application to everyday devices such as the motor vehicle. Students enrolled in this course should expect to spend at least two hours per week gaining hands-on laboratory experience.
Prerequisites: None. Lab fee charged.

2223 Technical Physics III 2-3-3
Structure of matter; density; pressure; buoyancy; streamlining; temperature scales; expansion; molecular energy; airfoils; specific heat; change of state; heat combustion; energy conversion; heat engines; ideal gases; laws of thermodynamics; properties of waves; doppler effect; electromagnetic waves.
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 or 2200. 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.

2241 College Physics I 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 II 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 I 3-2-3
Selected topics as applied to the allied health profession. Pressure forces and addition of vector quantities pertaining to biological systems; properties of waves, including frequency, wavelength, speed, amplitude, reflection, and refraction; optical instruments, including basic principles

of geometric optics; atomic spectra and spectroscopic techniques; electromagnetic radiation, including basic sources and detection schemes of IR, UV, visible, x-ray, and gamma radiation; fundamental nuclear particles and applications of nuclear techniques both as diagnostic and therapeutic tools; fundamentals of basic electricity, including current, resistance, simple DC circuits, potentiometer, transformer, and simple amplifier circuits; simple schematics, and basic components of various medical instruments.

Prerequisites: 1151. Lab fee charged.

2245 Health Physics II 5-2-3

Selected topics from those not covered in course number 2244.

Prerequisites: 2244. Lab fee charged.

2261 Printing Science I (Chemistry) 3-2-4

Concepts of chemistry related to production procedures, converting raw materials to finished product in the graphic communication field. Students enrolled in this course should expect to spend at least two hours per week gaining actual hands-on laboratory experience.

Prerequisites: None. Lab fee charged.

2262 Printing Science II (Physics) 2-3-3

Fundamental principles of mechanics, heat, color and electricity with special applications to the field of graphic communications. Students enrolled in this course should expect to spend at least two hours per week gaining actual hands-on laboratory experience.

Prerequisites: None. 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: 1170 or 1150. Lab fee charged.

2291 Physics I 3-2-3

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 II 3-2-3

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 III 3-2-3

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 IV 3-2-3

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.

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 Physical Science/Mathematics Technologies. (Grades S or U.)

Prerequisites: None. No lab fee charged.

2501 Automotive Technology I 5-10-8

Principles of the internal combustion engine. Repair and rebuilding modern automotive engines, including valves, rings, bearings, cooling and lubrication systems. Emphasis on the proper use of hand tools and special equipment.

Prerequisites: None. Lab fee charged.

2502 Automotive Technology II 5-10-8

Principles of carburetion; cleaning, rebuilding and adjusting representative types of carburetors and other fuel components. Fundamentals of auto electrics; construction, operation and repair of the electrical system, including batteries, ignition, starting, generating and accessory circuits.

Prerequisites: None. Lab fee charged.

2503 Automotive Technology III 2-8-5

Fundamentals and repair of the automobile chassis; includes suspension, braking system, steering and ventilation systems. Emphasis on the use of special equipment used to measure, repair and adjust these units.

Prerequisites: None. Lab fee charged.

2504 Automotive Technology IV 2-8-5

A study of the design, construction, operation and servicing of automotive drive line components. These components include clutches, transmissions, rear axles and differentials.

Prerequisites: None. Lab fee charged.

2505 Automotive Technology V 5-10-8

Automotive service and troubleshooting. Procedures and techniques for diagnosing and repairing electrical, engine and carburetion problems. The latest types of automotive testing equipment are studied together with standard repair procedures as practiced in the modern automotive shop. Work will be performed on live equipment.

Prerequisites: None. Lab fee charged.

2506 Machine & Hand Tool Lab 3-2-3

Principles and processes which underlie the use of hand tools, cutting tools, portable equipment and accessories, measuring devices and gauges. Emphasis is placed on developing sound trade judgement, safe work habits and correct work procedures.

Prerequisites: None. Lab fee charged.

2508 Techniques of Welding 1-4-2

Fundamental understanding and skill in the use of oxyacetylene. Arc welding and cutting equipment is developed. Such typical operations as butt, lap and fillet welds and the making of a bead are performed.

Prerequisites: None. Lab fee charged.

2510 Automotive Management I 2-3-3

Organization, design, layout, administration and operation of an automobile dealership, trucking company or automotive leasing operation. Recruiting, hiring and retaining personnel.

Prerequisites: None. No lab fee charged.

2511 Automotive Management II 2-3-3

A continuation of Automotive Management I. Engineering traffic flow, building parts and accessory sales, customer relations, measuring local parts and accessory market. Service selling and automotive warranties.

Prerequisites: None. No lab fee charged.

2801 Food & Beverage Sanitation, Safety, Service 3-0-3

History, objectives, economics, scope and social importance of the industry. Emphasis on sanitation and safety techniques in the kitchen with lab experience. Students in the Chef Apprenticeship program may elect to take OJT in lieu of lab.

Prerequisites: None. No lab fee charged.

2802 Food & Beverage Cost Controls 3-0-3

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: 2801, 2911. No lab fee charged.

2803 Menu Production & Purchasing 3-0-3

Examination & production of a full service menu to develop a food service purchasing system.

Prerequisites: 2801 2802. No lab fee charged.

2804 Catering Banquets Beverage Management 3-0-3

To give a comprehensive study of a hotel banquet and catering operation. This course also involves actual situations related to pricing and profit, beverage personnel job descriptions, beverage terms, merchandising, liquor laws, equipment, and profits.

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: 1001, 1002, 1021, 2804. No lab fee charged.

2806 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. Lab fee charged.

2807 Basic Foods for Hotel/Restaurant 2-4-3

Through lab and lecture, you will gain knowledge of basic foods including sauces, soups, fish, meats, simple desserts, breads, vegetables, potatoes, starches, culinary terms, and menu preparation.

Prerequisites: None. Lab fee charged.

2808 Food and Beverage Lab I 0-4-1

A practical application of service and kitchen duties in a full service restaurant.

Prerequisites/Corequisites: 2801. Lab fee charged.

2809 Food and Beverage Lab II 0-4-1

A practical application of service and kitchen duties in a full service restaurant.

Prerequisites: 2801, 2808. Lab fee charged.

2811 Introduction to Hotel-Motel 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 and Night Audit 3-2-3

Procedures

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 Hotel Executive Housekeeping 3-2-3

Studies in housekeeping and its administration, control of supplies, 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.

2815 Principles and Practices of Hotel Management 3-0-3

A study of the nature of management: planning, organizing, controlling, standards and appraising, communications, motivations, and decision making in the hotel industry.

Prerequisites: None. No lab fee charged.

2821 Sales Techniques 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 I 2-4-3

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 II 2-4-3

Basic classical soups, salad making, basic meat, fish and poultry, basic baking, confectionery, menu planning.

Prerequisites: None. Lab fee charged.

2824 Chef Advanced Cookery I 2-4-3

Through lab and lecture, you will gain a working knowledge of the following: classical soups, sauces, classical meat, poultry, fish dishes, game manger, buffet work.

Prerequisites: None. Lab fee charged.

2825 Pastry & Confectionery 4-8-6

Through lab and lecture, you will gain a working knowledge of the following: pastry and confectionery for the hotel and restaurant industry, dessert menu planning, correct orientation and familiarization with the patisserie environment, all basic pastry preparations and applying them to classical dessert making.

Prerequisites: 2822. Lab fee charged.

2826 Classical Cookery 4-8-6

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: 2825. Lab fee charged.

2827 Butchery & Fish Management 2-4-3

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: None. Lab fee charged.

2901 Principles of Marketing I 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 II 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.

2904 Office Management 3-0-3

Administrative management and organization of office departments; methods used in selection and training of office personnel, office planning and layout, cost controls, types and uses of office appliances, office forms, and an analysis of office procedures.

Prerequisites: 1832. 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.

2906 Credit & Collections 3-0-3

Sources of credit information, understanding credit and alternatives to successful collections including procedures of small claims courts, bankruptcy and court settlements. Study of types of credit, analyzing credit and computation of the dollar cost of credit, aging accounts receivable, telephone collections, collection letters and personal contact collections, including repossession procedures.

Prerequisites: 2960. No lab fee.

2907 Introduction to Marketing 4-0-4

For students who take only a first course and for those who elect to major in the discipline. Teaches the fundamentals of marketing in an interesting, challenging, and rewarding way. Focuses on key concepts of marketing.

Prerequisites: None. No lab fee charged.

2908 Case Studies in Marketing 4-1-4

Case studies of companies - some strategies that failed along with those that succeeded. Teaches students to make decisions based on facts given to achieve company goals.

Prerequisites: Completion of 2907 or by permission of coordinator. No lab fee charged.

2909 Office Accounting I 3-2-3

Principles and practices of basic accounting for the student who is required to complete only one term of accounting or needs 2910. Includes recording and accumulating financial events, preparation of statements, adjustments and cash and banking procedures. Limited to a study of service enterprises.

Prerequisites: None. No lab fee charged.

2910 Office Accounting II 3-2-3

A continuation of the concepts developed in 2909. Topics include account receivables, account payables, comprehensive practice set.

Prerequisites: 2909. No lab fee charged.

2911 Principles of Accounting I 3-2-3

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: None. Lab fee charged.

2912 Principles of Accounting II 3-2-3

A continuation of Principles of Accounting I. 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. Lab fee charged.

2913 Principles of Accounting III 3-2-3
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. No lab fee charged.

2914 Cost Accounting I 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: 2913. No lab fee charged.

2915 Cost Accounting II 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 I 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 II 3-0-3
A study of Federal Taxation dealing with advanced topics, partnerships and corporations.
Prerequisites: 2917. No lab fee charged.

2919 Intermediate Accounting I 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: None. No lab fee charged.

2920 Intermediate Accounting II 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.

2927 Security Management 3-0-3
The emerging role of security management in the modern organization. Organization of the internal structure of the security department and the roles and responsibilities of director, supervisors, and individual employees. Planning, budgeting, inspections, evaluation of countermeasures, investigations, office administration, and public relations.
Prerequisites: 2926. No lab fee charged.

2928 Hotel-Restaurant Accounting 3-0-3
Capital expenditures for fixed assets of a hotel or motel, prepayments and deferrals of income and expenses, analysis of accounts receivables and uncollectibles, break-even analysis related to room occupancy, purpose of the night audit, and the uniform account classification prevailing in the hotel-motel industry.
Prerequisites: 2912. No lab fee charged.

2929 Audit Procedures and Operations 3-0-3
Practical operating procedures of the NCR 4200 in performing night audit. Operation of posting machines and peripheral office equipment.
Prerequisites: None. No lab fee charged.

2930 Hotel-Restaurant Case Studies 3-0-3
A series of case studies in the hospitality industry involving daily management decisions. Studies include, but not limited to, financing, forecasting, budgeting, line and staff organization, and decision making.
Prerequisites: 2815. No lab fee charged.

2931 On-Site Property Management I 3-1-3
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 II 3-1-3
Continuation of course 2931, practical methods for successful management of property at the on-site level. This course encompasses management planning, personnel & resident policies, accounting & budgeting, legal aspects, insurance, marketing, leasing & sales, maintenance management and energy conservation.
Prerequisites: 2931. No lab fee charged.

2933 Executive Level Property Management I 3-1-3
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 & financial analysis, developing and managing apartments, offices, shopping centers, condominiums and cooperatives, and developing the management plan.
Prerequisites: None. No lab fee charged.

2934 Executive Level Property Management II 3-1-3
This course is a continuation of course 2933, techniques for successful management of property at the executive level. It encompasses the objectives of ownership, forms of ownership, real estate finance methods, valuation of property, present value theory, depreciation and tax considerations, cash flow projections and the management plan.
Prerequisites: 2933. 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.

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.

2944 Accounting Information Systems 3-0-3
This course takes the viewpoint that it is the company's responsibility to design an accounting system with emphasis on internal accounting controls. Logically organized, it is equally meaningful to students of accounting, management, or information systems. Topics move from manual systems to computer-based systems; and in a parallel treatment, the same subsystems in manual mode are converted to computer-based mode.
Prerequisites: 2913. 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

A study of financing real estate including major instruments, mortgage market, financial institutions, government influence, evaluation and risk in lending, and amortization and present value of future income streams. Required by state of Ohio prior to taking brokers license

Prerequisites: 2951, 2953. No lab fee charged.

2955 Real Estate Appraisal I - 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 II - 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.

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: 2905. 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, tax planning and estate planning.

Prerequisites: None. No lab fee charged.

2962 Investment Management I 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: 2926. No lab fee charged.

2963 Investment Tax 3-0-3

Course content will cover tax treatment of all savings and investment vehicles including IRAs 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.

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.

2975 Business Management Seminar 3-0-3

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. No lab fee charged.

3001 Typewriting I 2-3-3

A beginning course in typewriting including keyboard mastery, machine parts, introduction to the business letter, and simple tabulation exercises.

Prerequisites: None. Lab fee charged.

3002 Typewriting II 2-3-3

Brief review of keyboard and techniques; intensified drills on improve-

ment of speed and accuracy; progress through business letters, forms, and tabulation.

Prerequisites: Minimum grade of "C" in Typewriting I or permission from coordinator. Lab fee charged.

3003 Typewriting III 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.

Prerequisites: Minimum grade of "C" in Typewriting II or permission from coordinator. Lab fee charged.

3004 Typewriting IV 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.

Prerequisites: Minimum grade of "C" in Typewriting III or permission from coordinator. Lab fee charged.

3005 Administrative Typewriting 2-3-3

An introduction to touch typewriting with problem-solving emphasis on business correspondence, tabulation, telegrams, duplicating masters, and the special typing assignments encountered in administrative positions.

Prerequisites: None. Lab fee charged.

3021 Office Procedures 3-2-3

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: None. Lab fee charged.

3022 Word Processing Office Applications 2-3-3

A survey of the techniques, processes, operations and applications of information processing equipment. Equipment used in the class include electronic typewriters, standalone display editing word processors, and multi-terminal word processors.

Prerequisites: 3001 or permission of the coordinator. Lab fee charged.

3023 Machine Transcription 3-0-3

An introduction to transcribing machines and to the techniques of machine transcription on various models of word processing equipment and/or typewriters. Students will also review basic grammar, punctuation and spelling for successful output of mailable documents.

Prerequisites: 3001 and 1009. WPS students must have a grade of "C" or better in 3023 to continue with program sequence. ADSS and GOS students must have a grade of "C" or better in 3023. Lab fee charged.

3024 Secretarial Procedures 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 correct grammar, punctuation and spelling.

Prerequisites: 3021. Lab fee charged.

3025 Legal Secretarial Procedures I 2-3-3

Among topics to be studied are legal correspondence and filing, judicial procedures, law books and other reference materials, introductory research techniques, probate procedures, civil suits, public relations, and seeking, keeping or changing jobs.

Prerequisites: Shorthand III or IV with a grade of "C" or better, 1823. Lab fee charged.

3027 Office Practicum 2-3-3

Designed for the student who has elected to follow the General Secretarial Curriculum. Each student's program is individually designed to further develop the necessary skills required to secure a position in his or her chosen field, including basic office routines, human relations, and individual responsibilities.

Prerequisites: None. Lab fee charged.

3028 Secretarial Practicum 3-7-5

An intensive course in secretarial practicum emphasizing the area of business that is of particular interest to the student. Each student's program is to be individually designed to provide an opportunity to strengthen those areas where he may need additional training as well as to provide realistic practice in his chosen field, including decision-making responsibility, creative work, and human relations.

Prerequisites: 3027. No lab fee charged.

3032 Office Procedures/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.

Prerequisites: 3021. No lab fee charged.

3045 Legal Research Projects I

2-8-4

Individualized projects to equip the student with the techniques for law search and research.

Prerequisites: 1823 and permission of coordinator. No lab fee charged.

3048 Word Processing Operations I

1-4-3

A comprehensive "hands on" application of the basic operation and management of word processing and the text management system. The course will introduce students to a set of computer-assisted instruction lessons especially designed to acquaint students with the Advanced Text Management System display terminal. This course is not to be taken for credit by students seeking a degree in the Word Processing Technology.

Prerequisites: 3001. Lab fee charged.

3049 Word Processing Operations II

1-4-3

A continuation of the overview of word processing and the completion of the "learn" lessons to prepare students for entry into Text Management and Editing. Students will perform such functions as entering unformatted text, replacing, restructuring and storage of documents and subdocuments. Completion of the "learn" lessons will reinforce the successful operation of the Advanced Text Management System display terminal. This course is not to be taken for credit by students seeking a degree in the Word Processing Technology.

Prerequisites: 3048. Lab fee charged.

3050 Word Processing I

1-4-3

An introduction to word processing will present a historical overview of the development of automatic recording and transcribing equipment to show why word processors are an asset to businesses. This course will offer some "hands on" experience for the student.

Prerequisites: 3001. Lab fee charged.

3051 Word Processing II

1-4-3

The student will be introduced to the basic concepts of text management. They will become familiar with the IBM Document Composition Facility distributed shared-logic system and also various pieces of standalone information/word processors and become knowledgeable enough to process simple documents. Five weeks of 3051 will be spent on the IBM DCF system and five weeks will be spent on a rotational basis utilizing the standalone information processors.

Prerequisites: 3050. Lab fee charged.

3052 Text Management

1-4-3

The student will continue the study of standalone word processing equipment introduced in Word Processing II. They will learn how to input documents from hard copy and/or a dictation system. They will use codes and formatting controls to edit and manipulate text for final output.

Prerequisites: Grade of "C" or better from 3051 and 3023 or corequisite 3023. 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/Information Processing I

1-4-3

This course is designed for students choosing a career in word/information processing. Students will receive "hands-on," practical experience on the IBM Personal Computer.

Prerequisites: 3001 or permission of the coordinator. Lab fee charged.

3062 Information Records Processing

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 and spreadsheet applications are designed to enable students to logically sequence computer operations.

Prerequisites: 3001, 1850 or permission of coordinator. Lab fee charged.

3063 Word/Information Processing II

1-4-3

This course is an introduction to several different word processors, including the Exxon Series 500 Information Processor and the Wang Word Processing System. Introductory information includes formatting documents, inserting and deleting text, text entry, editing and manipulating text, and printing documents.

Prerequisites: 3001, 3060, or permission of coordinator. Lab fee charged.

3064 Word/Information Processing Simulations

1-4-3

This course combines the students' skills in machine transcription and in the use of the equipment experienced in courses 3063 and 3023. Through the use of simulated office experiences, the students will tran-

scribe documents from cassette tapes, rough draft materials, revision of originals, etc., and will produce final copy using the word processing equipment at their disposal.

Prerequisites: Must have a grade of "C" or better in 3023 before this class can be taken. Also, 3001, 3060, 3063, or permission of coordinator. Corequisite: 3065. Lab fee charged.

3065 Advanced Word/Information Processing

1-4-3

This course is designed for students to perform advanced functions on the equipment introduced in course 3063. These functions include advanced printing, document assembly, merging, stop codes, decimal alignment, pagination and repagination, headers and footers, superscripts and subscripts, global search and replace, and right margin justification.

Prerequisites: Must have a grade of "C" or better in 3023 before this class can be taken. Also, 3001, 3060, 3063 or permission of coordinator. Corequisite: 3064. Lab fee charged.

3066 Text Processing

1-4-3

This course is designed for students to perform advanced functions in the manipulation of text on personal computers.

Prerequisites: 3001, 3060, 3061, 3062, 3063, 3064, 3065, 3023, or permission of coordinator. Lab fee charged.

3067 Word/Information Processing Administration

2-3-3

The role of the word/information processing administrator and/or supervisor of word/information processing will be explored. Office simulations and special projects will enhance the various duties and functions of word/information processing administration. Case studies and the psychological aspects of supervision of automated offices from a secretarial standpoint will be discussed.

Prerequisites: 3001, 3060, 3064, and 3065. Lab fee charged.

3080 Speedwriting I

2-3-3

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.

Prerequisites: 3001 or permission of the coordinator. Lab fee charged.

3081 Speedwriting II

2-3-3

Designed for those students who have had previous speedwriting training and can transcribe within a 5 percent error allowance from speedwriting notes dictated at the rate of 60 words per minute. A continuation of the mastery of principles of theory from 3080. The student is introduced to dictation from material which is not familiar. Emphasis is on speed development.

Prerequisites: Minimum grade of "C" in 3080 or permission of coordinator. Lab fee charged.

3082 Shorthand I - Century 21

2-3-3

Designed for those students who have had no previous shorthand training. Century 21 Shorthand is used. Rapid reading of plate material and mastery of principles of theory, including speed forms is emphasized. 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.

3083 Shorthand II - C21

2-3-3

A continuation of Shorthand I, Century 21, 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 3082 and an introduction to dictation from unfamiliar material. Emphasis is on speed development.

Prerequisites: Minimum grade of "C" in 3082 or permission of coordinator. Lab fee charged.

3084 Shorthand I - 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 II - Gregg

2-3-3

A continuation of Shorthand I, 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 III - 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 I - 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 II - 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.

3089 Shorthand IV - Speedwriting/C21/Gregg 2-3-3
Designed for those students who enter the program with advanced standing and who are placed in advanced shorthand. Emphasis is on speed development from familiar and unfamiliar material and development of mailable transcription. Prerequisites: Minimum grade of "C" in 3086 or permission of coordinator. Lab fee charged.

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 I 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 Horticulture and Turfgrass Equipment 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 II 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 II 2-3-3
A continuation of Herbaceous Plants I, 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 difficult 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.

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.

3525 Plant Propagation 2-2-3
Principles and practices involved in reproducing both woody and herbaceous plant materials. Equipment used in propagation practices will also be covered. Prerequisites: 3502. 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. Prerequisites: None. No lab fee charged.

3530 Horticulture Seminar I 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 II 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 Maintenance 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 Landscaping 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 III 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.

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.

3541 Floriculture Production I 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 fall and winter months.

Prerequisites: 3501, 3502, 3528. Lab fee charged.

3542 Retail Florist Management 1-5-3

Principles and practices in management and operations of the retail flower shops and garden centers. Advertising, pricing, displays, marketing, inventory, and planning are some of the topics emphasized. Field trips and retailing projects required.

Prerequisites: 3540. No lab fee charged.

3543 Floriculture Production II 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 and early spring months.

Prerequisites: 3501, 3502 and 3528. 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 III 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 3-1-3

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. Prior courses in high school biology and chemistry are recommended.

Prerequisites: None. Lab fee charged.

4014 Anatomy and Physiology I 3-2-4

Structure and function of the human body. Topics discussed include anatomical terminology, physiological transport, the cell, tissue, skin, the skeletal system, the muscular system and the nervous system. Laboratory includes dissection.

Prerequisites: High school chemistry. Lab fee charged.

4015 Anatomy and Physiology II 3-2-4

Structure and function of the human body. Topics discussed include special senses, endocrine system, blood, the cardiovascular system and the respiratory system. Laboratory includes dissection.

Prerequisites: 4014. Lab fee charged.

4016 Anatomy and Physiology III 3-2-4

Structure and function of the human body. Topics discussed include the gastrointestinal system, metabolism, the renal system, fluids and electrolytes, acid-base balance, reproduction and the immune system. Laboratory includes dissection.

Prerequisites: 4015. Lab fee charged.

4018 Essentials of Pharmacology 3-0-3

A discussion of the basic principles of pharmacology needed by the health technician. Topics include principles, terminology, modes of administration, and mechanisms 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. No lab fee charged.

4025 Kinesiology 5-0-5

A study of the movement of body parts stressing the relationship to rehabilitation therapy.

Prerequisites: 4014, 4015. 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 of an 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.

4041 Integrated Science I 3-2-4

This course is an introduction to basic concepts in chemistry and biology. Included is weights and measures; inorganic, organic and biochemistry; cell structure and function; genetics and microbiology.

Prerequisites: None. Lab fee charged.

4042 Integrated Science II 3-2-4

This course includes basic concepts of anatomy, physiology, pathology and pharmacology as they relate to the skeletal, muscular, nervous, endocrine and cardiovascular systems.

Prerequisites: 4041 or high school biology and chemistry. Lab fee charged.

4043 Integrated Science III 3-2-4

This course includes basic concepts of anatomy, physiology, pathology and pharmacology as they relate to the integumentary, respiratory, gastrointestinal, renal, reproductive and immune systems.

Prerequisites: 4042. 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 Health** 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: Varies. No lab fee charged.
- 4100 Fundamentals of Nutrition** 4-0-4
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: None. Corequisites: 4111. No lab fee charged.
- 4102 Nutrition for the Life Cycle** 4-0-4
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: 4000, 4010, and 4030. Corequisites: 4112. No lab fee charged.
- 4104 Clinical Nutrition I** 4-0-4
An introduction to Nutritional Therapy and Assessment. Course uses 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: 2231, 4113, 4015. No lab fee charged.
- 4105 Introduction to Clinical Nutrition** 4-0-4
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: 4102. Corequisites: 4113. No lab fee charged.
- 4106 Clinical Nutrition II** 4-0-4
Nutritional therapy and assessment for endocrine, cardiovascular, and respiratory disorders. Also included is the role of the senses in food acceptance.
Prerequisites: 4104. Corequisites: 4114, 2232 and 4016. No lab fee charged.
- 4107 Clinical Nutrition III** 4-0-4
Nutritional therapy and assessment for metabolic, gastrointestinal, renal and immune disorders. The role of total parenteral nutrition and enteral tube feedings in nutritional therapy will be explored.
Prerequisites: 4106. Corequisites: 4115, 2233, 4017. No lab fee charged.
- 4108 Community Nutrition** 4-0-4
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 Seminar** 2-0-2
Comprehensive examination of nutrition care knowledge. Evaluation of field experiences, job trends and opportunities, community resources and professional organizations.
Prerequisites: Completion of all Dietetic Technician courses or in final term. No lab fee charged.
- 4111 Dietetics Orientation & Directed Practice I** 1-3-1
Orientation to the field of nutrition and dietetics, its roles, mission and relationship to the health care team. The role of the Dietetic Technician as a paraprofessional in the dietetics field is specifically explored. Directed Practice component includes field trips, role playing sessions, guest speakers, etc.
Prerequisites: Acceptance into Dietetics program. No lab fee charged.
- 4112 Dietetics Directed Practice II** 0-6-1
Nutrition care rotation in a health care facility parallel to didactics covered in Normal Nutrition.
Prerequisites: 4102, 4111. Lab fee charged.
- 4113 Dietetics Directed Practice III** 0-8-1
Nutrition care rotation in a health care facility parallel to didactics covered in Nutrition in Human Growth & Development.
Prerequisites: 4112. Corequisites: 4105. No lab fee charged.
- 4114 Dietetics Directed Practice IV** 0-10-2
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 Directed Practice V** 0-10-2
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 VI** 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 Dietetic Technician Nutrition Care Homecare 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.
Prerequisites: 4113. No lab fee charged.
- 4121 Food Management** 2-6-4
The fundamentals of household food preparation and meal management. Topics include: food composition related to nutritional value, principles of menu planning, food economics and time management. Laboratory includes: preparation and evaluation of all food groups and a meal presentation to a small group.
Prerequisites: None. Lab fee charged.
- 4122 Introduction to Food Systems** 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: None. Corequisites: 4143. No lab fee charged.
- 4123 Institutional Menu Planning** 3-3-4
Principles and practices of menu planning related to schools, hospitals, and health care institutions. Consideration of costs, utilization of labor, equipment, purchasing, inventory and storage will be stressed.
Prerequisites: 4122. Corequisite: 4144. No 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.
Prerequisites: None. No lab fee charged.
- 4125 Quantity Food Production** 2-5-4
A lecture/laboratory course in quantity food preparation involving the use of institutional equipment, the preparation and evaluation of foods using standardized quantity recipes, and the estimation of raw material needs and resources management.
Prerequisites: 4120, 4121. Corequisites: 4143. Lab fee charged.
- 4126 Records & Cost Control** 2-0-2
Record keeping and controls needed in health care food service operations. Health care applications of Accounting I and II principles are incorporated.
Prerequisites: 2912. Corequisites: None. No lab fee charged.
- 4127 Institutional Food Service Equipment, Layout, and Planning** 2-3-3
Food service layout, planning, and analysis, space requirements and flow line charts. Selection of building materials, time, and motion are studied considering the special needs of health care facilities.
Prerequisites: 4122. Corequisite: 4146. No lab fee charged.
- 4128 Food Service and Catering** 2-3-3
Determination of the type of service best suited for an operation. Planning, implementing and evaluating meals served for special activities.
Prerequisites: 4125, 4145. No lab fee charged.
- 4130 Introduction to Nutrition** 3-0-3
An introduction to nutrition for students with a minimal science background. Course includes basic nutrient composition, food sources, food

legislation, foodborne illnesses, menu planning and relationship of diet to health and disease.

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.

4132 Basic Diet Therapy 2-0-2

A study of nutritional therapy and diet modification for pathological states of the various body systems. Basic nutritional assessment and counseling techniques are covered in this course.

Prerequisites: 4131. No lab fee charged.

4133 Food Science 3-2-4

The study of the chemical, physical and microbiological properties of food and the effect of processing and handling on its properties. This course is designated for the student with basic science and some food preparation background. Lab will include experimentation that will support lecture material.

Prerequisites: 4100, 4120, High School Chemistry or 2200. Lab fee charged.

4141 Dietary Manager's Orientation 1-3-2

This course is designed to orientate the new student to Health Care Food Management. It includes standards and regulations as defined by federal, state and accreditation recommendations and how these standards impact on dietetic care in hospitals and care centers. The roles and professional interrelationships of health care providers is discussed so that the Dietary Manager student knows his/her responsibilities and appropriate role. Information gathering techniques are initiated, including resource material gathering and client interviewing.

Prerequisites: None. No lab fee charged.

4143 Food Systems Management Directed Practice III 1-8-2

Food service management rotation in a health care facility parallel to didactics studied in quantity food production.

Prerequisites: 4112. Corequisites: 4122. No lab fee charged.

4144 Food Service Management Directed Practice IV 2-8-3

Food service management rotation in a health care facility parallel to didactics studied in Institutional Menu Planning.

Prerequisites: 4143. Corequisites: 4123. Lab fee charged.

4145 Food Systems Management Directed Practice V 2-8-3

Food Service Management rotation in a health care facility parallel to didactics studied in Food Procurement Systems.

Prerequisites: 4144. Corequisites: 4125. No lab fee charged.

4146 Food Service Management Directed Practice VI 2-8-3

Food Service Management rotation paralleling didactics studied in Food Service and Catering.

Prerequisites: 4145. Corequisites: 4128. No lab fee charged.

4147 Dietetic Manager Seminar 1-0-1

This course will briefly review the role of the Dietary Manager in the health care field, food preparation and management systems, nutrition care and personnel management in preparation for the Dietary Managers certification examination. Test taking skills will be discussed and practiced.

Prerequisites: None. No lab fee charged.

4155 Basic Management Techniques for Food Service 2-0-2

This course is designed to provide applied dietary management skills for persons employed in small hospitals and nursing homes. Content will cover practical knowledge needed for recruiting, hiring, training, and disciplining personnel. Organizational structure will be addressed along with policy and procedure writing, effective communication and leadership skills.

Prerequisites: None. 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.

4199 Special Studies - Dietetics 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.

4200 Medical Office Practice I 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.

Prerequisites: 3002 or equivalent. No lab fee charged.

4201 Medical Office Practice II 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 I 2-3-3

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 II 2-3-3

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 I 2-3-3

Course will include modular units in the following content areas: basic laboratory procedures in hematology and urinalysis, specimen collection and preparation, wet preps, mono tests, pregnancy testing, laboratory safety, blood typing and special chemistry procedures.

Prerequisites: 4041. Corequisites: 4042. Lab fee charged.

4205 Medical Laboratory Procedures II 2-3-3

Course will include modular units in the following content areas: laboratory chemistry procedures, diagnostic testing, electrocardiograms, x-ray procedures and safety, stool collection and testing, sputum collection and testing, throat and nasal culturing.

Prerequisites: 4204. Lab fee charged.

4206 Medical Laboratory Procedures III 2-3-3

Course will include special laboratory and diagnostic procedures and services, such as physical therapy, special x-ray, Houlter monitoring, electrocardiogram interpretation, ultrasound, hematology procedures, blood chemistry procedures, and blood banking procedures.

Prerequisites: 4205. Lab fee charged.

4208 Insurance & Patient Records 2-2-3

Fundamental principles of initiating, maintaining, keeping patient records in the doctor's office; filing and indexing of records; retention of records; private, government and group insurance programs; completion of insurance forms.

Prerequisites: None. 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 I 0-21-3

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 remuneration for these experiences.

Prerequisites: 4200, 4201, 4202, 4203, 4204, or permission of instructor. Lab fee charged.

4212 Medical Assisting Clinical Experience II 0-21-3

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, 4205, 4441, 4211, or permission of instructor. No lab fee charged.

4213 Medical Assisting Clinical Experience III 0-32-4

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 remuneration for these

experiences.

Prerequisites: 4211, 4212 or permission of instructor. No lab fee charged.

4224 Advanced Clinical Procedures 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.

4270 Orientation to Health Unit Coordinating 3-0-3

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, patient admissions, transfers, and discharges are included.

Prerequisites: Acceptance into Unit Coord. program. No lab fee charged.

4271 Health Unit Coordinating I 2-4-4

The course incorporates concepts presented in course 4270 into the area of transcribing physician orders. The course will provide special emphasis on transcription of orders involving medications.

Prerequisites: 4270. Lab fee charged.

4272 Health Unit Coordinating II 2-4-4

This course is a continuation of course 4271, and focuses on skills involving transcription of orders for diagnostic and therapeutic procedures.

Prerequisites: 4271. Lab fee charged.

4273 Health Unit Coordinating III 2-0-2

This course will briefly review the role of the Health Unit Coordinator in specialty nursing units within the hospital. Consideration and study of current skills and topics in Health Unit Coordinating are also included.

Prerequisites: 4272, or permission of instructor. No lab fee charged.

4280 Health Unit Coordinator Practicum 0-20-4

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 at an off-campus site.

Prerequisites: Permission of instructor. 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-Var-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.

Prerequisites: None. No lab fee charged.

4301 Basic Laboratory Techniques 1-3-2

Orientation 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 including specimen collection and handling.

Prerequisites: Acceptance into technical courses of MLT Program. Lab fee charged.

4302 Basic Hematology & Urinalysis 4-6-6

Study of the theory and practice of hematology, coagulation, and urinalysis with emphasis on routine procedures in these areas.

Prerequisites: Taken concurrent with or subsequent to 4301. Lab fee charged.

4304 Clinical Chemistry 4-6-6

Study of theory and procedures of routine manual and automated chemical laboratory procedures, their quality control and use of related instrumentation.

Prerequisites: 2231, 2232, 4301. Corequisites: 2233. 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 serologic 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. Lab fee charged.

4307 Hematology II 2-3-3

Advanced hematology including study of anemia, leukemias, hemoglobinopathies and other blood dyscrasias. Instruction in the theory of coagulation and special hematologic procedures.

Prerequisites: 4302, 4311. Lab fee charged.

4308 Special Laboratory Procedures 1-3-2

Discussion of special laboratory procedures from the various areas, to include RIA, parasitology, mycology, spinal fluids, etc.

Prerequisites: Completion of all MLT courses. Lab fee charged.

4309 Medical Laboratory Seminar 3-0-3

Review of the various departments of the clinical laboratory, includes a registry type comprehensive examination.

Prerequisites: Completion of all MLT courses. No lab fee charged.

4311 Clinical Applications I - 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 instrumentation.

Prerequisites: Concurrent with or subsequent to 4302. Lab fee charged.

4312 Clinical Applications II - 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 troubleshooting for related instrumentation.

Prerequisites: Must be taken concurrent with or subsequent to 4304. Lab fee charged.

4313 Clinical Applications III - Blood Bank-Serology 0-6-2

Laboratory practice in routine blood banking and serology. The practicum will stress workload organization, record keeping and quality control.

Prerequisites: Must be taken concurrent with or subsequent to 4305. Lab fee charged.

4314 Clinical Applications IV - Clinical Microbiology 0-6-2

Practical experience in routine clinical microbiology procedures. The practicum will stress workload organization, record keeping and quality control applied to the microbiology lab.

Prerequisites: Must be taken concurrent with or subsequent to 4306. Lab fee charged.

4315 Laboratory Practicum I 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 troubleshooting of related instrumentation.

Prerequisites: 4302, 4304. Lab fee charged.

4316 Laboratory Practicum II 0-12-4

On-campus laboratory experience in Blood Bank, Serology, and Clinical Microbiology. The Practicum stresses workload organization, record keeping, and quality control.

Prerequisites: 4305, 4306. Lab fee charged.

4350 Orientation to the Clinical Lab 1-9-2

Experience in the clinical laboratory, designed to familiarize the student with laboratory organization, specimen collection and handling with emphasis on phlebotomy experience.

Prerequisites: 4301. Lab fee charged.

4351 Clinical Experience I 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 II 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.

Prerequisites: 4315, 4350. No lab fee charged.

4390 Basic Phlebotomy 5-1-5

This course introduces the student to blood drawing. Topics include terminology, anatomy and physiology appropriate to phlebotomy; techniques of veni puncture and capillary sampling; professional responsibilities. 10 hours of practice with techniques.

Prerequisites: None. No lab fee charged.

4391 Phlebotomy Practicum I 0-5-1

Placement in a local clinical facility for practice in blood drawing techniques on adults. Optional pediatric experience available.

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.

4400 Medical Word Processing 3-6-6

Basic medical word processing and text management, medical terminology and transcription related to diseases and operations encountered in transcription of history and physical examination; radiology, operative and pathology reports; discharge summaries, medical specialty reports and autopsy reports.

Prerequisites: Typing ability of 40 words per minute and 4000. 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: 4401, 4402, 4403, 4404. No lab fee charged.

4414 Record Science, Filing Systems and Record Analysis 4-3-5

Introduction to the Medical Record field. History of advances in medicine and medical records. Organization and structure of the American Medical Record Association; roles and functions of the RRA and ART, admitting office procedures, major numbering and filing systems, indexes and registers, including Tumor Registry, and case record analysis emphasizing JCAH Accreditation policies.

Prerequisites: None. Lab fee charged.

4415 Legal Aspects of Records in Health Care Facilities 3-1-4

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 J.C.A.H. standards for these facilities.

Prerequisites: 4414. No lab fee charged.

4416 Coding of Diagnoses, Operation and Procedures 5-5-7

Coding classification according to ICD-9-CM. Introduction to other major coding systems including SNDO, DRG, SNOP, DSM-II.

Prerequisites: 4000, 4408, 4414 or permission of instructor. Lab fee charged.

4417 Medical Statistics and Record Abstracting 3-2-4

Statistical procedures including calculation of daily census, monthly cen-

sus 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: 4414, 4415 and 4416. Lab fee charged.

4418 Tumor Registry, Utilization Review & Quality Assurance 4-0-4

Further understanding of the Tumor Registry with special emphasis on Morphology Coding; Completion of Tumor Registry Abstract and Follow-up Abstract. Fundamentals of Federal requirements for the Utilization Review process; utilization of the CPHA Length of Stay Handbook to establish appropriate length of stay by Diagnosis and/or Operative Procedure; federal and JCAH requirements. Computer applications to Tumor Registry and Utilization Review.

Prerequisites: 4414, 4416, 4417. Lab fee charged.

4428 Medical Record Directed Practice I 0-16-3

Practice in the hospital medical record department performing the following: Admission and discharge procedures; correspondence and release of medical information; outpatient clinics; medical records review and completion; coding of diseases, operations, and procedures by ICD-9-CM; abstracting medical data for computer input and statistical reporting.

Prerequisites: None. Lab fee charged.

4429 Medical Record Directed Practice II 0-16-3

Practice in hospital medical record departments performing the following: Cancer Registry, Utilization Review, Quality Assurance and Medical Audit, experience with Health records in Nursing Homes, selected special interest assignments, and directed experience in supervision. Approved for grade of S or U.

Prerequisites: None. No lab fee charged.

4441 Medical Word Processing Operations I 3-1-3

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: Typing ability of 40 words per minute and 4000. Lab fee charged.

4442 Medical Word Processing Operations II 3-1-3

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: 4441. Lab fee charged.

4445 Coding of Diagnoses, Operations and Procedures - Pt. 1 2-3-4

Coding classification according to ICD-9-CM. Introduction to other major coding systems including SNDO, DRG, SNOP, DMS-11.

This course is the first half of course 4416.

Prerequisites: 4000, 4014, or permission of instructor. Corequisites: 4408. No lab fee charged.

4446 Coding of Diagnoses, Operations and Procedures - Pt. 2 2-3-4

Coding classification according to ICD-9-CM. Introduction to other major coding systems including SNDO, DRG, SNOP, DSM-II.

This course is the second half of course 4416.

Prerequisites: 4445. No 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-Var

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.

4505 Introduction to Surgery I 4-0-4

This course will discuss the gradual evolution of modern day surgery, orient the student to the structure and organization of the operating room department and also introduce the student to the roles and functions of OR personnel. Aseptic techniques pertinent to the OR are stressed. Preparation and storage of OR supplies and methods of sterilization are addressed.

Prerequisites: Acceptance into Surgical Technology program or permission of the instructor. No lab fee charged.

4506 Introduction to Surgery II**5-0-5**

This course is a continuation of course 4505, and focuses on OR equipment, electrosurgical unit, catheters/drains, sponges, needles, sutures and instruments. The process of wound healing is reviewed. Pre- and post-op care of the surgical client is included. Anesthesia and OR drugs are examined.

Prerequisites: 4505 or permission of instructor. No lab fee charged.

4531 General Surgery I**4-0-4**

Course content will include discussion of laparotomy, hernias, biliary and bowel operative procedures. The course will focus on an analysis of associated pathological conditions in relationship to normal anatomy and physiology and integrate x-ray diagnostic tests which are routinely used to confirm the pathological state. The student will then focus on respective operative procedures which are utilized as part of the treatment modality for the surgical client.

Prerequisites: 4506 or permission of instructor. No lab fee charged.

4532 General Surgery II**4-0-4**

Course content will include discussion of breast, gynecological, genitourinary and peripheral vascular pathology and associated operative procedures. The course will focus on an analysis of associated pathological conditions in relationship to normal anatomy and physiology and integrate x-ray diagnostic tests which are routinely used to confirm the pathological state. The student will then focus on respective operative procedures which are utilized as part of the treatment modality for the surgical client.

Prerequisites: 4531 or permission of instructor. No lab fee charged.

4533 Surgical Specialties I**4-0-4**

This course incorporates the study of selected specialized areas of surgery, namely cardio-thoracic surgery and associated pulmonary and cardiac pathology; ophthalmic surgery and pathology; ear, nose and throat surgery and related pathology. Each specialty area is introduced with a review of the respective anatomy and physiology.

Prerequisites: 4532 or permission of instructor. No lab fee charged.

4534 Surgical Specialties II**4-0-4**

Course content includes a discussion of the surgical specialties of reconstructive/plastic surgery, orthopedic surgery and neurosurgery. Associated pathology related to each specialty area is discussed. A review of the respective anatomy and physiology precedes each specialty area.

Prerequisites 4533 or permission of instructor. No lab fee charged.

4538 ST Seminar**3-0-3**

The course consists of a comprehensive review of surgical technology.

Prerequisites: 4534. No lab fee charged.

4541 ST Surgery Lab**0-2-1**

This lab experience introduces the student to the actual operating room suite and supportive hospital departments. Students are oriented to the furnishings of an operating room, OR attire, transportation of patients and basic aseptic techniques. Tours of facilities which provide sterile supplies to the operating room are arranged by the instructor. Sterile technique utilized for the handling of sterile supplies will be demonstrated. The course provides supervised practice of beginning level OR skills with a mock OR setting on-campus and also with the actual operating room of an affiliated hospital.

Prerequisites: 4505, 4506. Lab fee charged.

4542 ST Clinical Experience I**0-5-2**

This course involves supervised practice of OR skills within a practice lab on-campus and also within the operating rooms of an affiliated hospital. Demonstrations of positioning patients, skin preps, catheterization, scrubbing, gowning and gloving will be presented.

Prerequisites: 4541. Lab fee charged.

4543 ST Clinical Experience II**0-5-2**

This course is a continuation of 4542. Students will gain additional proficiency in scrubbing, gowning and gloving. Demonstrations of draping, table set-ups and passing surgical instruments will be presented.

Prerequisites: 4542. Lab fee charged.

4544 ST Clinical Experience III**0-5-2**

This course provides the student with a culminating experience within the operating room setting of an affiliated hospital. The course will focus on the integration of basic OR skills while functioning in the scrub position.

Prerequisites: 4543. Lab fee charged.

4551 ST Clinical Practice I**1-40-7**

Students are assigned to an affiliated hospital where previously learned concepts and procedures are applied daily during operative procedures. Students will be required to demonstrate competency in first position scrub skills for a variety of general surgery procedures. Students also attend a one hour weekly seminar, on-campus, relating to the field experience.

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Prerequisites: Permission of instructor. Lab fee charged.

4552 ST Clinical Practice II**1-40-7**

The course is a continuation of 4551. The course will focus on specialty operative procedures. 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 III**1-40-7**

This course is a continuation of 4552 and continues to focus on surgical specialties. Students may be rotated to other affiliating hospitals. Students also attend a one hour weekly seminar, on-campus, relating to the field experience.

Prerequisites: 4552. No lab fee charged.

4594 Fundamentals of Operating Room Nursing**3-2-4**

The Fundamentals of Operating Room Nursing is a basic introductory course for senior level nursing students and registered nurses seeking continuing education in the area of operating room nursing. The course content provides an introduction to basic orientation to the operating room. Demonstration of sterile techniques of scrubbing, gowning and gloving will be presented. Discussion of the O.R. environment, patient preparation and supplies such as sutures, needles and basic instruments, anesthesia and O.R. drugs are included.

Prerequisites: For senior level nursing students and registered nurses. 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.

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**3-0-3**

Introduction to the developmental process of human performance; exploration of life 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 dysfunction in human occupation; and development of the therapeutic use of self.

Prerequisites: 4600. No lab fee charged.

4611 Occupational Therapy Concepts and Skills - Psychiatric**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: 4600, 4610. No lab fee charged.

4612 Occupational Therapy Concepts and Skills - Pediatrics**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 age-appropriate treatment interventions. Documentation skills are developed. Team approach is explored.

Prerequisites: 4600, 4610. No lab fee charged.

4613 Occupational Therapy Concepts and Skills - Physical Disabilities**3-0-3**

Introduction to the role of Occupational Treatment in the treatment of adults with physical dysfunction to include acute care and rehabilitation. Emphasis is on understanding the treatment techniques utilized for various disabling conditions. Treatment planning and implementation are developed along with documentation skills.

Prerequisites: 4600, 4610. No lab fee charged.

4614 Occupational Therapy Concepts and Skills - Geriatrics**3-0-3**

Introduction to the role of Occupational Therapy with the elderly population. Emphasis is on understanding the aging process and dysfunction pertinent to the elderly. The role of the OT assistant in non-traditional settings is explored.

Prerequisites: 4600, 4610. No lab fee charged.

4620 Techniques of Occupational Therapy 0-4-2

Instruction in the use of crafts and activity as therapeutic modalities in the treatment of dysfunction. The concepts of activity analysis and therapeutic adaptations are emphasized. Problem-solving skills are developed.

Prerequisites: 4600. Lab fee charged.

4621 Therapeutic Media for Occupational Therapy - Psychiatric 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.

Prerequisites: 4600, 4620. Lab fee charged.

4622 Therapeutic Media for Occupational Therapy - Pediatrics 0-4-2

Instruction in therapeutic intervention in a pediatric setting to include the use of play as a therapeutic tool, adaptive equipment, therapeutic techniques for positioning, handling, feeding, and basic developmental screening. Problem solving skills are emphasized.

Prerequisites: 4600, 4620. Lab fee charged.

4623 Therapeutic Media for Occupational Therapy - Physical 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. Lab fee charged.

4624 Therapeutic Media for Occupational Therapy - Geriatrics 0-4-2

Instruction in therapeutic intervention for elderly individuals in a geriatric setting to include selection of age-appropriate activity, use of recreational/leisure activity, and application of group process. Occupational Therapy treatment approaches in non-traditional settings are explored.

Prerequisites: 4600, 4620. 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: 4600, 4620. Lab fee charged.

4631 Occupational Therapy Fundamentals of Practice 3-0-3

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 II Field Work Experience.

Prerequisites: 4600, 4610. No lab fee charged.

4651 Occupational Therapy Assisting Field Work 1 (Level I) 0-8-2

Provides the opportunity for directed observation and participation in a community Occupational Therapy setting.

Prerequisites: 4600, 4611, permission of instructor. Lab fee charged.

4652 Occupational Therapy Assisting Field Work 2 (Level I) 0-8-2

Provides the opportunity for directed observation and participation in a community Occupational Therapy setting.

Prerequisites: 4651. No lab fee charged.

4653 Occupational Therapy Assisting Field Work 3 (Level I) 0-8-2

Provides the opportunity for directed observation and participation in a community Occupational Therapy setting.

Prerequisites: 4652. No lab fee charged.

4660 Occupational Therapy Assisting Field Work 4 (Level II) 1-40-8

A clinical practicum in two different Occupational Therapy settings, Two-5 week periods of full time work experiences under the supervision of a registered occupational therapist provide the student with in-depth experiences in the delivery of Occupational Therapy services to a variety of ages and conditions.

Prerequisites: 4653 and permission of instructor. Lab fee charged.

4701 Respiratory Therapy Science I 3-2-4

History of and introduction to the field of Respiratory Therapy. Introduction to respiratory therapy equipment and basic patient skills. Topics include oxygen equipment, gas cylinders, vital signs, patient communication, body mechanics and isolation procedures.

Prerequisites: Acceptance into RT program. Lab fee charged.

4702 Respiratory Therapy Science II 2-3-3

Respiratory therapy equipment and procedures with emphasis on recognition, assembly and function of equipment used in IPPB, O₂ and aerosol

therapy and chest physiotherapy. Pharmacology applicable to respiratory therapy procedures is treated. Pediatric applications will also be discussed.

Prerequisites: 4701. Lab fee charged.

4703 Respiratory Therapy Science III 3-2-4

The first part of the course is an introduction to general clinical medicine with emphasis on pulmonary disease. This course is intended to acquaint the student with disease processes which will be encountered in the patient setting. The second part of the course introduces continuous mechanical ventilation with emphasis on recognition, assembly and function of equipment and routine monitoring under supervision. Pediatric applications will be discussed.

Prerequisites: 4702. Lab fee charged.

4704 Respiratory Therapy Science IV 3-2-4

A continuation of 4703. Additional emphasis is placed upon clinical assessment of patients on mechanical ventilators.

Prerequisites: 4703. Lab fee charged.

4705 Respiratory Therapy Science V 3-2-4

Pulmonary function testing at the bedside and in the laboratory. Emphasis is placed on the theory of pulmonary measurement, equipment and application of test results to patient care. Theory, design and application of pulmonary rehabilitation techniques is introduced.

Prerequisites: 4704. Lab fee charged.

4706 Respiratory Therapy Science VI 3-2-4

Respiratory care for the critically ill patient. Invasive and noninvasive monitoring techniques, patient assessment and evaluation also discussed.

Prerequisites: Acceptance into Respiratory Therapist program or special permission. Lab fee charged.

4707 Respiratory Therapy Science VII 3-0-3

An in-depth study of neonatal and pediatric cardiopulmonary diseases and their treatment. Identification and care of the high risk newborn discussed.

Prerequisites: 4706. No lab fee charged.

4711 Respiratory Therapy Clinical Practice I 0-8-2

An introduction to the hospital environment with practical application of O₂ delivery apparatus, cleaning, disinfection, sterilization, and airway management.

Prerequisites: 4701, 4720. Lab fee charged.

4712 Respiratory Therapy Clinical Practice II 0-8-2

Practical application of IPPB, humidity, aerosol therapy, chest physiotherapy and incentive spirometry. Pulmonary function testing is demonstrated.

Prerequisites: 4711, 4702. No lab fee charged.

4713 Respiratory Therapy Clinical Practice III 0-24-5

A continuation of 4712. Neonatal applications are also treated.

Prerequisites: 4712, 4703. No lab fee charged.

4714 Respiratory Therapy Clinical Practicum I 0-30-4

A clinical practicum in all phases of respiratory care with emphasis on patients requiring mechanical ventilation.

Prerequisites: 4713, 4704. No lab fee charged.

4715 Respiratory Therapy Clinical Practice IV 0-16-2

Application of advanced respiratory care techniques. Emphasis on patients in the critical care setting.

Prerequisites: 4706. Lab fee charged.

4716 Respiratory Therapy Clinical Practicum II 0-16-3

A clinical practicum which provides experience with advanced respiratory care techniques. Home care techniques, supervisory and training experiences also included.

Prerequisites: 4707, 4715. No lab fee charged.

4718 Pulmonary Diseases I 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. No lab fee charged.

4719 Pulmonary Diseases II 2-0-2

Continuation of 4718.

Prerequisites: 4718. 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 those topics relevant to respiratory therapy; i.e., ventilation, diffusion, O₂ and CO₂ transport, red cell physiology, EKG and neonatal cardiopulmonary anatomy and physiology, renal physiology and acid-base balance.

Prerequisites: None. Lab fee charged.

4723 Respiratory Therapy Seminar 2-2-3

Basic theories and techniques of supervision and education in relation to respiratory care. Student presentation of case reports and library research to their peers. Practice in NBRC testing techniques also provided.

Prerequisites: 4715 or permission of instructor. No 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 (Dysrhythmias).

Prerequisites: 4770 or experience with ECG. No lab fee charged.

4780 Electrocardiography Clinical Practice 0-20-1

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 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. Lab fee charged.

4795 Workshop in Respiratory Therapy II 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.

4799 Special Studies - Respiratory Therapy 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.

5001 Portfolio Development 1-2-2

This course gives the student a range of opportunities to assess prior life and work experiences in order to set realistic career goals, and introduces the student to career requirements and opportunities in technical communications. The learning style instrument and a personality test will provide the student with information and strategies to assist the student with personal goal setting. Assessments of communication, calculation and keyboarding skills will place the student in the proper sequence of courses within the program. An amplified resume will be constructed and a journal will be developed as the student begins the portfolio development process. Conferences with the instructor are required and interviews with professionals in the field of technical communications are recommended. This course will culminate in the development of the final portfolio which will be presented in the last course.

Prerequisites: None. No lab fee charged.

5010 Planning the Illustrations 2-2-3

Technical communications requires the use of visual and graphic aids as integral parts of documents, and students must learn to use them as effectively as any rhetorical device in their communications. The student will prepare tables, charts and graphs; design figures with titles and captions; determine kinds and styles of illustrations; and obtain source data for illustrations. The course will also focus on the use of photographic equipment and the effective use of photographs in documents. The editorial functions of the format edit, which ensures conformity, will be applied to illustrations.

Prerequisites: None. No lab fee charged.

5022 Technical Presentations 3-2-4

Technical communicators must participate in meetings, deliver small group presentations, develop and use audio-visual materials and listen to comments. These communications skills will be practiced and improved as students plan and deliver technical presentations. Students will also assess others' presentations—both orally and in writing.

Prerequisites: None. No lab fee charged.

5032 Writing the Project Copy II 2-5-4

The nature of argumentative, narrative and expository prose demands different expression and design considerations. This course explores these

options for technical communications. Reports explaining processes will be studied and written. Solicited and unsolicited proposals will be examined as well. Students will be required to describe mechanisms, analyze operations, and classify information in their technical fields.

Prerequisites: 5001 & 1018. Lab fee charged.

5033 Writing the Project Copy III 2-5-4

This course concludes a three-part series that examines different types of project copy. Technical communicators must be able to develop tutorial and reference material to instruct their clients/audiences. This course examines the instructional process, its constraints and requirements. Students will develop and write project copies to meet specific needs of different audiences. Different media will be discussed to meet the needs of the project.

Prerequisites: 5001 & 5032. Lab fee charged.

5040 Project Organization 2-3-3

This course explores the many options and decisions that technical communicators must consider before, during, and after they write and edit the drafts of the document. This problem centering process involves decisions about preparing outlines, coordinating or subordinating ideas, analyzing and selecting information, and grouping information into working units. Different types of analysis, outlining, classification, and coordination will be studied along with the use of headings. The course will also examine the role of the technical editor in the project and present an overview of the editorial process.

Prerequisites: 1017. No lab fee charged.

5041 Editing the Project Copy I 2-2-3

This course explores skills and techniques that are essential to the editorial process. Three components of the editorial process will be studied. The "integrity" edit ensures that the parts of a document match. The screening edit, setting minimum editorial standards, identifies and corrects aspects of the project copy (e.g. complete sentences, spelling). The copy clarification edit codes the draft for production notes. Students will edit manuscripts.

Prerequisites: 5040 & 1018. No lab fee charged.

5042 Editing the Project Copy II 2-2-3

Higher level phases of the editorial process are discussed. The mechanical style edit brings the mechanics of the text and figures into consistent conformity. The language edit polishes the document as it reviews the way ideas are expressed. The substantive edit deals with the meaningful content including coherence throughout the document. Students will develop their own editorial criteria for their projects.

Prerequisites: 5041. No lab fee charged.

5051 Project Planning 3-1-3

This course focuses on the theory, principles and strategies needed for planning projects in technical communications. This course analyzes the problem solving process stage by stage. Tasks for project planning will involve recognizing requirements, defining needs and audience, determining time-frames, considering resources and soliciting ideas and feedback. Time management will also be examined.

Prerequisites: 5040 & 1018. No lab fee charged.

5089 Conducting the Project Review 1-6-3

A panel of professional technical communicators from local business and industry will certify the student as "competent" to gain an entry level position as a technical communicator. The student will present the portfolio which is developed from two years of classes, cooperative work experiences, and effort. This course must be taken last in the program. The student must achieve certification from this panel in order to apply for graduation.

Prerequisites: 5022, 5001, 5033, & 5042. No lab fee charged.

5099 Special Problems in Technical Writing Var-Var-Var

Individual study and special projects pertaining to the particular technology in which the student is enrolled. Open to a student wishing advanced standing, independent study and/or research. This course is arranged with the coordinator with the approval of the Dean of the Communication Skills Division.

Prerequisites: None. Lab fee charged.

6106 Modular Programming 2-2-3

This course is an introduction to programming for those who have not had Pascal, C, or PL/I. Students will use a collection of prewritten modules to write their own programs. Class work will focus on the data structures, data flow and module arrangement for each program. This course is intended for students who will go on to programming in Pascal, C, and other newer languages.

Prerequisites: None. Lab fee charged.

6110 Software Documentation 2-2-3

In this course students will be concerned with the procedures and docu-

mentation used in developing machine control software systems. Using libraries of existing software modules, students will build and execute functioning programs. Formal testing procedures and documentation will be used to compare the performance of the programs with the specification. Bugs will be documented and corrected in some cases. The programs used in this course will control laboratory instruments and other robots. Students will assemble the computer modules of the control system.

Prerequisites: Some programming exposure. Lab fee charged.

6111 PL/M Programming 2-2-3

PL/M is a subset of the PL/1 language that was designed for systems and machine control programming. It is widely used in computer-controlled industrial machines, including machine tools and robots. This course will introduce students to PL/M programming. Class projects will emphasize external communication, as used in machine control applications. The compiler runs under the iRMX operating system, so students will also be introduced to a professional software development environment.

Prerequisites: 1135 or 1137 or experience. Lab fee charged.

6112 Device Control Software 2-2-3

Students will write programs to control simple machines and laboratory instruments. The machines will be connected to the computers through interfaces. Program and machine performance will be tested. Program specifications and pseudocode will be provided. Students will write and test the programs. Advanced students will participate in the design of new procedures and programs. Project documentation will be an important part of the course. Students will write maintenance procedure and structure descriptions, data dictionaries, bug and maintenance reports, progress reports and user documentation.

Prerequisites: 6110, 6137. Lab fee charged.

6113 Real Time Programming 2-2-3

In this class students will write programs to monitor and control industrial equipment. Programs written in this course will be used as a basis for the Systems Integration Project class that concludes the ILMP series of courses. The programs will respond in real time to signals from the machines being controlled. Interrupts will be handled using both standalone programs and a real time, multitasking operating system. Programs will be developed from design specification and pseudocode. Students will be responsible for writing and maintaining the necessary design and user documentation.

Prerequisites: 6112. Lab fee charged.

6115 Micro/Mini Operating Systems 2-2-3

A Real Time programming class concentrating on programs to control individual machines. In this class programs that control systems of machines will be developed. Use of a real time, multitasking operation system will be studied. The system is RMX from Intel Corporation. Topics covered will include modification and installation of the operating system, multiple CPU systems, and program interface with the operating system. These topics will be covered in the context of developing system control programs.

Prerequisites: 6111, 6113 or experience. Lab fee charged.

6118 Systems Implementation Project 2-2-3

Programs and techniques developed in previous courses will be applied to other laboratory instrumentation and industrial manufacturing automation projects. Data collection devices, sensors in various configuration, machine tools, robots and material handling equipment will be controlled and coordinated to produce a product. Student tasks will include installing the software systems, connecting computers, interfaces and machines and testing and debugging system performance.

Prerequisites: 6115. Lab fee charged.

6135 "C" Programming II 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/O, 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.

6136 FORTH Programming II 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 FORTH programming. It will also provide an opportunity to use some of the advanced features of FORTH including vectored execution, disk I/O, and compiler extension. Concepts of program design, module building, design documentation and testing will be introduced and applied.

Prerequisites: 1136. Lab fee charged.

6137 Pascal Programming II 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 Pascal programming. It will also provide an opportunity to use some of the advanced features of Pascal, including pointers, linked lists and dynamic variables. Concepts of program design, module building, design documentation and testing will be introduced and applied.

Prerequisites: 1137. Lab fee charged.

6611 Technical Laboratory Chemistry I 3-3-4

This course is a blend of laboratory techniques applied to the concepts of general chemistry procedures including lab safety, use of burners, balances, purity of reagents, identification of types of chemical reactions, stoichiometric relationships and the preparation and dilution of solutions using volumetric apparatus. The structure, properties and states of matter, physical and chemical changes, solution chemistry and general acid-base theories are some of the concepts treated. Distinctions between organic and inorganic compounds are also covered especially as those distinctions relate to bonding and property differences.

Prerequisites: High school chemistry or equivalent and high school algebra or equivalent. Lab fee charged.

6621 Technical Laboratory Chemistry II 3-3-4

This course follows 6611 and emphasizes organic chemistry. Concepts of nomenclature, properties, preparations and typical reactions involving families of organic compounds are covered. Lab procedures will include melting and boiling point determinations, separation and purification techniques, synthesis reactions, and noninstrumental methods for organic group identification.

Prerequisites: 6611. Lab fee charged.

6629 Science of Materials 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. Metallographic specimens are mounted, then polished and examined using a metallurgical microscope. Corequisites: 1191. Lab fee charged.

6631 Technical Laboratory Chemistry III 3-3-4

This course continues from 6621 with emphasis on concepts and lab techniques related to oxidation/reduction and kinetics and equilibria as it applies to solubility and acid-base theory. Lab procedures will stress non-instrumental analytical techniques, both qualitative and quantitative. Gravimetric and volumetric (titrametric) procedures are included.

Prerequisites: 6621. Lab fee charged.

6639 Fundamentals of Physical Measurement 1/4x3-2-4

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. Basic electricity is taught to the extent that the student can understand the fundamental operation of the laboratory equipment used.

Prerequisites: 6629 or 7111, 1192. Lab fee charged.

6641 Technical Laboratory Chemistry IV 3-3-4

This course continues from 6631 to emphasize the instrumental aspect of chemical analysis of both inorganic and organic compounds. Lab procedures include specific ion analysis using selective ion electrodes, potentiometric titrations, fluorimetry, polarography, gas chromatography, and visible and UV spectrophotometry.

Prerequisites: 6631. Lab fee charged.

6649 Materials Testing 3-4-5

A continuation of the concepts developed in 6629 and 6639. Materials such as concrete, fabrics and paper products are tested, then the collected data analyzed. The course is project oriented where the student will develop the experimental procedure, perform the test, apply appropriate statistical techniques then submit a formal report to the instructor.

Prerequisites: 6639, 1192. Lab fee charged.

6659 Analysis of Materials Project 0-5-3

An application of measurement and testing technology to the conception, development, design and completion of an approved project to include the recording, compilation and reporting of project data.

Prerequisites: 1180, 6631, 6649. 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.

6670 Introduction to Statistical Process Control 4-0-4

Practical applications of statistical techniques such as X-R charts for variables and p, np, c and c charts for attributes. Pre-Control techniques will also be discussed. No prerequisites required, but a basic understanding of algebra is helpful. Students should purchase a scientific calculator for this course.

Prerequisites: None. No lab fee charged.

6699 Technical Laboratory Problems Var-Var-1/5

Special problems, projects, seminars and individual study assignments pertinent to technical laboratory areas. Arranged only with approval of coordinator and dean.

Prerequisites: None. No lab fee charged.

6710 Introduction to Lasers 3-2-4

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.

6720 Geometrical and Wave Optics 3-3-5

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 3-3-5

Optical Components: optical windows, flats, filters and beamsplitters. 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 3-3-5

Laser material processing, cutting, drilling, and welding. Air pollution monitoring with lasers. Holography, holographic non-destructive testing.

Prerequisites: 6730. Lab fee charged.

6741 Introduction to Fiber Optics 3-3-5

Optics Review-Lenses, Imaging, Numerical Aperture, Diffraction. Light wave fundamentals-dispersion, pulse distortion, reflection at a plane boundary and critical-angle reflections. Wave guides-Modes in symmetric slab wave guide. Optic Fiber wave guides-step index fiber, graded index fiber, attenuation. Modes in step-index fiber, distortion in step-index fiber. Couplers and connectors-connector principles, lateral misalignment, angular misalignment, end separations. Splices.

Prerequisites: 6710. Lab fee charged.

6745 Optical System Design 3-3-5

Co-axial system of two thin lenses, thick lenses, cardinal points. Refraction matrix, translation system matrix, lens matrix. System matrix of two thin lenses. System matrix of combination of lenses. Granssian constants and their physical significance. Lens aberrations.

Prerequisites: 6720 Lab fee charged.

6750 Laser Electro-Optic Measurements 3-3-5

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.

6999 Special Problems Seminar/Project Var-Var-1/5

Individual study and/or special project assigned in student's technical field of study. Available to fourth and fifth term students by special arrangement with coordinator and dean.

Prerequisites: None. No lab fee charged.

7005 Basic Blueprint Reading and Sketching 2-2-3

Provides a working knowledge of blueprint reading and shop sketching with special application and emphasis for different technologies. Technical terminology is defined and applied in a logical sequence for each new principle.

Prerequisites: None. Lab fee charged.

7008 Basic Engineering Drawing 2-4-3

A beginning course which covers the techniques and functions of drafting. Topics to be covered include equipment, lettering, line quality, sectioning, dimensioning and auxiliary views.

Prerequisites: 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 I 2-4-3

Emphasis on continued development of drafting skills. Concepts to be covered will include: secondary auxiliary views, sheetmetal layout, tolerancing, sectioning, welding representations and threads.

Prerequisites: 7008. Lab fee charged.

7016 Mechanical Systems Drafting 2-4-3

Emphasis on floor plans, electrical and plumbing layouts, and blueprint reading.

Prerequisites: 7008. Lab fee charged.

7018 Electrical Drafting 2-4-3

Provides a drawing knowledge of electrical power symbols (ANSI designations) and blueprint reading. Includes: schematics, one-line diagrams, raceway layouts, motor control ladder diagrams, riser diagrams, cable and fixture schedules, grounding systems, lighting layouts power distribution and protective devices, and basic architectural symbols, electronic schematics and digital logic diagrams.

Prerequisites: None. Lab fee charged.

7023 Architectural Drawing-Residential 2-4-3

Residential Drawings to include: floor plans, section views, building elevations, and typical architectural details, symbols, abbreviations, and dimensioning methods. Emphasis on developing a set of residential working drawings.

Prerequisites: None. Corequisite: 1171 or 1191. Lab fee charged.

7024 Architectural Drafting 2-4-3

Construction drawings to include: floor plan layout, structural section views, building elevation and typical architectural details, electrical plans, standard architectural symbols and abbreviations, and conventional dimensioning methods. Emphasis on construction materials and their uses in the building industry. Development and use of perspective and presentation drawings.

Prerequisites/Corequisites: 1171 or 1191 or equivalent. Lab fee charged.

7025 Survey Drafting 2-4-3

Surveyi field notes, cross sections, grading plans, deed abstracts and boundary plots. Computer terrain models.

Prerequisites: 7024, 4910. Corequisites: 1171, 1191 or equivalent. Lab fee charged.

7027 Computer Aided Drafting (Architectural) 2-3-3

A course in Architectural Computer Aided Design/Drafting in which the student will become familiar with CAD/D commands and create a set of architectural working drawings ngs. Students will also investigate other CAD/D techniques such as developing and utilizing symbol libraries.

Prerequisites: 7030, 1191, 7024. Lab fee charged.

7030 Computer Programming (BASIC) 2-2-3

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 personal computer.

Prerequisites/Corequisites: 1171 or 1191. Lab fee charged.

7031 Computer Programming (FORTRAN) 2-2-3

Principles of programming, flow charting and coding in FORTRAN language. Lecture and lab problems to show applications in engineering design calculations, automatic control, design optimization, quality control and engineering planning.

Prerequisites: 1171 or 1191. Lab fee charged.

7032 Introduction to Computer Programming (Civil) 2-2-3

Terminology and basic concepts of automation, introduction to BASIC programming with applications in surveying and construction.

Prerequisites/Corequisites: 7920, 2292. No lab fee charged.

7033 Advanced Computer Applications 2-2-3

Compilers, assemblers, and machine language codes are covered along with data file management, efficient programming, and optimum use of memory systems. The computer will be used to communicate via I/O buses with transducers, DC motors, Robots, and other peripherals.

Prerequisites: 7030. No lab fee charged.

7040 Supervision & Management 3-0-3

Operational theory and science of management that are pertinent to all levels of supervision. Responsibilities of management to plan, organize, staff and control leading to the accomplishment of organizational and individual goals.

Prerequisites: None. No 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.

7102 Machine & Hand Tool Laboratory 1-4-3

Principles and Processes which underlie the use of hand tools, cutting tools, portable equipment and accessories, measuring devices and gauges. Emphasis placed on developing sound trade judgement, safe work habits, and correct work procedures.

Prerequisites: None. Lab fee charged.

7104 Introduction to Machine Tool Processes 3-2-3

Designed to acquaint students to processes used in manufacturing with emphasis on turning, milling, drilling and broaching operations. Measuring instruments, tooling, concepts of horsepower, speeds, feeds are covered. Practical applications on manual and NC equipment. Corequisites: 1171 or 1191. Lab fee charged.

7111 Engineering Materials 3-2-3

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.

Prerequisites: 7104 or 7416. No lab fee charged.

7130 Engineering Mechanics 3-2-3

Vector algebra is employed to calculate forces and moments and their effects 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: None. Corequisites: 1192, 2292. No lab fee charged.

7132 Hydraulics & Pneumatics 4-2-4

Basic principles of hydraulics and pneumatics. Study of fluid power components including pumps, pressure, directional, and flow control valves, actuators and miscellaneous devices. Introduction into graphical symbols and common industrial circuits.

Prerequisites: 1172 or 1191, 2291. No lab fee charged.

7133 Industrial Instrumentation 3-2-3

An introduction to transducers used in process control systems. Basic transducer types will be studied: thermal, mechanical, optical. Signal conditioning between transducer and control elements will be discussed. Other topics include: calibration of transducers, discussion of device accuracy and resolution, and data recording techniques.

Prerequisites: 7720. Corequisites: 7730. No lab fee charged.

7135 Fluid Power Systems 4-2-4

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.

7138 Fluid Mechanics 3-2-3

Principles of fluid mechanics. Topics include: fluids at rest, flow of fluids, pressure and energy losses, laminar and turbulent flow, viscosity, series and parallel pipe systems, and flow measurement devices.

Prerequisites: 1191, 2291. No lab fee charged.

7140 Strength of Materials 4-2-4

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.

7142 Mechanisms Analysis & Design 3-3-3

This course provides an introduction to the analysis and design of mechanisms. The course involves mathematical and graphical solutions of problems involving the kinematics of mechanisms and the interaction of their components, including the study of the displacement, velocity, and acceleration of points within the mechanism. An introduction to gears, gear trains, and cam analysis is included.

Prerequisites: 2291, 2292. Corequisites: 1193, 7146. No lab fee charged.

7143 Process Control Systems I 3-3-4

Introduction to process controls. Course covers closed loop feedback

systems as found in the process control industry. The course integrates transducers, controllers, and actuators into complete control systems. Topics include: discontinuous and continuous control systems, proportional-integral-differential (PID) control algorithms, loop tuning techniques, process stability and quality.

Prerequisites: 7133. No lab fee charged.

7144 NC/CNC Programming I 2-3-3

Introduction to numerical control (NC) and computer numerical control (CNC) technology. Emphasis on programming 2 1/2 axes NC milling machine, 2 axes CNC lathe, and 2 1/2 axes CNC mill.

Prerequisites: 1191, 7104 or equivalent. Lab fee charged.

7145 Statics & Strength of Materials 3-2-3

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 I (Servomechanisms) 3-3-4

This course is divided into two parts: Part I deals with circuitry found in the industry. Topics include: Transistor Drivers, Push-Pull Amplifiers, Bipolar/VMOS Bridge Drivers. Relay driving, resistive and inductive load considerations, power supply and power line conditioning and Triac applications. Part II deals with Programmable Controllers. Topics include contact-coil ladder logic. Also counter-timer and sequence logic are discussed as they apply to on/off control logic.

Prerequisites: 7730, 7738. Corequisites: 7142. Lab fee charged.

7148 Applied Thermodynamics 3-2-3

An introduction to the first and second laws of thermodynamics. Topics to include the energy equation of gases, mollier diagrams, energy utilization, heat transfer, specific heat, carnot cycles, entropy, enthalpy, and adiabatic processes.

Prerequisites: 1192, 2292. Corequisites: 1193. No lab fee charged.

7149 Computer-Aided Manufacturing 3-2-3

An introductory course in the application of computers to the modern manufacturing environment. Topics include: computer-aided design/computer-aided manufacturing (CAD/CAM), numerical control (NC), computer numerical control (CNC), distributive numerical control (DNC), group technology and flexible manufacturing systems.

Prerequisites: None. No lab fee charged.

7150 Machine Design I 4-2-4

The application of the principles of engineering mechanics and strength of materials to the analysis and selection of mechanical elements and components. Topics include Tresca'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: 7130, 7140. No lab fee charged.

7153 Process Control Systems II 3-3-4

A continuation of Process Controls I. The course deals with programmable closed loop control systems as used in the control industry. Topics include: programmable controllers, direct digital controllers with PID capability, distributed control systems using local controllers with a central hostand nonlinear systems.

Prerequisites: 7143. No lab fee charged.

7154 NC/CNC Programming II 2-3-3

Emphasis on programming complex problems dealing with combined and mill and the production turning center.

Prerequisites: 7144. Lab fee charged.

7155 Machine Design II 4-2-4

A continuation of Machine Design I. 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 Design 2-4-3

A course intended to exercise the student's knowledge of electro-mechanical systems. It provides the time and opportunity for a student to work on the design, fabrication, assembly and troubleshooting of electro-mechanical devices and systems. The design is to include ideas covered in most of the student's previous core courses of study. The purpose is to promote independent study, initiative, and creativity by requiring the stu-

dent to develop the design problem with minimal staff supervision.
Prerequisites: 7142, 7146. Corequisites: 7157. Lab fee charged.

7157 Electro-Mechanical Controls II (Automated Systems/Robotics) 3-3-4

The purpose of this course is to develop 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 & writing systems. Transfer functions. The latter section of the course deals with the problems and benefits of computer control of the servo system. Emphasis is on simple closed loop algorithms to allow computer control of systems.
Prerequisites: 7146. Lab fee charged.

7158 Mechanical Systems Design Project 3-2-3

A parallel course to Machine Design II which 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. Corequisites: 7155. No lab fee charged.

7160 Computer Aided Drafting I 2-3-3

This is a hands-on oriented course designed to make the student proficient in the CAD workstation as a productive engineering tool. The course will use an approach of learning by doing, and focus on learning the functionality of the CAD technology rather than the skills of producing engineering drawings. It is assumed that the student has already had instruction in engineering drawing.
Prerequisites: 7008. Lab fee charged.

7161 CAD/CAM 2-4-3

A project course integrating computer aided design technology with computer aided manufacturing. Projects will be coordinated by the instructor so as to familiarize the students with the realities of a totally automated factory.
Prerequisites: 7160, 7449. No lab fee charged.

7165 Computer Aided Drafting II 2-3-3

Continuation of CAD I with emphasis on working drawings, oblique shapes, and the creation of surface models. Course primarily designed for students in a Mechanical Engineering Technology related major.
Prerequisites: 7160. Lab fee charged.

7167 Introduction to Robotics 2-2-3

An introduction to basic concepts of robotics/factory automation where robots are used only as a common tool for better quality and productivity. More specifically, the course will cover such topics as analysis of industrial robotics applications in an automated manufacturing environment, description of mechanical and electrical components, operation and hands-on programming principles, how to select a robot for an industrial application.
Prerequisites: Industrial Exp. or 2nd year student. Lab fee charged.

7170 Computer Aided Design 3-2-3

Advanced computer aided drafting and computer applications in mechanical engineering technology to provide the student with a working knowledge in using the computer as a design tool. The student will write programs in BASIC to perform engineering calculations. In addition, the student will use existing engineering software for complex design analysis.
Prerequisites: 7165, 7030. Corequisites: 7140. Lab fee charged.

7199 Special Problems Seminar - Mechanical 0-0-2/4

Individual and independent study and special projects pertaining to mechanical engineering technology. 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 department chairman and divisional director of academic affairs.
Prerequisites: Varies. No lab fee charged.

7301 Introduction to Plastic Processes 3-2-3

An introductory survey course for the student who desires a brief but overall coverage of the major types of plastics and plastic processes. Includes the manufacturing techniques and principles of operation of injection, extrusion and vacuum forming equipment.
Prerequisites: None. No lab fee charged.

7409 Industrial Safety & OSHA 3-2-3

Study of industrial safety programs, safety codes and standards, compensation, and safety inspection. Survey of selected occupational health hazards; solvents, lead, asbestos, welding, heat, noise, etc. Typical industrial policies and facilities for accidents and injuries. Safety devices for

equipment and safety education programs. Special emphasis given to "The Occupational Safety and Health Act" and its special reporting requirements.

Prerequisites: None. No lab fee charged.

7410 Materials Handling 3-2-3

Project course with heavy emphasis on materials flow analysis. Examine material handling elements such as material characteristics, material classifications, unit load, packaging, bulk handling, containerization, selection of equipment, economics of a material handling plan or phased improvements; selected industry problems and trends are analyzed.
Prerequisites: None. No lab fee charged.

7412 Introduction to Data Analysis 3-2-3

Designed to acquaint the students with the fundamentals of dimensional metrology along with their applications to the manufacturing system. Topics include data collection and analysis, reading and construction of charts and graphs, and computer-aided reports.
Prerequisites/Corequisites: 1171. Lab fee charged.

7416 Manufacturing Processes & Materials I 3-2-3

A course designed to integrate the various machine tools and processes used in manufacturing with the study of the principles basic to the physical properties of materials. Topics include applications and tooling for turning, milling, drilling machines along with techniques of testing and examination of materials.
Prerequisites/Corequisites: 1171. Lab fee charged.

7425 Human Factors Engineering 3-0-3

Includes considerations for human capabilities and limitations as they relate to the development and design of safe and efficient environments and products. Topics include human anatomy and sensory considerations for noise, lighting, fatigue and other stresses; person-machine factors, human behavior, skills and performance.
Prerequisites: None. No lab fee charged.

7426 Manufacturing Processes & Materials II 3-2-3

A continuation of Manufacturing Processes & Materials I where the various machine tools and manufacturing processes are integrated with the principles basic to the physical, mechanical and chemical properties of materials, machinability, castability, formability and weldability concepts are applied.
Prerequisites: 7416. Lab fee charged.

7430 Time and Motion Study 3-2-3

Principles of motion economy, tools for time and motion study - to include: process and operation charts, the movie camera, videotape, stop watch. Includes study and application of the basic principles used to develop better methods of performing work, and maintain audit and control functions, survey of standard data systems, implement cost reduction proposals.
Prerequisites: None. No lab fee charged.

7438 Industrial Engineering Concepts 2-2-3

Emphasis on principles of motion economy, efficient arrangement of production areas as to utilization of space, equipment and material flow analysis. Standard data systems, plant layout & material handling elements will be applied in planning and managing the manufacturing areas.
Prerequisites: 1171 or 1191. No lab fee charged.

7440 Industrial Processes & Plant Layout 3-3-4

Project course with emphasis on the most efficient arrangement of a production area and process arrangement to achieve effective utilization of space and equipment in manufacturing and service industries. Layout of aisles and use of cube space. To include layouts for small and medium size design, the characteristics of industrial processes and how instrumentation is used for process control. Analysis of sequences of Flow and/or Assembly. Facilities audit.
Prerequisites: None. No lab fee charged.

7441 Quality Assurance/Statistical Process Control 4-2-4

Survey of various functions, concepts, responsibilities, as they apply to the areas of quality control. Applications of statistics and probabilities to basic quality control problems with emphasis on computer usage to aid in compiling of data. Programs written in areas of histograms, control charts and sampling.
Prerequisites: 1179. No lab fee charged.

7444 Manufacturing Process Planning 2-2-3

A course designed to enable the student to process a part/or product from raw to finish condition. Techniques include application of manufacturing processes, sequence of operations, fixtures, tooling, quality, quantity and cost as applied to the engineering drawing and specifications.
Prerequisites: 7010, 7144, 7438. Corequisites: 7441. No lab fee charged.

7449 Computer Aided Manufacturing I 3-2-4

This course covers the high technology hardware involved with the totally automated factory. Numerical Control (NC), Computer Numerical Control (CNC), Distributive Numerical Control (DNC), Robotics, Flexible Manufacturing Systems (FMS), and other Computer Aided Manufacturing systems are discussed. Computer-Assisted part programming and group technology techniques are introduced.

Prerequisites: 1179 or 1193, 7030, 7144. No lab fee charged.

7450 Production Cost & Control 3-0-3

Development of cost estimation techniques, practical application of production cost theory, control of material and labor cost, overhead application, time requirements, estimation of production costs and impact of production mix on costs. Product life cycle analysis.

Prerequisites: 7444, 7438. No lab fee charged.

7452 Industrial Hygiene Measurements 3-2-3

Sampling, measurement and calculations of air flow, heat, noise, gas oxygen, particulate, and toxic levels in the industrial environment. Survey of effects of toxics, noise, heat, particulate concentrations on the human body. Includes area ventilation, heat stress, noise characteristics, measurements. Use of selected instrumentation to establish compliance with standards set by governmental and industry groups.

Prerequisites: 7409. No lab fee charged.

7454 CAD/CAM Project 3-2-4

A course designed to require the student to involve computer techniques in the planning and managing process of a design/manufacturing project. Cooperation with other technologies will be stressed toward a final solution.

Prerequisites: 7444, 7449. Corequisites: 7450. Lab fee charged.

7501 H.V.A.C. - Plant Maintenance 3-2-3

An introduction to the thermodynamic laws pertaining to refrigeration. The refrigeration cycle, operation, maintenance and troubleshooting of components including water towers, condensers, water treatment and refrigerants, copper pipe and tubing sizing, flaring, swaging, and soldering. Pump maintenance procedures, inspection and overhaul. Operation of boilers, oil burners, gas furnaces and heaters. General plant maintenance procedures.

Prerequisites: None. No lab fee charged.

7510 Elements of Refrigeration 4-2-4

Introduction to the field and terminology of refrigeration. Topics to include the basic laws of refrigeration, heat, and the methods of heat transfer, use and care of servicing tools, equipment, tubing, and fittings, compressors, refrigerants, temperature controls, special testing and service equipment. Laboratory sessions provide experience in basic service procedures.

Prerequisites/Corequisites: 1171 or 1191. No lab fee charged.

7520 Elements of Heating 3-2-3

Introduction to gas and oil furnaces and heat pumps. Topics include the fabrication, troubleshooting and servicing of these heating devices.

Prerequisites: 7510, 7701. No lab fee charged.

7525 Introduction to HVAC Principles 3-2-3

An introduction to refrigeration, air conditioning and heating systems. Topics covered include: terminology, principles of refrigeration, the components of refrigeration systems, refrigerants, gas and oil burners, boilers, pumps and absorption systems.

Prerequisites: 1171. Corequisites: 1171 or 1191. No lab fee charged.

7530 Air Conditioning Principles I 3-2-3

Study of cooling tower, evaporating condensers, water treatment, air cooled condensers, refrigeration safety devices, crankcase heaters, water chillers, and pumps. Laboratory experience to emphasize equipment, maintenance and troubleshooting procedures.

Prerequisites: 7510, 7702. No lab fee charged.

7531 Air Conditioning Applications 3-2-3

A survey of commercial and industrial applications of heating, refrigeration and air conditioning; ventilation; food preservation and storage; industrial processing; low temperature applications; comfort air conditioning applied to transportation vehicles, etc. The requirements, limitations and standards involved in the many applications are investigated.

Prerequisites: 7510, 7530. No lab fee charged.

7532 Sheet Metal Layout & Fabrication 2-4-3

A study of some of the more common problems encountered during installation and modifications, particularly the mechanical and field fabrication problems involved in duct work, piping, and electrical work. Introduction to the use of sheet metal tools, edges, seams, locks, etc.

Prerequisites: 7008. Lab fee charged.

7535 HVAC Systems I 3-2-2

An introduction to the layout and control of air conditioning systems, energy considerations, fans and basic heat load calculations.

Prerequisites: 1191, 7725. No lab fee charged.

7540 Air Conditioning Principles II 4-2-4

Basic principles of thermodynamics, cycle analysis, noise and vibration control, and pipe sizing are covered. Laboratory sessions allow the student to measure and perform cycle analysis of operating refrigeration systems, and verify noise and vibration calculations.

Prerequisites: 7530. No lab fee charged.

7541 Air Conditioning Design I 4-2-4

The application of air conditioning principles to design. Emphasis on selection of equipment, consideration of applicable codes, and functional handling of air conditioning design problems. Emphasis on design calculations, equipment selection and system layout for non-commercial structures.

Prerequisites: 7520. No lab fee charged.

7545 HVAC Systems II 3-2-3

The selection of inside design conditions with regards to economics and comfort, psychrometrics, noise and vibration, piping, and selection of equipment are covered.

Prerequisites: 1192. No lab fee charged.

7547 Plumbing Systems Design 3-2-3

The design and layout of plumbing systems including: fixtures, traps, intercepting devices, water supply systems, drainage and vent systems, gravity flow, pipe sizing, air flow in vent piping, standard plumbing code regulations, zone control, and hot water systems.

Prerequisites: 7138. No lab fee charged.

7550 Air Conditioning Principles III 3-2-3

Basic principles of commercial duct sizing, balancing air and hydronic systems, refrigerant pipe sizing, low temperature refrigeration, and first cost vs. operating costs are covered. Laboratory sessions allow student to measure and balance air and hydronic systems, design and connect control systems for low temperature refrigeration.

Prerequisites: 7540, 7702. No lab fee charged.

7551 Air Conditioning Design II 3-3-4

Basic principles of commercial air conditioning load calculations, design and equipment selection. Includes equations and methods of calculation of external and internal building loads, ventilation requirements and solar loads. Laboratory sessions allow the student to calculate the load, select the equipment and layout the duct system for a commercial building.

Prerequisites: 7540, 7541. Corequisites: 7550. No lab fee charged.

7552 Air Conditioning Controls 3-2-3

The theory and methods of controlling conditioned air systems. Types, functions and applications of controls for heating, cooling, humidity, and ventilation requirements. Laboratory sessions allow the student to make connection of systems components and simulate operational characteristics of electric, pneumatic and electronic control systems.

Prerequisites: 7702, 7540. No lab fee charged.

7555 HVAC Systems III 3-3-4

Calculation of the heating and cooling loads of buildings. Topics include heat losses and gains through the building envelope (due to temperature difference, color, and infiltration), zoning, thermal storage, people, lights, and power, and shading from adjacent structures.

Prerequisites: 7545. No lab fee charged.

7557 Safety Systems Design 3-2-3

The design and layout of safety systems including: fire alarms, security and communication systems, smoke detectors, sprinkler systems, and computer monitoring systems for energy management.

Prerequisites: 7016, 7708. No lab fee charged.

7700 Electrical Concepts 3-2-3

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. A required course for all pre-engineering electrical technology majors.

Prerequisites: None. Corequisites: 1171 or 1191. No lab fee charged.

7701 Electrical Fundamentals I 3-2-3

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: None. Corequisites: 1171 or 1191. No lab fee charged.

7702 Electrical Fundamentals II 4-2-4

A continuation of electrical Fundamentals I. AC power factor, polyphase

relationships, and control systems functions are examined in greater depth. Abilities of the student to plan, assist, and supervise electrical power, and control system installations, and modifications are developed.

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; continually applied to control diagrams, circuits, and components. Also 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.

7708 Electrical Fundamentals & Controls 3-3-4
A survey of the field of electrical/electronics controls. Topics to include basic circuit analysis, relay logic control (ladder diagrams), programmable controls, digital electronic devices and microprocessors.
Prerequisites: None. Corequisites: 1171 or 1191. No lab fee charged.

7710 DC Circuit Analysis 6-0-5
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.
Prerequisites: None. Corequisites: 1191 or 1172, 7711. No lab fee charged.

7711 D.C. 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, VOMs and VTVMs.
Prerequisites: None. Corequisites: 7710. No lab fee charged.

7712 Electrical Circuits I 6-0-5
This course introduces basic electrical concepts, laws, and devices, including: charge, direct and alternating current, voltage, resistance, capacitance, rectification, power, efficiency, Ohm's Law, and Kirchoff's Laws. Analysis and introduction to troubleshooting of direct current series, parallel, series-parallel, and comppplications of these circuits. Classroom lecture and exercises are supplemented by hands-on circuit projects.
Prerequisites/Corequisites: 1191 or 1172, 7713. Lab fee charged.

7713 Electrical Circuits I Lab 0-3-1
Laboratory exercises and evaluation in the proper use of techniques and instruments commonly used by electromechanical technicians. Includes safety considerations, schematic diagrams, capacitive time constants, soldering techniques, introduction to circuit fault analysis and troubleshooting, and protective devices.
Prerequisites/Corequisites: 7712. No lab fee charged.

7715 Electrical Fundamentals 4-2-4
An introduction to D.C. and A.C. circuit concepts, power distribution, and control circuitry. Including transformers, three phase systems, circuit protection, grounding, conductor sizing, power factor, switches, and relays.
Prerequisites: None. Coorequisites: 1171 or 1191. No lab fee charged.

7720 AC Circuit Analysis 6-0-5
This course introduces inductance and covers capacitive and inductive time constants. AC signal generation, AC waveforms, reactance, impedance will be studied. Series, parallel and series-parallel A.C. circuits will be covered along with applications of these circuits including filters and resonance. Transformers will be introduced.
Prerequisites: 7710, 7711. Corequisites: 1192, 7721. No lab fee charged.

7721 A.C. 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 A.C. circuits. Major emphasis on oscilloscopes, signal generators and VTVMs.
Prerequisites: 7710, 7711. Coorequisites: 7720. No lab fee charged.

7722 Electrical Circuits II 6-0-5
This course is a continuation of 7712, Electrical Circuits I. Introduces magnetism, inductance, alternating current (AC) wafeforms, reactance, impedance, phasor analysis of AC series, parallel, and series-parallel circuits, AC power, resonance, filters, transformers, and three-phase AC systems. Emphasis will be placed on applications and troubleshooting. Classroom lecture and exercises are supplemented by hands-on circuit projects.
Prerequisites: 7712, 7713, 7710, 7711. Corequisites: 1192, 7723. Lab fee charged.

7723 Electrical Circuits II Lab 0-3-1
Laboratory exercises and evaluation in the proper use of techniques and instruments commonly used by electromechanical technicians. Includes safety considerations, use of oscilloscope, use of signal generator and measuring instruments, inductive time constants, resonance, frequency response, filters, rectifier and power supply circuits, transformers, three-phase systems, and introduction to the National Electric Code.
Prerequisites: 7712, 7713 or 7710, 7711. Corequisites: 7722. No lab fee charged.

7727 Programming in "C" 3-3-4
The purpose of this course is to introduce the student to the "C" language. Emphasis is given to procedure development and pseudo code solutions. Attention given to the development of tasks, software modules, and procedures for computer solutions. Discussions include: variable types, loops, branching and testing, simple I/O and file I/O, structures and development of libraries.
Prerequisites: 7728. Corequisites: 7738. Lab fee charged.

7728 Introduction to Digital Concepts 3-2-3
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/Corequisites: 1191 or 1172; 7708 or 7710. No lab fee charged.

7730 Electronics I 6-3-5
Semiconductory theory, pn junctions, diodes, Zener diodes, light emitting diodes, rectifier circuits, power supply filtering, regulators, clippers and clammers, SCR, Triacs, basics of operational amplifiers and negative feedback, inverting and non-inverting amplifiers, comparators, differentiators and integrators.
Prerequisites/Corequisites: 7720, 7721; or 7722, 7723. No lab fee charged.

7733 Electronic Troubleshooting 3-2-3
Developing 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 3 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 I 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 ICs will be discussed.
Prerequisites: 7728. Corequisites: 7720. Lab fee charged.

7740 Electronics II 4-2-4
Waveform generators, precision rectifiers, differential, instrumentation and bridge amplifiers, active filters, bipolar transistor theory, bipolar switch, bipolar biasing circuits.
Prerequisites: 7730. No lab fee charged.

7742 Computer-Aided Drafting (Electrical) 2-3-3
An introduction to computer-aided design and drafting for electrical engineering 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 I 4-2-4
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. No lab fee charged.

7747 Computer Instrumentation 2-2-3
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 standalone

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: 7727, 7748. No lab fee charged.

7748 Digital Systems II

3-3-4

Microprocessor Hardware: Includes memories, RAMS, ROMS, PROMS, and E-PROMS, also ALU units with A/D and D/A conversions. Course continues with microprocessors, microcomputers, architecture, CPU, and bus structures. Application of microprocessor will be discussed interfacing with laboratory systems.

Prerequisites: 7738. Lab fee charged.

7749 Biomedical Instrumentation I

3-2-3

Covers basic medical instrumentation and the role of the BMET in the hospital. To include: man to machine interface, medical terminology, hospital organization, heart and circulatory system, electrodes, transducers, bioelectric amplifiers, EKGs, mechanical recorders, ICUs and CCUs, electrical safety, and electro-surgery units.

Prerequisites: 4012, 7730, 7738. No lab fee charged.

7750 Electronics III

4-2-4

Class A small signal and power amplifiers, class B amplifiers, field effect transistors, FET biasing, FET amplifiers, frequency response of amplifiers.

Prerequisites: 7740. No lab fee charged.

7753 Communication Systems II

4-2-4

This course covers the analysis and design of circuitry required for communications systems including tuned circuits, phase locked loops, AM-FM and pulse detectors, modulators, linear amplifiers, power amplifiers, transmitters, receivers, transmission lines, wave guides, microwave transmissions, antennas, radar and facsimile.

Prerequisites: 7743. No lab fee charged.

7755 Electrical Estimating

2-2-3

Blueprint reading take-off techniques, specifications, estimating procedure, unit pricing, pricing sheets, summary sheets, proposals, checking methods, computerized estimating techniques.

Prerequisites: None. No Lab fee charged.

7756 Power Generation & Transmission

3-1-3

Survey of coal, oil, nuclear, and hydroelectric generation; circuit constants, assemblies of power system components, load flow studies, transients, power limits for stability, faults on power systems, instrumentation, relays and interrupting devices, insulation, tower design, and effective grounding techniques.

Prerequisites: None. No lab fee charged.

7758 Motors & Controls

3-3-3

Fundamentals, applications and selection of DC and 30/ AC motors including speed torque characteristics, horsepower and efficiency calculations. Relay, static, and programmable control circuits emphasizing equipment and personal protection, across the line starting, acceleration methods, speed control, reversing, plugging, sequencing, counting, breaking, and jogging will be analyzed, constructed, designed and diagnosed for improper operation.

Prerequisites: 7722, 7723; or 7702, 7721; or 7702, 7708; 7728. No lab fee charged.

7759 Biomedical Instrumentation II

3-2-3

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 are presented. Maintenance management including records, stock level optimization, shop layout, forms and technician duties is discussed. Consideration is given to the ethics related to biomedical equipment servicing.

Prerequisites: 7749. No lab fee charged.

7767 Computer Communications

3-2-3

This course will discuss the various topics and methods of computer communications. The course will deal with the following topics: local and global micro busses, parallel communications, async vs. sync communications, serial communication standards, modems, networking techniques, fiber optic systems.

Prerequisites: 7768, 7727, 7747. No lab fee charged.

7768 Digital Systems III

3-3-4

Microprocessor software. Course develops machine language and assembly language programming for an 8-bit microprocessor system. Machine instruction sets will be discussed. Use of programmable peripheral chips will be included. Course develops applications software.

Prerequisites: 7748. 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 standalone systems.

Prerequisites: 7747, 7768. Corequisites: 7757. No lab fee charged.

7799 Special Problems Seminar-Electrical

Var-Var-2/4

Individual Study and special projects pertaining to the particular technology that the student is enrolled in. 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 program coordinator and divisional coordinator of academic affairs.

Prerequisites: None. No lab fee charged.

7810 Welding Skills

3-3-3

Basic gas welding. Safe and correct methods of assembling and operating of welding equipment. Introduces the student to joining of metals based on fusion, diffusion, chemical and mechanical methods. Specific laboratory work will involve the oxyacetylene cutting, heating, soldering, brazing, and welding skills.

Prerequisites: None. Lab fee charged.

7811 Welding Processes & Techniques

3-3-4

Introduction to the use and technical aspects of basic and oxy-fuel welding processes. Studies are made of various welding process factors such as heat, polarity, electrode application. Laboratory experience to include joining of mild steel. Gas metal arc welding (MIG welding) theory and application are also introduced. The American Welding Society designation of GMAW, OAW, and SMAU apply to this course.

Prerequisites: None. Lab fee charged.

7901 Energy Management and Alternatives

3-0-3

Methods of evaluating and solving energy usage problems - particularly in residential homes. Coverage includes: structural energy usage analysis, lifestyle management, problem-solving methods showing retrofits and alterations of existing systems as well as new applications. Alternate energy options including solar and wind energy.

Prerequisites: None. No lab fee charged.

7910 Surveying Measurements

3-3-3

Introductory course in field measurement techniques, with emphasis on units of measurement, field note format, instrument usage, differential leveling, 3-wire leveling, profiles, cross sections, taping, E.D.M. usage, horizontal and vertical angles, bearings and azimuths.

Prerequisites: 1171 or 1191. No lab fee charged.

7911 Introduction to Construction

3-1-3

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.

Prerequisites: None. No lab fee charged.

7912 Survey of Construction

3-0-3

A survey of the construction industry to include the following topics: management in construction, contracting methods, contracts and specifications, estimating, scheduling, construction methods and materials, blueprint reading, and surveying.

Prerequisites: None. No lab fee charged.

7920 Surveying Calculations

4-2-3

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 and "COGO" Computer Program.

Prerequisites: 7910. No lab fee charged.

7930 Route Surveying

3-3-3

Advanced course in the elements of route surveying, with emphasis on design and layout of horizontal curves, vertical curves, and spiral transition curves, calculation of super-elevation, construction and staking.

Prerequisites: 7920, 7032. No lab fee charged.

7931 Light Construction

3-3-3

Forest products and their characteristics, carpentry, roofing, etc.; footings; foundations; bracing; retaining walls; construction material and methods; lightweight steel construction.

Prerequisites: 1192. No lab fee charged.

7934 Statics (CIVIL)

3-2-3

A continuation and application of principles of physics to engineering analysis. Topics of instruction are limited to force analysis applied to civil engineering structures and to static friction. Course objectives are accomplished through lecture, visual aids, example calculations, literature refer-

ences, and handouts.
Prerequisites: 1192, 2292. No lab fee charged.

7935 Computer Applications (Civil) 3-2-3
Application software usage, with emphasis on word processing, spreadsheets, and data bases with application to Civil Engineering Technology problems.
Prerequisites: 1192, 7032, 7920. No lab fee charged.

7940 Elements of Land Surveying 3-2-3
Advanced course in the elements of boundary surveys, with emphasis on document research, deed descriptions, U.S. public lands survey system, Ohio land subdivisions, legal aspects of land surveys.
Prerequisites: 7920. No lab fee charged.

7941 Heavy Construction 3-2-3
Design principles and construction techniques involving buildings constructed with heavy timber, steel, concrete, or a combination of these materials. Emphasis on commercial and industrial buildings including multi-level structural installations, piles, caissons, and retaining walls.
Prerequisites: None. Corequisites: 7945. No lab fee charged.

7943 Estimation and Inspection 3-2-3
Development of skills in estimation amount and cost of labor and materials for various types of construction.
Prerequisites: 1191. No lab fee charged.

7944 Strength of Materials (CIVIL) 3-2-3
An introductory course in the application of statics to the properties of materials used in Civil Engineering structures. Topics will include Hooke's Law, temperature effects, welds, biaxial stress conditions, combined stress and prestressed beams. Course objectives are accomplished through lecture, demonstration, example calculations, case studies, literature references, and extensive handouts.
Prerequisites: 1191, 7934. Corequisites: 7945. No lab fee charged.

7945 Structural Design I 3-2-3
A design course in which the principles of statics are applied to analysis and design of simple structures. Topics of instruction include space frames, shear and moment diagrams, beam analysis and design, and beam deflection. Course objectives are accomplished through lecture, visual aids, example calculations, literature references, and handouts.
Prerequisites: 1191, 7934. Corequisites: 7944. No lab fee charged.

7947 Drainage Control Systems 3-2-3
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. Emphasis will be on control of erosion and sedimentation. Course objectives are accomplished through lecture, visual aids, example calculations, case studies, and extensive handouts.
Prerequisites: 1191. No lab fee charged.

7948 Subdivision Design 3-2-3
Analysis of the elements in site development, including subdivision and zoning regulations; construction of streets, gutters, water and sewerage systems and earthwork.
Prerequisites: 7910, 7925. No lab fee charged.

7950 Surveying Field Project 1-6-3
Specialized project utilizing fundamental theories and standard practices involved in surveying. To include courthouse research, field reconnaissance and measurements, resolution, platting and astronomic observations.
Prerequisites: 7930, 7940. No lab fee charged.

7953 Construction Management and Operation 3-2-3
An analysis of a contractor's operation from the initial purchase of land to the completion of a project. Contractor's relationship with the architect, engineer, client, and public agencies. Planning coordination, progress charts, and subcontracts are emphasized.
Prerequisites: None. No lab fee charged.

7954 Structural Design II 3-3-3
A course presenting the fundamentals of statics to reinforce concrete design. Topics of instruction include the ACI Strength Method of reinforced concrete design, and the Moment Distribution method of analysis for statically indeterminate structures. The laboratory presents the ACI weight proportioning method of mix design, an introduction to superplasticizers, and the use of steel fibers. Course objectives are accomplished through lecture, example calculations, literature references, laboratory experience, and extensive handouts.
Prerequisites: 7944, 7945, 1192. No lab fee charged.

7955 Soils Engineering Technology 3-2-3
This course is an introduction to the properties of soil as a material used in

construction. Topics of instruction will include routine laboratory tests, soil classification, compaction, slope stability, soil strength and geotextile materials. Course objectives are accomplished through lecture, laboratory experience, example calculations, case studies, literature references, and extensive handouts.
Prerequisites: 1192, 7934. No lab fee charged.

7957 Environmental Engineering Technology 3-1-3
An introductory overview of environmental concerns seen from the perspective of engineering technology. The course is built on an environmentalist's concern for public health and safety. Much of the course content is built upon the work of the Environmental Protection Agency, but is also supplemented by reasoned critiques of their efforts. Major topics of study include solid and hazardous waste, and potable and wastewater treatment. Course objectives are accomplished through lecture, field trips, laboratory demonstration, visual aids, case studies, literature references, and extensive handouts.
Prerequisites: 7947. No lab fee charged.

7958 Control Surveying 3-3-4
Introduction to control surveying. Topics of instruction include: state plane coordinates, astronomic observations, control surveying standards and techniques, total stations and data collectors, computer calculations and graphics, and aerial photogrammetry control.
Prerequisites: 7920, 7930, 1192. No lab fee charged.

7961 Introduction to Hazardous Waste Management 3-0-3
An introductory course exploring the current practices and problems associated with management of hazardous substances. Several case histories will be presented. Discussion will focus on how past and current practices may adversely affect human health. Legislative efforts to regulate exposure, promote conservation and clean-up existing sites will be summarized. The importance and techniques of citizen involvement will be stressed.
Prerequisites: None. 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 program coordinator and divisional coordinator of academic affairs.
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 1-4-3
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
Complete required maintenance forms, records and inspection report. Select and use FAA and manufacturer's aircraft maintenance specifications, data sheets, manuals, publications and related Federal Aviation Regulation Lift, thrust and drag. Stability of aircraft.
Prerequisites: None. No lab fee charged.

8106 Engineering Graphics (Aviation) 2-2-2
Read drawings, symbols and schematic diagrams. Draw sketches of repairs and alterations. Apply blueprint information. Use graphs and charts.
Prerequisites: None. No lab fee charged.

8107 Materials & Processes 5-5-5
Identify and select aircraft hardware and materials. Perform precision measurements. Perform penetrate, chemical etching, and magnetic particle inspections. Identify and select appropriate nondestructive testing methods. Perform basic heat-treating processes. Inspect and check welds. Fabricate and install rigid and flexible lines and fittings.
Prerequisites: None. Lab fee charged.

8108 Aircraft Electricity 3-2-3
Repair 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
Identify and select cleaning materials. Perform aircraft 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.
Prerequisites: None. No lab fee charged.

8130 Airframe Structures I 3-7-5
Identifying of wood defects, inspect wood structures, service and repair wood structures, fabric and fiberglass covering materials. Trim, lettering and touch-up paint; cleaning and corrosion controls, inspect and identify defects.
Prerequisites: 1191, 2291, 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, 8108. No lab fee charged.

8140 Airframe Structures II 3-7-5
Install special rivets and fasteners. Inspect bonded structures. Inspect and repair plastics, honeycomb and laminated structures. Inspect and repair 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.

8141 Airframe Fuel Systems 1-4-2
Inspect, check and repair pressure fueling, transfer, defueling, and dump systems. Repair of fuel systems components. Inspect, check, service, troubleshoot, and repair aircraft fuel systems. Inspect, check, service, troubleshoot, and repair powerplant fuel systems.
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, 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, 2292. No lab fee charged.

8150 Instrumentation, Communication, Navigation and Utility Systems 5-5-5
Installation, marking, swinging of instruments. Testing of pilot and static air systems and filter systems. Install and check pressure, vacuum, mechanical instruments. Inspect, check and service autopilot, approach control and communication and navigation systems. Inspect and repair antenna and electronic equipment. Inspect, check and service speed and take-off warning system electrical brake controls, anti-skid system and carbon monoxide detection systems. Inspect, check and service ice and rain control system. Inspect, check, troubleshoot, service and repair landing gear position and warning system and aircraft fire detection and extinguishing systems.
Prerequisites: 8107, 8140, 8108, 8143. No lab fee charged.

8151 Airframe Systems, Hydraulic & Pneumatic Landing Gear 3-7-5
Inspect, check, service and repair landing gear. Retraction systems, shockstruts, brakes, wheels, tires and steering systems. Inspect, check and service of warning systems of anti-skid electrical brakes. Controls, landing gear position 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.

Prerequisites: 8141, 8142. Corequisites: 8150, 8151. No lab fee charged.

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 I 5-5-5
Introduction to the design, manufacture, overhaul, and repair of piston engines. Overhaul of an opposed engine. Inspect and repair a 14-cylinder or larger radial piston engine.
Prerequisites: 1172 or 1191, 2291, 8102. No lab fee charged.

8161 Powerplant Lubrication 4-3-4
Identify and select proper lubricants. Inspect, check, service, troubleshoot and repair powerplants.
Prerequisites: 2292, 8102. 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, 2291, 8102. No lab fee charged.

8170 Powerplant Theory & Maintenance II 5-5-5
Inspect and repair reciprocating engines. Inspect, check service and repair opposed and radial engines and reciprocating engine installations.
Prerequisites: 8160. No lab fee charged.

8171 Powerplant Fuel Metering Systems I 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: 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: 8160, 8170. Corequisites: 8183. No lab fee charged.

8182 Engine Instruments & Fire Protection 1-4-3
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: 8160, 8170. Corequisites: 8183. No lab fee charged.

8183 Powerplant Theory & Maintenance 5-5-5
Install, troubleshoot and remove reciprocating engines. Overhaul turbine engines, inspect, check, service and repair turbine engine installations. Remove, install and troubleshoot turbine engines.
Prerequisites: 8160, 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.

9000 Career Development 2-0-2
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. Lab fee charged.

9005 College Success Strategies for Returning Adults 2-0-2

Are you afraid of failure; are you unsure about your career and personal goals; are you concerned about the adequacy of your 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.

9200 Professional Practices 1-0-0

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.

9201 Cooperative Employment 4-40-3

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 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 thirty (30) to forty (40) class hours per term is required to earn co-op credit.

Prerequisites: None. No lab fee charged.

9202 Cooperative Employment 4-40-3

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 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 thirty (30) to forty (40) class hours per term is required to earn co-op credit.

Prerequisites: None. No lab fee charged.

9203 Cooperative Employment 4-40-3

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 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 thirty (30) to forty (40) class hours per term is required to earn co-op credit.

Prerequisites: None. No lab fee charged.

9204 Cooperative Employment 3-40-3

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 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 thirty (30) to forty (40) class hours per term is required to earn co-op credit.

Prerequisites: None. No lab fee charged.

9205 Cooperative Employment 3-40-2

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 suc-

ceeding 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 thirty (30) to forty (40) 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 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.

9401 Cooperative Employment/Engineering Technologies 1-40-3

Usually on an alternating term basis, the engineering 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.

Technologies Division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

9605 Cooperative Education Sciences/Mathematics Division 1-40-2

Usually on an alternating term basis, the Math/Science Technology student is placed on a full-time (32-40 hour) job that 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 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 Math/Science Technologies Division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

9701 Cooperative Employment 1-40-3

Usually on an alternating term basis, the Technical Writing/Editing Technology student is placed on a full-time (32-40 hour) job that 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 should be 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 Communication Skills/Social Sciences Division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

9702 Cooperative Employment 1-40-3

Usually on an alternating term basis, the Technical Writing/Editing Technology student is placed on a full-time (32-40) job that 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 should be 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 Communication Skills/Social Sciences Division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

9703 Cooperative Employment 1-40-3

Usually on an alternating term basis, the Technical Writing/Editing Technology student is placed on a full-time (32-40 hour) job that 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 should be 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 Communication Skills/Social Sciences Division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

9704 Cooperative Employment 1-40-3

Usually on an alternating term basis, the Technical Writing/Editing Technology student is placed on a full-time (32-40 hour) job that 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 should be 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 Communication Skills/Social Sciences Division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

Usually on an alternating term basis, the engineering 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 engineering technology division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

Usually on an alternating term basis, the engineering 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 engineering technology division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

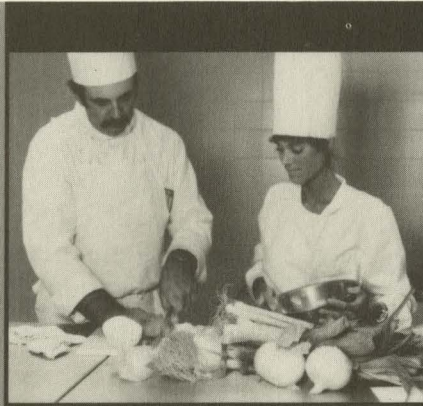
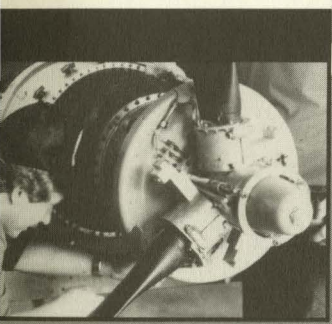
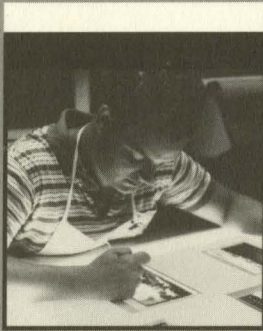
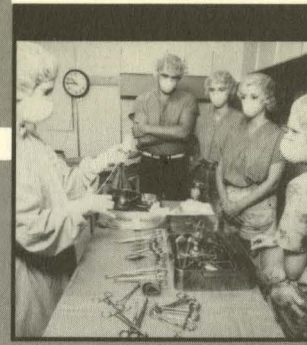
9501 Cooperative Employment 1-40-3

Usually on an alternating term basis, the ornamental horticulture 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 horticulture division co-op policies and procedures required to earn credit.

Prerequisites: None. No lab fee charged.

9502 Cooperative Employment 1-40-3

Usually on an alternating term basis, the ornamental horticulture 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 horticulture division co-op policies and procedures required to earn credit.



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 M.A., Central Michigan University
Schreckenhofer, Charlotte, R.R.T. Adjunct Clinical Instructor,
 Respiratory Therapy Program
 Shriners Burns Institute
 A.A.S., Cincinnati Technical College
Schulte, Clifford Program Chairman,
 Engineering Technologies Division
 B.S.E.E., University of Cincinnati
Schwegman, Charlene, R.N. Clinical Adjunct Instructor,
 Medical Record Program
 McCullough-Hyde Hospital
 B.A., College of St. Francis, Illinois
Scott, Sandra, R.D. Adjunct Clinical Instructor,
 Dietetics Program
 Clifton Care Center
 B.S., University of Cincinnati
 R.D., University of Cincinnati
Sefton, J. Richard Instructor,
 Business Technologies Division
 B.S., University of Cincinnati
 M.Ed., University of Cincinnati
Shepard, John Adjunct Instructor, Physical Sciences/
 Mathematics Division
 B.S., University of Cincinnati
 M.A., University of Cincinnati
Simons, Sandy, R.N. Adjunct Clinical Instructor,
 Surgical Technology Program
 Bethesda North Hospital
Sketch, Gregory, P.S. Instructor,
 Engineering Technologies Division
 A.A.S., Cincinnati Technical College
 B.S.C.E., Ohio State University
 B.S.S., Ohio State University
Smith, Donna, R.N. Adjunct Clinical Instructor,
 Surgical Technology Program
 Fort Hamilton Hughes Medical Center
Smith, Gail ART Adjunct Clinical Instructor,
 Medical Record Program
 Mercy Hospital
 A.A., Eastern Kentucky University
Smith, Eugene Adjunct Instructor, Physical Sciences/
 Mathematics Division
 B.S.C.E., University of Kentucky
 M.S.C.E., University of Kentucky
 Ph.D., University of Texas
Smith, Swanya d'Andre Coordinator,
 Business Technologies Division
 A.A.B., Cincinnati Technical College
Sowers, James, A.M.T. Adjunct Clinical Instructor,
 Medical Laboratory Program
 Brown County Hospital
 A.M.T., U.S. Army Medical Service School
Spraley, Judith, A., R.N. Coordinator,
 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
Stark, Thomas J. Dean, Physical Sciences/

Mathematics Division &
Communication Skills/
Social Sciences Division
B.S., Xavier University
M.Ed., Xavier University
Steele, Dewey, ART Adjunct Clinical Instructor,
Medical Record Program
Bethesda Oak Hospital
Steidley, V. Kenneth Professor Emeritus,
Engineering Technologies Division
B.S., Northeast Missouri State University
Stewart, Briggetta E. Coordinator,
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A.A.B., Cincinnati Technical College
Certified Protection Personnel, American Society for Industrial
Security
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B.A., Thomas More College
Stock, William Coordinator,
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A.A.B., Cincinnati Technical College
A.A.S., Cincinnati Technical College
B.S., University of Cincinnati
Certified Food and Beverage Executive, Educational Institute of
American Hotel & Motel Association
Certified Culinary Educator, American Culinary Federation
Certified Executive Chef, American Culinary Federation
Stoll, Kenneth V. Dean,
Engineering Technologies Division
B.S., Miami University
M.Ed., University of Cincinnati
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Medical Record Program
Jewish Hospital
Stump, Diane Counselor, Student Services
B.A., Eastern Kentucky University
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M.Ed., Xavier University
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Business Technologies Division
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M.Ed., University of Cincinnati
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Certified Systems Professional, Association for Systems
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Mathematics Division
B.S., Xavier University
Swanson, Richard Instructor, Physical Sciences/
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B.S., University of Cincinnati
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Medical Record Program
Bethesda Hospital
A.A.S., Eastern Kentucky University
B.S., University of Cincinnati
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Surgical Technology Program
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B.S., Northern Kentucky University
Ed., University of Cincinnati
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Mathematics Division

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M.S., Xavier University
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Medical Laboratory Program
St. Francis Hospital
B.S., Thomas More College
M.Ed., Xavier University
M.T. (ASCP), Good Samaritan School of Medical Technology
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Engineering Technologies Division
A.A.S., Ohio College of Applied Science
Van Horn, Robert Industrial Trainer,
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B.S., Northern Kentucky State University
Certified Master Automotive Technician
Van Mouwerick, Connie Instructor,
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A.A.S., Cincinnati Technical College
B.S.M.E., Tri-State College
Vaughn, A. Wayne Vice President,
Finance & Business Affairs
B.S., Miami University
B.A., Miami University
Vetter, Jeffrey A. Coordinator,
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B.S., Xavier University
von Kampen, Karl N. Coordinator,
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Certified Master Automotive Technician
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M.Ed., University of Cincinnati
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Respiratory Therapy Program
Jewish Hospital
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Medical Record Program
Clermont Mercy Hospital
Ware, Kathleen Adjunct Instructor,
Developmental Education
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M.Ed., Xavier University
Warman, Charles E. Senior Vice President Emeritus
B.Ed., University of Cincinnati
M.Ed., Xavier University
Washington, Kenneth Adjunct Instructor, Communication
Skills/Social Sciences Division
B.A., University of Wyoming
M.A., University of Cincinnati
Waters, Sharon Coordinator/Counselor
Grant Programs
Watts, Olivia, R.N. Coordinator,
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B.S.N., University of Cincinnati
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Respiratory Therapy Program
Bethesda Hospital
B.S., University of Cincinnati
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Surgical Technology Program
Our Lady of Mercy Hospital
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Dietetics Program
Nutrition Consultant
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Dietetics Program
St. Francis Hospital
B.S., Illinois State University
R.D., Good Samaritan Hospital
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Wyatt, Walter W. Director, Cooperative Education,
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B.S., Ohio State University
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B.S.E.E., Ohio State University
Youngpeter, Donald Program Chairman,

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Drake Memorial Hospital
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M.Ph., Yale University
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M.A.T., George Washington University
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Mathematics Division
Ziegler, Lawrence J. Instructor, Communication Skills/
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Zwick, Nancy, R.D. Adjunct Instructor,
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Wayne McDonough Frisch's Inc.
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Gustave Neuss, III Gustave Neuss & Associates
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Ron Dobbs Kenner Products
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Dietetics Technology

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Susan Groeschen, D.T. Jewish Hospital
Mary Ann Panzeca, D.T. St. Elizabeth Medical Center
Joe Piepmeyer, R.D. Twin Towers Retirement Center
Theresa Taft, R.D. Robin Vickers, D.T.
Ann Wolf, R.D. Consultant Dietitian
Carol Wright St. Francis-St George Hospital

Electrocardiography Technology

Zeb Allen St. Elizabeth Medical Center
Richard Beiting Bethesda Hospital North
Martha Bernhard Jewish Hospital
Jessie Brown Good Samaritan Hospital
Jackie Dabbelt St. Elizabeth Medical Center
Bonnie Fair Christ Hospital
Lorenzo Law Veterans Administration Hospital
Marcia Miller Deaconess Hospital
Diane Overberg Bethesda Hospital
Julie Wolfe Bethesda Hospital North

Electro-Mechanical Engineering Technology

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Dick Boehm Armco East
Mike Carlier S.D.R.C.
John Dooley General Electric Company
Alex Fodor Kettering Labs
Troy Fultz Cincinnati Milacron
Steve Shaffer Reams Controls
Bill Stross Metcut Research Associates

Electronics Engineering Technology

Dan Beddard Cinox
Mike Bowling Cinox
Ed Brenner Nutone
Max Cohn KDI Precision
Vern Dahl Cincinnati Electro-Systems
Doug Hickmann Cincinnati Electro-Systems
Kevin Nadzam Mosler Safe Company

Graphic Communications/Flexographic Communications Technology

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Ron Dettmer Printing Industries Assoc. of Ohio
Ed Kobman Gibson (Retired)
Fred Manning Taussig's Graphic Supply, Inc.
Ron Schlensker Sidney Printing
James Wermes Gibson Greeting Card Co.
Robert Zschau S. Rosenthal Company

Health Unit Coordinator Technology

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Nancy Binns Bethesda North Hospital
Virginia Blocker Bethesda North Hospital
Carolyn Brinkerhoff Shriners Burns Institute
Brenda Harney Bethesda Hospital
Rosetta Hull University Hospital
Lillian Levy Bethesda Oak Hospital
Marie Marks University Hospital
Brenda Montag Children's Hospital Medical Center
Anita Murphy St. Elizabeth Medical Center
Shirley Powell Bethesda Oak Hospital
Vi Sparka St. Elizabeth Medical Center
Bernice Sullivan Christ Hospital
Luvirda Todd Bethesda Hospital
Elmer Weingartner University Hospital

HVAC Technologies

Fred Betz	A. M. Kinney Company
Keith Dean	Central Trust Center
Jim Donovan	Environmental Air Products
Jerry Fellers	HAL-PE Assoc.
Lee Grosser	Lee Grosser Associates
Ken Hover	Pedco, E & A. Services
Jim McHugh	T. J. Dyer Company
Bill McMillan	Camargo Associates
Larry McMullin	Hunt Development Corp.

Hotel-Restaurant Management Technology

Marie Abdon	Westin Hotel
Jim Ellison	Holiday Inn Eastgate
Chris Hageman	Netherland Plaza
Rick Lobert	Winegardner & Hammons
Billy Sue Lockwood	Clarion Hotel
John Marotta	Maisonette
Sandra Stock	Hyatt Hotel
Pauline Sutton	Greater Cincinnati Restaurant Assoc.
Klaus Trusseini	Queen City Club
Erika Windholtz	Lenhardt's Restaurant

Industrial Laboratory Technology

Bob Aylesworth	
William Ball	Hill-Griffith Company
Richelle Becker	Drackett Company
Bruce Beimesch	Emery Industries, Inc.
William H. Boyd	Procter and Gamble Co.
Justine Clark	Formica Corporation
Patricia Griffiths	Procter and Gamble Co.
James Grote	Tekmar Company
Lawrence J. Kamphake	U.S. EPA

Industrial Software Technology

Ralph Bruggeman	Cincom Systems
Paul Burton	General Electric Company
Alan Kilpatrick	Dynallectron Data Processing Services
Stephen J. Lieland	Cincinnati Incorporated
Joseph McClure	The William Powell Company
Al Scheide	Cincinnati Milacron
James Webb	Zonic Corporation
Jerry Weber	Center for Manufacturing Technology

Laser/Optics Technology

Dr. J. Michael Burke	Procter and Gamble Co.
Brown Cooper	General Electric Company
Al Geiser	Cincinnati Electronics
Dave Gilbert	General Electric Company
Dr. Robert Hengehold	Wright Patterson AFB
William H. Jones	Monsanto Research Corp.
Gene Moss	NIOSH
Norman Neal	Cincinnati Milacron
Dr. Gary Neiheisel	Armco Steel Corp.
Jim Rockwell	Rockwell Associates, Inc.

Loss Control Technology

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Stanley M. Carle	John Shillito Company
Jack Collins	Hamilton County Courthouse
Ronald Heineman	Frisch's
Claude E. Hinds	Cal Crim
Maurice C. Hite	U.S.A.F. Medical Center
Donald Huesman	Cincinnati Milacron
James D. Jesse C.P.P.	Procter and Gamble Co.
Alan Jones	Jewish Hospital
Perry Lyle	The Wackenhut Corporation
William Mantz	Armco Steel
Elmer J. Reis	U.S. Shoe Corporation
Frank H. Rhodes	Swallen's, Inc.
Bruce Snyder	Good Samaritan Hospital
James Stauder	Armco Steel
Larry Wilson	Emery Industries
Daniel Wolfangel	Hamilton County Courthouse
Larry Zakem	Electronic Eye

Management Information Systems Technology

Robert M. Bartlett	Savings & Loan Data Corp.
Brad Dees	Champion International Corp.
John M. Fricke	Clopay Corporation
William Hilbert	Community Mutual Insurance Co.

Michael Lense	Clopay Corporation
Thomas Rouff	Champion International Corp.
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William Schunder	Cincinnati Gas & Electric
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Paul J. Twilling	Gibson Greeting, Inc.

Managerial Accounting Technology

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Tom Lindeman	Ernst & Whinney
Bob Manning, CPA	Rippe & Kingston
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Ralph Estes	Cincinnati Time Recorder (Retired)
Bob Johnson	Kinney Shoes
Michael Powell	Scot Business Machines
Nev Shanahan	Shanahan and Assoc.
Ruth Van Gorden	Merten Company
Richard A. Wanamaker, CBC	The William Powell Co.
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Mechanical Engineering Technology

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Shelby Bowling	Belcan Engineering
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Greg Hauck	Hauck Design Company
Carl Koors	CINCINNATI, Inc.
Alex McLennan	Alexander & Associates, Inc.
Richard Norman	Senmed, Inc.
Tom Tenkman	American Laundry Corp.

Medical Assisting Technology

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JoAnn Dill, R.N.	Group Health Associates
Gail Hennekes PA-C	Charles Dillard, M.D.
Lee Moeller, R.N.	Group Health Associates
Victoria Nash, C.M.A.	McAuley Hospital
Donna Percy, C.M.A.	University Hospital
Becky Petersen, C.M.A.	Craig Cleveland, M.D.
Dr. Jay John Schmidt	Private Practice
Alan Schulman	Attorney
Lori Seitzer, C.M.A.	Joesph Daugherty, M.D.
Sandra Seiwert, C.M.A.	Dr. J. Schmidt
Sheila Stuckey, M.A.	Mayfield Neurological Institute
Pamela Toepfer, C.M.A.	Group Health Associates

Medical Laboratory Technology

Lois Bonner	Shriners Burns Institute
L. Elaine Boulden	Veterans Administration Hospital
Cathleen Callies	Shriners Burns Institute
Bradley E. Copeland, M.D.	Veterans Administration Hospital
Werner E. Donath, M.D.	St. Francis-St. George Hospital
Paul Laemmle	Jewish Hospital
Harriet Saunders	Deaconess Hospital
Robert Uhl	St. Francis-St. George Hospital
Cathy Yoshikawa	Drake Memorial Hospital

Medical Record Technology

Janice Brink, RRA	University Hospital
Beatrice Busse, RN	Twin Towers Methodist Home
S. M. Clarita, OP, ART	St. Francis-St. George Hospital
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Martha Fowler, RRA	Cincinnati Technical College
Candy Lepp, RRA	Providence Hospital
Lela McFerrin, RRA	Christ Hospital
Gail Patrick Smith, ART	Mercy Hospital of Hamilton
Beverly Stratton, ART	Jewish Hospital
Jeanne Weitmarschen, ART	Good Samaritan Hospital

Occupational Therapy Technology

Jill Frank	Bethesda Hospital
Kimberly Hoffman	Bathesda Hospital
Barbara Homlar	Children's Hospital Medical Center
Elizabeth Lamping	Redwood School & Rehabilitation Center
Georgianna Joary Miller	Good Samaritan Hospital
Elaine Mullin	Private Practice
Gerry Sturm	Private Practice

Bonita Williams Drake Memorial Hospital

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William Knapp DeCenso & Knapp Attorneys
Joe Lower Mariemont Board of Education
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Steve Sandford R.F. City of Cincinnati
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Earl Wilson Thornton-Wilson, Inc.

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Debbie Sawyers Estep Management Company
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Susan Stegemoeller IDS/American Express
Marguerite Tilden Princeton Square Village

Real Estate Technology

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Charles W. Deuser Procter & Gamble Company
Bob Kelly Grady Realtors
Shirley Luedders Fifth Third Bank
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John Toelke West Shell Realtors

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Bob Carroll, RRT Good Samaritan Hospital
Sylvia Dodd-Garner Bethesda Hospital
David Dortin, Jr., D.O. Jewish Hospital
Peter Enyeart, M.D.
Bonita Heinzeoth Jewish Hospital
Robert Jackson Deaconess Hospital
Kerry Loeffler Greater Cincinnati Hospital Council
Kimberly Patton, RRT Christ Hospital
Charlotte Schreckenhofer, CRTT Shriner's Burns Institute
David Skopin, CRTT Christ Hospital
Tim Wilder, RRT Bethesda North Hospital

Surgical Technology

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Holly Garner Student
Mary Ann Gellenbeck, RN Fort Hamilton Hughes Medical Center
Melodie Gillette, RN University Hospital
Sandra Graves, CST Clermont Mercy Hospital
Katherine Halverson, RN Children's Hospital Medical Center
Randy Holland, RN St. Francis-St. George Hospital
Thomas Kreindler, MD Kreindler Medical Center
Carol Maxwell Midwest Ear Bank
Janet Nailor, RN Christ Hospital
Dick Osborne Student
Regina Teuschler, RN Providence Hospital

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Theodore H. O'Connor Monarch Marking, Systems
Terri Parker Freelance Writer
Martha H. Phillips P E I Associates
Stephanie L. Stamas The Write Perspective

Medical Laboratory Technology

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L. Elaine Boulton Veterans Administration Hospital
Cathleen Callier Shriners Burns Institute
Barbary E. Conneland, M.D. Veterans Administration Hospital
Walter E. Donnelly, M.D. St. Francis St. George Hospital
Paul Lachmiller Jewish Hospital
Hester Saunders Deaconess Hospital
Robert Lill St. Francis St. George Hospital
Cathy Robinson Drake Memorial Hospital

Medical Record Technology

Janice Brink, RRA University Hospital
Beckie Buser, RRA Twin Towers Methodist Home
J. M. Cline, CR, ART St. Francis St. George Hospital
Betsy Dublin, RRA Nursing Home Consultants
Marilyn Fawcett, RRA Cincinnati Technical College
Candy Lipp, RRA Providence Hospital
Lea McFarlane, RRA Christ Hospital
Gail Panch, SMRT, ART Jewish Hospital of Hamilton
Brenda Stallard, ART Jewish Hospital
Jeanne Wimmerbach, ART Good Samaritan Hospital

Occupational Therapy Technology

Ill Tonn Bethesda Hospital
Kimberly Holman Bethesda Hospital
Barbara Kromer Children's Hospital Medical Center
Elizabeth Langing Redwood School & Rehabilitation Center
Georganna Jany Miller Good Samaritan Hospital
Elaine Mullin Private Practice
Cory Stum Private Practice

Laser/Optic Technology

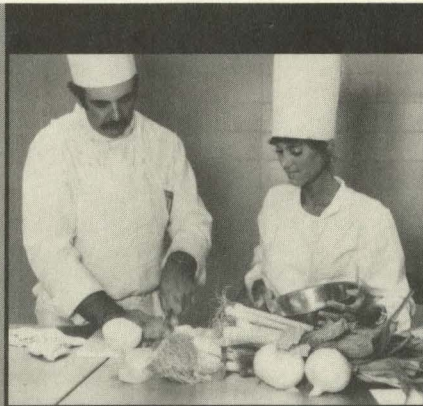
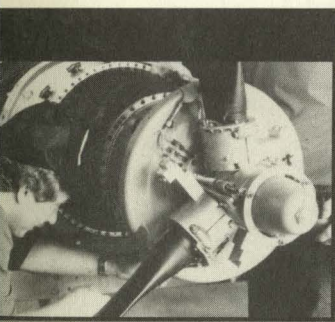
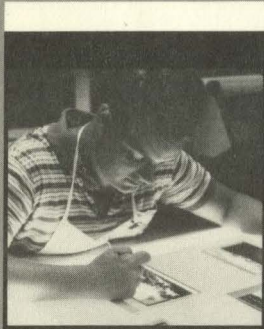
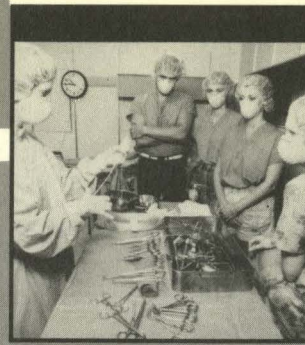
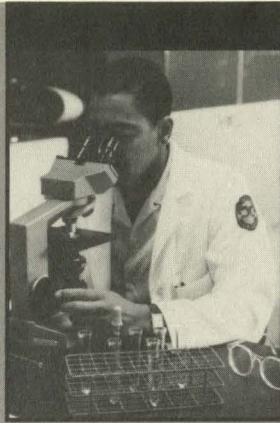
Dr. L. Michael Baker Procter and Gamble Co.
Blawn Cooper Cincinnati Electric Company
Al Grier Cincinnati Electric Company
Dave Gibson Cincinnati Electric Company
Dr. Robert Hengsthold Wright Patterson AFB
William H. Jones Monsanto Research Corp.
Gene Moss MICH
Norman Noel Cincinnati Milacron
Dr. Gary Neff Amco Steel Corp.
Jim Rockwell Rockwell Associates, Inc.

Loss Control Technology

Jack Bywater Hamilton County Courthouse
Stanley M. Cate John Shillito Company
Jack Collins Hamilton County Courthouse
Ronald Heinerman Frisch's
Claude E. Hinds Cal-Cam
Maurice C. Hite U.S.A. Medical Center
Donald Hussman Cincinnati Milacron
James D. Isness, C.R.P. Procter and Gamble Co.
Alyn Jones Jewish Hospital
Perry Lyle The Washburn Corporation
William Marks Amco Steel
Elmer J. Rios U.S. Shoe Corporation
Frank H. Rhoads Swadlow, Inc.
Bruce Snyder Good Samaritan Hospital
James Stander Amco Steel
Lynn Wilson Emery Industries
Daniel Willmangel Hamilton County Courthouse
Larry Zarem Electronic Eye

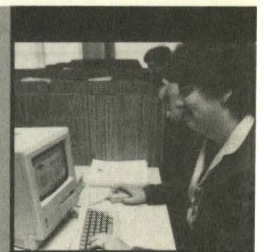
Management Information Systems Technology

Robert M. Barkett Savings & Loan Data Corp.
Fred Dees Champaign International Corp.
John M. Fiske Clippy Corporation
William Hilbert Community Mutual Insurance Co.



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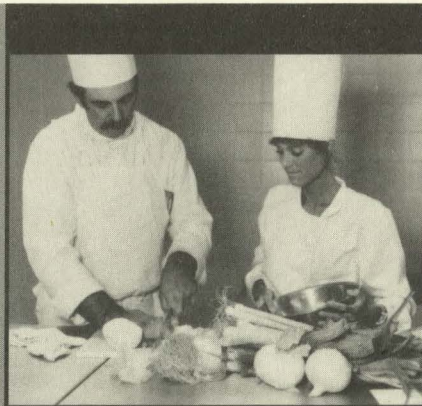
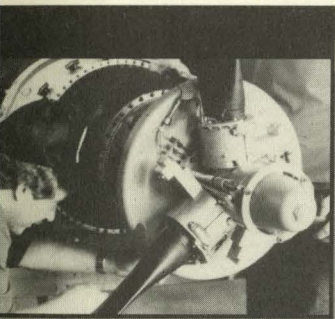
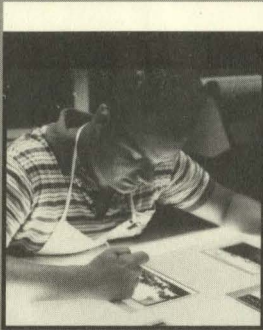
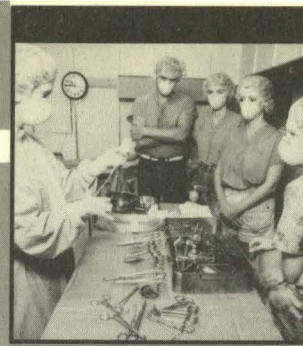
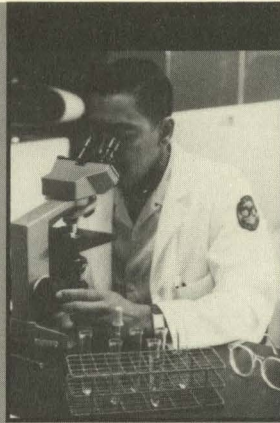
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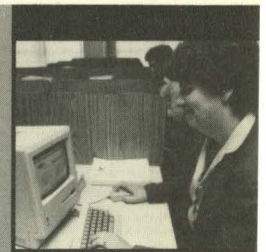
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CALENDAR

SEPTEMBER, 1986

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p>Extended Registration 8:00 a.m. - 7:00 p.m. August 25, 26, 27</p>	<p>1 Labor Day/College Closed</p>	<p>2 No Classes/Offices Open Last day to withdraw with 100% refund — Sept. term</p>	<p>3 September Term classes begin Senior Citizens Registration</p>	<p>4 Late fee assessed for registration</p>	<p>5 OPEN Registration 8:00 a.m. - 4:30 p.m.</p>	<p>6</p>
		<p>Open Registration 8:00 a.m.-7:00 p.m.</p>				
<p>7</p>	<p>8 Open Registration 8:00 p.m.-4:30 p.m. June Term Grade Reports Mailed</p>	<p>9 Last day to register for September term or add courses except co-op and extensions Open Registration 8:00 p.m.-4:30 p.m. Last day to withdraw with 80% refund — September term</p>	<p>10</p>	<p>11</p>	<p>12</p>	<p>13</p>
		<p>Co-op Registration Only 8:00 a.m.-4:30 p.m.</p>				
<p>14</p>	<p>15</p>	<p>16 Last day to register for co-op FTE reporting date</p>	<p>17 Last day for November Term Pre-registration</p>	<p>18</p>	<p>19</p>	<p>20</p>
	<p>Co-op Registration Only 8:00 a.m.-4:30 p.m.</p>		<p>Last day to petition — November Term graduates</p>	<p>No Registration</p>		
<p>21 Commencement Music Hall 1:00 p.m.</p>	<p>22</p>	<p>23 Board of Trustees Meeting</p>	<p>24</p>	<p>25</p>	<p>26</p>	<p>27</p>
<p>28</p>	<p>29</p>	<p>30</p>				

OCTOBER, 1986

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 Bills for November term mailed	2	3	4 Rosh Hashanah
5	6	7 Last day to change "I" grades from June term	8	9	10	11
12	13 Yom Kippur	14	15 Bills for November term due No pays—voided pre-registration	16	17	18
19	20	21	22 Graduation Petitions for January Term begins (end November 24)	23 Last Day to Withdraw With a Grade of "W" For Sept. Term	24	25
26	27 January term pre-registration begins (ends November 19) January Term schedule available	28 Board of Trustees Meeting	29	30	31	

Course Change — Drop/Add only 8:00 a.m.-4:30 p.m.

Course Changes — Drop/Add & Registration 8:00 a.m.-7:00 p.m.

No Registration or Drop/Add Activity

Registration 8:00 a.m.-7:00 p.m.

Registration 8:00 a.m.-4:30 p.m.

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

						1
2	3	4 Election Day	5 September term ends Last day to change "IP" grades from June term	6 No Classes/Offices Open Last day to withdraw with 100% refund — November term	7 College Closed Veterans Day Observed	8
	Open Registration 8:00 a.m.-7:00 p.m.			Open Registration 8:00 a.m.-4:30 p.m.		
9	10 November Term Classes begin Senior Citizens Registration	11 Late fee assessed for registration September term grades due 4:00 p.m.	12 Clark Tech vs. CTC (home 7:30 p.m.)	13	14 Last day to register for November term or add courses except co-op 8:00 a.m. - 4:30 p.m. Last day to withdraw with 80% refund — November term	15 Vincennes Invitational (away TBA)
	Open Registration 8:00 a.m.-7:00 p.m.			Open Registration 8:00 a.m.-4:30 p.m.		
16	17 September term grade reports mailed	18	19 January term pre- registration ends	20	21 Last day to register for co-op Hudepohl Classic (home 6:00 & 8:00)	22 Hudepohl Classic (home 6:00 & 8:00)
	Co-op Registration only 8:00-4:30 p.m.					
23 30	24 Last day to petition — January Term graduates	25 Board of Trustees Meeting	26	27 Thanksgiving College Closed	28 College Closed Mott Ragnone Invitational (away TBA)	29 Mott Ragnone Invitational (away TBA)
	No Registration or Drop/Add Activity					

DECEMBER, 1986

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3 Bills for January term mailed CTC vs. Sinclair (away 7:00 p.m.)	4	5	6
7 Hanukah	8	9	10 CTC vs. Sullivan (away 8:00 p.m.)	11	12 Brevard Christmas Tournament (away TBA)	13 Brevard Christmas Tournament (away TBA)
14	15	16 Shawnee State vs. CTC (home 7:30 p.m.)	17 Bills for January term due No pays — voided pre-registration Registration And Drop/Add Activity	18	19	20
	Course Changes — Drop/Add 8:00 a.m.-4:30 p.m.		Extended Hours 8:00 a.m.-7:00 p.m.	No Registration or Drop/Add Activity		
21	22 Wabash Valley vs. CTC (home 7:30 p.m.) Offices Open	23 Offices Open	24	25 Christmas Day College Closed	26	27
	No Registration or Drop/Add Activity		Student Winter Recess			
28	29 CTC vs. Schoolcraft (away 8:00 p.m.) Offices Open	30 CTC vs. St. Clair (away 2:00 p.m.) Offices Open No Classes	31 Offices Open			
	Student Winter Recess					

JANUARY, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 New Year's Day College Closed	2 College Closed	3 Sullivan vs. CTC (home 2:00 p.m.)
4	5 January Term Classes Resume	6 CTC vs. Northwestern (away 7:30 p.m.)	7	8 Last day to withdraw with a "W" for Nov. Term	9 Graduation Petitions for April Term begin (end February 10)	10
	← No Registration or Drop/Add Activity →					
11	12 April Term schedule available April term pre- registration begins (ends February 3)	13 Sinclair vs. CTC (home 7:30 p.m.)	14	15 Martin Luther King's Birthday CTC vs. Vincennes (away 7:30 p.m.)	16	17 Owens Tech vs. CTC (home 2:00 p.m.)
	← Registration 8:00 a.m.-7:00 p.m. →			← Registration 8:00 a.m.-4:30 p.m. →		
18	19 College Closed Martin Luther King Day observed	20	21 CTC vs. Edison State (away 8:00 p.m.)	22	23 November term ends Last day to change "IP" grades from September Term Open Registration 8:00 a.m.-4:30 p.m.	24 Lakeland vs. CTC (home 7:30 p.m.)
	← Open Registration 8:00 a.m.-7:00 p.m. →					
25	26 Last day to withdraw with 100% refund — January term No Classes/Offices Open	27 January Term begins Registration 8:00 a.m.-7:00 p.m. Senior Citizens Registration Board of Trustees Meeting November term grades due—4:00 p.m. CTC vs. Shawnee State (away 7:30 p.m.)	28 Late fee assessed for registration	29	30 CTC vs. Metro (away 8:00 p.m.)	31 CTC vs. Lakeland (away 3:00 p.m.)
	← Open Registration 8:00 a.m.-7:00 p.m. →			← Open Registration 8:00 a.m.-4:30 p.m. →		

FEBRUARY, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2 November term grade reports mailed Last day to register for January term or add courses except co-op Last day to withdraw with 80% refund—January term Open Registration 8:00 a.m.-4:30 p.m.	3 April term pre-registration ends	4 CTC vs. Clark Tech (away 7:30 p.m.)	5	6	7 CTC vs. Owens Tech (away 2:00 p.m.)
	Co-op Registration Only 8:00 a.m.-4:30 p.m.					
8	9 Vincennes vs. CTC (home 7:30 p.m.) Last day to register for co-op 8:00 a.m.-4:30 p.m.	10 Last day to petition April Term graduates	11	12	13	14 Valentines Day Metro vs. CTC (home 3:00 p.m.)
15	16 Presidents Day College Closed	17 Northwestern vs. CTC (home 7:30 p.m.)	18 Bills for April term mailed	19	20	21
22	23	24 Board of Trustees Meeting	25	26	27 OJCAC Tournament (away TBA)	28 OJCAC Tournament (away TBA)

MARCH, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 OJCAC Tournament (away TBA)	2	3 Last day to change "1" grades from November term	4 Bills for April term due No pays — voided pre- registration Region XII Tournament (away TBA) Course Changes Drop/Adds & Registration Extended Hours 8:00 a.m.-7:00 p.m.	5 Region XII Tournament (away TBA)	6 Region XII Tournament (away TBA)	7
	Course Changes — Drop/Adds Only 8:00 a.m.-4:30 p.m.		No Registration or Drop/Add Activity			
8	9	10	11	12	13	14
	No Registration or Drop/Add Activity					
15	16	17 St. Patrick's Day	18 Graduation Petitions for June Term begin (end April 21)	19 Last day to withdraw with a "W" for Jan. term	20	21
	No Registration or Drop/Add Activity for April Term					
22	23 June term pre-registration begins (ends April 16) June term schedule available	24 Board of Trustees Meeting	25	26	27	28
	Registration 8:00 a.m.-7:00 p.m.		Registration 8:00 a.m.-4:30 p.m.			
29	30	31				
	Open Registration 8:00 a.m.-7:00 p.m.					

APRIL, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 January term classes end	2	3	4
			Open Registration 8 a.m.-7 p.m.	Offices Open Open Registration 8:00 a.m.-4:30 p.m.		
5	6 April term classes begin	7 January term grades due	8	9	10 Last day to register for April term or add courses except co-op	11
	Open Registration 8:00 a.m.-7:00 p.m.			Open Registration 8:00 a.m.-4:30 p.m.		
12	13 January term grade reports mailed Last day to withdraw with 80% refund — April term	14	15	16 June term pre-registration ends	17 Good Friday College Closed	18
	Open Registration 8:00 a.m.-4:30 p.m.	Co-op Registration Only 8:00 a.m.-4:30 p.m.				
19 Easter	20	21 Last day to petition — June Term graduates	22	23 Passover begins	24	25
	Co-op Registration Only 8:00 a.m.-4:30 p.m.					
26	27	28 Board of Trustees Meeting	29	30		

MAY, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
58	59	30			1	2
3	4	5	6 Bills for June term mailed	7	8	9
10	11 Last day to change "I" grades from January term Co-op information sheets due — April term	12	13	14	15	16
17	18	19	20 Bills for June term due No pays — voided pre-registration Course Changes Drop/Add & Registration for June Term Extended Hours 8:00 a.m.-7:00 p.m.	21 Graduation Petitions for September Term begins (end July 9)	22	23
24	25 Memorial Day College Closed	26 Last day to withdraw with a "W" for April term Board of Trustees Meeting	27	28 September term pre-registration begins (ends July 10) September term schedule available	29	30
31			No Registration or Drop/Add Activity for June Term			

JUNE, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
		Registration 8:00 a.m.-7:00 p.m.		Registration 8:00 a.m.-4:30 p.m.		
7	8	9 Last day to change "IP" courses from January term April term classes end	10	11 April term grades due — 4:00 p.m.	12	13
			Registration 8:00 a.m.-4:30 p.m.			
14	15	16	17 April term grade reports mailed	18	19	20
			Registration 8:00 a.m.-4:30 p.m.			
21	22	23 Board of Trustees Meeting	24 June term begins Senior Citizens Registration	25 Late fee assessed for registration	26	27
		Open Registration 8:00 a.m.-7:00 p.m.		Open Registration 8:00 a.m.-4:30 p.m.		
28	29	30 Last day to register for June term or add courses except co-op Last day to withdraw with 80% refund — June Term				
	Open Registration 8:00 a.m.-7:00 p.m.					

JULY, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 Independence Day College Closed	2	3 Independence Day College Closed	4
			Co-op Registration Only 8:00 a.m.-4:30 p.m.			
5	6	7	8 Last day to register for co-op	9 Last day to petition September graduates	10 September Term pre-registration ends	11
	Co-op Registration Only 8:00 a.m.-4:30 p.m.					
12	13	14	15	16	17	18
19	20	21	22 Bills for September Term mailed — Due August 5	23	24	25
26	27	28	29	30	31	

AUGUST, 1987

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3	4	5 Bills for September term due — No pays — voided pre- registration	6	7	8
Course Changes — Drop/Add Only 8:00 a.m.-4:30 p.m.			Course Changes Drop/Add & Registration Extended Hours 8:00 a.m.-7:00 p.m.	No Drop/Add Activity No Registration		
9	10	11	12	13 Last day to withdraw with a grade of "W" for June term	14	15
No Registration or Drop/Add Activity						
16	17 Distribution grade report lists — June term November term pre- registration begins (ends September 16) Final November term schedule available	18	19	20	21	22
Registration 8:00 a.m.-7:00 p.m.			Registration 8:00 a.m.-4:30 p.m.			
23	24 Registration 8 a.m.-7 p.m.	25 Board of Trustees Meeting	26 June Term ends Last day to change "IP" grades from April term	27 No Classes/Offices Open	28 No Classes/Offices Open June Term grades due — 4:00 p.m.	29
30	31	Registration 8:00 a.m.-7:00 p.m.		Registration 8:00 a.m.-4:30 p.m.		

NOTES

Numbers Frequently Called

This page is provided for your convenience in listing the numbers which you call most frequently.

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Customized Training

Cincinnati Technical College can provide customized training programs to business, industry, and professional organizations in a variety of areas, including the following:

Accounting	Management/Supervision
Analyzing the Message Sent to Your Audience	Manufacturing Processes
Applied Statistics and Quality Design	Materials Handling
Automotive Update	Measurement and Metrology
Basic Industrial Electricity w/ Troubleshooting	Mechanical Drives & Linkages
Blueprint Reading	Medical Record Coding
Career Planning	NC/CNC Programming
Computer Aided Design/Drafting (CADD)	Parenting and the Professional
Creativity & Problem Solving	Precision Measurement
Development of Technical Writing Style	Process Control
EKG Training	Production Costs & Controls
Editing Technical Documents	Programming: Basic
Electrical Code	"C"
Electrical Maintenance	FORTH
Electrical Motors and Controls	PASCAL
Electrical Power Distribution	Real Estate Licensing and Continuing Education
Electrical Troubleshooting	Safe Use of Hand/Portable Power Tools
Energy Management	Sales Techniques
Estimation - Contracts - Specifications	Shop Math
Food Service Management	Skill Assessment and/or Development
Greenhouse and Nursery Management	Statistical Process Control (SPC)
Group Dynamics and Quality Circles	Surgical Techniques
Health Care Management Techniques	Technical Presentations
Heating, Ventilating, and Air Conditioning	Telephone Techniques
Human Relations: Problem Centering and Sharing	Text and Graphics Processing
Hydraulics and Pneumatics	Tood-Die-Jig & Fixtures
IBM Personal Computer Training	Train the Trainer
Industrial Instrumentation	Training/Human Resource Development
Industrial Safety	Understanding Yourself and Your Employees
Labor Relations	Unit Clerk Training
Landscape Design	Welding
Languages (Technical): German	Word Processing
Japanese	Xenith/Unix
Spanish	

Please contact Paul Callahan, Director of Continuing Education and Extended Services, by calling or writing:

CINCINNATI TECHNICAL COLLEGE
3520 Central Parkway
Cincinnati, OH 45223
559-1520. ext 114.



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