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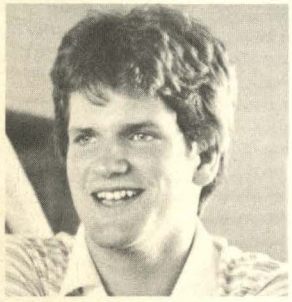

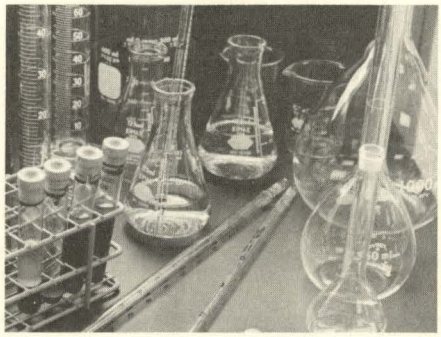

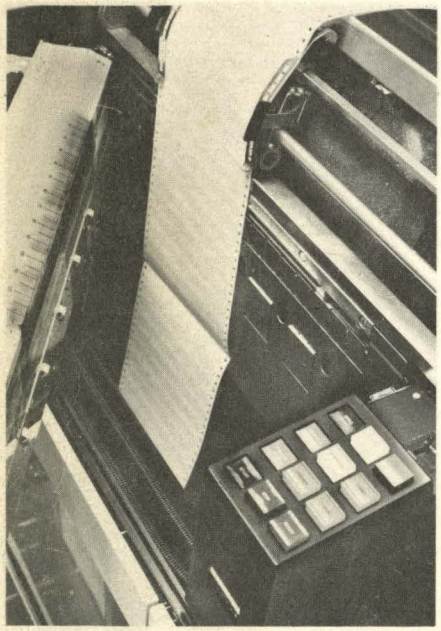

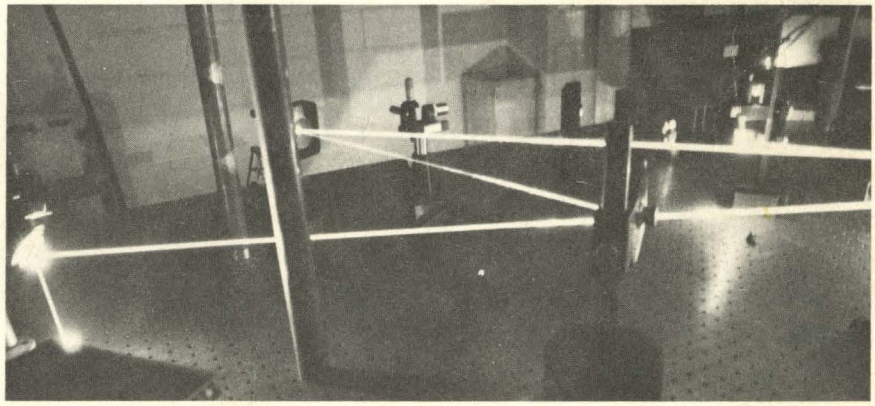

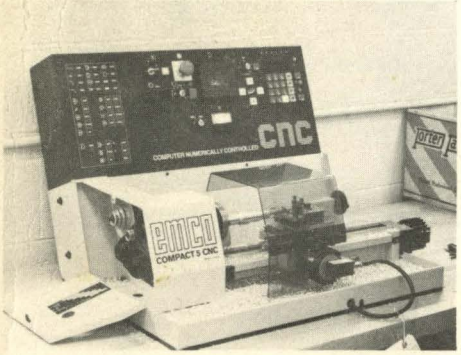

Cincinnati Technical College

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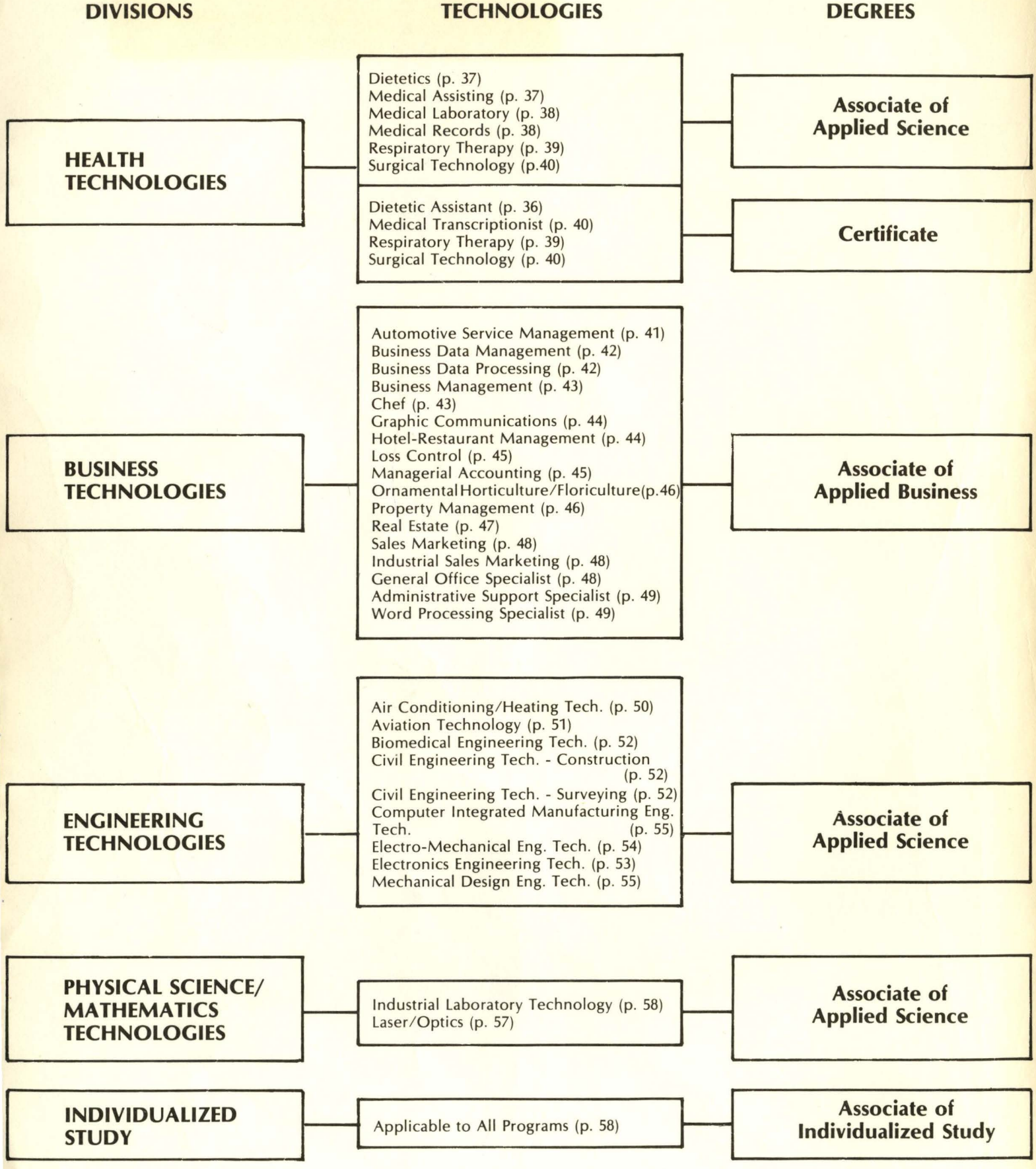
1983-84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Cincinnati Technical College
3520 Central Parkway
Cincinnati, Ohio 45223
(513) 559-1520
Admissions Office 559-1537

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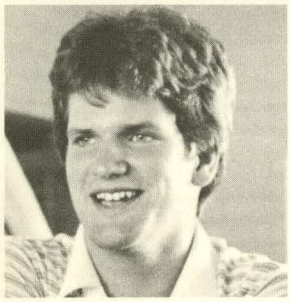
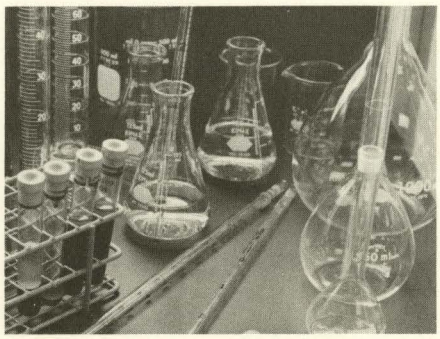
All statements in this publication are announcements of present policy only and are subject to change at any time without prior notice. They are not to be regarded as offers to contract.

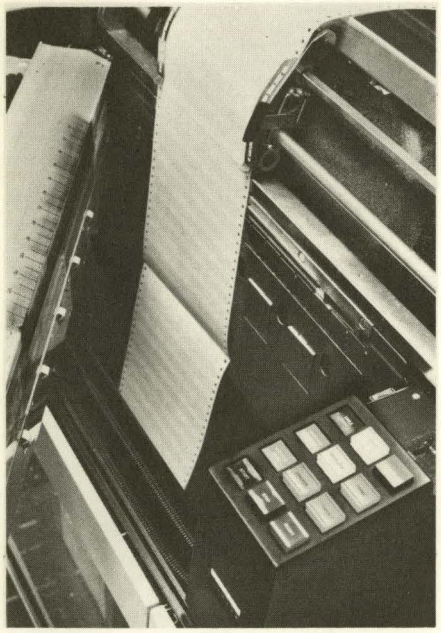
Cincinnati Technical College does not discriminate on the basis of race, age, color, handicap, national origin or sex in the admission of students or in any activity conducted by the Cincinnati Technical College.

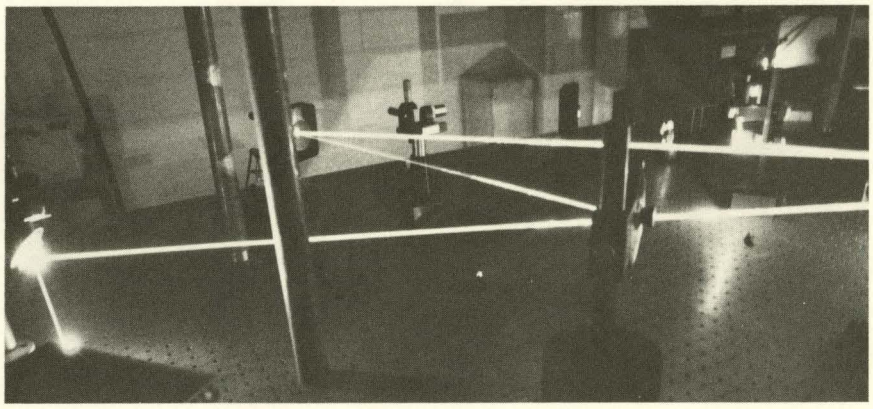
Cincinnati Technical College is an equal opportunity institution.

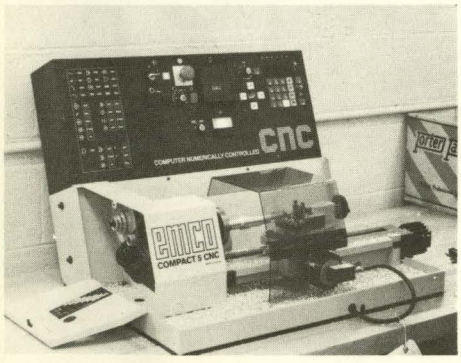
Cincinnati Technical College
3520 Central Parkway
Cincinnati, Ohio 45223
(513) 559-1520
Admissions Office 559-1527











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Office of the President
President ..... Frederick B. Schlimm
Institutional Development ..... Walter R. Murray
Development ..... Johnnie F. Boggio
Athletics & Activities ..... John E. Hurley
Public Information ..... Michele M. Imhoff
Publishing Operations Production ..... Gary Walton, Susie Evans
Affirmative Action, Human Resources &
Staff Development ..... Eleanor Bonner
Executive Assistant ..... Davie Cooper
Planning & Research/Consortium ..... Terrence J. Glenn
Otto ..... Jo Ellen Seik

Office of Academic Affairs
Vice President ..... David C. Ballinger
Executive Assistant ..... Theresa Jones
Extended Services (Evening) ..... Paul R. Callahan
Clerical Assistant ..... Linda Nagel
Learning Resource Center ..... James H. Horton
Information Services ..... Debbie Tucker
Thelma Barnes
Duane Gardner
William Shaw
Technical Services ..... Rose von Volborth
Marianne Cramer
Media Services ..... Dave Evans
Ben Duke
Roger Jansen

Office of Finance & Business Affairs
Vice President ..... A. Wayne Vaughn
Financial Services ..... Carol Roth
Receptionists ..... Evelyn Burke
Gloria Donaldson
Purchasing ..... Kathleen Austing
Controller ..... Herb Bom
Accountants ..... Harry Bradley
Terry Taylor
Judy Wright
Cashier ..... Linda Cole
Assistant ..... Elaine Croxton
Student Financial Aid ..... Frank Barlag
Counselors ..... Naomi Cain
Janice Lewis
Lucille Richardson
Executive Assistant ..... Sharon Waters
Facilities ..... Dale McCarthy
Facilities Services ..... Leonard Bidwell

Student Services
Dean ..... Ann I. Rasche
Executive Assistant ..... Gaby Boeckermann
Counseling Services ..... John Wagner
Linda Meador
Carol Throckmorton
Veterans ..... Yolanda Lawrence
Assistant ..... Ann Ruoff
Educational Relations ..... Miriam Pizzuto

Business Technologies
Dean ..... Dan Cayse
Executive Assistant ..... Terri Sagel
Director, Academic Affairs ..... Randall Corgan
Director, Cooperative Education ..... Walter Wyatt
Automotive Service Mgmt. ..... Joe Keenan
Karl vonKampen
Business Management &
Managerial Accounting ..... Joe Derickson
Jim Macke
Sheryl Stewart
Data Management & Data Processing ..... Verale Phillips
Debbie Combs
Mike Nakoff
Elizabeth Sullivan
Chef ..... John Kinsella
Graphic Communications ..... Al Leicht
Tom Miller
Hotel-Restaurant Mgmt. ..... Rich Hendrix
Bill Stock
Loss Control ..... Bea Stewart
Ornamental Horticulture/Floriculture ..... Claire Ehrlinger
Brian Huffaker
Property Management & Real Estate ..... Vasil Ognenoff
Sales Marketing & Industrial Sales ..... Bob Elmer
Paul Kinzie
Office Specialist ..... Connie Campbell
Sharon Brown
Instructors ..... Stewart Bonem
Richard Brown
Annie Galloway
Clyde Kobberdahl
David Kuehm
Katye Mindhardt
Lou Owsley
Len Penn
Lloyd Pitman
Rick Sefton

Swanya Smith
Gary Walton

Data Processing Academic Para Professional ..... Naomi Merlin

Engineering Technologies

Dean ..... Robert Craigo
Executive Assistant ..... Pat Robbins
Division Coordinators ..... Hal Funk
Gary Graff
Charles Jonas
Ken Stoll
Air Conditioning ..... James Farrer
Aviation ..... Tony Rinck
Biomedical Engineering Tech. ..... Michael Carroll
Civil Engineering Tech. ..... Paul DeNu
John Hubbard
Wally Klayer
Electro-Mechanical Eng. Tech. ..... Ray DiPilla
Gary Webster
Electronics Engineering Tech. ..... Roger Schaller
Tim Rush-Ossenbeck
Computer Integrated Manufacturing Eng. Tech. ..... Judd James
Bill Rhein
Robert Speckert
Mechanical Design Eng. Tech. ..... Terry Brown
Instructors ..... Steve Bove
Vince DeVol
Linda Hollstegge
Don Meyer
Bill Mullins
Ralph Sanders
LaVerne Winkle

Health Technologies

Dean ..... Dr. Gerry Kaminski
Executive Assistant ..... Claudia Straughn
Assistant Dean ..... Dr. Tom Kober
Dietetics ..... Eileen Coffe
Marianne Krismer
Medical Assisting ..... Nancy Walters
Olivia Watts
Medical Laboratory ..... Ed Knepp
Carolyn Laemmle
Medical Records ..... Rosemary Clark
Mary LaValle
Respiratory Therapy ..... Bob Eveslage
Sally Blocher
Surgical Technology ..... Jeannine Denson
Judith Spraley
Instructors ..... Ron Davidson
Jude Norton

Physical Sciences/Mathematics

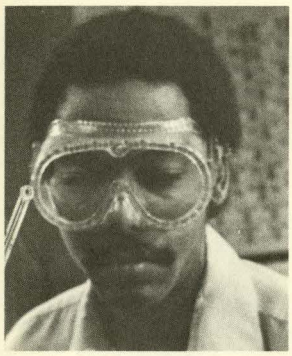
Dean ..... Thomas Stark
Instructional Assistant to the Dean ..... Lawrence Pucke
Industrial Laboratory Technology ..... Jerry Froehlich
Laser/Optics ..... Dr. Prem Batra
Instructors ..... Richard Bartlow
Frank Iacobucci
John Lalley
Rodney Rupp
Ralph Schlueter
William Tulloss
Adjunct Faculty ..... Martha Brosz
Robert Duffy
Linda Huge
Terrence Huge
Joan Jackson
Robert Moon
William Page
Edward Sunderhaus
Richard Swanson
Jerome Weber

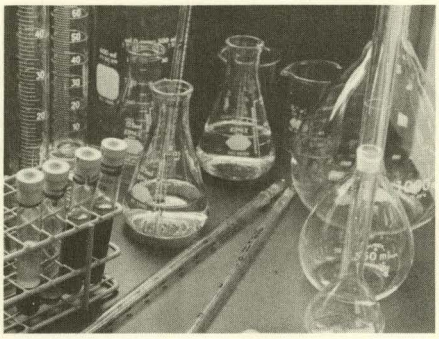
Communication Skills/Behavioral Sciences

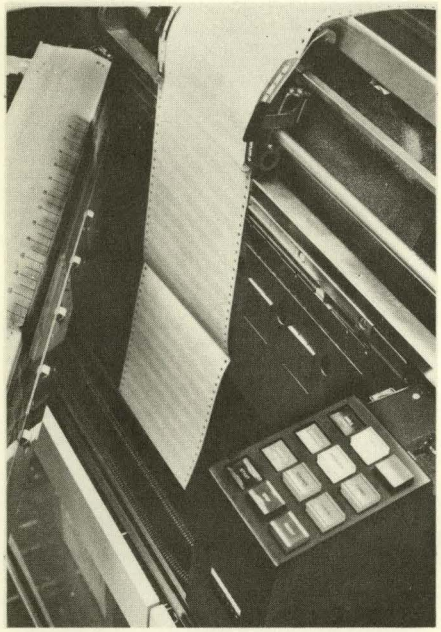
Dean ..... Thomas Stark
Instructional Assistant to the Dean ..... Marc Baskind
Instructors ..... Elmer Flamm
Marcus Green
Harry Heink
Mike Jones
Mary Lee Keller
Daniel Mellinger
Timothy Nolan
Catherine Wiesner
Kim Ziegel
Lawrence Ziegler
Adjunct Faculty ..... John Battistone
Margaret Hall
Mary Williamson

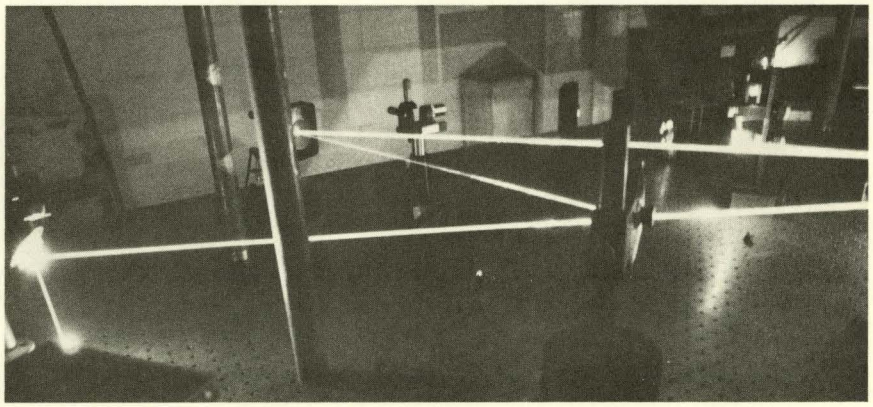
Developmental Education

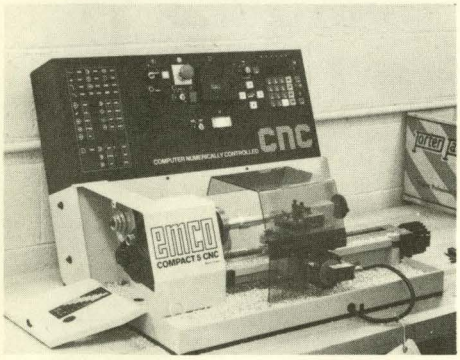
Director .....
Clerical Assistant ..... Debbie Greenlee
Counselor ..... Sharon Davis
Instructors ..... Grace A. Davis
Edward A. Hirsch
Janice L. Hoeweler
Linda Knepp
Ellen R. Layne
Hope Page Lieberman
James Marcotte
Kathleen Resnick
Cyra D. Sanborn











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Mission of the Cincinnati Technical College

The Cincinnati Technical College has a vital and distinctive mission to perform in addressing the educational and economic needs of the Tri-State area.

The mission of the College is to teach the application of knowledge and skills useful to technicians and to prepare students who have technical occupational interests and aptitudes for immediate employment and potential advancement, to provide non-technical educational experiences and activities which will prepare students to function as effective members of our society, and to encourage students who have the desire to continue their education beyond the academic level of this College to do so.

The philosophy of Cincinnati Technical College is that technical education is best presented in a program which combines theoretical concepts, practical experiences and a broad spectrum of other valued educational experiences.

Technical Education

A scientific revolution, underway the last several decades, has quickened the pace of change in all of 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.

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 36 associate degree programs and options and four certificate programs in 1983-84. 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 Co-op Plan

Cincinnati Technical College, with regard to its mission and philosophy, has developed a co-op 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) Financial — Most full-time students are able to earn money while gaining work experience. These co-op 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.

(2) Educational — Students support what they learn in class with "real life" work experience. These two learning situations complement each other.

(3) Career clarification — The technical classwork and on-the-job experience help the students focus on particular career areas and decide if those areas are appropriate for them.

(4) 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.

Outcomes for the College

(1) Comprehension of employment needs — The efforts by the College to establish co-op 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 co-op 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 field through contact with industry.

Outcomes for the Community

(1) Supply of technicians — The College's programs create a needed supply of trained, experienced technicians for the employment community. This factor makes the area attractive for business development.

(2) Economic gain — Increased earning potential of the graduates benefits the community in terms of productivity, taxes paid and contributions made.

(3) Citizen productivity — Graduates enter the workforce with well-clarified career goals and experience which enable them to be more productive and motivated workers.

(4) Industrial staffing — Employers have the opportunity to train and observe co-op students and to evaluate their suitability for full-time employment before they make the commitment to hire full-time.

Starting Salaries for Graduates

Average starting salaries for graduates in each technology are available from the coordinator or can be found in the Admissions Office.

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 seventeen 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 4200 students in 50 degree and certificate programs and options; has a staff of 220 plus 100 part-time instructors; and has 500 co-op employers.

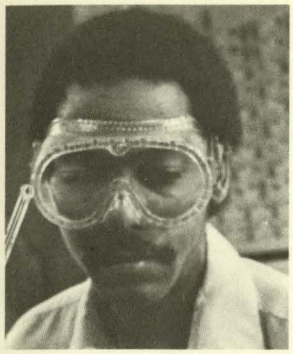
Accreditations & Memberships

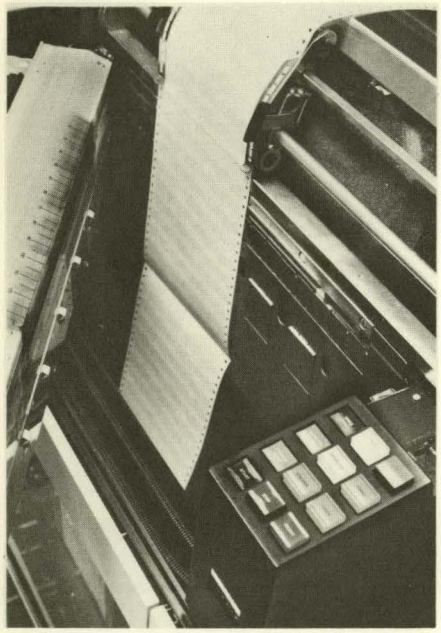
Ohio Board of Regents
Division of Vocational Education, State Department of Education
North Central Association of Colleges and Secondary Schools
Ohio Technical and Community College Association
FAA — Approved Aircraft Maintenance Technician School
Member of the American Society of Allied Health Professions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

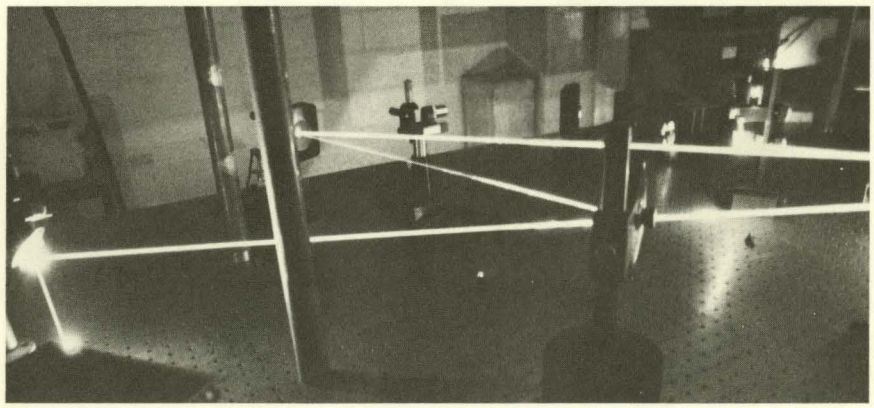
Greater Cincinnati Consortium of Colleges and Universities

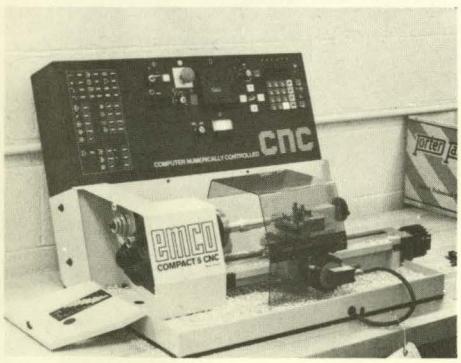
Twelve institutions of higher learning in the Cincinnati area, including Cincinnati Technical College, are members of the Greater Cincinnati Consortium of Colleges and Universities. The Consortium Officers are located at Cincinnati Technical College. Among the benefits of the Consortium is that regularly 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.









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Admissions Information

Application for Admission

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 should take the admissions test.
4. After the applicant's file is complete and has been reviewed by the program coordinator, the applicant will be notified as to the admission interview status.
5. The applicant should call the Admissions Office for an interview appointment.
6. He or she should pay the $25 deposit fee as directed in the acceptance letter.

NOTE:

- Apply early! Some programs are filled by March 1 each year.
- Both the $20 application fee and the $25 deposit fee are non-refundable.
- The applicant will be notified by mail or when he or she calls the Admissions Office to make an interview appointment whether he or she is required to take the mathematics placement test, the communication skills placement test or developmental education tests.
- The applicant must complete the admission process by the last date of pre-registration in order to register as a matriculant for the following term. This is most important if the student expects to use any form of financial aid or veterans benefits.

Admission Deposit

A deposit of twenty-five dollars ($25) is payable when an applicant receives notice of tentative acceptance. Payment of the deposit when due assures the applicant of a place in the program and is considered as evidence of good faith that the student will register. The deposit applies towards fees charged for classes in the first term a student registers.

The student deposit 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 Applicants

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 incidential expenses, must be provided by the student. In order to facilitate enrollment, an international student should contact the International Student Advisor.

Admissions Test

All applicants for admission to the Cincinnati Technical College must satisfy the entrance examination requirement before any final decision on acceptance can be made.

The exam will be administered at the Cincinnati Technical College. The test takes about 4 hours.

Applicants are urged to take the exam on the earliest date possible and to submit all other necessary forms since many programs are filled by early spring.

Applicants living outside of the Greater Cincinnati area, who cannot arrange to take the exam in Cincinnati, should write the Admissions Office as early as possible so special arrangements might be made through the applicant's high school or educational officer if the applicant is in military service.

At the discretion of the program coordinator, SAT or ACT scores, previous college or work experience may be substituted to satisfy the entrance test requirement. Contact the coordinator of the program for which admission is sought to see if a test waiver is possible.

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 Regent's subsidy for their instruction. (See page 14 for complete explanation of residency determination.)

Fees are non-refundable other than the Instructional Fee.

Fees and Charges

	Instructional Fee		General Fee[2]		Cost per Credit Hour
Resident Status					
State of Ohio Resident	$19	+	$3	=	$22
Out-of-State Resident	$29	+	$3	=	$32

Other Charges:

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

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

Co-op Employment

Two (2) credit hours for approved cooperative work experience are granted for terms 1 and 2, and three (3) credit hours for terms 3, 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.

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 the 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 these standards. A non-resident student may have his or her residency status reviewed after living for twelve consecutive months in Ohio.

A. Authority and Effective Date.

1. It is the intent of the Ohio Board of Regents in promulgating this Rule to exclude from treatment as residents, as that is applied here, those persons who are present in the State of Ohio primarily for the purpose of receiving the benefit of a state supported education while insuring that that same benefit is conferred on all bona fide domiciliaries of this State whose permanent residence and legal citizenship is in Ohio, and whose actual source of financial support is subject to Ohio taxation.
2. This Rule shall be effective as of September 1, 1977, and shall continue in effect until its rescission or amendment.

B. Definitions.

For purposes of this Rule:

1. A resident of Ohio "for all other legal purposes" shall mean any person who maintains a 12 month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state welfare benefits, and who may be subjected to tax liability under Section 5747.02 of the Revised Code; provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.
2. "Financial support" as used in this Rule, shall not include grants, scholarships and awards from persons or entities which are not otherwise related to the recipient.
3. An "institution of higher education" as used in this rule shall mean any university, community college, technical institute or college, general and technical college, medical college or private medical or dental college which receives a direct subsidy from the state of Ohio.

C. General Residency from Subsidy Purposes.

The following persons shall be classified as residents of the State of Ohio for subsidy and tuition surcharge purposes:

1. Dependent students, at least one of whose parents or legal guardian has been a resident of the State of Ohio for all other legal purposes for 12 consecutive months or more immediately preceding the enrollment of such student in an institution of higher education.
2. Persons who have resided in Ohio for all other legal purposes for at least 12 consecutive months immediately preceding their enrollment in an institution of higher education and who are not receiving, and have not directly or indirectly received in the preceding 12 consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.
3. Persons who live and are gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who are pursuing a part-time program of instruction at an institution of higher education, their spouses and dependents.
4. Persons who have been reclassified as residents under provisions of Section D.6 of this rule.

D. Specific Exceptions and Circumstances.

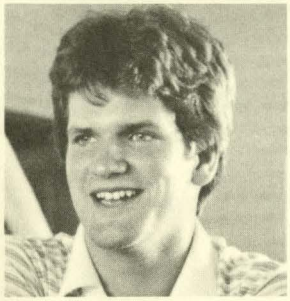
1. A person on active duty status in the United States military service who is stationed and resides in Ohio and his or her dependents shall be considered residents of Ohio for these purposes.
2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile.
3. Any aliens who entered this country prior to August 9, 1978 and have their visa third preference petition approved by the Immigration and Naturalization Service can be considered permanent residents for purposes of residency determination.
4. No person holding a student or other temporary visa shall be eligible for Ohio residency for these purposes.
5. A dependent person classified as a resident of Ohio who is enrolled in an institution of higher education when his or her parents or legal guardian remove their residency from the State of Ohio, shall be considered a resident of Ohio for these purposes during continuous full-time enrollment and until his or her completion of any one academic degree program.
6. Any person once classified as a non-resident, upon the completion of 12 consecutive months of residency in Ohio for all other legal purposes, may apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes. Should such person present clear and convincing proof that no part of his or her financial support is, or has in the preceding 12 consecutive months been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident.

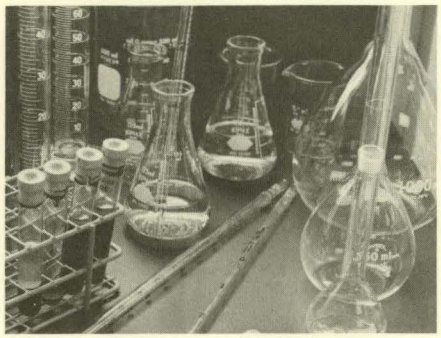
   Evidentiary determinations under this Rule shall be made by the institution which may require, among other things, the submission of information regarding the sources of a student's actual financial support to that end.
7. Any reclassification of a person who was once classified as a nonresident for these purposes shall have prospective application only from the date of such reclassification.

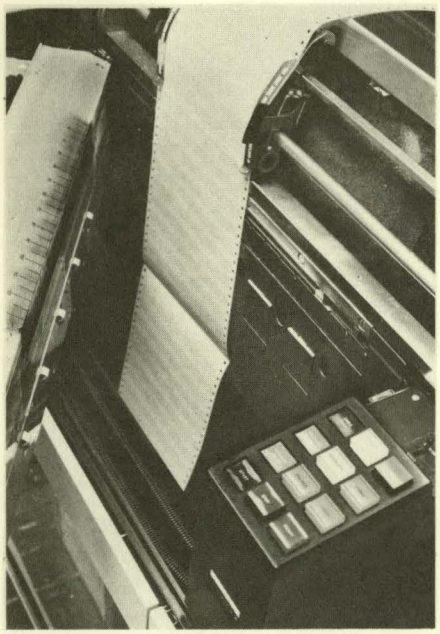
E. Procedures.

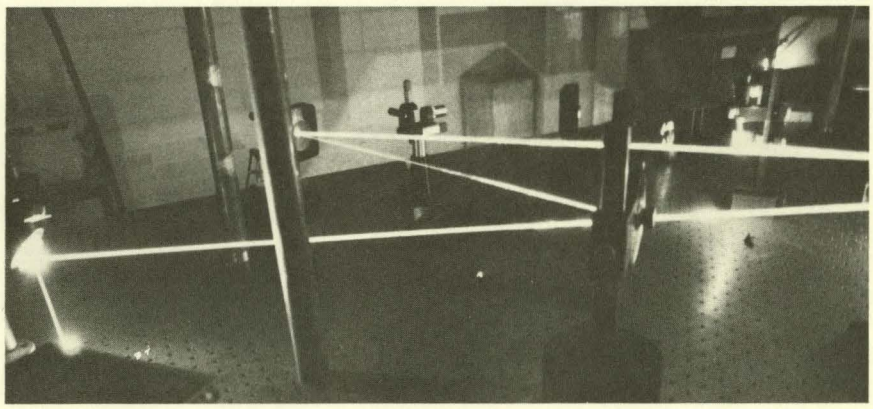
Institutions of higher education charged with reporting student enrollment to the Ohio Board of Regents for state subsidy purposes and assessing the tuition surcharge shall provide individual students with a fair and adequate opportunity to present proof of their Ohio residency for purposes of this Rule. Such institution may require the submission of affidavits and other documentary evidence which it may deem necessary to a full and complete determination under this Rule.

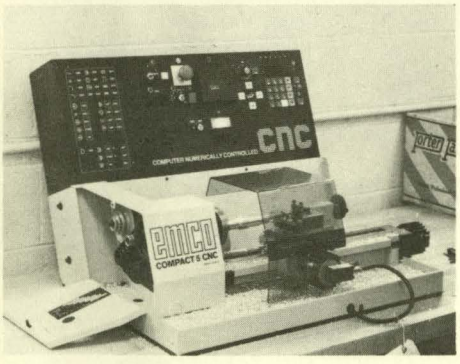
A review of a student's residency status will be made upon proof of proper documentation that the student has been a resident of the state of Ohio for twelve (12) consecutive months prior to the request for residency review. A form for residency review is available in the Registrar's Office. The completed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











ACADEMICS, POLICIES & PROCEDURES CATALOG/HANDBOOK 83-84

ACADEMICS, POLICIES &
PROCEDURES
CATALOG/HANDBOOK 83-84

Graduation Requirements

To qualify for the associate degree, a student must declare a major and fulfill the program requirements as identified at the time of matriculation, 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 take at least forty-five (45) credit hours at Cincinnati Techical College 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.

A student who changes programs is subject to the 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 approved by the division dean. A student who does not enroll for three consecutive terms must be readmitted to the program.

The petition to graduate must be filed in the Records Office no later than the end of the first week of the term preceding the term planned to complete the degree requirements. In the 1983-84 academic year, those dates are as follows:

Term degree requirements completed	Petition deadline
November, 1983	September 13, 1983
January, 1984	November 18, 1983
April, 1984	January 30, 1984
June, 1984	April 6, 1984

Participation in Commencement

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

Students who have satifactorily completed all requirements for a certificate or degree during the preceding five terms and who have not opted to participate in the previous commencement under the following condition:

*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 register and pay for all remaining courses by the close of 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 students' participation.

*Student in this category will be noted in the program as completing their programs 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 the student 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 or core 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 wil not be calculated in the TGPA.
**Note: The core GPA is not considered at credit levels 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
W	Withdrawal	Not Computed
X	Audit	Not Computed
K	Transfer Credit	Not Computed
S	Satisfactory	Not Computed
U	Unsatisfactory	Not Computed
IP	In Progress	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 term following that 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 Records Offices.

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 initiate and inform the Records Office in writing of the intent to withdraw. The date of the withdrawal will be the date the notice is received in the Records Office. A grade of "F" is assigned as the final grade in a course if a student discontinues attendance without officially dropping the course.

Audit (X)

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 45 credit hours must be earned at Cincinnati Techical 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 paralleling those of 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.

A matriculated student should apply for a credit transfer with the program coordinator before the end of the first term. 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 transfer form is completed and is approved by the division dean, the student will receive a copy of the transfer form.

Advanced Standing Credit

(A minimum of 45 credit hours 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 must submit a request form 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 in 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 documentation which

- 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 program 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 Schools, Warren County 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 their 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 coordinator. 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.

A currently enrolled student registers for classes during the last two weeks of the term for the next term and/or the alternate term if the student will be out on co-op.

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 deadline cannot be assured of class schedules consistent with his or her planned program curriculum.

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

Withdrawal From And Readmission To A Program

A matriculated student who fails to enroll for three (3) consecutive terms will be considered withdrawn. In such a case, the student must apply for readmission to the program and will be subject to re-evaluation upon the student's return and may be subject to any change of degree requirements during the student's absence.

Off-Campus Credits

Credit for courses earned at another institution by a student who is currently enrolled at CTC can be applied toward the degree only with the prior approval of the program coordinator. The form for Permission to Register for Off-Campus Credit can be obtained in the Student Records Office. The form must be completed prior to registering for the course.

Dean's List

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

Changing Technologies

Students transferring from one technology to another must secure written approval for acceptance into the alternate program. An official withdrawal must be made with the coordinator of the technology from which the student is transferring.

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

Cooperative Education Program

The College's rapid growth and development is due, in part, to the institution's strong commitment to cooperative education. The co-op experience is an integral part of those programs which offer co-op courses as part of their curriculums. The co-op program is vital to the strength and continued success of the College.

Co-op Requirements

Students attending Cincinnati Technical College may meet their associate degree co-op requirements by one of three ways:

1. Participating in CTC's full co-op program, in which students alternate full-time terms in the classroom with full-time terms of co-op employment.
2. Attending classes on a half-day schedule for ten consecutive terms and co-oping in a half-time (or longer) position.
3. Pursuing a totally academic program. However, the total number of required credit hours, including co-op credit hours, must be completed. Academic courses and/or work experience may be substituted in lieu of co-op credits with divisional approval.

Co-op Credit Through Documented Valid Work Experience

Valid work experience may be used in lieu of co-op courses provided the student has already demonstrated through successful work experience those skills or competencies which are

the desired end-product of one or more co-op courses the applicant would ordinarily take in the Cincinnati Technical College program curriculum.

One to thirteen co-op credits can be awarded for documented work experience. Students must provide evidence of both time and quality of experience; e.g., portfolio, references, etc. **This credit must be applied for and granted by the first co-op term. Only work experience which can be documented prior to enrollment at Cincinnati Technical College can be submitted for credit. A single fee of $25 will be charged.**

Academic Requirements

A student desiring co-op credit 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 courses or other requisite courses.

If the student does not maintain the required G.P.A., the student will not be eligible to enroll in co-op courses or clinical experiences/directed practice without the permission of the program coordinator.

Co-op Experience

The College has been quite successful in placing students in cooperative work jobs. However, there can be **NO ABSOLUTE GUARANTEE.** Cooperative employment and continued employment depend on what the individual can offer to employers. A student who has not demonstrated employability in some form may be advised to discontinue the co-op program.

The employer is solely responsible for decisions regarding hiring, retention, dismissal, promotion or demotion of a co-op.

Experience indicates that when a student decides to quit school for full-time employment with a co-op employer, this decision is usually regretted in the long run by both employer and student. Neither student or employer should attempt, under any circumstances, to influence the other for permanent employment until the student has completed the entire two-year program.

Types of Co-op Positions

The College classifies co-op positions in three categories: A — directly related to the technology; B — indirectly related; C — unrelated.

When possible, the College would like to place all students in A-type jobs, in B-type jobs as a second choice; and in C-type jobs as the third choice. However, it should be recognized that both B-type and C-type jobs have many values. The work experience gained in B or C-type jobs prepares the student for occupational advancement and helps the student mature emotionally, socially, and educationally.

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 resistence 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 or 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, "Regulations of behavior of students, staff, faculty and visitors", the involved party shall be so 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 of 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). Students should discuss problems with their 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 resloved 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 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
- 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

Schedule of Classes

Classes are scheduled between 7:00 a.m. and 10:00 p.m. The full-time load will include five to six hours of instruction per day and twelve (12) credit hours per term.

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. The instructor may or may not require a student to explain absences, but will avoid rigid classification of absences as "excused" or "unexcused." "Excused" absences for official school functions are the exceptions.

On co-op and clinical placements the employer 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.

When a student fails to provide evidence and show good cause for being afforded make-up privileges, a course instructor does not have to permit or grant make-up privileges for:

a. failure to turn in assignments when due
b. being absent when quizzes, tests or exams were administered.

In all cases of request for make-up privileges, the burden of proof as to the legitimacy of the reason(s) rests with the student.

The course instructor has the discretion of determining the form and content of documentation of the reason(s) needed as long as the criteria used are reasonable, standard and uniformly applied in all cases of like circumstances.

Grade Reports

It is the student's responsibility to check the grade report form and take the necessary steps to assure accuracy. Errors or omissions in grade reports should be reported to the student's coordinator or the course instructor.

Transcripts

Upon completion of a Request for Transcript Form obtain-

able in the Records Office, an official transcript of a student's academic record will be forwarded to any employer or educational institution.

The first transcript is free, each additional transcript is $2.00. 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, gymnasium, voting in campus elections, anything dealing with the Consortium of Colleges and also any 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 public 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

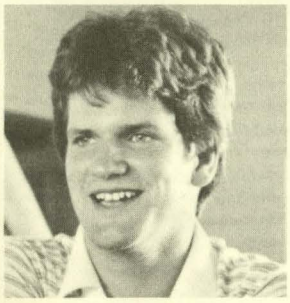
Public information will be used for releases to newpapers, television and radio.

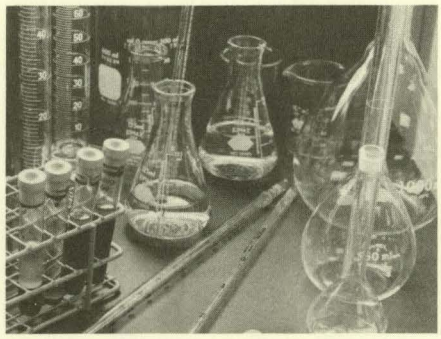
All other information is confidential and will be released only upon the receipt of written permission from the student or for legitimate College purposes.

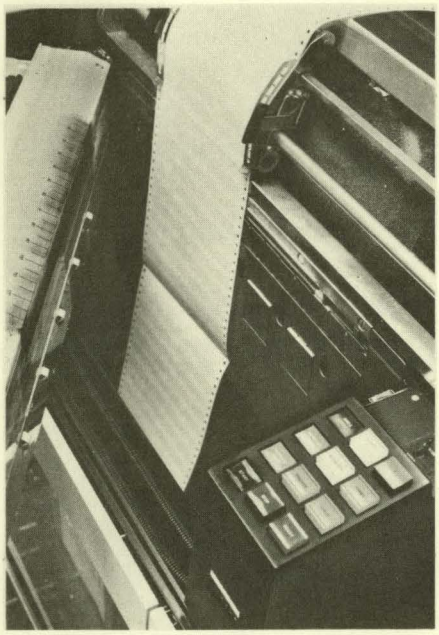
Photographs and/or films of students for promotional and recruitment purposes are taken throughout the school year. Students who do not wish to be included in these visuals must inform the Director of Public Information prior to photographing and/or filming.

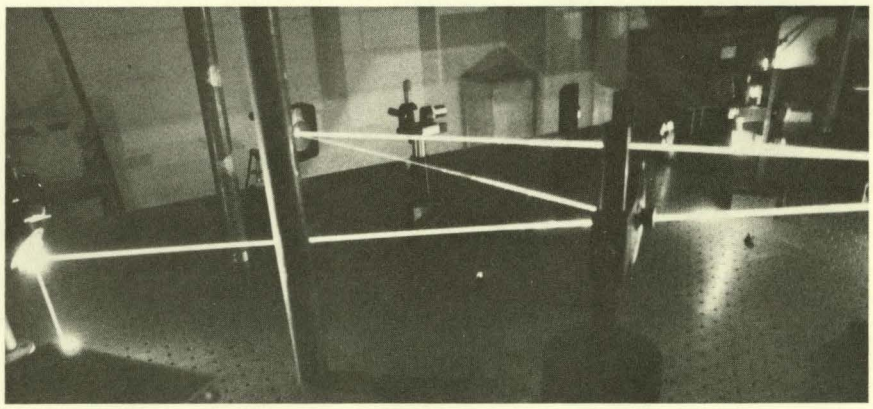
Personal Telephone Messages

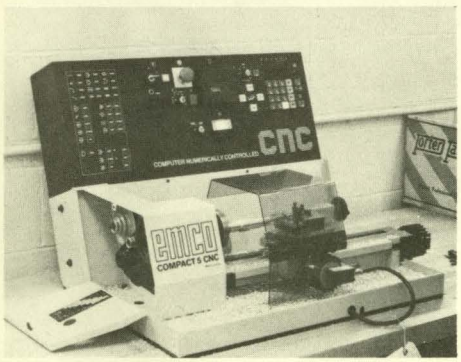
Personal telephone messages can be accepted only in the event of an extreme emergency. Students are asked to their parents and friends of this restriction. Office telephones are provided for College business only. Public telephones are located in the main lobby, student activity center and cafeteria.











STUDENT SERVICES CATALOG/HANDBOOK 83-84

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; assist 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 special needs, and students in special programs, i.e., Job Corps and CETA.
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 9:00 a.m. to 5:00 p.m. Monday through Friday, and until 8:00 p.m. on Tuesday and Wednesday.

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 facilites, 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 Admissions and Counseling 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 Admissions and Counseling 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 intended to supplement the student's resources enabling the student to better concentrate on studies. It is not intended to provide a steady source of income on which the student must rely to meet living expenses.

All students must be fully accepted by the College into a degree or certain certificate granting programs before financial aid can be awarded.

All funds are awarded on a first-come, first-served basis in compliance with Federal and state guidelines. Therefore, deadlines are critical. CTC's priority deadline is March 15. Students whose applications are completed by March 15 are given first consideration.

Procedures for Applying for Financial Aid include —

a. Apply for admission to Cincinnati Technical College.
b. File an institutional application for financial aid.
c. File a Financial Aid Form (FAF).
d. Ohio residents file an application with the 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.

Federal programs available include:

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 at a minimum of $30.00 per month 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 College Work-Study program provides jobs for students who have great financial need.

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

In arranging a job and determing 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 twenty 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 guardsman should contact the Adjutant General's office to apply for this program.

Scholarships — A limited number of scholarships are provided by private organizations and community groups. Criteria for the scholarships are established by the donor.

Check with the Financial Aid Office or the Institutional Development Office for more information.

David J. Joseph Company Cooperative Education Scholarship awarded to a Taft or Hughes High School graduate; selected by high school counselor.

Anonymous Cooperative Education Scholarship awarded to a Milford High School graduate; selected by high school counselor.

Texo Corporation Cooperative Education Scholarship for Scarlet Oaks Career Development Center graduate; selected by high school counselor.

General Electric Company Technology Scholarships; one each for Aiken High School graduate, Lockland High School graduate and Princeton High School graduate; selected by Engineering Technologies Division.

Anonymous Technology Scholarship awarded to eligible student enrolled in any technology; selected by the Financial Aid Office.

Cincinnati Milacron Technology Scholarship awarded to engineering technology student; selected by sponsor.

Tekmar Cooperative Education Scholarship for a Reading High School graduate; selected by high school counselor.

Xtek, Inc. Technology Scholarship awarded to a student enrolled in Manufacturing Engineering Technology or Electro-Mechanical Engineering Technology; selected by sponsor.

The Williamson Company Technology Scholarship awarded to a student enrolled in Air Conditioning/Heating Technology program; selected by sponsor.

Cincinnati Gas & Electric Company Technology Scholarships: four scholarships yearly for minority and/or women students enrolled in Electronics Engineering Technology; selected by sponsor.

Kahn's and Company Technology Scholarships awarded to students enrolled in Electronics Engineering Technology; selected by sponsor.

Springdale Kiwanis Club Service Organization Scholarship awarded to a Princeton High School graduate; selected by sponsor.

Lee B. Weinstein Scholarship awarded to an eligible student in Sales Marketing program; selected by Office of Institutional Development.

Sara E. Donnelly Scholarship awarded to a returning female student in any technology; selected by sponsor.

Anonymous Athletic Scholarship selected by Athletic Director and Office of Institutional Development.

Richard H. Strait Memorial Scholarships: one awarded to a student enrolled in engineering technology program and one to a student in any other technology; selected by Office of Institutional Development.

A number of other sholarships from various sponsors are available from time to time in the Financial Aid Office. Also, professional organizations and societies provide scholarships to CTC students based on their technology majors. Students should ask their coordinators about the availability of such scholarships.

Methods of Disbursement

a. PELL, NDSL, OIG, SEOG — credited to the student's account.

b. **Expense Money** — Any funds (except College Work-Study) in excess of the tuition and book charges will be refunded to the student after the fifth week of the term. No execeptions will be made. Students must plan their budgets accordingly.

c. College Work-Study Program — Students who perform work on the College Work-Study Program are paid every two weeks by the Financial Aid Office at designated times. Late timesheets will cause a delay in payment.

d. **Book Slips** — Students who have financial aid funds (excluding College Work-Study and OIG) in excess of their tuition costs may obtain from the cashier a book slip authorizing the purchase of books in the Cincinnati Technical College bookstore.

The Award Year

The financial aid award year begins with the June, 1983 term and extends through April, 1984 term.

Rights and Responsibilities Governing Receipt of Financial Aid

The following information is provided in compliance with federal regulations.

Satisfactory Progress

All CTC students, including financial aid recipients, must maintain satisfactory academic progress as stated in this catalog/handbook (18-35 credits = 1.75 grade point average, 36-53 credit hours = 2.00 grade point average, 54-71 credit hours = 2.00 grade point average, and 72 credit hours and over = 2.00 grade point average). Additionally, students must maintain a 2.00 in their core courses after completing 35 credit hours. If a student is dismissed from a degree granting program, he or she is automatically ineligible for financial aid. In addition, financial aid recipients must carry to successful completion 75 percent of the credits for which they have registered. The monitoring of satisfactory progress will be done on a term basis. Students will be notified when they fall below the minimum standards.

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 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: change of terms, change of credit hour load, change of technology, or change in 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 by taking a copy of the award letter and the registration form to the cashier for proof of payment.

Renewal/Reapplication

Financial Aid awards for the 1983-84 academic year expire in June, 1984. If students wish to receive aid after June, 1984, they must reapply by March 15, 1984.

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.

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 act 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 and women'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. In the 1982-83 season the Tigers won the OJCAC championship.

Along with the intercollegiate competition, Cincinnati Technical College offers an expanding intra-mural program. Class competition 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 Pizzuto in room 156.

Student Organizations

Students are encouraged to join organizations for designed 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), the Junior Food Service Executive Association (JFSEA) and the Junior Litho Club. For additional information check with the Student 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 freetime recreation. These hours will not conflict with previously scheduled events, and may be subject to change because of short term scheduling of intra-murals, 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. on 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 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 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 is a unit which 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 with 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. On occasion hours are extended as follows:

During registration: 9:30 a.m. to 8:30 p.m.
First week of a term: 8:00 a.m. to 8:30 p.m.
Second week of a term: 9:30 a.m. to 7:30 p.m.

Dining Facilities

There are two separate dining facilities to serve CTC students. They are:

The Stateroom — Students may purchase excellently prepared, full course hot lunches, as well as ala carte specialties.

The Stateroom is open from 11:00 a.m. to 12:30 p.m. each Tuesday, Wednesday and Thursday of the second through eighth week of each school term. The seating capacity is extremely limited; therefore, students are accommodated on a first come, first served basis.

Breakfast is also served from 7:30 to 8:30 a.m.

The Stateroom is completely manned by students from the Hotel, Chef and Dietetics technologies.

The Cafeteria on the third floor 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 a.m. to 5 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. - 4:30 p.m. & 5:30 p.m. - 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.

Lounges

The main student lounge, located on the third floor, and the snack lounge area in the student activity center provide areas for students and faculty to gather between classes and discuss mutual interests, listen to music, or just relax. A food service and vending machines offering a large selection of food and drinks or snacks are available.

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.

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 the 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 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 persons driving vehicles onto 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 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. Crosswalk	$ 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

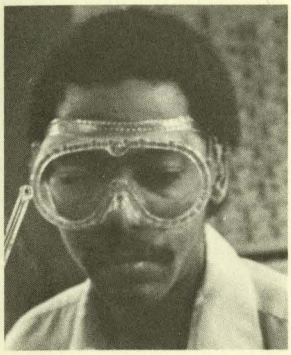
Other

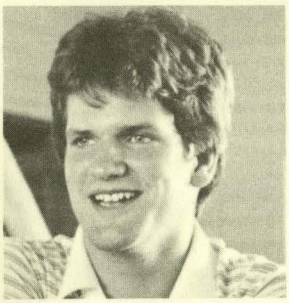
11. No parking permit (decal) or not displayed	5.00
12. Vehicle not registered	5.00
13. Towing and impoundment	Cost
14. Disregard of barricades	10.00
15. Reproducing, altering or defacing a parking decal or permit. Using a stolen or revoked permit or decal. (Tow & Impound)	Cost
16. Other	5.00

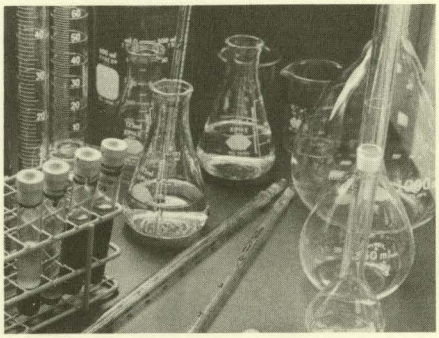
Failure to pay fines will result in the holding of transcripts until such fines are paid; also prevention from purchasing on-campus parking for future terms.

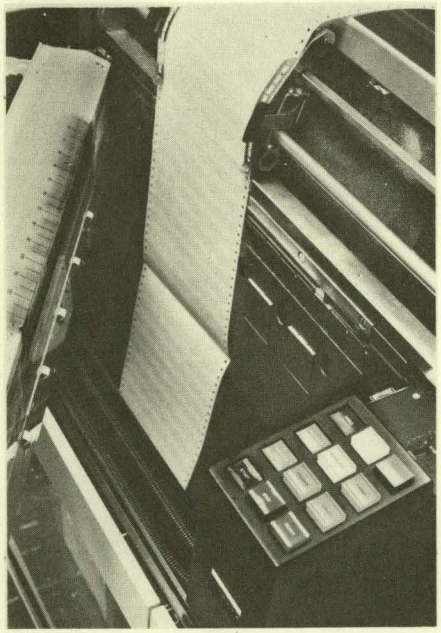
LOCK YOUR CAR

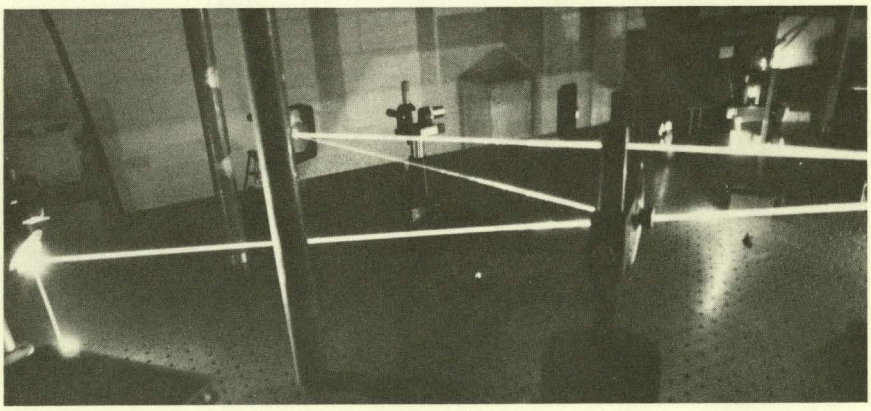
Cincinnati Technical College assumes no responsibility for any loss or theft of any automobile or any part thereof; or for any article left therein; or for any damage which may be caused by fire, trespassers, collision, etc.

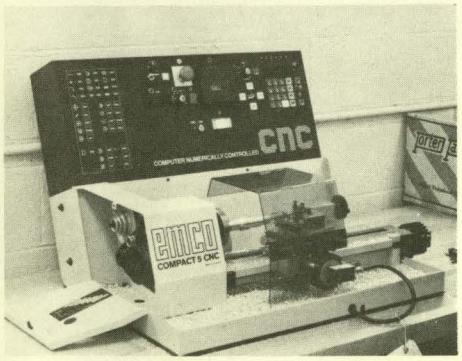












ACADEMIC DIVISIONS, DEGREE & CERTIFICATE PROGRAMS CATALOG/HANDBOOK 83-84

ACADEMIC DIVISIONS, DEGREE
& CERTIFICATE PROGRAMS
CATALOG/HANDBOOK 83-84

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.

Two of these six—Communication Skills/Social Sciences and Developmental Education—are non-degree granting divisions. However, their roles are essential to the academic success and career progression of students.

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 communication.
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 within which technical skills develop and are applied. Each of the social sciences provides a distinctive perspective of this framework. The social sciences allow 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 1001, 1002, 1009, 1010 and 1011 are also offered on an individualized, self-paced basis. These courses cover all the material contained in the lecture-discussion classes but allow students to progress through the material at their own pace. Students move from one unit of learning to the next as they demonstrate a minimum proficiency of eighty percent. All learning packets, additional activities and resources as well as individualized diagnosis and instruction are available through the Writing Center. Individualized, self-paced 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.

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 3:00 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 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 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 Communication Skills I
- 1002 Communication Skills II
- 1007 Research and Logic
- 1009 Business English
- 1030 Science Fiction and Composition

Technical Writing and Business Communications:
- 1010 Technical Writing
- 1011 Business Communications
- 1015 Technical Writing II

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

Social Sciences

Psychology:
- 1502 Human Relations - Applied Psychology
- 1505 The Psychology of the Inner World of the Person
- 1506 The Psychology of the External World of the Person
- 1509 Psychology of Human Development - Adolescence through Aging

Economics:
- 1512 Microeconomics
- 1513 Macroeconomics

Sociology:
- 1521 Introduction to Sociology
- 1527 Technology and Ethical Decisions
- 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

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 0041 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	3
#0002 College Spelling	2
#0003 Basic Writing I	3
#0004 Basic Writing II	3
#0007 Telephone Techniques	1
#0008 Oral Reports	2
#0010 College Reading I	3
#0011 College Reading II	3
#0012 Technical Reading I	3
#0013 Technical Reading II	3
#0014 College Study Skills	3
#0020 Basic Mathematics I	3
#0021 Basic Mathematics II	3
#0022 Essentials of Mathematics	6
#0024 Basic Algebra I	3
#0025 Basic Algebra II	3
#0030 Basic Concepts of Biology	3
#0031 Basic Concepts of Chemistry	3
#0040 Interpersonal Development	3
#0041 Interpersonal Communications	3

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.

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.

Prerequisites for all programs are available at CTC.

Dietetic Assistant/ Dietetic Technician (nutrition care emphasis)

CTC's one-year Dietetic Assistant program and two-year Dietetic Technician program are approved by the American Dietetic Association (ADA).

The Dietetic Assistant assists the Registered Dietitian and Dietetic Technician in nutrition care and food service supervision. The Technician is responsible for many aspects of health care from nutrition care and education of clients to the management of institutional food service.

Upon completion of the Dietetic Assistant program the student is awarded a certificate and may begin immediate employment, or the student may continue (if accepted) an additional year towards the associate degree Dietetic Technician program.

Both programs include unpaid directed practice at area hospitals, health agencies and extended care facilities. Each program also includes two terms of paid cooperative employment.

Dietetic Assistant Curriculum (DTC)

Prerequisites: High school algebra	Hours Per Week Class	Lab	Credit Hours
■ First Term			
4000 Medical Terminology	3	1	3
4001 Introduction to Health Care System	2	0	2
4010 Human Biology	3	0	3
4111 DT Orientation & Directed Practice I	1	3	1
4100 Fundamentals of Nutrition	4	0	4
10xx Communication Skills Elective I	3	0	3
	16	4	16
■ Second Term			
1150 Introduction to Science Mathematics	4	0	4
2200 Basic Chemistry	3	2	4
4102 Nutrition for the Life Cycle	4	0	4
4120 Nutrition and Food Preparation	2	6	4
4112 DT Directed Practice II	0	6	1
4121 Meal Management	3	0	3
	16	14	20
■ Third Term			
9301 Cooperative Employment	1	40	2
■ Fourth Term			
1502 Human Relations - Applied Psychology	3	0	3
4030 Technology of Education for Health	1	3	2
4031 Health Care Management	3	0	3
4105 Introduction to Clinical Nutrition	4	0	4
4113 DT Directed Practice III	0	8	1
4122 Food Service Management I	3	3	4
	14	14	17
■ Fifth Term			
9302 Cooperative Employment	1	40	2
			57

Dietetic Technician Curriculum (DT)

Prerequisites: Completion of the CTC Dietetic Assistant Program (57 credit hours) with a 2.5 TGPA and 2.75 core average	Hours Per Week Class	Lab	Credit Hours
■ First Term			
4005 Chemistry for Health Technology	3	2	4
15xx Social Science Elective	3	0	3
4106 Nutrition in Disease	4	0	4
4114 DT Directed Practice IV	0	10	2
10xx Communication Skills Elective 2	3	0	3
	13	12	16
■ Second Term			
9303 Cooperative Employment	1	40	3
■ Third Term			
1020 Effective Speaking	3	0	3
4107 Diet Therapy	4	0	4
4115 DT Directed Practice V	0	10	2
4123 Food Service Management II	3	3	4
4009 General Microbiology	3	3	4
	13	16	17
■ Fourth Term			
9304 Cooperative Employment	1	40	3
■ Fifth Term			
4002 Community Health Services	2	0	2
4061 Contemporary Health Care Issues	3	0	3
4109 Dietetics Seminar	2	0	2
4116 DT Directed Practice VI	0	8	1
10xx Communication Skills Elective 4	3	0	3
15xx Social Sciences Elective	3	0	3
	13	8	14
			53
Total 1st & 2nd years			110

General Electives

Communication Skills Elective 1 - 1001 or 1002
Communication Skills Elective 2 - if 1001 first: 1002
- if 1002 first: 1007, 1010 or 1030
Communication Skills Elective 4 - 1010 or 1015

Social Sciences Electives

Group 1 - Psychology: 1505, 1506, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1525, 1527
Group 4 - Community Relations: 1531, 1535, 1539
Three courses from at least two groups.

Dietetic Assistant Evening Program

The Dietetic Assistant program can be completed primarily in the evening. Courses for the Dietetic Assistant evening plan will be scheduled according to the following plan. All directed practice courses must be completed during the day.

	Hours Per Week Class	Lab	Credit Hours
■ September Term			
4111 Dietetic Orientation	1	3	1
4001 Introduction to Health	2	0	2
■ November Term			
4100 Fundamentals of Nutrition	4	0	4
4010 Human Biology	3	0	3
■ January Term			
4000 Medical Terminology	3	1	3
1001 Communication Skills I	3	0	3
■ April Term			
1150 Health Mathematics	4	0	4
2200 Basic Chemistry	2	3	3
■ September Term			
4120 Nutrition and Food Preparation	2	6	4
4121 Meal Management	3	0	3
■ November Term			
4031 Health Care Management	3	0	3
1021 Human Relations	3	0	3
■ January Term			
4102 Nutrition for the Life Cycle	4	0	4
4112 DT Directed Practice II	0	6	1
■ April Term			
4122 Food Service Management I	3	3	4
4130 Education for Health	1	3	2
■ June Term			
4105 Introduction to Clinical Nutrition	4	0	4
4113 DT Directed Practice II	0	8	1
9301 Cooperative Employment	1	40	2
9302 Cooperative Employment	1	40	2
			56

Medical Assistant Technology (MA)

The Medical Assistant program is an associate degree program which includes clinical rotations or externships which are supervised work experiences for students to develop competencies in skills needed by the Medical Assistant. Students receive no monetary reimbursements for these experiences.

Medical Assistants have both administrative and clinical responsibilities. Administrative tasks include scheduling, handling correspondence, filing, 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.

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, students are eligible to take the Certified Medical Assistant Examination given by the AAMA.

Medical Assistant Technology Curriculum

Prerequisites: High school chemistry, biology, algebra & typewriting (35 wpm) or equivalent	Hours Per Week Class	Lab	Credit Hours
■ First Term			
1001 Communication Skills I	3	0	3
3002 Typewriting II	2	3	3
4000 Medical Terminology	3	1	3
4001 Introduction to Health Care	2	0	2
4005 Chemistry for Health Technology	3	2	4
4201 Medical Office Practice	2	8	4
	15	14	19
■ Second Term			
3055 Medical Office Transcription	1	3	2
4014 Anatomy and Physiology I	3	2	4
4131 Developmental Nutrition	4	0	4
4202 MA Clinical Assisting I	2	8	4
4208 Insurance & Patient Records	2	2	3
	12	15	17
■ Third Term			
4211 MA Clinical Experience I	0	20	3
■ Fourth Term			
1002 Communication Skills II	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
4015 Anatomy and PhysiologyII	3	2	4
4203 MA Clinical Assisting II	2	8	4
4204 Medical Procedures I	2	8	4
	13	18	18
■ Fifth Term			
4212 MA Clinical Experience II	0	20	3
102x Speech Elective	3	0	3
15xx Social Sciences Elective	3	0	3
15xx Social Sciences Elective	3	0	3
3050 Word Processing I	1	4	3
	10	24	15
■ Sixth Term			
1010 Technical Writing	3	0	3
4016 Anatomy and Physiology III	3	2	4
4018 Essentials of Pharmacology	3	0	3

4205 Medical Procedures II	2	8	4
	11	10	14
Seventh Term			
4213 MA Clinical Experience III	1	20	3
Eighth Term			
2909 Office Accounting	2	3	3
4009 General Microbiology	3	3	4
4020 Fundamentals of Pathophysiology	5	0	5
4031 Health Care Management	3	0	3
4209 Medical Assistant Seminar	0	5	2
	13	11	17
Ninth Term			
9301 Cooperative Employment	1	40	2
			108

General Electives

Speech Elective - 1020 or 1024

Social Sciences Electives

Group 1 - Psychology: 1502, 1505, 1506, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1525, 1527
Group 4 - Community Relations: 1531, 1535, 1539
Three courses from at least two groups.

Medical Laboratory Technician (MLT)

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 Technologist, MT (ASCP), or to the National Certification Agency for Medical Laboratory Personnel to obtain certification as a Clinical Laboratory Scientist, CLS (NCA).

Medical Laboratory Technician Curriculum

Prerequisites: High school algebra, biology & chemistry	Hours Per Week Class	Lab	Credit Hours
First Term			
4014 Anatomy and Physiology I	3	2	4
4005 Chemistry for Health Technology	3	2	4
4301 Basic Laboratory Techniques	2	3	3
4302 Basic Hematology & Urinalysis	4	6	6
4311 Clinical Application I - Hematology & Urinalysis	0	6	2
	12	19	19
Second Term			
4015 Anatomy and Physiology II	3	2	4
4351 ML Clinical Experience I	1	24	4
	4	26	8
Third Term			
11xx Mathematics Elective	4	0	4
4001 Introduction to Health Care System	2	0	2
4303 Immunology	3	0	3
4304 Clinical Chemistry	4	3	5
4312 Clinical Application II - Clinical Chemistry	0	6	2
10xx Communication Skills Elective 1	3	0	3
	16	9	19
Fourth Term			
4016 Anatomy and Physiology III	3	2	4
4352 ML Clinical Experience II	1	24	4
	4	26	8
Fifth Term			
4009 General Microbiology	3	3	4
4305 Blood Bank - Serology	4	6	6
4313 Clinical Application III - Blood Bank - Serology	0	6	2
15xx Social Sciences Elective	3	0	3
2244 Health Physics I	3	2	3
	13	17	18
Sixth Term			
9302 Cooperative Employment	1	40	2
Seventh Term			
10xx Communications Skills Elective 2	3	0	3
4306 Clinical Microbiology	4	6	6
4307 Hematology II	2	3	3
4314 Clinical Application IV - Clinical Microbiology	0	6	2
15xx Social Sciences Elective	3	0	3
	12	15	17
Eighth Term			
9303 Cooperative Employment	1	40	3
Ninth Term			
1020 Effective Speaking	3	0	3
4020 Fundamentals of Pathophysiology	5	0	5
4308 Special Laboratory Procedures	1	3	2
4309 Medical Lab Seminar	3	0	3
10xx Communication Skills Elective 3	3	0	3
15xx Social Sciences Elective	3	0	3
	18	3	19
			113

General Electives

Communication Skills Elective 1 - 1001 or 1002
Communication Skills Elective 2 - if 1001 first: 1002, 1009
- if 1002 first: 1007, 1009, 1010 or 1030
Communication Skills Elective 3 - 1010 or 1011 or 1015

Social Sciences Electives

Group 1 - Psychology: 1502, 1505, 1506, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1522, 1525, 1527
Group 4 - Community Relations: 1531, 1535, 1539
Three courses from at least two groups.

Recommended Mathematic Electives

1131 or 1151 based on Placement Test and decision of Program Coordinator.

Medical Record Technology (MRT)

CTC's program is accredited by the American Medical Association's Committee of Allied Health Education and Accreditation in collaboration with the American Medical Records Association (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 Record Technology Curriculum

Prerequisites: High school biology, chemistry & typewriting (40 wpm) or equivalent	Hours Per Week Class	Lab	Credit Hours
■ First Term			
10xx Communication Skills Elective 1	3	0	3
4000 Medical Terminology	3	1	3
4014 Anatomy and Physiology I	3	2	4
4208 Insurance & Patient Records	2	2	3
4414 Record Science, Filing Systems & Record Analysis	4	3	5
	15	8	18
■ Second Term			
9301 Cooperative Employment	1	40	2
■ Third Term			
10xx Communication Skills Elective 2	3	0	3
4015 Anatomy and Physiology II	3	2	4
4400 Medical Terminology & Transcription	3	6	6
4408 Advanced Medical Terminology	3	0	3
4415 Legal Aspects of Records in Health Care Facilities	3	1	4
	15	9	20
■ Fourth Term			
9302 Cooperative Employment	1	40	2
■ Fifth Term			
102x Speech Elective	3	0	3
4001 Introduction to Health Care	2	0	2
4016 Anatomy and Physiology III	3	2	4
4031 Health Care Management	3	0	3
4416 Coding of Diagnoses, Operations and Procedures	4	3	5
	15	5	17
■ Sixth Term			
9303 Cooperative Employment	1	40	3
■ Seventh Term			
1010 Technical Writing	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
15xx Social Science Elective	3	0	3
1850 Computer Business Application	2	3	3
4417 Medical Statistics and Record Abstracting	3	2	4
4428 Medical Record Directed Practice I	0	16	3
	14	21	19
■ Eighth Term			
9304 Cooperative Employment	1	40	3
■ Ninth Term			
15xx Social Science Elective	3	0	3
4020 Fundamentals of Pathophysiology	5	0	5
4409 Medical Record Seminar	3	0	3
4419 Tumor Registry, Utilization Review and Quality Assurance	4	0	4
4429 Medical Record Directed Practice II	0	16	3
	15	16	18
■ Tenth Term			
9305 Cooperative Employment	1	40	3
			104

Recommended General Electives
Communication Skills Elective 1 - 1001 or 1002
Communication Skills Elective 2 - if 1001 first: 1002, 1009, 1030
- if 1002 first: 1007, 1009

Recommended Speech Elective: 1020 or 1024
Social Sciences Electives
Group 1 - Psychology: 1502, 1505, 1506, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1525, 1527
Group 4 - Community Relations: 1531, 1535, 1539
Three courses from at least two groups.

Respiratory Therapy Technician/ Respiratory Therapist

Respiratory Therapy education at CTC consists of a one-year certificate program and an associate degree program.

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

The technician program is 15 months in duration and concludes with the awarding of a certificate. This program does not include paid cooperative education as students spend their time in course work and unpaid clinical experiences.

The certificate and associate degree programs are 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. Technician program graduates may apply for the certification examination administered by the National Board for Respiratory Care (NBRC). Candidates who complete these requirements are recognized as Certified Respiratory Therapy Technicians (CRTT).

Students may elect to continue into the second level of respiratory therapy education. This level, the Respiratory Therapist program, is a continuation of the first year, and graduates are granted an associate degree. The program does not include paid cooperative education. Graduates may apply for the registry examination administered by the NBRT for recognition as Registered Respiratory Therapists (RRT).

Respiratory Therapy Technician (RTC) Certificate Curriculum

Prerequisites: High school biology, algebra & chemistry	Hours Per Week Class	Lab	Credit Hours
■ First Term*			
11xx Math Elective	4	0	4
4001 Introduction to Health Care	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
	14	6	16
■ Second Term			
**10xx Communication Skills Elective	3	0	3
4015 Anatomy and Physiology II	3	2	4
4701 RT Science I	3	2	4
4720 Cardiopulmonary Anatomy and Physiology	3	2	4
	12	6	15
■ Third Term			
4009 General Microbiology	3	3	4
4016 Anatomy and Physiology III	3	2	4
4702 RT Science II	2	3	4
4711 RT Clinical Practice I	0	10	2
	8	18	14
■ Fourth Term			
10xx Communication Skills Elective	3	0	3
4018 Essentials of Pharmacology	3	0	3
4703 RT Science III	3	2	4
4712 RT Clinical Practice II	0	10	2
4718 Pulmonary Disease	2	0	2
	11	12	14
■ Fifth Term			
**10xx Communication Skills Elective	3	0	3
4704 RT Science IV	3	2	4
4713 RT Clinical Practice III	0	24	5
4719 Pulmonary Diseases	2	0	2
	8	26	14
■ Sixth Term			
**15xx Social Sciences Elective 1	3	0	3
4705 RT Science V	3	2	4
4714 RT Clinical Practicum I	0	32	4
	6	34	11
			84

*4000-Medical Terminology is recommended for the first term.
**Required for Therapist program only.

Math Elective: 1151, 1171 or 1191

Respiratory Therapy Technologist (RT) Second-Year Curriculum

Prerequisite: Graduation from an accredited Respiratory Therapy Technician program	Hours Per Week Class	Lab	Credit Hours
■ First Term			
10xx Communication Skills Elective	3	0	3
2244 Health Physics	3	2	3
4020 Fundamentals of Pathophysiology	5	0	5
4706 RT Science VI	3	2	4
	14	4	15
■ Second Term			
15xx Social Sciences Elective	3	0	3
15xx Social Sciences Elective	3	0	3
4715 RT Clinical Practice IV	0	12	2
4707 RT Science VII	3	0	3
	9	12	11
■ Third Term			
4716 RT Clinical Practicum II	0	24	3
4721 RT Supervision and Education	2	0	2
4723 RT Seminar	1	2	2
	3	26	7
			33
Total 1st & 2nd years			117

General Electives
Communication Skills Elective 1 -1001 or 1002
Communication Skills Elective 2 - if 1001 first: 1002
- if 1002 first: 1007, 1010, 1030
Communication Skills Elective 3 - 1020 or 1024
Communication Skills Elective 4 - 1010 or 1015

Social Sciences Electives
Group 1 - Psychology: 1502, 1505, 1506, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1525, 1527
Group 4 - Community Relations: 1531, 1535, 1539
Three courses from at least two groups.

Surgical Technology

The student has the option of pursuing a one-year certificate course of study or an associate degree. The associate degree option requires the student to successfully complete additional general education and basic science courses. Clinical experience is provided.

Surgical Technologists are trained in basic scrub functions directly assisting the surgeon. They also prepare and care for sterile supplies and equipment and assist the registered nurse with circulating duties in the operative suite.

After successfully completing the requirements for the certificate program, students are eligible for the National Certification Examination of the Association of Surgical Technologists for designation as a Certified Surgical Technologist (CST).

This program is accredited by the American Medical Association's Comittee of Allied Health Education and Accreditation in collaboration with the Joint Review Committee for Surgical Technologists.

Surgical Technology Certificate Curriculum (STC)

Prerequisites: High school biology & chemistry	Hours Per Week Class	Lab	Credit Hours
■ First Term			
4000 Medical Terminology	3	1	3
4001 Introduction to Health Care	2	0	2
*4011 General Anatomy	2	3	3
4501 Introduction to Surgery	6	0	6
4511 ST Clinical Experience I	0	5	2
	13	9	16
■ Second Term			
4009 General Microbiology	3	3	4
*4012 Human Physiology I	3	2	4
4502 Medical/Surgical Operative Procedures I	8	0	8
4512 ST Clinical Experience II	0	5	2
	14	10	18
■ Third Term			
4521 ST Clinical Practice I	1	40	7
■ Fourth Term			
4522 ST Clinical Practice II	1	40	7
■ Fifth Term			
4007 Emergency Medical Procedures	1	2	2
*4013 Human Physiology II	3	2	4
4503 Medical/Surgical Operative Procedures II	10	0	10
4513 ST Clinical Experience III	0	10	2
	14	14	18
			66

*4014, 4015 and 4016 may be substituted for 4011, 4012 and 4013 with permission of program coordinator.

Surgical Technology (ST) Second-Year Curriculum

This option is available for students enrolled in the Surgical Technology program who choose to pursue an associate of applied science degree (AAS).

Students must complete the following "basic" courses:

4018 Fundamentals of Pharmacology	3	0	3
4020 Fundamentals of Pathophysiology	5	0	5
4031 Health Care Management	3	0	3

General Electives

Students must complete 21 credit hours from the following categories:

Communication Skills Electives:

A minimum of 12 credits required with at least three credits each from Electives 3 and 4.
Communication Skills Elective 1 - 1001 or 1002
Communication Skills Elective 2 - if 1001 first: 1002
- if 1002 first: 1007, 1010 or 1030
Communication Skills Elective 3 - 1020
Communication Skills Elective 4 - 1010 or 1015

Social Sciences Electives:
Nine credit hours from at least two elective groups.
Group 1 - Psychology: 1502, 1505, 1506, 1509
Group 2 - Economics: 1512, 1513
Group 3 - Sociology: 1521, 1525, 1527

Students choosing the AAS option of the Surgical Technician program are encouraged to begin in the June Term.

Special Offerings in Health Technologies

Medical Transcriptionist

A Medical Transcriptionist is a person skilled in medical word processing.

Medical Transcriptionists are much in demand in the Medical Transcription or Central Dictation area of the medical records department in hospitals, clinics, physicians offices, neighborhood health centers, health departments, health maintenance organization (HMO's), medical transcription companies, health insurance offices and medical research and teaching centers.

The Medical Transcriptionist is responsible for the prompt and accurate transcribing of history and physicals, x-ray reports, operative reports, pathology reports, consultations, discharge summaries and autopsies which become permanent records of medical, scientific and legal value. This individual is knowledgeable in anatomy and physiology and medical terminology used in medical and surgical procedures, drugs, instruments and laboratory tests, and possesses excellent typing, spelling and grammatical skills. A certificate is awarded upon successful completion of the program.

Students may complete the program at night or during the day. Selected courses may be offered on Saturdays. Those interested in entering the program should have a typing speed

of more than 40 words per minute, high school chemistry and biology courses, or equivalent, as prerequisites. These courses are available at Cincinnati Technical College. All students will be given a typing placement test as part of these prerequisites.

Medical Transcriptionist Certificate Curriculum

Prerequisites: High school biology, chemistry & typewriting (more than 40 wpm)	Hours Per Week Class	Lab	Credit Hours
First Term			
4000 Basic Medical Terminology	3	1	3
3002 Typewriting II	1	4	3
	4	5	6
Second Term			
1009 Business English	3	0	3
4014 Anatomy and Physiology I	3	2	4
	6	2	7
Third Term			
3048 Word Processing I	1	4	3
4408 Advanced Medical Terminology	3	0	3
	4	4	6
Fourth Term			
4441 Medical Terminology & Transcription I	2	5	4
Fifth Term			
4442 Medical Terminology & Transcription II	2	5	4
			27

Electrocardiography Certificate Training

Basic Electrocardiography (#4290)

Basic electrocardiography is a 50-hour course of lecture and lab covering terminology, anatomy and physiology appropriate to electrocardiography; electrocardiography techniques; attitude and professionalism; basic pathology of the heart and an introduction to arrhythmias.

Electrocardiography Clinical Practice (#4292)

This course consists of 80 hours of clinical practice of electrocardiography in a local hospital. Students will be supervised by practicing electrocardiographers employed by the hospital. A "C" or better in course #4290 is a prerequisite.

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)

This 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, responsible men and women identified as managers who can establish a working 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, 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.

The Cincinnati Technical College is meeting the need for specialized business training with eighteen 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 eighteen business curricula. Collegiate level courses in these business areas combine with job-related activities during the alternating ten-week work terms to provide students with both business skills and business experience. Upon completion of the two-year work/study program in business, students receive an associate degree and begin advancing rapidly to more responsible and better paying mid-management positions.

Automotive Service Management Technology (ASM)

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

Automotive Service Management Technology Curriculum

	Hours Per Week Class	Lab	Credit Hours
First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1120 Introduction to Business Mathematics	4	0	4
2501 Automotive Technology I	5	10	8
7102 Machine & Hand Tool Laboratory	1	4	3
	13	14	18
First Co-op Term			
9201 Cooperative Employment	3	40	2
Second School Term (January & April)			
1002 Communication Skills II	3	0	3
*1170 Introduction to Technical Mathematics	4	0	4
2221 Technical Physics I	2	3	3
2502 Automotive Technology II	5	10	8
	14	13	18
Second Co-op Term			
9202 Cooperative Employment	3	40	2
Third School Term (June & September)			
2909 Office Accounting I	3	2	3
2925 Business Principles	3	0	3
1512 Microeconomics	3	0	3
2222 Technical Physics II	2	3	3
2503 Automotive Technology III	2	8	5
2510 Automotive Management I	2	3	3
	15	16	20

■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1010	Technical Writing	3	0	3
1505	Psychology of the Inner World of the Person	3	0	3
1535	Introduction to Labor Management Relations	3	0	3
2504	Automotive Technology IV	2	8	5
2511	Automotive Management II	2	3	3
7810	Welding Skills	3	3	3
		16	14	20
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1020	Effective Speaking	3	0	3
1850	Computerized Business Applications	2	3	3
1823	Business Law I	3	0	3
2505	Automotive Technology V	5	10	8
2903	Survey of Marketing	3	0	3
		16	13	20
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				109

*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.

Business Data Management Technology (DM)

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

Business Data Management Technology Curriculum

Prerequisites: algebra & typewriting		Hours Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1001	Communication Skills I	3	0	3
*1140	Introduction to Linear Algebra	4	0	4
1711	Introduction to Data Management & Computer Operations	4	6	6
1712	Data Entry Systems	2	3	3
2911	Principles of Accounting I	3	2	3
		16	11	19
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1002	Communication Skills II	3	0	3
1141	Matrix Algebra	4	0	4
1731	Peripheral Equipment Operations	3	7	5
2912	Principles of Accounting II	3	2	3
2925	Business Principles	3	0	3
		16	9	18
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1142	Probability & Introduction to Quantitative Analysis	4	0	4
1721	Programming Logic & Methods	2	3	3
1740	Operating Systems	4	6	6
2913	Principles of Accounting III	3	2	3
15xx	Social Sciences Elective	3	0	3
		16	11	19
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1010	Technical Writing	3	0	3
1512	Microeconomics	3	0	3
1742	COBOL Programming I	3	7	6
1823	Business Law I	3	0	3
2926	Principles of Management	3	0	3
		15	7	18
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1020	Effective Speaking	3	0	3
1502	Human Relations - Applied Psychology	3	0	3
1761	Introduction to RPG II	3	7	6
1741	Operating Systems II	2	3	3
1783	Research Project OR	1	3	2
2921	Managerial Accounting	1	3	2
2903	Survey of Marketing	3	0	3
		15	13	20
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				107

*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.

Business Data Processing Technology (DP)

The objective of the Business Data Processing program 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 data processing community after graduation.

Business Data Processing Technology Curriculum

Prerequisites: algebra & typewriting		Hours Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1001	Communication Skills I	3	0	3
*1140	Introduction to Linear Algebra	4	0	4
1701	Introduction to Data Processing & Programming	4	6	6
1721	Programming Logic & Methods	2	3	3
2911	Principles of Accounting I	3	2	3
		16	11	19
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1002	Communication Skills II	3	0	3
*1141	Matrix Algebra	4	0	4
1722	Advance Basic Programming	2	3	3
1761	Introduction to RPG II	3	7	6
2912	Principles of Accounting II	3	2	3
		15	12	19
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1142	Probability & Introduction to Quantitative Analysis	4	0	4
1512	Microeconomics	3	0	3
1742	COBOL Programming I	3	7	6
1781	Advanced RPG II	2	3	3
2913	Principles of Accounting III	3	2	3
		15	12	19
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1010	Technical Writing	3	0	3
1505	Psychology of the Inner World of the Person	3	0	3
1762	COBOL Programming II	4	6	6
1763	Systems Analysis & Design	3	7	5
2925	Business Principles	3	0	3
		16	13	20
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1020	Effective Speaking	3	0	3
1739	Operating Systems	2	3	3

1752	Real Time Systems & Data Communications	2	3	3
1783	Research Project	1	3	2
15xx	Social Sciences Elective	3	0	3
1823	Business Law I	3	0	3
2926	Principles of Management	3	0	3
		17	9	20
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				110

*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.

For 15xx electives refer to the 15xx series section in course descriptions.

Business Management Technology (BM)

Business Management students receive a combination of business training and business experience by working with instructors experienced in management, personnel procedures, finance, accounting, sales, office organization, and related subjects. Learning experiences are provided through guest lecturers, case studies and modern visual presentations.

Business Management Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1001	Communication Skills I	3	0	3
*1121	Business Mathematics	4	0	4
2901	Principles of Marketing I	3	0	3
2911	Principles of Accounting I	3	2	3
2925	Business Principles	3	0	3
3001	Typewriting I	2	3	3
		18	5	19
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1002	Communication Skills II	3	0	3
1122	Financial Analysis	4	0	4
2926	Principles of Management	3	0	3
1810	Principles of Salesmanship	3	0	3
2902	Principles of Marketing II	3	0	3
2912	Principles of Accounting II	3	2	3
		19	2	19
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1007	Research & Logic	3	0	3
1505	Psychology of the Inner World of the Person	3	0	3
1850	Computerized Business Applications	2	3	3
2905	Money & Banking	3	0	3
2913	Principles of Accounting III	3	2	3
1512	Microeconomics	3	0	3
		17	5	18
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1011	Business Communications	3	0	3
1804	Risk & Insurance	3	0	3
1823	Business Law I	3	0	3
1832	Personnel Management	3	0	3
2917	Federal Taxation	2	3	3
2960	Principles of Finance	3	0	3
		17	3	18
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1020	Effective Speaking	3	0	3
1521	Introduction to Sociology	3	0	3
1824	Business Law II	3	0	3
2904	Office Management	3	0	3
2906	Credits & Collections	3	0	3
2921	Managerial Accounting	2	3	3
		17	3	18
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				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.

Chef Technology (CH)

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

The curriculum meets the standards as established by the American Culinary Federation.

Chef Technology Curriculum

		Hour Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1001	Communication Skills I	3	0	3
1120	Introduction to Business Mathematics	4	0	4
2801	Introduction to Restaurant Management	2	4	3
2806	Beverage Management	3	0	3
2822	Fundamentals of Food Preparation I	2	4	3
2911	Principles of Accounting I	3	2	3
		17	10	19
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1002	Communication Skills II	3	0	3
*1121	Business Mathematics	4	0	4
2802	Restaurant Management II	2	4	3
2823	Food Preparation II	2	4	3
2912	Principles of Accounting II	3	2	3
2925	Business Principles	3	0	3
		17	10	19
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1020	Effective Speaking	3	0	3
1234	OSHA I	3	0	3
2803	Restaurant Management III	2	4	3
2824	Food Preparation III	2	4	3
2928	Hotel-Motel Accounting	3	0	3
4130	Introduction to Nutrition	3	0	3
		16	8	18
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1502	Human Relations - Applied Psychology	3	0	3
1512	Microeconomics	3	0	3
1535	Labor Management Relations	3	0	3
1850	Computerized Business Applications	2	3	3
2804	Restaurant Management IV	3	0	3
2825	Food Preparation IV	2	4	3
		16	7	18
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1011	Business Communications	3	0	3
1521	Introduction to Sociology	3	0	3
1823	Business Law I	3	0	3
2805	Restaurant Management V	3	0	3
2815	Principles and Practices of Hotel Management	3	0	3
2821	Sales Techniques	3	0	3
2826	Food Preparation V	2	4	3
		20	4	21

■ **Third Co-op Term**				
9205	Cooperative Employment	4	40	3
				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.

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.

Graphic Communications Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1001	Communication Skills I	3	0	3
1449	Estimating Preparation	2	3	3
1401	Layout and Design	3	0	3
1402	Typography	2	6	4
1415	Graphic Arts Processes	2	3	3
2925	Business Principles	3	0	3
		15	12	19
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1002	Communication Skills II	3	0	3
1410	Machine Composition & Newspaper Design	1	9	4
1460	Bindery Method/Procedures	2	3	3
1512	Microeconomics	3	0	3
1850	Computerized Business Applications	2	3	3
2261	Printing Science I (Chemistry)	3	2	4
		14	17	20
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1020	Effective Speaking	3	0	3
1450	Estimating	2	3	3
1421	Cold Type Process	1	9	4
1502	Human Relations - Applied Psychology	3	0	3
1810	Principles of Salesmanship	3	0	3
2262	Printing Science II (Physics)	2	3	3
		14	15	19
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1007	Research and Logic	3	0	3
1419	Survey of Printing Inks	3	0	3
1430	Presswork	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
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1010	Technical Writing	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
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				108

Hotel-Restaurant Management Technology (HR)

CTC's Hotel-Motel-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 the industry.

Hotel-Restaurant Management Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1001	Communication Skills I	3	0	3
*1120	Introduction to Business Mathematics	4	0	4
2801	Introduction to Restaurant Management	2	4	3
2806	Beverage Management	3	0	3
2811	Introduction to Hotel-Motel Management	3	0	3
2911	Principles of Accounting I	3	2	3
		18	6	19
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1002	Communication Skills II	3	0	3
1121	Business Mathematics	4	0	4
2802	Restaurant Management II	2	4	3
2812	Hotel Front Office and Night Audit Procedures	3	2	3
2912	Principles of Accounting II	3	2	3
1502	Human Relations - Applied Psychology	3	0	3
		18	8	19
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1020	Effective Speaking	3	0	3
2803	Restaurant Management III	2	4	3
2813	Hotel Executive Housekeeping	3	2	3
2815	Principles & Practices of Hotel Management	3	0	3
2928	Hotel-Motel Accounting	3	0	3
4130	Introduction to Nutrition	3	0	3
		17	6	18
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1512	Microeconomics	3	0	3
1535	Labor Management Relations	3	0	3
1850	Computerized Business Applications	2	3	3
2804	Restaurant Management IV	3	0	3
2814	Hotel Maintenance Engineering	3	0	3
2925	Business Principles	3	0	3
		17	3	18
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1011	Business Communications	3	0	3
1521	Introduction to Sociology	3	0	3
1825	Hotel Law I	3	0	3
2805	Restaurant Management V	3	0	3
2821	Sales Techniques	3	0	3
2930	Hotel-Motel Case Studies	3	0	3
		18	0	18
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				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.

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 Class	Lab	Credit Hours
■ First School Term			
September			
1201 Private Police Officer's Training Course	4	8	8
1210 Introduction to Loss Control and Security Administration	3	0	3
November			
1001 Communication Skills I	3	0	3
1216 Security Administration I	3	0	3
2926 Principles of Management	3	0	3
	16	8	20
■ First Co-op Term			
9201 Cooperative Employment	3	40	2
■ Second School Term			
January			
1002 Communication Skills II	3	0	3
1211 Industrial Security	3	0	3
1217 Security Administration II	3	0	3
April			
*1120 Introduction to Business Mathematics	4	0	4
1220 Fundamentals of Fire Protection	3	0	3
2927 Security Management	3	0	3
	19	0	19
■ Second Co-op Term			
9202 Cooperative Employment	3	40	2
■ Third School Term			
June			
1020 Effective Speaking	3	0	3
1121 Business Mathematics	4	0	4
1233 Emergency Planning	3	0	3
September			
1010 Technical Writing	3	0	3
1208 Criminal Law I	3	0	3
1230 Safety Management	3	0	3
	19	0	19
■ Third Co-op Term			
9203 Cooperative Employment	4	40	3
■ Fourth School Term			
November			
1024 Group Dynamics & Problem Solving OR	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
1204 Personnel Security Systems	2	3	3
1209 Criminal Law II	3	0	3
January			
1535 Labor Management Relations	3	0	3
1823 Business Law I	3	0	3
2909 Office Accounting I	3	2	3
	17	5	18
■ Fourth Co-op Term			
9204 Cooperative Employment	4	40	3
■ Fifth School Term			
April			
1205 Criminal Interrogation	3	0	3
1505 Psychology of the Inner World of the Person	3	0	3
1850 Computerized Business Application	2	3	3
June			
1506 Psychology of the External World of the Person	3	0	3
1521 Introduction to Sociology	3	0	3
2903 Survey of Marketing	3	0	3
	17	3	18
■ Fifth Co-op Term			
9205 Cooperative Employment	4	40	3
			107

*A competency-based math test will be administered to all entering Business Technologies 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 Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1121 Business Mathematics	4	0	4
1505 Psychology of the Inner World of the Person	3	0	3
2911 Principles of Accounting I	3	2	3
2925 Business Principles	3	0	3
3001 Typewriting I	2	3	3
	18	5	19
■ First Co-op Term			
9201 Cooperative Employment	3	40	2
■ Second School Term (January & April)			
1002 Communication Skills II	3	0	3
1122 Financial Analysis	4	0	4
1512 Microeconomics	3	0	3
1521 Introduction to Sociology	3	0	3
2903 Survey of Marketing	3	0	3
2912 Principles of Accounting II	3	2	3
	19	2	19
■ Second Co-op Term			
9202 Cooperative Employment	3	40	2
■ Third School Term (June & September)			
1007 Research & Logic	3	0	3
1804 Risk & Insurance	3	0	3
1850 Computerized Business Applications	2	3	3
2913 Principles of Accounting III	3	2	3
2917 Federal Taxation I	2	3	3
2926 Principles of Management	3	0	3
	16	8	18
■ Third Co-op Term			
9203 Cooperative Employment	4	40	3
■ Fourth School Term (November & January)			
1011 Business Communications	3	0	3
2919 Intermediate Accounting I	2	3	3
1823 Business Law I	3	0	3
1851 Auditing	4	1	4
2914 Cost Accounting I	3	2	3
2918 Federal Taxation II	2	3	3
	17	9	19
■ Fourth Co-op Term			
9204 Cooperative Employment	4	40	3
■ Fifth School Term (April & June)			
1020 Effective Speaking	3	0	3
1824 Business Law II	3	0	3
1852 EDP & Auditing	2	3	3
2905 Money & Banking	3	0	3
2915 Cost Accounting II	3	2	3
2920 Intermediate Accounting II	2	3	3
	16	8	18
■ Fifth Co-op Term			
9205 Cooperative Employment	4	40	3
			106

*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.

Ornamental Horticulture & Floriculture Technologies

Students may elect to specialize in either Landscaping or Floriculture during their fourth, fifth and sixth terms by enrolling in certain technical courses.

Because of the unique seasonal employment requirements of horticulturally related jobs, this program follows a different co-op schedule. Ornamental Horticulture students spend two consecutive terms (during the growing season) in cooperative employment during each of the two years in the program.

Ornamental Horticulture (OH) Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ First School Term				
1001	Communication Skills I	3	0	3
*117x	OR 119x - Technical Mathematics Elective	4	0	4
1502	Human Relations - Applied Psychology	3	0	3
3502	Horticulture Science I	3	1	3
3504	Woody Plant Materials I	2	3	3
3500	Orientation to Horticulture Occupations	1	0	1
		16	4	17
■ Second School Term				
1002	Communication Skills II	3	0	3
22xx	Chemistry Elective	3	2	4
2925	Business Principles	3	0	3
3510	Horticultural & Turf Equipment	2	3	3
3532	Landscape Maintenance	2	3	3
		13	8	16
■ Third School Term				
15xx	Social Sciences Elective	3	0	3
3501	Soils and Plant Nutrition	3	0	3
3505	Herbaceous Plant Materials	2	2	3
3509	Principles of Landscape Design	2	3	3
3528	Greenhouse Management	3	0	3
3530	Horticulture Seminar I	1	1	1
		14	6	16
■ First Co-op Term				
9501	Cooperative Employment	3	40	2
■ Second Co-op Term				
9502	Cooperative Employment	1	40	2
■ Fourth School Term				
102x	Speech Elective	3	0	3
2909	Office Accounting I	3	2	3
3521	Entomology and Plant Pathology	2	2	3
3508	Turfgrass Management	2	3	3
3511	Landscape Construction	1	5	3
		11	12	15
■ Fifth School Term				
1010	Technical Writing	3	0	3
151x	Economics Elective	3	0	3
1850	Computerized Business Applications	2	3	3
2926	Principles of Management	3	0	3
3506	Nursery Management	2	3	3
3515	Woody Plant Materials II	2	3	3
		15	9	18
■ Sixth School Term				
1810	Principles of Salesmanship	3	0	3
1823	Business Law I	3	0	3
3507	Arboriculture	3	0	3
3518	Advanced Landscape Design	2	3	3
3519	Landscape Contracts & Specifications	3	0	3
3531	Horticulture Seminar II	1	1	1
		14	4	16
■ Third Co-op Term				
9503	Cooperative Employment	1	40	3
■ Fourth Co-op Term				
9504	Cooperative Employment	1	40	3
				108

Ornamental Horticulture/Floriculture (FL) Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ First School Term (September)				
1001	Communication Skills I	3	0	3
*117x	OR 119x Technical Mathematics Elective	4	0	4
3502	Horticulture Science I	3	1	3
3505	Herbaceous Plant Materials	2	2	3
3504	Woody Plant Materials I	2	3	3
3500	Orientation to Horticulture Occupations	1	0	1
		15	6	17
■ Second School Term (November)				
1002	Communication Skills II	3	0	3
1505	Psychology of the Inner World of the Person	3	0	3
1521	Introduction to Sociology	3	0	3
22xx	Chemistry Elective	3	2	4
3525	Plant Propagation	2	2	3
		14	4	16
■ Third School Term (Janauary)				
1512	Microeconomics	3	0	3
3501	Soils and Plant Nutrition	3	0	3
3509	Principles of Landscape Design	2	3	3
3528	Greenhouse Management	3	0	3
3510	Horticultural & Turf Equipment	2	3	3
3530	Horticulture Seminar I	1	1	1
		14	7	16
■ First Co-op Term (April)				
9501	Cooperative Employment	3	40	2
■ Second Co-op Term (June)				
9502	Cooperative Employment	1	40	2
■ Fourth School Term (September)				
1020	Effective Speaking	3	0	3
1850	Computerized Business Applications	2	3	3
2925	Business Principles	3	0	3
3521	Entomology and Plant Pathology	2	2	3
3541	Floriculture Production I	2	3	3
3540	Introduction to Floral Design	2	3	3
		14	11	18
■ Fifth School Term (November)				
1823	Business Law I	3	0	3
2909	Office Accounting I	3	2	3
2926	Principles of Management	3	0	3
3542	Retail Florist Management	1	5	3
3543	Floriculture Production II	2	3	3
		12	10	15
■ Sixth School Term (Janaury)				
1010	Technical Writing	3	0	3
1810	Principles of Salesmanship	3	0	3
3534	Interior Plantscaping	2	2	3
3544	Advanced Floral Design	2	3	3
3545	Floriculture Production III	2	3	3
3531	Horticulture Seminar II	1	1	1
		13	9	16
■ Third Co-op Term (April)				
9503	Cooperative Employment	1	40	3
■ Fourth Co-op Term (June)				
9504	Cooperative Employment	1	40	3
				108

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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. Five of its technical courses (2931, 2932, 2933, 2934 and 2935) are offered only in the evening. The curriculum includes required courses for the Ohio real estate license.

In many cases co-op employment requires a state real state 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 a jobs-available basis.

Property Management Technology Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1120 Introduction to Business Mathematics	4	0	4
1512 Microeconomics	3	0	3
2925 Business Principles	3	0	3
2931 On-Site Property Management I	3	1	3
2951 Real Estate Principles & Practices	3	0	3
	19	1	19
■ First Co-op Term			
9201 Cooperative Employment	3	40	2
■ Second School Term (January & April)			
1002 Communication Skills II	3	0	3
1024 Group Dynamics - Problem Solving OR 1502 Human Relations - Applied Psychology	3	0	3
1121 Business Mathematics	4	0	4
1513 Macroeconomics	3	0	3
2932 On-Site Property Management II	3	1	3
2953 Real Estate Law	3	0	3
	19	1	19
■ Second Co-op Term			
9202 Cooperative Employment	3	40	2
■ Third School Term (June & September)			
1020 Effective Speaking	3	0	3
2905 Money & Banking	3	0	3
2911 Principles of Accounting I	3	2	3
2933 Executive Level Property Management I	3	1	3
2952 Real Estate Brokerage	3	0	3
2954 Real Estate Finance	3	0	3
	18	3	18
■ Third Co-op Term			
9203 Cooperative Employment	4	40	3
■ Fourth School Term (November & January)			
1007 Research & Logic	3	0	3
1505 Psychology of the Inner World of the Person	3	0	3
2912 Principles of Accounting II	3	2	3
2926 Principles of Management	3	0	3
2934 Executive Level Property Management II	3	1	3
2955 Real Estate Appraisal I - Residential	3	0	3
	18	3	18
■ Fourth Co-op Term			
9204 Cooperative Employment	4	40	3
■ Fifth School Term (April & June)			
1011 Business Communications	3	0	3
1850 Comuterized Business Applications	2	3	3
1832 Personnel Management	3	0	3
2917 Federal Taxation I	2	3	3
2935 Property Management Case Study	3	0	3
2957 Real Estate Seminar: Special Topics	3	0	3
	16	6	18
■ Fifth Co-op Term			
9205 Cooperative Employment	4	40	3
			105

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Real Estate Technology (RE)

CTC's Real Estate technology, directed by a licensed real estate broker, helps students and professionals with their career development.

Students may follow a sequenced, six-course program which meets all the requirements to qualify for the Ohio Real Estate Sales Associate and Broker's license examinations. The associate degree curriculum includes all required courses for the real estate license and the GRI designation.

During the study, the student is encouraged to secure the state real estate license early in the schedule in order to gain actual co-op work experience. A half-day schedule may be maintained for degree requirements until graduation. Co-op work in this technology always requires a state real estate license.

The program can be combined with certain property management courses for a double major.

Real Estate Technology Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1120 Introduction to Business Mathematics	4	0	4
1512 Microeconomics	3	0	3
2925 Business Principles	3	0	3
2951 Real Estate Principles & Practices	3	0	3
2953 Real Estate Law	3	0	3
	19	0	19
■ First Co-op Term			
9201 Cooperative Employment	3	40	2
■ Second School Term (January & April)			
1002 Communication Skills II	3	0	3
1024 Group Dynamics - Problem Solving OR 1502 Human Relations - Applied Psychology	3	0	3
1121 Business Mathematics	4	0	4
1513 Macroeconomics	3	0	3
2940 Real Estate Sales	3	0	3
2954 Real Estate Finance	3	0	3
	19	0	19
■ Second Co-op Term			
9202 Cooperative Employment	3	40	2
■ Third School Term (June & September)			
1020 Effective Speaking	3	0	3
1804 Risk & Insurance	3	0	3
2901 Principles of Marketing I	3	0	3
2905 Money & Banking	3	0	3
2911 Principles of Accounting I	3	2	3
2952 Real Estate Brokerage	3	0	3
	18	2	18
■ Third Co-op Term			
9203 Cooperative Employment	4	40	3
■ Fourth School Term (November & January)			
1007 Research & Logic	3	0	3
1505 Psychology of the Inner World of the Person	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
2955 Real Estate Appraisal I - Residential	3	0	3
	18	2	18
■ Fourth Co-op Term			
9204 Cooperative Employment	4	40	3
■ Fifth School Term (April & June)			
1011 Business Communications	3	0	3
1850 Computerized Business Applications	2	3	3
1842 Advertising & Display	3	2	4
2917 Federal Taxation I	2	3	3
2956 Real Estate Appraisal II - Income Producing Property	3	0	3
2957 Real Estate Seminar: Special Topics	3	0	3
	16	8	19
■ Fifth Co-op Term			
9205 Cooperative Employment	4	40	3
			106

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math sequence which is more compatible to their level of experience and aptitude.

Sales Marketing & Industrial Sales Technologies

In the Sales Marketing program, the most important objective is developing talent for the sales marketing professions. The kinds of cooperative employment presently held by Sales Marketing students are as varied as the marketing area itself.

Students in the Industrial Sales Marketing program attend day and evening classes. This option focuses on selling in the industrial-commercial area.

Sales Marketing (SM) Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1020	Effective Speaking	3	0	3
*1120	Introduction to Business Mathematics	4	0	4
1810	Principles of Salesmanship	3	0	3
1845	Principles of Retailing	3	0	3
2925	Business Principles	3	0	3
		16	0	16
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1001	Communication Skills I	3	0	3
1024	Group Dynamics - Problem Solving	3	0	3
1121	Business Mathematics	4	0	4
1836	Principles of Wholesaling	3	0	3
2926	Principles of Management	3	0	3
3005	Administrative Typewriting	2	3	3
		18	3	19
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1002	Communication Skills II	3	0	3
1505	Psychology of the Inner World of the Person	3	0	3
1521	Introduction to Sociology	3	0	3
1850	Computerized Business Applications	2	3	3
1832	Personnel Management	3	0	3
2901	Principles of Marketing I	3	0	3
		17	3	18
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1007	Research and Logic	3	0	3
1512	Microeconomics	3	0	3
1815	Audiovisual Sales Techniques	3	2	4
1823	Business Law I	3	0	3
2902	Principles of Marketing II	3	0	3
2911	Principles of Accounting I	3	2	3
		18	4	19
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1011	Business Communications	3	0	3
1840	Retail Merchandising & Operations	4	0	4
1824	Business Law II	3	0	3
1842	Advertising and Display	3	2	4
2912	Principles of Accounting II	3	2	3
1804	Risk and Insurance	3	0	3
		19	4	20
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				105

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Industrial Sales (SI) Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ **First School Term (September & November)**				
1020	Effective Speaking	3	0	3
*1120	Introduction to Business Mathematics	4	0	4
1846	Industrial Product Marketing I	4	0	4
1810	Principles of Salesmanship	3	0	3
2925	Business Principles	3	0	3
		17	0	17
■ **First Co-op Term**				
9201	Cooperative Employment	3	40	2
■ **Second School Term (January & April)**				
1001	Communication Skills I	3	0	3
1121	Business Mathematics	4	0	4
1813	Industrial Sales	4	0	4
1847	Industrial Product Marketing II	4	0	4
3005	Administrative Typewriting	2	3	3
2926	Principles of Management	3	0	3
		20	3	21
■ **Second Co-op Term**				
9202	Cooperative Employment	3	40	2
■ **Third School Term (June & September)**				
1002	Communication Skills II	3	0	3
1024	Group Dynamics - Problem Solving	3	0	3
1505	Psychology of the Inner World of the Person	3	0	3
1850	Computerized Business Applications	2	3	3
1817	Industrial Purchasing	4	0	4
1521	Introduction to Sociology	3	0	3
		18	3	19
■ **Third Co-op Term**				
9203	Cooperative Employment	4	40	3
■ **Fourth School Term (November & January)**				
1011	Business Communications	3	0	3
1512	Microeconomics	3	0	3
1815	Audiovisual Sales Techniques	3	2	4
2911	Principles of Accounting I	3	2	3
1814	Case Studies Industrial Sales	4	1	4
1823	Business Law I	3	0	3
		19	5	20
■ **Fourth Co-op Term**				
9204	Cooperative Employment	4	40	3
■ **Fifth School Term (April & June)**				
1015	Technical Writing II	3	0	3
2912	Principles of Accounting II	3	2	3
1824	Business Law II	3	0	3
1842	Advertising and Display	3	2	4
1820	Sales Management	4	0	4
1804	Risk and Insurance	3	0	3
		19	4	20
■ **Fifth Co-op Term**				
9205	Cooperative Employment	4	40	3
				110

*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 curriculums include not only technical skill development but also courses in business principles and management.

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

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

The Word Processing Specialist curriculum prepares an individual to be a word processor or a word 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 techniques and procedures are emphasized.

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

Administrative Support (SE) Specialist Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1120 Introduction to Business Mathematics	4	0	4
2925 Business Principles	3	0	3
3001 Typewriting I	2	3	3
3011 Shorthand I - Century 21 OR	4	1	4
3010 Shorthand I - Gregg	4	1	4
3021 Office Procedures	3	0	3
	19	4	20
■ First Co-op Term			
9201 Cooperative Employment	3	40	2
■ Second School Term (January & April)			
1009 Business English	3	0	3
1121 Business Mathematics	4	0	4
3002 Typewriting II	2	3	3
3012 Shorthand II - Century 21 OR	4	1	4
3020 Shorthand II - Gregg	4	1	4
3032 Office Procedures/ Professional Development	2	3	3
3050 Word Processing I	1	4	3
	16	11	20
■ Second Co-op Term			
9202 Cooperative Employment	3	40	2
■ Third School Term (June & September)			
1002 Communication Skills II	3	0	3
2926 Principles of Management	3	0	3
1823 Business Law I	3	0	3
3003 Typewriting III	2	3	3
3013 Shorthand III - Gregg & C21	4	1	4
3022 Keyboarding/Word Processing Office Equipment	2	3	3
	17	7	19
■ Third Co-op Term			
9203 Cooperative Employment	4	40	3
■ Fourth School Term (November & January)			
1011 Business Communications	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
2911 Principles of Accounting I	3	2	3
3014 Transcription I - Gregg & C21	2	8	5
3024 Secretarial Procedures	3	0	3
	14	10	17
■ Fourth Co-op Term			
9204 Cooperative Employment	4	40	3
■ Fifth School Term (April & June)			
1020 Effective Speaking	3	0	3
1512 Microeconomics	3	0	3
1521 Introduction to Sociology	3	0	3
1850 Computerized Business Applications	2	3	3
2912 Principles of Accounting II	3	2	3
3015 Transcription II - Gregg & C21	2	8	5
	16	13	20
■ Fifth Co-op Term			
9205 Cooperative Employment	4	40	3
			109

*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.

General Office (SG) Specialist Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1120 Introduction 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	0	3
	17	6	19
■ First Co-op Term			
9201 Cooperative Employment	3	40	2
■ Second School Term (January & April)			
1009 Business English	3	0	3
1121 Business Mathematics	4	0	4
1512 Microeconomics	3	0	3
3002 Typewriting II	2	3	3
3032 Office Procedures/ Professional Development	2	3	3
3050 Word Processing I	1	4	3
	15	10	19
■ Second Co-op Term			
9202 Cooperative Employment	3	40	2
■ Third School Term (June & September)			
1002 Communication Skills II	3	0	3
2926 Principles of Management	3	0	3
1823 Business Law I	3	0	3
2905 Money & Banking	3	0	3
3003 Typewriting III	2	3	3
3022 Keyboarding/Word Processing Office Equipment	2	3	3
	16	6	18
■ Third Co-op Term			
9203 Cooperative Employment	4	40	3
■ Fourth School Term (November & January)			
1011 Business Communications	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
1832 Personnel Management	3	0	3
2909 Office Accounting I	3	2	3
3004 Typewriting IV	2	3	3
3024 Secretarial Procedures	3	0	3
	17	5	18
■ Fourth Co-op Term			
9204 Cooperative Employment	4	40	3
■ Fifth School Term (April & June)			
1020 Effective Speaking	3	0	3
1521 Introduction to Sociology	3	0	3
2903 Survey of Marketing	3	0	3
2904 Office Management	3	0	3
2910 Office Accounting II	3	2	3
1712 Data Entry Systems	2	3	3
	17	5	18
■ Fifth Co-op Term			
9205 Cooperative Employment	4	40	3
			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.

Word Processing (WP) Specialist Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1120 Introduction to Business Mathematics	4	0	4
2925 Business Principles	3	0	3
3001 Typewriting I	2	3	3
3021 Office Procedures	3	0	3
3050 Word Processing I	1	4	3
	16	7	19
■ First Co-op Term			
9201 Cooperative Employment	3	40	2
■ Second School Term (January & April)			
1009 Business English	3	0	3
1121 Business Mathematics	4	0	4
1850 Computerized Business Applications	2	3	3

3032	Office Procedures/ Professional Development	2	3	3
3051	Word Processing II	1	4	3
		14	13	19
■ Second Co-op Term				
9202	Cooperative Employment	3	40	2
■ Third School Term (June & September)				
1002	Communications Skills II	3	0	3
1512	Microeconomics	3	0	3
2926	Principles of Management	3	0	3
3003	Typewriting III	2	3	3
3023	Machine Transcription	3	0	3
3052	Text Management	1	4	3
		15	7	18
■ Third Co-op Term				
9203	Cooperative Employment	4	40	3
■ Fourth School Term (November & January)				
1011	Business Communications	3	0	3
1502	Human Relations - Applied Psychology	3	0	3
2903	Survey of Marketing	3	0	3
2911	Principles of Accounting I	3	2	3
3056	Document Handling Controls	1	4	3
		14	10	18
■ Fourth Co-op Term				
9204	Cooperative Employment	4	40	3
■ Fifth School Term (April & June)				
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
3054	Transcription Text Editing II	1	4	3
3057	Text Administration	1	4	3
		17	10	21
■ Fifth Co-op Term				
9205	Cooperative Employment	4	40	3
				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.

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, 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 admissions test.

If the test indicates 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 chances to enter the technology in the September and/or November terms when most of the technologies' course work begins.

Air Conditioning/Heating Technology (AC)

The Air Conditioning/Heating program provides a course of study covering the theory and application of modern heating and air conditioning systems. Students are trained to design, install, service and maintain residential and commerical air conditioning and heating installations. Refrigeration processes and equipment constitute a major related responsibility of this field.

Air Conditioning/Heating Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)				
1001	Communication Skills I	3	0	3
*1191	Algebra & Trignometry I	4	0	4
7008	Basic Engineering Drawing	2	4	3
7510	Elements of Refrigeration	4	2	4
7701	Electrical Fundamentals I	4	2	4
		17	8	18
■ First Co-op Term				
9401	Cooperative Employment	1	40	2
■ Second School Term (January & April)				
1002	Communication Skills II	3	0	3
1192	Algebra & Trigonometry II	4	0	4
2291	Physics I - Kinematics & Dynamics	3	2	3
7016	Construction Drawing	2	4	3
7520	Elements of Heating	3	2	3
7702	Electrical Fundamentals II	4	2	4
		19	10	20
■ Second Co-op Term				
9402	Cooperative Employment	1	40	2
■ Third School Term (June & September)				
1179	Technical Statistics	4	0	4
2292	Physics II - Mechanics & Heat	3	2	3
7132	Hydraulics & Pneumatics	4	2	4
7530	Air Conditioning Principles I	3	2	3
7xxx	Technical Elective			3
1502	Human Relations - Applied Psychology	3	0	3
				20
■ Third Co-op Term				
9403	Cooperative Employment	1	40	3
■ Fourth School Term (November & January)				
102x	Speech Elective	3	0	3
2293	Physics III - Electromagnetic Wave	3	2	3
7735	Electronic Fundamentals	3	3	4
7540	Air Conditioning Principles II	4	2	4
7541	Air Conditioning Design I	4	2	4
		17	9	18
■ Fourth Co-op Term				
9404	Cooperative Employment	1	40	3
■ Fifth School Term (April & June)				
1010	Technical Writing	3	0	3
1513	Macroeconomics	3	0	3
15xx	Social Science Elective	3	0	3

7550	Air Conditioning Principles III	3	2	3
7551	Air Conditioning Design II	3	3	4
7552	Air Conditioning Controls	3	2	3
		18	7	19
■ Fifth Co-op Term				
9405	Cooperative Employment	3	40	3
				108

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

Recommended Technical Electives
7030 Computer Programming (Basic)
7040 Industrial Supervision & Management
7532 Sheet Metal Layout & Fabrication
7757 Electrical Maintenance
7901 Energy Management & Alternatives

Aviation Technology (AV)

The Aviation program is designed to prepare aircraft and powerplant mechanics for employment in commercial, corporate or general aviation.

The curriculum includes the theoretical and practical training designed to equip the student with the competence required to work effectively with all of these systems.

The student gains experience in working with a variety of types of aircraft and engines. The program includes eight academic terms. The first five academic terms concentrate on general and airframe and the last three terms on powerplant.

Graduates may be employed by fixed base operators, corporate plane operations or commercial airlines.

Aviation Technology Curriculum

		Hours Per Week Class	Lab	Credit Hours
■ First School Term (September)				
1001	Communication Skills I	3	0	3
*1171	Technical Mathematics I	4	0	4
8100	Aircraft Orientation	3	2	3
7704	Basic Industrial Electricity	3	2	3
8102	Machine and Hand Tools	1	4	3
8103	Basic Aerodynamics & FAA Regulations	3	2	3
		17	10	19
■ Second School Term (November)				
1172	Technical Mathematics II	4	0	4
2291	Physics I - Kinematics & Dynamics	3	2	3
8120	Airframe Structures	5	5	5
8140	Aircraft Electrical Systems	5	5	5
		17	12	17
■ Third School Term (January)				
1192	Algebra & Trigonometry II	4	0	4
7009	Engineering Graphics (Aviation)	1	4	2
2292	Physics II - Mechanics & Heat	3	2	3
8101	Welding Processes	1	4	2
8110	Fuels and Fuel Systems	1	4	2
8131	Aircraft Structures (Metal)	3	7	4
		13	21	17
■ Fourth School Term (April)				
1002	Communication Skills II	3	0	3
2293	Physics III - Electromagnetic Wave	3	2	3
8121	Airframe Hydraulic & Pneumatic Sys.	1	4	2
8122	Materials and Processes	2	3	3
8151	Airframe Assembly & Rigging	3	7	5
8142	Flight Line Maintenance I	1	4	2
		13	20	18
■ Fifth School Term (June)				
1502	Human Relations - Applied Psychology	3	0	3
8150	Aircraft Electrical Generating Sys.	3	2	3
8130	Aircraft Sys., Hyd. & Pneu. Land. Gear	3	7	5
8141	Aircraft Instr., Comm. & Nav. & Util. Sys.	5	5	5
8152	Flight Line Maintenance II	2	3	3
		16	17	19
■ Sixth School Term (September)				
1513	Macroeconomics	3	0	3
15xx	Social Science Elective	3	0	3
8160	Powerplant Theory, Reciprocating	5	5	5
8161	Powerplant Lubrication	3	2	3
8162	Propellers	3	2	3
		17	9	17
■ Seventh School Term (November & January)				
102x	Speech Elective	3	0	3
8170	Powerplant Theory, Turbine	5	5	5
8171	Fuel Metering Systems	3	2	3
8172	Ignition Systems	5	5	5
		16	12	16
■ Eighth School Term (April & June)				
1010	Technical Writing	3	0	3
8180	Turbine Powerplant Sys. & Components	6	4	6
8181	Powerplant Carburetor Fuel Sys.	6	4	6
**8182	Airframe & Powerplant Comprehensive	3	2	3
		18	10	18
				145

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

**This course is not required for degree purposes but is highly recommended.

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 Class	Lab	Credit Hours
1171	Technical Mathematics I	4	0	4
8100	Aircraft Orientation	3	2	3
8102	Machine & Hand Tools	1	4	3
8103	Basic Aerodynamics & FAA Regulations	3	2	3
2291	Physics I - Kinematics & Dynamics	3	2	3
8120	Airframe Structures	5	5	5
8140	Aircraft Electrical Systems	5	5	5
7009	Engineering Graphics (Aviation)	1	4	2
8101	Welding Processes	1	4	2
8110	Aircraft Fuels & Fuel Systems	1	4	2
8131	Airframe Structures, Sheet Metal	3	7	4
8121	Airframe Hydraulic & Pneumatic Systems	1	4	2
8122	Materials & Processes	2	3	3
8151	Airframe Assembly & Rigging	3	7	5
8142	Fightline Maintenance I	1	4	2
8150	Aircraft Electrical Generating Systems	3	2	3
8130	Airframe Systems, Hydraulic & Pneumatic Landing Gears	3	7	5
8141	Aircraft Instrument, Communications & Navigation & Utility Systems	5	5	5
		48	71	61

Powerplant Certificate Curriculum

		Hours Per Week Class	Lab	Credit Hours
1171	Technical Mathematics I	4	0	4
1001	Communications Skills I	3	0	3
8100	Aircraft Orientation	3	2	3
8103	Basic Aerodynamics & FAA Regulations	3	2	3
2291	Physics I - Kinematics & Dynamics	3	2	3
7009	Engineering Graphics (Aviation)	1	4	2
8122	Materials & Processes	2	3	3
8142	Flightline Maintenance I	1	4	2
8152	Flightline Maintenance II	2	3	3
8160	Powerplant Theory, Reciprocating	5	5	5

8161 Powerplant Lubrication	3	2	3
8162 Propellers	3	2	3
8170 Powerplant Theory, Turbine	5	5	5
8171 Fuel Metering Systems	3	2	3
8172 Ignition Systems	5	5	5
8180 Turbine Powerplant Systems Components	6	4	6
8181 Powerplant Carburetor Fuel Systems	6	4	6
	58	49	62

Biomedical Engineering Technology (EB)

The Biomedical Engineering Technology is a relatively new field created by the interaction of physicians, scientists and engineers. Together they have developed complex electronic apparatus now used to diagnose, prevent and treat disease. Various types of medical equipment have become almost indispensible tools of the modern physician and hospital.

Someone with a knowledge of why and how this equipment works must be available to keep it running safely and effectively. That person is a Biomedical Engineering Technician (BMET). In various sections of the country, the person may be referred to as a clinical technician, a medical instrument technician or some similar title. The technician's basic function, however, remains the same.

The BMET is employed by both hospitals and equipment manufacturers.

Biomedical Engineering Technology Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1191 Algebra & Trigonometry I	4	0	4
7030 Computer Programming (Basic)	2	2	3
4005 Chemistry for Health Technology	3	2	4
7710 D.C. Circuits Analysis	6	3	5
	18	7	19
■ First Co-op Term			
9401 Cooperative Employment	1	40	2
■ Second School Term (January & April)			
1002 Communication Skills II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
4014 Anatomy & Physiology I	3	2	4
7720 A.C. Circuits Analysis	6	3	5
7728 Introduction to Digital Concepts	3	2	3
	19	7	19
■ Second Co-op Term			
9402 Cooperative Employment	1	40	2
■ Third School Term (June & September)			
1193 Functions & Introduction to Calculus	4	0	4
2293 Physics III - Electromagnetic Wave	3	2	3
4015 Anatomy & Physiology II	3	2	4
7730 Electronics I	6	3	5
7738 Digital Systems I	3	3	4
	19	10	20
■ Third Co-op Term			
9403 Cooperative Employment	1	40	3
■ Fourth School Term (November & January)			
102x Speech Elective	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
15xx Social Science Elective	3	0	3
7748 Digital Systems II	3	3	4
7740 Electronics II	4	2	4
+7749 Biomedical Instrumentation I	3	2	3
	19	7	20
■ Fourth Co-op Term			
9404 Cooperative Employment	1	40	3
■ Fifth School Term (April & June)			
1010 Technical Writing	3	0	3
1513 Macroeconomics	3	0	3
7750 Electronics III	4	2	4
7768 Digital Systems III	3	3	4
+7759 Biomedical Instrumentation II	4	2	4
	17	7	18
■ Fifth Co-op Term			
9405 Cooperative Employment	1	40	3
			109

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

+Offered in late afternoon or evening.

Civil Engineering Technology (CE) (An ABET accredited program)

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

Surveying Major

The Surveying Major is designed to help prepare the student for possible registration as a professional surveyor.

Early in the curriculum students are exposed to surveying terminology, conventional surveying equipment as well as modern theodolites, electronic distance measuring equipment and automatic levels. Also included is an emphasis on surveying related drawings: plats, contour maps, cross sections, profiles, etc.

Later in the curriculum topics include design and layout of horizontal, vertical and spiral transition curves; state plane coordinate calculations; document research; land survey systems; deed writing; site planning; evaluation of evidence and astronomic observations.

Construction Major

The Building Construction major prepares the student for careers in the construction industry. The graduate becomes the link between building tradesmen and graduate engineers, communicating good engineering practice during the construction process. The curriculum is balanced between practical methodology of construction and basic structural theory.

Civil Engineering Technology Curriculum Surveying Major

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1191 Algebra & Trigonometry I	4	0	4
2291 Physics I - Kinematics & Dynamics	3	2	3
7024 Civil Engineering Graphics I	2	4	3
7910 Surveying Measurements	3	3	3
7911 Construction Methods	3	1	3
	18	10	19
■ First Co-op Term			
9401 Cooperative Employment	1	40	2
■ Second School Term (January & April)			
1002 Communication Skills II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II - Mechanics & Heat	3	2	3
7030 Computer Programming (Basic)	2	2	3
7025 Civil Engineering Graphics II	2	4	3
7920 Surveying Calculations	4	2	3
	18	10	19
■ Second Co-op Term			
9402 Cooperative Employment	1	40	2
■ Third School Term (June & September)			
1193 Functions & Introduction to Calculus OR	4	0	4
1179 Technical Statistics	4	0	4
2951 Real Estate Principles & Practices	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
7935 Computer Applications (Civil)	3	2	3
7930 Route Surveying	3	3	3
7934 Statics	3	2	3
	19	7	19

■ Third Co-op Term			
9403 Cooperative Employment	1	40	3
■ Fourth School Term (November & January)			
2293 Physics III - Electromagnetic Waves	3	2	3
15xx Social Science Elective (Rec at Night) ...	3	0	3
102x Speech Elective	3	0	3
7947 Drainage Control Systems	3	2	3
7940 Elements of Land Surveying	3	2	3
7948 Site Development	3	2	3
7943 Estimation & Inspection	3	2	3
	21	10	21
■ Fourth Co-op Term			
9404 Cooperative Employment	1	40	3
■ Fifth School Term (April & June)			
1010 Technical Writing	3	0	3
1513 Macroeconomics	3	0	3
7950 Surveying Field Project	1	6	3
7952 Contracts & Specifications	3	0	3
7957 Environmental Engineering Technology	3	1	3
7955 Soils Engineering Technology	2	3	3
	15	10	18
■ Fifth Co-op Term			
9405 Cooperative Employment	1	40	3
			109

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Civil Engineering Technology Curriculum Construction Major

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1191 Algebra & Trigonometry I	4	0	4
2291 Physics I - Kinematics & Dynamics	3	2	3
7024 Civil Engineering Graphics I	2	4	3
7910 Surveying Measurements	3	3	3
7911 Construction Methods	3	1	3
	18	10	19
■ First Co-op Term			
9401 Cooperative Employment	1	40	2
■ Second School Term (January & April)			
1002 Communication Skills II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II - Mechanics & Heat	3	2	3
7030 Computer Programming (Basic)	2	2	3
7920 Surveying Calculations	4	2	3
7025 Civil Engineering Graphics II	2	4	3
	18	10	19
■ Second Co-op Term			
9402 Cooperative Employment	1	40	2
■ Third School Term (June & September)			
1193 Functions & Introduction to Calculus	4	0	4
2951 Real Estate Principles & Practices	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
7935 Computer Applications (Civil)	3	2	3
7931 Light Construction	3	3	3
7934 Statics	3	2	3
	19	7	19
■ Third Co-op Term			
9403 Cooperative Employment	1	40	3
■ Fourth School Term (November & January)			
2293 Physics III - Electromagnetic Wave	3	2	3
15xx Social Science Elective (recommended at night)	3	0	3
102x Speech Elective	3	0	3
7944 Strength of Materials (Civil)	3	2	3
7945 Structural Design I	3	2	3
7943 Estimation & Inspection	3	2	3
7941 Heavy Construction	3	2	3
	21	10	21
■ Fourth Co-op Term			
9404 Cooperative Employment	1	40	3
■ Fifth School Term (April & June)			
1010 Technical Writing	3	0	3
1513 Macroeconomics	3	0	3
7954 Structural Design II	2	4	3
7952 Contracts & Specifications	3	0	3
7953 Construction Management & Operation	3	2	3
7955 Soils Engineering Technology	2	3	3
	16	9	18
■ Fifth Co-op Term			
9405 Cooperative Employment	1	40	3
			109

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

Electronics Engineering Technology (EL)

The Electronics Engineering Technology program provides a course of study in modern electronic systems. The curriculum covers theory and application of mathematics, basic circuit theory, analog and digital systems; including discrete and integrated devices and microprocessors. Various technical electives specifically applicable to such areas as telecommunication electronics, instrumentation and process control, electrical power and laser optics are also available to interested students.

Electronics Engineering Technology Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term (September & November)			
1001 Communication Skills I	3	0	3
*1191 Algebra & Trigonometry I	4	0	4
2291 Physics I - Kinematics & Dynamics	3	2	3
7030 Computer Programming (Basic)	2	2	3
7710 D.C. Circuits Analysis	6	3	5
	18	7	18
■ First Co-op Term			
9401 Cooperative Employment	1	40	2
■ Second School Term (January & April)			
1002 Communication Skills II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
7008 Basic Engineering Drawing	2	4	3
7720 A.C. Circuits Analysis	6	3	5
7728 Introduction to Digital Concepts	3	2	3
	18	9	18
■ Second Co-op Term			
9402 Cooperative Employment	1	40	2
■ Third School Term (June & September)			
1502 Human Relations - Applied Psychology..	3	0	3
1193 Functions & Introduction to Calculus	4	0	4
2292 Physics II - Mechanics & Heat	3	2	3
7730 Electronics I	6	3	5
7738 Digital Systems I	3	3	4
	19	8	19
■ Third Co-op Term			
9403 Cooperative Employment	1	40	3
■ Fourth School Term (November & January)			
2293 Physics III - Electromagnetic Waves	3	2	3
7740 Electronics II	4	2	4
7xxx Technical Elective			3
7748 Digital Systems II	3	3	4
102x Speech Elective	3	0	3
			17
■ Fourth Co-op Term			
9404 Cooperative Employment	1	40	3
■ Fifth School Term (April & June)			
1010 Technical Writing	3	0	3
1513 Macroeconomics	3	0	3
15xx Social Science Elective	3	0	3
7750 Electronics III	4	2	4
7768 Digital Systems III	3	3	4

7xxx	Technical Elective			3
				20
■ Fifth Co-op Term				
9405	Cooperative Employment	1	40	3
				105

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

Recommended Technical Electives

Telecommunication Electronics:
7743 Communication Systems I
7753 Communication Systems II
7754 FCC License Preparation

Electrical Power:
7736 Electrical Power Systems
7746 Electrical Power Distribution
7758 Industrial Motors & Controls

Instrumentation & Process Control:
7133 Electronic Instrumentation
7143 Process Control Systems I
7153 Process Control Systems II

Laser Optics:
6710 Laser Optics II
6720 Laser Optics II
6730 Laser Optics III

Electro-Mechanical Engineering Technology (EM)

The Electro-Mechanical Engineering Technology program is a single program from which a student may elect one of two majors.

Machine Control Major

Study and practice in machine control system elements, such as Computer Numeric Control (CNC) machine tools, industrial robot components, automated factory production equipment, servomechanisms, industrial hydraulics and pneumatics, motor controls and microprocessor applications.

Process Control Major

Study and practice in process control system elements, such as instrumentation, automatic control systems, actuators and valves, control loop adjustment and analysis, and programmable controllers and distributive systems analysis, which are the basis for automation in the bulk product manufacturing industry.

Electro-Mechanical Engineering Technology Curriculum Machine Control Major

		Hours Per Week Class	Lab	Credit Hours
■ First School Term				
1001	Communication Skills I	3	0	3
*1191	Algebra & Trigonometry I	4	0	4
2291	Physics I - Kinematics & Dynamics	3	2	3
7008	Basic Engineering Drawing	2	4	3
7710	D.C. Circuits Analysis	6	3	5
		18	9	18
■ First Co-op Term				
9401	Cooperative Employment	1	40	2
■ Second School Term				
1002	Communication Skills II	3	0	3
1192	Algebra & Trigonometry II	4	0	4
7030	Computer Programming (Basic)	2	2	3
7720	A.C. Circuits Analysis	6	3	5
7728	Introduction to Digital Concepts	3	2	3
		18	7	18
■ Second Co-op Term				
9402	Cooperative Employment	1	40	2
■ Third School Term				
1193	Functions & Introduction to Calculus	4	0	4
2292	Physics II - Mechanics & Heat	3	2	3
7730	Electronics I	6	3	5
7738	Digital Systems I	3	3	4
7758	Industrial Motors & Control	3	2	3
		19	10	19
■ Third Co-op Term				
9403	Cooperative Employment	1	40	3
■ Fourth School Term				
102x	Speech Elective	3	0	3
1502	Human Relations - Applied Psychology	3	0	3
2293	Physics III - Electromagnetic Waves	3	2	3
7104	Machine Tools & Manufacturing Processes	3	2	3
7135	Fluid Power Systems	4	2	4
7146	Electro-Mechanical Controls I - Servomechanisms	3	3	4
		19	9	20
■ Fourth Co-op Term				
9404	Cooperative Employment	1	40	3
■ Fifth School Term				
1010	Technical Writing	3	0	3
1513	Macroeconomics	3	0	3
15xx	Social Sciences Elective	3	0	3
7140	Strength of Materials	4	2	4
7157	Electro-Mechanical Controls II - Microprocessor Applications	3	3	4
7xxx	Technical Elective			3
				20
■ Fifth Co-op Term				
9405	Cooperative Employment	1	40	3
				108

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

Technical Electives

1194 Differential & Integral Calculus
1195 Differential Equations
2294 Physics IV - Atomic & Nuclear
7040 Supervision & Management
7111 Engineering Materials
7142 Mechanisms Analysis
7144 CNC-NC Programming

Electro-Mechanical Engineering Technology Curriculum Process Control Major

		Hours Per Week Class	Lab	Credit Hours
■ First School Term				
1001	Communication Skills I	3	0	3
*1191	Algebra & Trigonometry I	4	0	4
2291	Physis I - Kinematics & Dynamics	3	2	3
7008	Basic Engineering Drawing	2	4	3
7710	D.C. Circuits Analysis	6	3	5
		18	9	18
■ First Co-op Term				
9401	Cooperative Employment	1	40	2
■ Second School Term				
1002	Communication Skills II	3	0	3
1192	Algebra & Trigonometry II	4	0	4
7030	Computer Programming (Basic)	2	2	3
7720	A.C. Circuits Analysis	6	3	5
7728	Introduction to Digital Concepts	3	2	3
		18	7	18
■ Second Co-op Term				
9402	Cooperative Employment	1	40	2
■ Third School Term				
1193	Functions & Introduction to Calculus	4	0	4
2292	Physics II - Mechanics & Heat	3	2	3
7133	Electronic Instrumentation	3	2	3
7730	Electronics I	6	3	5
7738	Digital Systems I	3	3	4
		19	10	19
■ Third Co-op Term				
9403	Cooperative Employment	1	40	3

■ Fourth School Term			
102x Speech Elective	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
2293 Physics III - Electromagnetic Waves	3	2	3
7135 Fluid Power Systems	4	2	4
7143 Process Control Systems I	3	3	4
7xxx Technical Elective			3
			20
■ Fourth Co-op Term			
9404 Cooperative Employment	1	40	3
■ Fifth School Term			
1010 Technical Writing	3	0	3
1513 Macroeconomics	3	0	3
15xx Social Sciences Elective	3	0	3
7153 Process Control Systems II	3	3	4
7758 Motors & Controls	3	2	3
xxxx Technical Elective			3
			19
■ Fifth Co-op Term			
9405 Cooperative Employment	1	40	3
			107

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

Technical Elective
1194 Differential & Integral Calculus
1195 Differential Equations
2294 Physics IV - Atomic & Nuclear
7040 Supervision & Management
7111 Engineering Materials
7142 Mechanisms Analysis
7144 CNC-NC Programming

Computer Integrated Manufacturing (CM) Engineering Technology

The Computer Integrated Manufacturing (CIM) program prepares the student for the revolution currently taking place in the field of Manufacturing by offering a sequence of courses covering two major manufacturing functions: planning and processing.

Numerical Control (NC), Computer Numerical Control (CNC), Distributive Numerical Control (DNC), Robotics, Materials Handling and Total Computer-Aided Manufacturing (CAM) techniques have impacted significantly the way industry processes parts.

Computer Assisted Process Planning (CAPP), Group Technology, Capacity Requirements Planning (CRP) and Material Requirements Planning (MRP) Systems have greatly improved the manufacturing planning and control functions.

An integration of the automation and planning processes results in a Computer Integrated Manufacturing system — today's answer to improving productivity and quality.

Computer Integrated Manufacturing Engineering Technology Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term			
1001 Communication Skills I	3	0	3
1191 Algebra & Trigonometry I	4	0	4
1512 Microeconomics	3	0	3
2291 Physics I - Kinematics & Dynamics	3	2	3
7008 Basic Engineering Drawing	2	4	3
7104 Machine Tools & Manufacturing Processes	3	2	3
	18	8	19
■ First Co-op Term			
9401 Cooperative Employment	1	40	2
■ Second School Term			
1002 Communication Skills II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II - Mechanics & Heat	3	2	3
7030 Computer Programming (Basic)	2	2	3
7111 Engineering Materials	3	2	3
7144 CNC/NC Programming	2	3	3
	17	9	19
■ Second Co-op Term			
9402 Cooperative Employment	1	40	2
■ Third School Term			
102x Speech Elective	3	0	3
1179 Technical Statistics	4	0	4
2293 Physics III - Electromagnetic Waves	3	2	3
7411 Processes & Materials of Manufacturing	4	2	4
7708 Electrical Fundamentals & Controls	3	3	4
	17	7	18
■ Third Co-op Term			
9403 Cooperative Employment	1	40	3
■ Fourth School Term			
1535 Labor Management Relations	3	0	3
7140 Strength of Materials	4	2	4
7441 Quality Assurance/Quality Control	4	2	4
7449 Computer-Aided Manufacturing I	4	2	4
7443 Manufacturing Methods & Cost Analysis I	3	2	3
	18	8	18
■ Fourth Co-op Term			
9404 Cooperative Employment	1	40	3
■ Fifth School Term			
1010 Technical Writing	3	0	3
15xx Social Science Elective	3	0	3
7160 Computer-Aided Design/Drafting	2	3	3
7453 Manufacturing Methods & Costs Analysis II	3	2	3
7459 Computer-Aided Manufacturing II	4	2	4
7xxx Technical Elective			3
			19
■ Fifth Co-op Term			
9405 Cooperative Employment	1	40	3
			106

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

Recommended Electives
7031 Computer Programming (Fortran)
7033 Advanced Computer Applications
7132 Hydraulics & Pneumatics I
7161 CAD/CAM
7430 Time and Motion
7442 Advanced Quality Control

Mechanical Design Engineering Technology (MD)

The Mechanical Design program prepares the student for careers that range from detail drafting to layout and design of mechanical systems utilizing both standard and computerized methods of design. The curriculum provides students with the knowledge of scientific theory and mathematical skills necessary for solving technical problems that arise in many areas of design and manufacturing.

Mechanical Design Engineering Technology Curriculum

	Hours Per Week Class	Lab	Credit Hours
■ First School Term			
1001 Communication Skills I	3	0	3
1502 Human Relations - Applied Psychology	3	0	3
1191 Algebra & Trigonometry I	4	0	4
2291 Physics I - Kinematics & Dynamics	3	2	3
7010 Engineering Drawing I	2	4	3
7013 Engineering Graphics-Descriptive Geometry	2	4	3
	17	10	19
■ First Co-op Term			
9401 Cooperative Employment	1	40	2

■ Second School Term				
1192	Algebra & Trigonometry II	4	0	4
2292	Physics II - Mechanics & Heat	3	2	3
7012	Engineering Drawing II	2	4	3
7030	Computer Programming (Basic)	2	2	3
7104	Machine Tools &Manufacturing Processes	3	2	3
7130	Engineering Mechanics (Statics)	3	2	3
		17	12	19
■ Second Co-op Term				
9402	Cooperative Employment	1	40	2
■ Third School Term				
1002	Communication Skills II	3	0	3
1193	Functions & Introduction to Calculus	4	0	4
7132	Hydraulics & Pneumatics	4	2	4
7140	Strength of Materials	4	2	4
7144	CNC/NC Programming	2	3	3
		17	7	18
■ Third Co-op Term				
9403	Cooperative Employment	1	40	3
■ Fourth School Term				
102x	Speech Elective	3	0	3
2293	Physics III - Electromagnetic Wave	3	2	3
7123	Materials Selection	3	2	3
7150	Machine Design I	4	2	4
7160	Computer Aided Design/Drafting	2	3	3
7147	Tool, Die, Jig & Fixtures	3	2	3
		18	11	19
■ Fourth Co-op Term				
9404	Cooperative Employment	1	40	3
■ Fifth School Term				
1010	Technical Writing	3	0	3
15xx	Social Science Elective	3	0	3
1513	Macroeconomics	3	0	3
7xxx	Technical Elective	3	2	3
7155	Machine Design II	4	2	4
7708	Electrical Fundamentals & Controls	3	3	4
		19	7	20
■ Fifth Co-op Term				
9405	Cooperative Employment	1	40	3
				108

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

Technical Electives

1194 Differential & Integral Calculus
2209 Technical Chemistry
7031 Computer Programming (Fortran)
7142 Mechanisms Analysis & Design
7161 CAD/CAM
7441 Quality Assurance & Control
7449 Computer-Aided Manufacturing I

Robotics Technology

The industrial robot will be an integral part of the revitalization of American industry in the 1980's.

Although no discrete curriculum on robotics exists at this time, it should be noted that as early as 1974 the Electro-Mechanical Technology program has offered courses in computer control servo-systems (both servomechanisms and servohydraulics) with transducer feedback which is the heart of many pieces of automated equipment such as robots, CNC machine tools, etc. Students interested in the electrical, mechanical and control features of the industrial robot should refer to the Electro-Mechanical program and course numbers 7135, 7146 and 7157.

In 1982, the Engineering Technologies Division designed a Computer Integrated Manufacturing program which is scheduled to go into effect in September, 1983. Students who are more interested in the application of robots to an automated manufacturing environment should refer to this program and course 7449.

Physical Science 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 and mathematics considered basic for successful study in a science dependent field such as engineering technology, health or technical business services
- providing in-depth instruction in the applied sciences leading the student to a career in either technical laboratory and materials testing or laser-electro-optic systems.

It is important to note that course recommendations in physical science and mathematics at CTC are determined by the readiness of each student. Readiness is determined during the admissions process through testing and an interview. Faculty are chosen for their ability to communicate effectively with students, for their knowledge of subject matter as well as for their experience in business and industry. As a result, the chances for student success in physics, chemistry and mathematics are greatly enhanced.

Mathematics 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. 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 skill development as well as being related to his or her technology major.

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.

Mathematics and Physical Science Offerings

Each sequence of mathematics course is tailored to meet the desired needs of the technology served and to provide additional skills as elected by the student.

Mathematics Courses Serving All Technologies:

1131 College Algebra
1132 Statistics

Sequence of Courses Serving Health Technologies:

1150 Introduction to Science Mathematics
1151 Science Mathematics I
1152 Science Mathematics II

Sequence of Courses Serving Business Technologies:

1120 Introduction to Business Mathematics
1121 Business Mathematics
1122 Financial Analysis
1123 Computerized Financial Analysis
1125 Business Calculus

Sequence of Courses Serving Computer Programming Technologies:

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 Technologies & Physical Science Technologies:

1170 Introduction to Technical Mathematics
1171 Technical Mathematics I
1172 Technical Mathematics II
1173 Technical Mathematics III
1179 Technical Statistics (see prerequisites)
(or students may begin the sequence at the following level)
1191 Algebra & Trigonometry I
1192 Algebra & Trigonometry II
1193 Functions & Introduction to Calculus
1194 Differential & Integral Calculus
1195 Differential Equations

Physics, chemistry and mathematics 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 student. The science division therefore places much emphasis on the laboratory. Care is taken to ensure all laboratories are well supplied with equipment. The laboratory experience, 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.

Science Courses Serving All Technologies:

2200 Basic Chemistry
2209 Technical Chemistry Survey
2210 Inorganic Chemistry
2270 Introduction to Physics

Sequence of Courses Serving Health Technologies:

2231 Fundamentals of Inorganic Chemistry
2232 Fundamentals of Organic Chemistry
2233 Fundamentals of Biochemistry
2244 Health Physics
2245 Health Physics II

Sequence of Courses Serving Business Technologies:

2221 Technical Physics I
2222 Technical Physics II
2261 Printing Science I (Chemistry)
2262 Printing Science II (Physics)

Sequence of Courses Serving Engineering Technologies & Physical Science Technologies:

2291 Physics I - Kinematics & Dynamics
2292 Physics II - Mechanics & Heat
2293 Physics III - Electromagnetic Wave
2294 Physics IV - Atomic & Nuclear

Computer courses provide the technical community a single center for improving programming skills. These courses are offered according to student need and the availability of qualified instructors and equipment. Other viable courses may be added as various technologies require.

1133 BASIC 2 for Science & Engineering Technologies
1134 FORTRAN Programming
1135 "C" Programming
1136 FORTH Programming
1137 PASCAL Programming
1138 Introduction to Computer Graphics & Modeling

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

Laser/Optics Technology (LO)

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 technical aspects of laser-electro-optics theory and application.

Some co-op opportunities may occasionally be available out of town. Students who participate enhance their employment opportunities at graduation.

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

	Hours Per Week Class	Lab	Credit Hours
■ First Term			
1001 Communication Skills I	3	0	3
*1191 Algebra & Trigonometry I	4	0	4
2200 Basic Chemistry	3	2	4
2291 Physics I - Kinematics & Dynamics	3	2	3
6710 Laser Optics I	3	3	4
	16	7	18
■ Second Term			
1002 Communication Skills II	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II - Mechanics & Heat	3	2	3
6611 Technical Laboratory Chemistry I	3	3	4
7710 D.C. Circuits Analysis	6	3	5
	19	8	19
■ Third Term			
9601 Cooperative Employment	1	40	2
■ Fourth Term			
1193 Functions & Introduction to Calculus	4	0	4
6621 Technical Laboratory Chemistry II	3	3	4
6720 Laser Optics II	3	3	5
7720 A.C. Circuits Analysis	6	3	5
	16	9	18
■ Fifth Term			
9602 Cooperative Employment	1	40	2
■ Sixth Term			
xxxx Elective (Coordinator approval required)	3	2	3
15xx Social Sciences Elective	3	0	3
6730 Laser Optics III	3	3	5
7730 Electronics I	6	3	5
	15	8	16
■ Seventh Term			
9603 Cooperative Employment	1	40	3
■ Eighth Term			
102x Speech Elective	3	0	3
150x Psychology Elective	3	0	3
6740 Laser Optics IV	3	3	5
7740 Electronics II	4	2	4
	13	5	15
■ Ninth Term			
9604 Cooperative Employment	1	40	3
■ Tenth Term			
1010 Technical Writing	3	0	3
151x Economics Elective	3	0	3
6750 Laser Optics V	3	3	5
xxxx Elective (Coordinator approval required)			3
	9/	3/	14
			110

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

Electives:

1133 Basic II for Science & Engineering Technologies
1135 "C" Programming
1136 FORTH Programming
1137 PASCAL Programming
1138 Introduction to Computer Graphics & Modeling
1194 Differential & Integral Calculus
1195 Differential Equations
2294 Physics IV - Atomic & Nuclear
4011 General Anatomy
4501 Introduction to Surgery
6631 Technical Laboratory Chemistry III

6741 Fiber Optics
6745 Optical System Design
6999 Laser-Optic Project
7030 Computer Programming (Basic)
7031 Computer Programming (Fortran)
7728 Introduction to Digital Concepts
7738 Digital Systems I
7748 Digital Systems II
7768 Digital Systems III

Industrial Laboratory Technology (IL)

The Industrial Laboratory program 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 taking, recording, compiling, and reporting of measurement data.

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

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

	Hours Per Week Class	Lab	Credit Hours
■ First Term			
1002 Communication Skills II	3	0	3
*1191 Algebra & Trigonometry I	4	0	4
15xx Social Science Elective	3	0	3
2291 Physics I - Kinematics & Dynamics	3	2	3
6611 Technical Laboratory Chemistry I	3	3	4
6629 Science of Materials	3	2	4
	19	7	21
■ Second Term			
9601 Cooperative Employment	1	40	2
■ Third Term			
1007 Research & Logic	3	0	3
1192 Algebra & Trigonometry II	4	0	4
2292 Physics II - Mechanics & Heat	3	2	3
6621 Technical Laboratory Chemistry II	3	3	4
7710 D.C. Circuit Analysis	6	3	5
	19	8	19
■ Fourth Term			
9602 Cooperative Employment	1	40	2
■ Fifth Term			
1179 Technical Statistics	4	0	4
2293 Physics III - Electromagnetic Waves	3	2	3
6631 Technical Laboratory Chemistry III	3	3	4
6639 Instrumentation & Measurement	3	2	4
xxxx Elective (Coordinator approval required)			3
	13/	7/	18
■ Sixth Term			
9603 Cooperative Employment	1	40	3
■ Seventh Term			
1010 Technical Writing	3	0	3
1193 Functions in & Introduction to Calculus	4	0	4
6649 Materials Testing	3	4	5
7030 Computer Programming (Basic)	2	2	3
xxxx Elective (Coordinator approval required)			3
	12/	6/	18
■ Eighth Term			
9604 Cooperative Employment	1	40	3
■ Ninth Term			
102x Speech Elective	3	0	3
151x Economics Elective	3	0	3
1194 Differential & Integral Calculus	4	0	4
15xx Social Science Elective	3	0	3
6659 Analysis of Materials Project	3	4	5
2294 Physics IV - Atomic & Nuclear	3	2	3
	19	6	21
■ Tenth Term			
9605 Cooperative Employment	1	40	3
			110

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Electives:
1133 Basic II for Science & Engineering Technologies
1135 "C" Programming
1136 FORTH Programming
1137 PASCAL Programming
1138 Introduction to Computer Graphics & Modeling
1195 Differential Equations
4000 Medical Terminology
4009 General Microbiology
6641 Technical Laboratory Chemistry IV
6661 Chemical Contamination in the Environment
6710 Laser Theory I
7031 Computer Programming (Fortran)
7441 Quality Control
7720 A.C. Circuit Analysis
7728 Introduction to Digital Concepts
7730 Electronics I
7740 Electronics II

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 Extended Services 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 way:

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 are employed but are seeking to develop their careers to a higher level in the most efficient manner. Many 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 upgrade employee skills. In addition, the College works with professional and technical societies, organizations and trade unions to offer short-term and long-term programs for their members.

Change in Scheduling

Since there is an increase in the number of students who are employed full-time, the College has increased the evening 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 programs through the main campus evening program:

Business Technologies Division
business data management
business data processing
business management
loss control
managerial accounting
real estate/property management
sales marketing
industrial sales marketing
office specialist

Engineering Technologies Division
electronics engineering technology
electro-mechanical engineering technology
heating/air conditioning technology
computer integrated manufacturing engineering technology
mechanical design technology

Health Technologies Division
medical record technology

Physical Science/Mathematics Division
industrial laboratory technology

The College also offers certificate programs through its evening operation: dietetic assisting, and medical transcription.

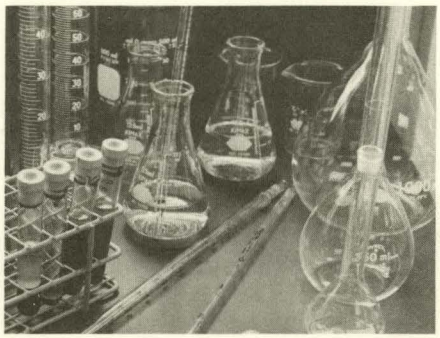
To pursue a degree program at night, the student should apply for admissions and meet the admissions criteria for that program.

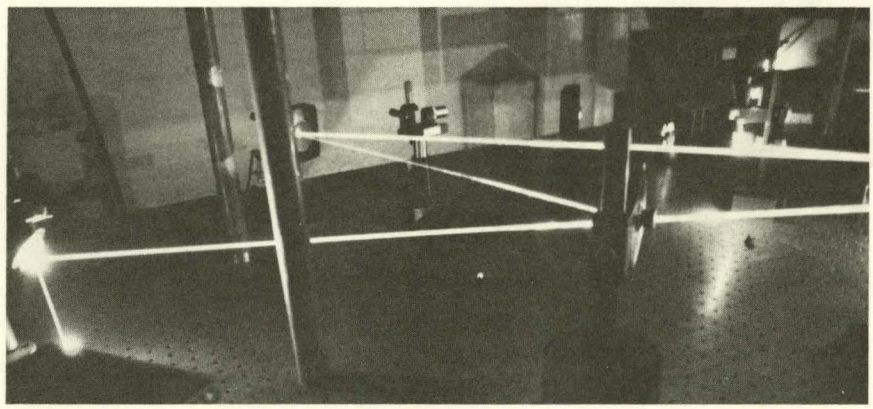
Change in Locational Needs

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 the 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.

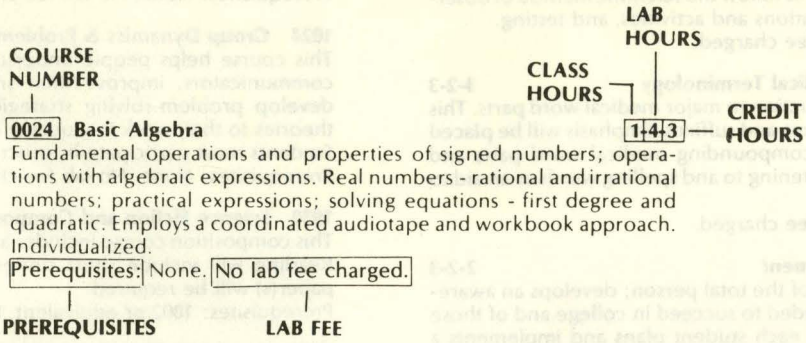




COURSE DESCRIPTIONS CATALOG/HANDBOOK 83-84

COURSE DESCRIPTIONS
CATALOG/HANDBOOK 83-84

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: an 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.

0001 English Grammar **2-3-3**
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 **1-2-2**
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 **2-3-3**
After an analysis of strengths and weakness 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 **2-3-3**
Emphasizes paragraph organization and transitional devices in longer composition; punctuation.
Prerequisites: 0003 or equivalent. No lab fee charged.

0007 Telephone Techniques **1-1-1**
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 **2-1-2**
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 **1-4-3**
Instruction and practice to develop flexibility in reading, improve vocabulary; sharpen comprehension. Diagnostic and prescriptive testing; individualized, multi-media.
Prerequisites: None. No lab fee charged.

0011 College Reading II **1-4-3**
Continuation of 0010. Recommended for students needing further improvement in reading skills.
Prerequisites: 0010 or equivalent. No lab fee charged.

0012 Technical Reading I **2-3-3**
Develops skills and vocabulary needed to succeed in a particular technology through an individualized curriculum drawn from the reading required. Emphasizes purposeful reading.
Prerequisites: 0010 or equivalent. No lab fee charged.

0013 Technical Reading II **2-3-3**
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 **3-1-3**
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.

0020 Basic Mathematics I **1-4-3**
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 **1-4-3**
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**
Mathematics at the development level. Individualized instruction and practice in the fundamental skills of mathematics. Uses audio tapes and coordinated text. Assignments for each student as determined by diagnostic test. Topics available: whole numbers; prime, composites, and factoring; common fractions; decimals; percent. Additional topics: reinforcement of basic computations; math applications.
Prerequisites: None. No lab fee charged.

0024 Basic Algebra I **1-4-3**
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 **1-4-3**
Continuation of 0024. Recommended for students needing further instruction and practice.
Prerequisites: 0024. No lab fee charged.

0026 Fundamentals of Business Mathematics **1-4-3**
Structure of the number system with business applications. Whole numbers, equations, fractions, decimals, percent, percentage, ratio, proportion, measurements (U.S. and metric), measures of central tendency. Individualized with audio tapes, text and film strips.
Prerequisites: None. No lab fee charged.

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

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

0035 General Science **3-2-3**
An introductory science course which provides a background for future studies in chemistry, biology, and physics. The course is a blend of content and process; students follow the scientific method of observation, hypothesis, demonstrations and activities, and testing.
Prerequisites: None. No lab fee charged.

0036 Basic Concepts of Medical Terminology **3-2-3**
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 **2-2-3**
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 Communications **2-2-3**
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.

0050 Orientation to Business **3-0-3**
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.

1001 Communication Skills I **3-0-3**
Syntax, the composition of clear and effective sentences and paragraphs and usage.
Prerequisites: None. No lab fee charged.

1002 Communication Skills II **3-0-3**
The composition of a theme; principles of research techniques.
Prerequisites: 1001 recommended. No lab fee charged.

1007 Research and Logic **3-0-3**
Organization and development of argumentative writing, including research and logical and fallacious reasoning.
Prerequisites: 1002 or equivalent. 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: 1001 recommended. No lab fee charged.

1010 Technical Writing **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: 6 credits hours of composition. For matriculating students only. Exception only with approval. No 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: 6 credit hours of composition. No 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 or 1011. No lab fee charged.

1020 Effective Speaking **3-0-3**
The preparation and effective delivery of various types of speeches. Improved listening techniques, audience participation, and evaluation are stressed.
Prerequisites: None. No lab fee charged.

1021 Human Relations **3-0-3**
Applies psychological principles to everyday life. These applications help students understand themselves better, change their behaviors, and enhance their interpersonal relationships. The students must participate in structured experience. Can be applied for Social Science Credit.
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.

1030 Science Fiction and Composition **3-0-3**
This 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: 1002 or equivalent. No lab fee charged.

1099 Special Problem in Communication Skills **1-5—0—1-5**
Individual study and special projects pertaining to the particular technology in which the student is enrolled. 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. See page 55.
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.
Prerequisites: None. 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, mark 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. See page 55.
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.
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.
Prerequisites: 1121 or the 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.

1125 Business Calculus **4-0-4**
Functions and calculus with application to business and the social sciences. Decision making involving maximum or minimum conditions. Dervatives and antiderivatives.
Prerequisites: Algebra. No lab fee charged.

1130 How To Use A Microcomputer **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**
Mean, median and mode. Central tendencies and standard deviation. Frequency distributions. Confidence levels and decision making.
Prerequisites: Algebra. No lab fee charged.

1133 Basic 2 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 Fortran Programming **3-2-3**
The optimizing blocking factors used for both magnetic tape and magnetic disk. Introduction to linear programming and forecasting. The discussions of searching lists and sorting techniques. Fortran language is used as a problem-solving tool.
Prerequisites: None. Lab fee charged.

1135 "C" Programming Language **2-2-3**
"C" is a programming language primarily for CPM operating systems on the micro and mini computer. It is a most efficient programming language in utilizing the architecture of the micro-processor chip. This course is intended for students who have already completed an introductory course in a high level programming language.
Prerequisites: COBOL or BASIC, etc. Lab fee charged.

1136 FORTH Programming **2-2-3**
Easier to learn than BASIC and much more powerful, FORTH is rapidly becoming the programming language of choice for many micro- and minicomputer programmers. This course will focus on how the FORTH language works and how to use if effectively in such practical applications as process control, graphics, and database manipulation. No previous programming experience is required.
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.

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. See page 55.
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 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 Operation 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. See page 55.
Prerequisites: Math Placement Test. No lab fee charged.

1151 Science Mathematics I **4-0-4**
Arithmetic calculations: accuracy, precision, signed numbers, decimals, scientific notation, empirical data, dimensional unit conversions, proportions, formulas. Linear algebra. Quadratic formula. Right triangle Trigonometry. Logarithms. Statistics. Applications selected from chemical and physical topics: length, area, volume, density, specific gravity, mole, molarity molality, normality, PH, pOH, atomic weights, force vectors and bone/muscle structure, traction, light and optics, refraction, radioactive half life, half layer value, etc. Students should expect to use scientific calculators.
Prerequisites: 1150 or equivalent. No lab fee charged.

1152 Science Mathematics II **4-0-4**
A continuation of the mathematics and applied topics presented in course 1151. Skill development is to include topics from densities, logarithmic data, bone and muscle systems as modeled through force analysis, geometrical considerations involved in optical instrumentation, balancing nuclear reactions, radiation levels as modeled through the inverse square law. Students should expect to utilize scientific electronic calculators.
Prerequisites: 1151. 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.
Prerequisites: 0020, 0024, or the equivalent. No lab fee charged.

1171 Technical Mathematics **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 the equivalent. No lab fee charged.

1172 Technical Mathematics II **4-0-4**
Logarithic 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 Technical Statistics **4-0-4**
Organization of data including mean, mode, median, standard deviation, Chebyshev's Theorem and Z-Scores; measurement of uncertainty and the analysis of uncertainty principles utilizing experimental data; estimating the mean and choosing sample size; testing statistical hypotheses, experimental data relationships including curve-fitting and regression techniques; conditional probability and independent events; the analysis of variance and non-parametric tests.
Prerequisites: 1171 or equivalent. 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, simultaneous second degree equations. Some applications using series and parallel circuits, forces on mechnical 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, introduction to Boolean Algebra. 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 Functions and Introduction To Calculus **4-0-4**
Graphs of first and second degree functions, empirical curve fitting, introductions to statistics, limit concept, derivatives. Some applications using analysis of dimensions, heat, time, etc., maxima and minima. Students enrolled in this course should expect to utilize and electronic calculator having Scientific Notation, Trig and Log functions.
Prerequisites: 1191, 1192. No lab fee charged.

1194 Differential and Integral Calculus **4-0-4**
Derivatives, differentials, integrals, techniques of integration, volumes. Introduction to differential equations. Applied calculus with emphasis upon applications in mechanical and electrical fields. Students enrolled in this course should expect to utilize an electronic calculator having Scientific Notation, Trig and Log functions.
Prerequisites: 1191, 1192, 1193. No lab fee charged.

1195 Differential Equations **4-0-4**
This course emphasizes the calculations and techniques that are used to set up and solve problems modeled with differential equations. The solution techniques are always calculus techniques using various methods of differentiation and integration. Students enrolling in the course should have interests in the major areas of engineering and science since the emphasis of this course is both on how to model a physical setting and how to solve the differential equation and interpret the results.
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 instructors' certification; CPR instruction, including instructors' certification.
Prerequisites: None. No lab fee charged.

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. No lab fee charged.

1205 Criminal Interrogation **3-0-3**
This course is an indepth 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 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 course 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 renumeration 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 problem: 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.

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. No lab fee charged.

1222 Financial Analysis **4-0-4**
Review of discounts and taxes, compound interest, present value, revolving charges. Annual percentage rate, depreciation, mortgages, amortization, insurance.
Prerequisites: 1121 or equivalent. No 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 to 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 and 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 and 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 motor fleet 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, mod-

ern 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.

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 methods 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 kinds 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 make-up; how its integral parts affect color, drying properties, subtrates, 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 operations of various keyboards. The use of electronics, computers, and tape operated controls.
Prerequisites: 1402. Lab fee charged.

1428 Mangement 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.

1430 Presswork **1-9-4**
Survey and justification studies of press equipment to assist in suggesting capital expenditures for future growth and replacement cycles for letterpress, offset, and flexographic systems. Press usage and depreciation methods, replacement policies.
Prerequisites: 1410. Lab fee charged.

1440 Offset Press Operation **2-13-6**
Techniques of operation and control, study of various moistening systems, comparison of wet and dry forms of lithography. Plate comparisons to include wipe on, presensitized, albumin surface, deep etch, bi-metal, tri-metal, dycril and other synthetics, grained and grainless. Understanding the required adjustments necessary for top quality printing. Use of pressroom and quality control equipment.
Prerequisites: None. Lab fee charged.

1449 Estimating Preparation **2-3-3**
This course is designed to cover those areas in estimating in printing 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: 1161. 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. Darkroom 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. 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 The Psychology of the Inner World of the Person **3-0-3**
This course presents psychology as the science of understanding behavior. Topics covered are the following: methods of psychological research, the biological bases of behavior, perception, learning, memory and language, motivation, and emotions.
Prerequisites: None. No lab fee charged.

1506 The Psychology of the External World of the Person **3-0-3**
This course covers the development and growth of people; the personality, the maladjusted patterns of behavior; psychotherapy; social psychology; and applied psychology in terms of business, industry, education, and consumerism.
Prerequisites: 1505 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 introduces the fundamental economic problem of scarcity and provides a brief overview of the macro-system. The primary focus is 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 economics problem 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 acculturalization.
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: 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 asist students is understanding how ethics is applied in practical situations. Discussion of ethical principles and procedures is an integral part of the courses. 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 governement 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 to 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.

1537 Ethics **3-0-3**
Introduces students to some basic ethical principles so that they can apply them to their own academic discipline and career field. Schools of ethics covered are Determinism, Relativism, Hedonism, Self-Realization, Naturalism, Evolutionism, Religious Ethics, and Existentialism.
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 viewpoint of management and Labor. Topics include EEO, Workers Compensation, OSHA, Bargaining, Hiring and Firing Laws, etc.
Prerequisites: None. 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 Communication Skills/Sciences Division.
Prerequisites: Six hours in Social Sciences. No lab fee charged.

1701 Introduction to Data Processing & Programming **4-6-6**
An overview of the entire field of data processing with an emphasis on programming functions.
Prerequisites: None. No lab fee charged.

1711 Introduction to Data Management & Computer Operations **4-6-6**
An overview of the entire field of data processing with emphasis on the field of Data Management. Instruction in the operational function of key-operated equipment and introduction to the computer. Laboratory work will reinforce these principles.
Prerequisites: None. No lab fee charged.

1712 Data Entry Systems **2-3-3**
Instruction is given in the operation of card-punch, key-type, and key-disc equipment. Laboratory work will reinforce the instruction.
Prerequisites: None. Lab fee charged.

1721 Programming: Logic & Methods **2-3-3**
The course is designed to give the student initial exposure to programming logic methods, flowcharting, and documentation methodology. It should prepare the student for subsequent programming classes and actual programming problem assignments which might be encountered in the field.
Prerequisites: 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: 1701, 1721. Lab fee charged.

1731 Peripheral-Equipment Operations **3-7-5**
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: 1711. 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: 1701. Lab fee charged.

1740 Operating Systems **4-6-6**
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: 1711, 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 system and time sharing.
Prerequisites: 1740. Lab fee charged.

1741A Operating Systems **4-6-6**
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: 1711, 1731. 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: 1721. Lab fee charged.

1752 Real-Time Systems & Data Communications I **2-3-3**
The System Analysis student will enter into man-machine interactions through a teleprocessing based on data processing system. Topics will include tele-communications hardware and the appropriate (related) programming languages. Emphasis will be placed on the current time-sharing language(s). Also stressed will be problem-solving techniques requiring the use of remote terminals, inquiry-response techniques, and time-sharing techniques.
Prerequisites: 1762. Lab fee charged.

1761 Introduction to RPG II (BDP) **3-7-6**
Beginning level course for the programming major student. Topics include processing of sequential files and generating typical business reports.
Prerequisites: 1701, 1721. Lab fee charged.

1762 COBOL Programming II **4-6-6**
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: 1742. Lab fee charged.

1763 Systems Analysis and 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: 1701, 1721. No 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 and 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: 1701, 1721, 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: None. No 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. No 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 observation of the steps of a sale and an introduction to industrial and wholesale selling.
Prerequisites: None. No lab fee charged.

1813 Industrial Sales **4-0-4**
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 **4-1-4**
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 **4-0-4**
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: Completion of 1846, 1847,1813 or by permission of coordinator. No lab fee charged.

1820 Sales Management **4-0-4**
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.

1832 Personnel Management **3-0-3**
A broad overview of the traditional functions of 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.

1843 Advertising and 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 mid-management employment. Case studies are introduced to give the students practical operating experience.
Prerequisites: None. No lab fee charged.

1846 Industrial Product Marketing I **4-0-4**
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 **4-0-4**
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**
The computer as a mangement tool. Accounts Receivable, Accounts Payable, Inventory Control, Payroll, Accounting Statements, and other business application models are studied using the medium-sized computer. Other topics include Hardware and Data Controls.
Prerequisites: None. Lab fee charged.

1851 Auditing **4-1-4**
Auditing techniques and procedures for computer based accounting. Topics include review of internal control; preparation of audit programs, flowcharts and working papers; internal auditing. Students will utilize the computer and peripheral equipment in course.
Prerequisites: 1850 or 1798, 1799 or comparable course, 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 4th or 5th term standing.
Prerequisites: 1851. Lab fee charged.

1999 Special Problem Seminar **Var-Var-Var**
Individual study and special projects pertaining to the particular technology that the student is enrolled in. Open to fourth and fifth term students, by special arrangement with the Coordinator and Division Dean.
Prerequisites: None. No lab fee charged.

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, for particulars, 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-Var**
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 Co-ordinator and Division Dean.
Prerequisites: None. No lab fee charged.

2200 Basic Chemistry **3-2-4**
An introductory course for the student who did not have high school chemistry or whose background in chemistry is weak. 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 waive.) 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.

2210 Inorganic Chemistry **3-2-4**
This is a short course in the theory of inorganic chemistry integrated with related laboratory techniques for the laboratory technician. Eye goggles required, laboratory apron or laboratory coat suggested.
Prerequisites: 1150 or 1170 or equivalent. 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.

2231 Fundamentals of Inorganic Chemistry **3-2-4**
The first course of a three-couse sequence in college chemistry; for those interested in the structure and properties of matter, changes in matter, chemical bonding, chemical reactions, equilibrium.
Prerequisites: 1150 or equivalent. Lab fee charged.

2232 Fundamentals of Organic Chemistry **3-2-4**
The second course of a three-course sequence in college chemistry; organic chemistry as related to the study of biochemistry - carbon bonding; saturated, unsaturated and aromatic hydrocarbons; alcohols, phenols, aldehydes, ketones, acids, amines.
Prerequisites or Corequisites: 2231 or equivalent. Lab fee charged.

2233 Fundamentals of Biochemistry **3-2-4**
The third course of a three-course sequence in college chemistry; biochemistry - carbohydrates, amino acids, proteins, lipids, vitamins, enzymes, metabolism, body fluids.
Prerequisites: 2232 or equivalent. Lab fee charged.

2244 Health Physics **3-2-3**
Pressure and other related topics as applied to the Allied Health profession; 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 **3-2-3**
Electromagnetic radiation, including basic sources detection schemes and medical application of infra-red, visible, ultra-violet, X-ray, and gamma radiation; fundamental nuclear particles and applications of nuclear techniques both as diagnostic and therapeutic tools; the electron, fundamental forces with emphasis on the electric field, potential energy and voltage, current, resistance and simple DC circuits; the potentiometer, the transformer; schematics and simple circuit layout; basic components of various medical instruments.
Prerequisites: None. 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 2 hours per week gaining actual hands-on laboratory experience.
Prerequisites: None. 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 - Kinematics and Dynamics **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 - Mechanics and Heat **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 - Electromagnetic Waves **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 - Atomic and Nuclear **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, Photoelectric 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. No 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. Funda-

mentals of auto electrics; construction, operation and repair of the electrical system, including batteries, ignition, starting, generating and accessory circuits.
Prerequisites: None. No 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. No 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. No lab fee charged.

2505 Automotive Technology V **5-10-8**
Automotive service and trouble-shooting. 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. No lab fee charged.

2506 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 is placed on developing sound trade judgement, safe work habits and correct work procedures.
Prerequisites: None. Lab fee charged.

2507 Basic Blueprint Reading & 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.

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, lay-out, administration and operation of an automobile dealership, trucking company or automotive leasing operation. Recruiting, hiring and retaining personnel.
Prerequisites: None. No lab fee charged.

2801 Introduction to Restaurant Management **2-4-3**
History, objectives, economics, scope and social importance of the industry. Emphasis on sanitation and safety techniques in the kitchen with lab experience.
Prerequisites: None. Lab fee charged.

2802 Restaurant Management II **2-4-3**
Factors determining food choices, food nutrition needed in each stage of life. Nutritive value of food selection to meet economic, nutritive and social needs. In addition, complete kitchen layout and design including lab experience.
Prerequisites: 2801. Lab fee charged.

2803 Restaurant Management III **2-4-3**
Detailed menu planning, design and development with emphasis on costing and pricing including lab experience.
Prerequisites: 2801. Lab fee charged.

2804 Restaurant Management IV **3-0-3**
First-line supervisor: selection and training qualified personnel for management positions in a restaurant including lab experience.
Prerequisites: 2801. No lab fee charged.

2805 Restaurant Management V **3-0-3**
Guidance and development of employees including discipline, handling complaints and grievances, job satisfaction and morale, and lab experience.
Prerequisites: 2801. 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. No 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 Procedures **3-2-3**
Study of front office management and operation with emphasis on the use of various front office equipment, supplies, and procedures. Practical operating procedures in performing the hotel night audit including registration, rates, hotel racks posting charges and credits.
Prerequisites: None. No lab fee charged.

2813 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 and Engineering **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 Fundamentals of Food Preparation I **2-4-3**
Through lecture and laboratory work this course provides breakfast food preparation (eggs, fritters, omelettes, pancakes, etc.), good practices in personal cleanliness and safety and sanitary food handling, and food cost calculation.
Prerequisites: None. Lab fee charged.

2823 Food Preparation II **2-4-3**
Bake Shop: through lecture and laboratory work this course provides for fundamental food preparation and the development of cooking techniques, emphasizing cake decorating and pastry baking; an awareness of control and cost of supplies and menu planning.
Prerequisites: None. Lab fee charged.

2824 Food Preparation III **2-4-3**
Meat & Fish Management: this course provides through lecture and laboratory work for the development of cooking techniques - butchering, meat and fish preparation. Students acquire knowledge about food production systems, planning and writing menus; and the prevention of food spoilage and contamination.
Prerequisites: None. Lab fee charged.

2825 Food Preparation IV **2-4-3**
This course emphasizes through lecture and laboratory work quality food - soup sauce, gravy, garde manger (cold meats area); development of relationships between time, labor, equipment and food costs.
Prerequisites: None. Lab fee charged.

2826 Food Preparation V **2-4-3**
Through lecture and laboratory work students learn food preparation - with emphasis on broiling, stewing, braising and sauteeing; managerial duties and responsibilities in controlling food quality and costs are stressed.
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 Credits & 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 charged.

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. No 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. No 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 **3-2-3**
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 **3-2-3**
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 **2-3-3**
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 **2-3-3**
A study of Federal Taxation dealing with advanced topics, partnerships and corporations.
Prerequisites: 2917. No lab fee charged.

2919 Intermediate Accounting I **2-3-3**
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 **2-3-3**
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 **2-3-3**
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.

2925 Business Principles **3-0-3**
A study of the nature of business, forms of business ownership, production problems and financing, forecasting, budgeting, governmental regulations 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-Motel Accounting **3-0-3**
Capital expenditures for fixed assets of a hotel or motel, prepayments and deferrals of income and expense, 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: None. 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-Motel 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, property administration, merchandising and renting, formal and informal communications, legal ramifications of managing apartments.
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. Encompasses interior, exterior, mechanical and grounds maintenance, budgeting, accounting, financial reports, insurance, purchasing and resident coordination.
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 investment objectives, use of data and statistics, analysis of regions, neighborhoods and markets, financial

analysis and methods, budgeting, cash flow projection, economics of alternatives, 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 courses 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.

2940 Real Estate Sales **3-0-3**
Listing real estate. The exclusive listing. Listing goals and aids. Classified advertising, Qualifying buyers. Financing showing the property. The purchase contract. Obtaining and presenting the offer. Creative salesmanship.
Prerequisites: 2951. No lab fee charged.

2945 Residential Construction **3-0-3**
This course is a "bricks and mortar" course for the non-constructionist. 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 exam.
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 State of Ohio prior to taking the brokers license exam.
Prerequisites: None. 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, 2953. 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.

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 improvement 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 rought 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.

3010 Shorthand I — Gregg **4-1-4**
Designed for those students who have had no previous shorthand training. Gregg Shorthand with emphasis on rapid reading of plate material and mastery of principles of theory including brief forms. An introduction to writing shorthand and transcribing on the typewriter from shorthand notes.
Prerequisites: None. No lab fee charged.

3011 Shorthand I — Century 21 **4-1-4**
Designed for those students who have had no previous shorthand training. Century 21 Shorthand, with emphasis on rapid reading of plate material and mastery of principles of theory including speed forms. An introduction to writing shorthand and transcribing on the typewriter from shorthand notes.
Prerequisites: None. No lab fee charged.

3012 Shorthand II — Century 21 **4-1-4**
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 3011 and an introduction to dictation from unfamiliar material. Emphasis is on speed development.
Prerequisites: Minimum grade of "C" in 3011 or by permission of the coordinator. Lab fee charged.

3013 Shorthand III — Gregg & C 21 **4-1-4**
An advanced course designed for those students who have had previous Gregg or Century 21 shorthand training. Emphasis is on speed development from both familiar and unfamiliar material.
Prerequisites: Minimum grade of "C" in 3012 or 3020 or permission of the coordinator. Lab fee charged.

3014 Transcription I — Gregg & C 21 **2-8-5**
A continuation of the study of Gregg and Century 21 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 3013 or 3029 or by permission of coordinator. Lab fee charged.

3015 Transcription II — Gregg & C 21 **2-8-5**
Continuation of 3014. Emphasis is on mailable transcription. Integration of office-style dictation and the mailable letter to meet office standards.
Prerequisites: Minimum grade of "C" in 3014 or permission of the coordinator. Lab fee charged.

3016 Legal Terms & Transcription I — Gregg & C 21 **2-8-4**
Stress is on development of legal vocabulary and transcription of legal shorthand dictation. Latin and French root words are studied as legal shorthand vocabulary is increased. Polishing of techniques regarding preparation of legal instruments and documents.

Prerequisites: Minimum grade of "C" in 3013 or 3029 or permission of coordinator. Lab fee charged.

3017 Legal Terms & Transcription II — Gregg & C 21 **2-8-4**
Continuation of 3016.
Prerequisites: 3016 with grade of "C" or better or permission of coordinator. Lab fee charged.

3020 Shorthand II — Gregg **4-1-4**
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 3010 and an introduction to dictation from unfamiliar material. Emphasis is on speed development.
Prerequisites: Minimum grade of "C" in 3010 or by permission of coordinator. 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. No lab fee charged.

3022 Keyboarding/WP Office Equipment **2-3-3**
A general survey of the techniques, processes, operations and applications of machines transcription equipment and word processing equipment. Equipment used in the class include transcribing machines, automatic typewriters, electronic typewriters, and stand-alone display editing word processors.
Prerequisites: 3001. Lab fee charged.

3023 Machine Transcription **3-0-3**
An introduction to transcribing machine and to the techniques of machine transcription. Students will also review basic grammar, punctuation, and spelling for successful manipulation of documents.
Prerequisites: 3051. Corequisite: 3052. No lab fee charged.

3024 Secretarial Procedures **3-0-3**
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.
Prerequisites: None. No 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 Office Specialist Curriculum. Each student's program is to be 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. No 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 or she may need additional training as well as to provide realistic practice in his or her chosen field, including decision-making responsibility, creative work, and human relations.
Prerequisites: 3027. No lab fee charged.

3029 Shorthand IV — Gregg & C 21 **4-1-4**
Designed for those students who enter the program with advanced standing and who are placed in advanced shorthand. Emphasis is on speed development from both familiar and unfamiliar material and development of mailable transcription.
Prerequisites: Minimum grade of "C" in 3013 or by permission of coordinator. 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: Business Law I and permission of the secretarial 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. No 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. No 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**
This course will present additional "hands on" experience for the student. The student will be preparing for entry into Text Management which entails insertions, deletions, entry, editing, and manipulation of text.
Prerequisites: 3050. Lab fee charged.

3052 Text Management I **1-4-3**
An introduction to stand-alone text editing devices. Students will become acquainted with formatted text, text formatting controls; text line controls; and techniques of modification of, deletion from, and insertion into documents and subdocuments.
Prerequisites: Grade of "C" or better in 3051. Lab fee charged.

3053 Transcription & Text Editing I **1-4-3**
Entry and editing of formatted and unformatted text on the Advanced Text Management System III (ATMS). Columnar entry/editing and tabulated materials will be formatted. Insertions, deletions, and modifications of text are reinforced to acquaint students with on-the-job situations.
Prerequisites: 3052. Lab fee charged.

3054 Transcription & Text Editing II **1-4-3**
A continuation of entry and editing of formatted and unformatted text on the ATMS III. Comprehensive use of the program function keys to successfully refine documents. This includes mergings, sub-mergings, headings, footings, paginations, text alignments (centering, left and right justification), and proper adjustment of text.
Prerequisites: 3053, 3056. Lab fee charged.

3055 Medical Office Transcription **1-3-2**
A survey course to introduce the student to transcribing machines and the techniques of transcription. Medical terminology related to the transcription of history and physical reports, pathology reports, surgical reports, radiologic reports, laboratory reports, operative reports, reports of diagnostic tests, letters and other correspondence. Students should attain proficiency in producing mailable transcripts using correct punctuation, spelling, and format.
Prerequisites: 3002. Lab fee charged.

3056 Document Handling Controls **1-4-3**
An introduction to the role of text administrator. Students will be instructed through the use of simulated exercises to enhance the specialized processing applications of word processing and document handing controls. These exercises will entail management of text, editing and retrieval systems, transferring of documents from working to permanent storage, and special manipulation functions.
Prerequisites: 3052. Lab fee charged.

3057 Text Administration **1-4-3**
A lecture course introducing the student, through role playing and special projects, to the various duties and functions of text administration. Case studies and the psychological aspects of supervision of automated offices will be discussed from a secretarial viewpoint.
Prerequisites: 3053. 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 I **3-1-3**
To provide a basic understanding of plant classification, structures, physiology, development, and the environmental conditions which effect plant growth.
Prerequisites: None. No 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 planting. Frequent field trips required.
Prerequisites: None. No lab fee charged.

3506 Nursery Management **2-3-3**
An introduction to techniques and practices used in the commercial production of herbaceous perennials, ground covers, deciduous shrubs and trees, conifers, and broadleaf evergreens. Greenhouse and nursery procedures and practices are emphasized.
Prerequisites: 3501, 3525. Lab fee charged.

3507 Arboriculture **3-0-3**
A study of the commercial arboriculture business. The diagnosis and treatment of tree ills, study of principles and techniques used to protect trees from disease and damage, common insects, diseases, and standard control practices; pruning, removal, etc.
Prerequisites: 3510, 3521. 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 technique 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: 3504. No lab fee charged.

3516 Herbaceous Plants II **3-2-3**
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 **2-3-3**
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 presentations. 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 and 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 **3-0-3**
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.
Prerequisites: None. No lab fee charged.

3531 Horticulture Seminar II **1-1-1**
Guest speakers and field trips dealing with current industry topics.
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: 3521, 3508. No lab fee charged.

3534 Interior Plantscaping **2-2-3**
Identification, culture, selection, and maintenance of tropical plants used in residential and commercial interior plantings. Field trips required.
Prerequisites: None. 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 designs, styles, principles, 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 retail flower shop 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, 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 Floricuture 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 Basic 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 Technology **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.

4010 Human Biology **3-0-3**
An introduction to cell biology, genetics, anatomy and physiology. Fulfills high school biology requirement.
Prerequisites: None. No lab fee charged.

4011 General Anatomy **2-3-3**
Complements 4012 and 4013. General anatomical principles and gross and microscopic anatomy of the major organ systems. Laboratory is primarily dissection with comparison to human anatomy.
Prerequisites: High school biology or equivalent. Lab fee charged.

4012 Human Physiology I **3-2-4**
Normal physiology of the human body including the cell membrane, biological transport, exitable tissue, the nervous system, special senses, cardiovascular system, and the endrocrine system. Lab experiences to complement and reinforce the concepts presented.
Prerequisites: High school chemistry or equivalent. Lab fee charged.

4013 Human Physiology II **3-2-4**
Normal physiology of the human body including respiration, the renal system, acid-base balance, reproduction and the gastrointestinal system.
Prerequisites: 4012. 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 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 electrocytes, acidbase 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, inflamation, 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.

4030 Technology of Education for Health **1-3-2**
Principles and techniques for planning, designing, producing, implementing and evaluating 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: None. No 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 Studies - Health Technologies **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. Corequisite: 4111. No lab fee charged.

4102 Nutrition for the Lifecycle **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.

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 Nutrition in Disease **4-0-4**
An introduction to therapeutic nutrition, including the study of the pathological states of trauma and disease and their nutritional interrelationships, i.e. surgery, burns, diabetes. Also includes patient chart analysis, techniques for doing nutritional assessment, diet histories and diet instruction.
Prerequisites: 4105. No lab fee charged.

4107 Diet Therapy **4-0-4**
A continuation of Nutrition in Disease with an increased emphasis on application of diet therapy principles. Course includes a study of the

pathological states and nutritional involvement of cardiovascular and renal disease, GI disorders, cancer, allergies and rehabilitative medicine.
Prerequisites: 4106. No 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 of the Dietetics Program. No lab fee charged.

4111 Dietetics Orientation and 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: None. 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. No 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. No lab fee charged.

4115 Dietetics Directed Practive V **10-0-2**
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.

4120 Nutrition and Food Preparation **2-6-4**
The fundamentals of food preparation including small and large equipment utilization, energy sources and food composition in relation to nutritional value. Laboratory includes the preparation and evaluation of all food groups according to appropriate procedures.
Prerequisites: 4130 or permission of instructor. Lab fee charged.

4121 Meal Management **3-0-3**
Principles of menu planning and presentation for various age and societal groups. A study of food economics including major economic indicators, marketing trends and purchasing techniques. Course 4103 is recommended as a prerequisite to this course.
Prerequisites: None. Lab fee charged.

4122 Food Service Management I **3-3-4**
Introduction to institutional food service systems including layout and equipment menu planning and costing, recipe standardization, product testing, purchasing flow patterns, time management, job procedure writing and analysis, safety and sanitation.
Prerequisites: 4120. Lab fee charged.

4123 Food Service Management II **3-3-4**
Continuation of 4122 with emphasis on management skills, including work schedules, job descriptions, inventory control, and evaluation of food service operations and employees. Laboratory includes the implementation and complete operation of a small food service delivery system with cycle regular and modified menus.
Prerequisites: 4122. 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 **4-0-4**
Nutritional science and its effect on human physiology with application to all population groups. Nutrient composition, digestion absorption and metabolism for normal and diseased states are studied. Didactics accompanied by practical application to developmental life stages.
Prerequisites: 4005 or high school chemistry. 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-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.

4201 Medical Office Practice **2-8-4**
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: None. Lab fee charged.

4202 Clinical Assisting I **2-8-4**
Fundamentals of patient preparation, history taking, positioning, draping, taking and recording the vital signs, assisting the physician with the examinations, caring for the physician's bag, caring for the examination room before and after a patient.
Prerequisites: None. Lab fee charged.

4203 Clinical Assisting II **2-8-4**
Fundamentals of preparing and administering medications, assisting the specialists, patient preparation for the specialty examination, basic first aid for the medical office, sterilization techniques and methods.
Prerequisites: 4202. Lab fee charged.

4204 Medical Procedures I **2-8-4**
Study of medical laboratory procedures for the medical office - including specimen collection, basic hematology procedures, pregnancy testing, culturing techniques, urinalysis, sickle cell testing, x-ray procedures, basic EKG procedures.
Prerequisites: 4005. Lab fee charged.

4205 Medical Procedures II **2-8-4**
Continuation of Medical Procedures I, with emphasis on differentials, WBC, RBC, urine microscopics, chemistry procedures, coagulation testing, vision and hearing testing, EKG interpretation, blood grouping and rh typing, serological procedures, ova and parasites, ultra sound and diathermy, basic pulmonary studies, other patient diagnostic tests and employee health programs.
Prerequisites: 4204. Lab fee charged.

4208 Insurance and 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 **0-5-2**
Preparation of the student for the certification examination. Topics to be presented by the students enrolled in the class. Students hold clinics for practical experience in the performance of procedures learned during previous Medical Assisting courses.
Prerequisites: Students who take this course must be in their last term of Medical Assisting Program. No lab fee charged.

4211 Medical Assisting Clinical Experience I **0-20-3**
Clinical practice in the physician's office, health centers and clinics, hospital out-patient departments, performing functions related to medical assisting. The student will spend an equal number of hours in clinical and administrative assisting. Students will not receive renumeration for these experiences.
Prerequisites: None. No lab fee charged.

4212 Medical Assisting Clinical Experience II **0-20-3**
Clinical practice in the physician's office, health centers and clinics, hospital out-patient departments, performing functions related to medical assisting. The student will spend an equal number of hours in clinical and administrative assisting. Students will not receive renumeration for these experiences.
Prerequisites: None. No lab fee charged.

4213 Medical Assisting Clincal Experiences III **0-20-3**
Clinical practice in the physician's office, health centers and clinics, hospital out-patient departments, performing functions related to medical assisting. The student will spend an equal number of hours in clinical and administrative assisting. Students will not receive renumeration for these experiences.
Prerequisites: None. No lab fee charged.

4290 Basic Electrocardiography **5-0-5**
Introduction to principles of electrocardiography. Designed to acquaint the participants with taking the EKG, patient preparation, mounting and filing, cardiac anatomy and electrophysiology, recognizing and correcting distortion problems and special patients and problems with the EKG. Practical experience in taking the EKG included.
Prerequisites: None. Lab fee charged.

4291 Electrocardiogram Interpretation **3-0-3**
Advanced course in electrocardiography with emphasis on recognizing arrhythmias. Review of basic EKG principles and cardiac anatomy. Emphasis on measurement and calculation of EKG patterns for determining variations in heart patterns (Dysrhythmias).
Prerequisites: Basic EKG 4290 or experience. No lab fee charged.

4292 Electrocardiography Clinical Practice **0-8-1**
This course consists of clinical practice of electrocardiography in a local hospital. Students will be supervised by practicing ECG technicians employed by the hospital.
Prerequisites: 4290. No lab fee charged.

4294 Workshops in Medical Assisting **3-0-3**
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-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.

4301 Basic Laboratory Techniques **2-3-3**
Instruction in the use and maintenance of laboratory equipment, including the microscope, spectrophotometer and centrifuges. Discussion of laboratory safety, quality control. Instruction in basic techniques such as blood drawing and pipetting also included.
Prerequisites: None. Lab fee charged.

4302 Basic Hematology and Urinalysis **4-6-6**
Study of theory of blood cell production and routine hematologic procedures, to include the complete blood count, erythrocyte sedimentation rate, reticulocyte and platelet counts. The routine urinalysis with microscopic examination of sediment is also included.
Prerequisites: Taken concurrent with or subsequent to 4301. Lab fee charged.

4303 Immunology **3-0-3**
Discussion of the basic physiology of the immune system; study of principles of routine techniques for serological testing. Brief introduction to immune disorders and tissue transplants.
Prerequisites: None. No lab fee charged.

4304 Clinical Chemistry **4-3-5**
Study of theory and procedures of routine manual and automated chemical laboratory procedures, their quality control and use of related instrumentation.
Prerequisites: 4005 and 4301. Lab fee charged.

4305 Blood Bank — Serology **4-6-6**
A study of blood banking procedures and theory including the inheritance of blood group determinants and donor procedures. Also includes a study of serology. Performance of routine typing, crossmatching, antibody screening, cell panels and routine serologic procedures.
Prerequisites: 4301 and 4303. 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, hemoglobinpathies and other blood dyscrasias. Instruction in the theory of coagulation and special hematologic procedures.
Prerequisites: 4302 and 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, spinalfluids, 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 & Urinalysis **0-6-2**
Laboratory practice in routine hematology and urinalysis. The practicum will stress workload organization, record keeping, quality control, routine maintenance and troubleshooting of related instrumentations.
Prerequisites: 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: 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: 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: Concurrent with or subsequent to 4306. Lab fee charged.

4351 Clinical Experience I **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: 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.

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 vein puncture and capillary sampling; professional responsibilities. Ten 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. No 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-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.

4400 Medical Terminology and Transcription **3-6-6**
Advanced Medical Terminology and Medical Transcription related to diseases and operations encountered in transcription of history and physical examinations, discharge summaries, operative reports, laboratory, x-ray, pathology and autopsy reports. Transcription from modern dictation machines of histories and physicals, x-ray, pathology, operative and autopsy reports and discharge summaries.
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: 4414, 4415, 4416, 4417, 4418. No lab fee charged.

4414 Record Science, Filing Systems & 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 JCAH standards for these facilities.
Prerequisites: 4414. No lab fee charged.

4416 Coding of Diagnoses, Operations and Procedures **4-3-5**
Coding classification according to ICD-9-CM. Introduction to other major coding systems including SNDO, DRG, SNOP, DSM-11.
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 census and percentages. Completion of monthly reports; analysis of reports including simple retrieval through abstracting of medical information from the patient record and learning the process of computer terminal input.
Prerequisites: 4414, 4415, 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 Regisitry and Utilization Review.
Prerequisites: 4414, 4416, 4417. No 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. No 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.
Prerequisites: None. No lab fee charged.

4441 Medical Terminology and Transcription I **2-5-4**
(Advanced Medical Terminology and Medical Transcription). Medical terminology related to diseases and operations encountered in transcription of history and physical examinations, x-rays, operative and pathology reports. Transcription from modern dictation machines of histories and physicals, x-ray, operative and pathology reports.
Prerequisites: Typing ability of 40 words per minute and 4000. No lab fee charged.

4442 Medical Terminology and Transcription II **2-5-4**
Medical terminology related to diseases and operations encountered in transcription of discharge summaries, and autopsies. Specialized terminology encountered in Ear, Nose, and Throat, Psychiatry, Respiratory, Genitourinary, Gastrointestinal, Cardiovascular, Neurology, Obstetrics-Gynecology, and Plastic and Reconstructive Surgery transcription. Transcription from modern dictation machines of discharge summaries, autopsies, and medical specialty transcription.
Prerequisites: 4441. 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. No 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.

4501 Introduction to Surgery **6-0-6**
This course will discuss the gradual evolution of modern day surgery, orient the student to the organization and structure of the operating room department and also introduce the student to the roles and functions of OR personnel. The care and sterilization of equipment, care and preparation of the operative patient, sutures/needles, basic instruments, anesthesia and wound healing are included.
Prerequisites: None. No lab fee charged.

4502 Medical-Surgical Operative Procedures I **8-0-8**
This course utilizes the content presented in course 4501 Introduction to Surgery, incorporating the content into a comprehensive study of operative procedures. This course will provide instruction in operative procedures in the field of general surgery, gynecological surgery, thoracic and vascular surgery.
Prerequisites: 4501, 4011. Corequisites: 4512, 4012. No lab fee charged.

4503 Medical-Surgical Operative Procedures II **10-0-10**
This course incorporates the study of specialized areas of surgical procedures, namely reconstructive plastic surgery, thyroid and parathyroid surgery, ear, nose and throat surgery, ophthalmic surgery, neurosurgery, orthopedic surgery, genitourinary and cardiac surgery.
Prerequisites: 4501 and 4502. No lab fee charged.

4511 Surgical Technology Clinical Experience I **0-5-2**
Introduction to basic OR skills including aseptic techniques, OR attire, scrubbing, gowning, gloving, opening sterile packs and sterilization of OR supplies. The course involves supervised practice of OR skills in a practice lab on campus and in the operating rooms of an affiliated hospital.
Prerequisites: Permission of instructor. Corequisites: 4501. Lab fee charged.

4512 Surgical Technology Clinical Experience II **0-5-2**
Continuation of course 4511 - Clinical Experience I.
Prerequisites: 4511. Corequisites: 4502. Lab fee charged.

4513 Surgical Technology Clinical Experience III **0-10-2**
Exposes the clinically experienced ST student to all aspects of surgery including pre-operative, operative and post-operative care of the surgical patient.
Prerequisites: 4512. No lab fee charged.

4521 Surgical Technology Clinical Practice I **1-40-7**
Students are assigned to the operating room of a hospital currently affiliated with the program. The student is supervised by an adjunct faculty member and program coordinator. Students also attend a one-hour weekly seminar on campus relating to the field experience.
Prerequisites: Permission of instructor. No lab fee charged.

4522 Surgical Technology Clinical Practice II **1-40-7**
Continuation of 4521 accompanied with a one hour weekly seminar on campus relating to the field experience.
Prerequisites: 4521. No lab fee charged.

4523 Surgical Technology Clinical Practice III **0-10-2**
Exposes the clinically experienced ST student to all aspects of surgery including pre-operative, operative and post-operative care of the surgical patient.
Prerequisites: 4512. No lab fee charged.

4594 Fundamentals of OR Nursing **3-2-4**
The fundamentsl 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 OR environment, patient preparation and supplies such as sutures, needles and basic instruments, anesthesia and OR drugs are included.
Prerequisites: For senior level nursing students and registered nurses. Lab fee charged.

4599 Special Studies - Surgical Technology **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.

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, O_2 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 on 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 are introduced.
Prerequisites: 4704. Lab fee charged.

4706 Respiratory Therapy Science VI **3-2-4**
Respiratory care for the critically ill patient. Invasive and non-invasive monitoring techniques, patient assessment and evaluation are 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 **0-10-2**
An introduction to the hospital environment with practical application of O_2 delivery apparatus, cleaning, disinfection, sterilization, and airway management.
Prerequisites: 4701, 4720. No lab fee charged.

4712 Respiratory Therapy Clinical Practice II **0-10-2**
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 **0-32-4**
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 **0-12-2**
Application of advanced respiratory care techniques. Emphasis on patients in the critical care setting.
Prerequisites: 4706. No lab fee charged.

4716 Respiratory Therapy Clinical Practicum II **0-24-3**
A clinical practicum which provides experience with advanced respiratory care techniques. Home care techniques, supervisory and training experiences are also included.
Prerequisites: 4707, 4715. No lab fee charged.

4718 Pulmonary Diseases I **2-0-2**
Indepth 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, O_2 and CO_2 transport, red cell physiology, EKG and neonatal cardiopulmonary anatomy and physiology, renal physiology and acid-base balance.
Prerequisites: Acceptance into RT Program. Lab fee charged.

4721 Respiratory Therapy Supervision & Education **2-0-2**
Basic theories and techniques of supervision and education in relation to respiratory therapy. An introduction to lower and middle management techniques, and planning and implementation of hospital educational and training programs.
Prerequisites: None. No lab fee charged.

4723 Respiratory Therapy Seminar **1-2-2**
Student presentation of case reports and library research to their peers. Practice in NBRT testing techniques also provided.
Prerequisites: None. No lab fee charged.

4794 Workshops in Respiratory Therapy **3-0-3**
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-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.

6611 Technical Laboratory Chemistry I **3-3-4**
Theory of technical chemistry with application and laboratory practice - the first of a series of chemistry courses for the laboratory technician. Goggles are required. A laboratory coat or a laboratory apron is suggested.
Prerequisites: High school chemistry or equivalent and high school algebra or equivalent. Lab fee charged.

6621 Technical Laboratory Chemistry II **3-3-4**
Theory of technical chemistry with application and laboratory practice - the second of a series of chemistry courses for the laboratory technician. Goggles are required. A laboratory coat or a laboratory apron is suggested.
Prerequisites: 6611 or equivalent. Lab fee charged.

6629 Science of Materials **3-2-4**
A study of the principles basic to the physical properties of materials; examination of materials; techniques of testing materials. The materials studied are primarily metals, woods and polymers; some ceramics and composites are included. This course and course 7111 while covering the same major physical properties and tests thereof are different in emphasis. Course 6629 additionally stresses the preparation of metallographic specimens, etc., as well as implications that may or may not be possibly drawn from the laboratory data.
Corequisites: Chemistry and 1191. Lab fee charged.

6631 Technical Laboratory Chemistry III **3-3-4**
Theory of technical chemistry with application and laboratory practice - the third of a series of chemistry courses for the laboratory technician. Goggles are required. A laboratory coat or a laboratory apron is suggested.
Prerequisites: 6621 or equivalent. Lab fee charged.

6639 Instrumentation and Measurement **3-2-4**
Applied black-box instrumentation including transducer elements, signal amplification, and analog and digital data recorder. Measurement topics include a study of measurement standards, error and uncertainty, accuracy versus precision, and the development of empirical equations of all types including complex wave forms generated from SHM.
Prerequisites: 6629 or 7111. Prerequisite or co-requisite: 7708. Lab fee charged.

6641 Technical Laboratory Chemistry IV **3-3-4**
Theory of technical chemistry with application and laboratory practice - the fourth of a series of chemistry courses for the laboratory technician. Emphasis is on instrumental analysis. Goggles are required. A laboratory coat or a laboratory apron is suggested.
Prerequisites: 6631. Lab fee charged.

6649 Materials Testing **3-4-5**
An application of instrumentation devices and techniques to the determination of the chemical and physical properties of matter. The course emphasizes materials and testing methods not covered in the Science of Materials course, such as concrete, fabrics, leather, and paper products.
Prerequisites: 6639, 6629, 6621. Lab fee charged.

6659 Analysis of Materials Project **3-4-5**
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 projects data.
Prerequisites: 6649, 6631, 1179. Lab fee charged.

6661 Chemical Contamination 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.

6699 Technical Laboratory Problems **Var-Var-1-5**
Special problems, projects, seminars and individual study assignements pertinent to technical laboratory areas. Arranged only with approval of coordinator and dean.
Prerequisites: None. No lab fee charged.

6710 Laser Optics I **3-2-4**
Emission and absorption of photons, elements of laser, properties of laser light, optical cavities, Helium-neon gas lasers, Laser classifications and characteristics. Introduction to laser safety.
Corequisites: 1191. Lab fee charged.

6720 Laser Optics II **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 Laser Optics III **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 Laser Optics IV **3-3-5**
Laser power and energy measurements; wavelength; dispersion and refractive index measurements; use of monochromators and spectrophotometers; use of Fabry-Perot, Michelson, Twyman-Green and Mach-Zehnder interferometers.
Prerequisites: 6730. Lab fee charged.

6741 Fiber Optics **3-2-4**
Introduction to Fiber Optics; Review of the Nature of Light, Reflection, Refraction, Light Measurement; Light Sources and Transmitters; Optical Fibers-Physical Description, Light Propagation, Transmission Losses; Splices, Connectors and Coupler; Receivers - Pin Photodiodes, Avalanche Photodiodes and Photo-Transistors; Typical Systems.
Prerequisites: 6710. No lab fee charged.

6745 Optical System Design **3-3-5**
Refraction matrix, translation matrix, lens matrix, optical matrix, optical system matrix. Gaussian constants and their significance. Spherical aberration, chromatic aberration. Gaussian beam propagation, spot size, radius of curvature. Optical resonators, modes of oscillation. Microcomputer systems and analysis of optical systems.
Prerequisites: 6720. Lab fee charged.

6750 Laser Optics V **3-3-5**
Laser material processing, cutting, drilling and welding; air pollution monitoring with lasers; data processing and data display; optical memories; holographic non-destructive testing; medical applications of lasers; optical communication systems.
Prerequisites: 6740. Lab fee charged.

6999 Special Problems Seminar **0-0-1-5**
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. Lab fee charged.

7000 Engineering Technologies Orientation **1-0-1**
Designed to familiarize the engineering student with the operations and policies of the Engineering Technologies Division, his/her career field, employment trends and cooperative employment responsibilities. Topics to include: academic requirements, program option, recommended and non-technical electives, etc. Required for all incoming freshmen during their first term in school. Waiver of this requirement because of special circumstances such as re-entry students, transfer students, etc. can be obtained from the Divisional Coordinator of Academic Affairs.
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. Use of technical terms, equipment, lettering and basic line quality. Includes orthographic and isometric sketching and projection. The basic concepts of sections, dimensions and auxiliary view drawing.
Corequisites: 1171 or 1191. No 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 view, gears, cams, various sectioning representation, American Standard tolerancing, Geometric referencing, detailed and assembly working drawings to include bills of materials.
Prerequisites: 7008 or equivalent. Corequisites: 1171 or 1191. No lab fee charged.

7012 Engineering Drawing II **2-4-3**
A continuation of Engineering Drawing I with an introduction to the design process as applied to Mechanical Design Technology majors. Emphasis will be on working drawings with specific applications to machine assembly and detail drawings utilizing computer data base information.
Prerequisites: 7010. No lab fee charged.

7013 Engineering Graphics (Descriptive Geometry) **2-4-3**
Graphic analysis of space positions involving points, lines, planes, connectors and a combination of these. Practical design problems stressed with analytical verification where applicable.
Prerequisites: None. Corequisites: 1171 or 1191. No lab fee charged.

7016 Construction Drawing **2-4-3**
Emphasis on floor plans, electrical and plumbing layouts, and blueprint reading.
Prerequisites: 7008. No lab fee charged.

7018 Electrical Drafting **2-4-3**
Provides a drawing knowledge of electrical power symbols (ANSI designations) and teaches 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, basic architectural symbols, electronic schematics and digital logic diagrams.
Prerequisites: None. No lab fee charged.

7024 Civil Engineering Graphics I **2-4-3**
Construction drawing 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: None. Corequisites: 1171 or 1191. No lab fee charged.

7025 Civil Engineering Graphics II **2-4-3**
Development of individual skills and techniques, with emphasis on surveying related drawings, profiles, cross sections, contour maps, plats and abstracts, and computer graphics.
Prerequisites: 7024. No lab fee charged.

7030 Computer Programming (Basic) **2-2-3**
Principles of programming, flow charting and coding in Basic language. Lecture and lab problems to show applications in Engineering design calculations, automatic control, design optimization, quality control and Engineering planning.
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) **3-2-3**
Terminology and basic concepts of automation, introduction to Fortran programming with applications in surveying and construction.
Prerequisites: None. 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 busses 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 and 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 Machine Tools & Manufacturing Processes **3-2-3**
Designed to acquaint the student with the various machines used in manufacturing. To include: measuring instruments, characteristics of metals and cutting tools, manufacturing processes, etc.
Prerequisites: None. Corequisite: 1171 or 1191. No lab fee charged.

7111 Engineering Materials **3-2-3**
Study of the principles basic to the physical properties of materials; examination of materials; techniques of testing materials. Students enrolled in this course should expect to spend at least two hours per week gaining actual hands-on laboratory experience.
Prerequisites: None. Corequisite: 1191. Lab fee charged.

7123 Material Selection **3-2-3**
Covers the basic physical and specific properties of irons, steels, nonferrous and plastic materials. Also covered will be the effects of the Manufacturing Process on material selection, the proper use of material, catalogs, and the cost procedures of material selection.
Prerequisites: 1191, 7104 or equivalent. No lab fee charged.

7130 Engineering Mechanics (Statics) **3-2-3**
An analytical and graphical approach to the solution and understanding of the mechanics of force systems. To include: moments and couples, equilibrium, etc. Specific emphasis on: trusses, frames, space force systems, friction, centroids and centers of gravity, moments of inertia, transfer formula, and radius of gyration.
Corequisites: 1192, 2292. No lab fee charged.

7132 Hydraulics and 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: 1171 or 1191. No lab fee charged.

7133 Electronic 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 **4-4-4**
Basic principles of hydraulics and pneumatics. Covers the generation, distribution and control of fluid power. Applications in fluid mechanics includes pumps, flow, pressure and directional valves. An in-depth study of hydraulic and pneumatic symbols and circuitry. A comprehensive study in the fundamental concepts of servo-hydraulics, air logic and control systems.
Prerequisites: 1191. Lab fee charged.

7140 Strength of Materials **4-2-4**
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. Topics of study include simple, torsional, and bending stresses; deflection and combined stresses.
Prerequisites: 1192, 2292. No lab fee charged.

7142 Mechanisms Analysis & Design **3-2-3**
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. Cam analysis and design is introduced, with particular emphasis on pressure angles and follower motions. An introductory study of gears and gear trains is included.
Prerequisites: 2291. Corequisite: 1193. 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 **2-3-3**
Introduction to numerical control (NC) and Computer Numerical Control (CNC) technology emphasis on tape control systems, writing of programs and lab experience in implementing these programs on a 2½ axes NC milling machine and 2 axes CNC lathes.
Prerequisites: 1191, 7104 or equivalent. Lab fee charged.

7145 Statics and 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 Control I (Servomechanisms) **3-3-4**
Introduction to transducer feedback systems. Analog control of levels, velocities, positions, etc. of output devices such as hydraulic actuators and D.C. drives. Servo-control techniques through the use of digital circuits. Topics to include open and close loop systems, feedback, resolution, accuracy, repeatability, transient response analysis, stabilization circuits, dampening, types of comparators, gray code encoders, optical encoders, leadscrew control, and stepping motors.
Prerequisites: 7730, 7738. Lab fee charged.

7147 Tool, Die, Jig, & Fixtures **3-2-3**
Introduces the student to techniques and practices of tool design with emphasis on cutting tools, gages, clamping, jigs, fixtures, tools and die design. Also covered will be the application of NC/CNC.
Prerequisites: 7104, 1191 or 1172. No lab fee charged.

7150 Machine Design 1 **4-2-4**
Principles of mechanics and strength of materials as applied to components of mechanisms and power trains as well as beams, pressure vessels, weldments, springs and other bodies under static load.

Emphasis is on the fundamental principles of the design of separate components rather than the complete machine or structure.
Prerequisites: 7130, 7140. No lab fee charged.

7151 Tool Engineering Design 3-2-3
A study and analysis of cutting, forming, and drawing sheet metal, using modern tools and dies. Application of mathematics and mechanics to determine forces and stresses occurring in these metal working operations. Provides experience of designing a die to produce a simple sheet metal product. Also includes jig and fixture design.
Prerequisites: 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 host system, data highways, multi-variable systems and nonlinear systems.
Prerequisites: 7143. No lab fee charged.

7155 Machine Design II 4-2-4
The application of principles of mechanics and strength of materials to the design of machine and structures. A practical approach for both draftsmen and practicing designers. Emphasis will not be entirely on force analysis and calculations, but will also include economic considerations, manufacturing methods, installation, safety, and servicing.
Prerequisites: 7150. No lab fee charged.

7156 Electromechanical Design 2-8-4
A course intended to exercise the student's knowledge of electromechanical systems. It provides the time and opportunity for students 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 student to develop the design problem with minimal staff supervision.
Prerequisites: 7731, 7146. Lab fee charged.

7157 Electro-Mechanical Controls II (Computer Applications) 3-3-4
Introduction to computer architecture. Course develops the use of programmable controllers for machine control. Topics include DC-Servos, AC-Servos, Hydraulic Servos. Course continues with computer based control of robotic systems. Discussions of current robotic sensors such as proximity sensing, touch, and vision will be covered.
Prerequisites: 7146. Lab fee charged.

7160 Computer Aided Design/Drafting (CAD/D) 2-3-3
A course in Computer Aided Design/Drafting (CAD/D). Use of computer graphics to make, store, copy and alter engineering drawings. Use, cost, part numbers, bill of materials and other related data to analyze alternate design.
Prerequisites: 7008, 7010, or 7030. No 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: 7449, 7160. No lab fee charged.

7199 Special Problems Seminar — Mechanical 2-4 Credit Hours
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 Coordinator and Divisional Coordinator 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. Lab fee charged.

7411 Processes and Materials of Manufacturing 4-2-4
Designed to acquaint the student with the wide selection of materials, machines and processes available in areas of machining, forming and joining of materials. Computer usage in areas of feeds and speeds, material selection, tool geometry and machinabilities of materials will be applied to compile and store pertinent data.
Prerequisites: 7111. No 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. 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 sequence of Flow and/or Assembly. Facilities audit.
Prerequisites: None. Lab fee charged.

7441 Quality Assurance/Quality 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.

7443 Manufacturing Methods and Cost Analysis I 3-2-3
Manufacturing practices and planning procedures are introduced with emphasis on manufacturing analysis, cost estimating, quality and tool design. Additional topics include application of methods and production scheduling control as required in tool and manufacturing design.
Prerequisites: 7411. No lab fee charged.

7449 Computer Aided Manufacturing I 4-2-4
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: 7030, 7144. 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. Lab fee charged.

7453 Manufacturing Methods and Cost Anaylsis II 3-2-3
Implementation of the maufacturing plan with emphasis in areas of detailed parts, assemblies, testing and packaging. The part and/or product is processed from its original to finished state by the application of methods, tool and fixture selection, correct sequencing of operations, operation identification and standard time requirements.
Prerequisites: 7443. No lab fee charged.

7459 Computer Aided Manufacturing II 4-2-4
This course covers the software systems of a totally automated factory. Techniques for attaining optimum utiliziation of facilities, equipment

and other manufacturing resources are covered; Computer Assisted Process Planning (CAPP), Capacity Requirements Planning (CRP), and Material Requirements Planning (MRP) systems are introduced.
Prerequisites: 7449. No 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. 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.
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 devives.
Prerequisites: 7510, 7701. No lab fee charged.

7530 Air Conditioning Principles I **3-2-3**
Study of cooling towers, 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. Lab fee charged.

7532 Sheet Metal Layout and 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.

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.

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. 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.
Corequisites: 1171 or 1191. No lab fee charged.

7701 Electrical Fundamentals I **4-2-4**
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**
Solution of alternating current circuits containing inductance, capacitance, and resistance; transformers; motors, phasor diagrams are covered.
Prerequisites: 7701, 1191 or 1171. No lab fee charged.

7704 Basic Industrial Electricity (Aviation) **3-2-3**
An introduction to applied electrical circuits; current, voltage, and resistance measurements; Ohm's Law in series and parallel circuits; magnetism, wiring practices; electrical energy and power; concepts of capacitance, inductance and transformers; AC and DC motor fundamentals; fundamentals of motor control; development, analysis and troubleshooting simple motor control circuits; basic concepts of control systems for non-electrical technology majors.
Corequisites: 1171 or 1191. No lab fee charged.

7708 Electrical Fundamentals and 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: 1192. No lab fee charged.

7710 D.C. Circuit Analysis **6-3-5**
This course introduces the concepts 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.
Corequisites: 1191 or 1172. No lab fee charged.

7720 A.C. Circuit Analysis **6-3-5**
This course introduces inductive 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. An emphasis in lab will be placed on the oscilloscope, function generator and V.T.V.M. for application in A.C. circuits.
Prerequisites: 7710. Corequisite: 1192. No lab fee charged.

7725 Electrical Lighting Design **3-0-3**
Basic principles of light and sight and the characteristics of light. Quantity and quality measurements of lighting. Recommended levels and distribution of illumination. Types of light sources, lamp design, operating and performance characteristics. Light control and luminaire design. Exterior and interior lighting methods and calculations. Industrial, commerical and office lighting. Energy management in lighting design.
Corequisites: 7720. No 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: 1191, 7708 or 7710. 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 clampers, SCR, Triacs, basics of operational amplifiers and negative feedback inverting and non-inverting amplifiers, comparators, differentiators and integrators.
Prerequisites: 7720. No lab fee charged.

7734 D.C. Machinery & Controls **3-3-4**
Study of the principles, construction, operating characteristics, selection and maintenance of DC motors and DC generators. Also control system will be covered with emphasis on relay logic and algorithmetic troubleshooting methods.
Prerequisites: 7720 or 7702. No lab fee charged.

7735 Electronic Fundamentals **3-3-4**
Basic principles of solid state electronics. Diodes and applications including rectification and device ratings. Principles, applications and selection of solid state amplifiers with an emphasis on operational amplifiers. Control circuits and system operation of transducers; such as position, pressure, flow, temperature, light, acceleration, and velocity measurement. Open and closed Loop Circuits, Servo Systems. SCR and TRIAC Control Principles and Circuits. Analog-Digital interface considerations.
Prerequisites: 7702 or 7720. No lab fee charged.

7736 Electrical Power Systems **3-2-3**
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: 7720. 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 IC's will be discussed.
Prerequisites: 7720, 7728. 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.

7743 Communications 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.

7744 AC Machinery & Controls **3-3-4**
Study of the principles, construction, connection, operating characteristics, selection and maintenance of polyphase and single phase AC motors and alternators. Also control systems will be covered with emphasis on static logic and programmable controllers utilizing ladder diagram formats. Troubleshooting will be emphasized throughout.
Prerequisites: 7734, 7728, 7702 or 7720. No lab fee charged.

7746 Electrical Power Distribution **3-1-3**
Distribution, Voltage Selection, Motor Circuit Protection, System Voltage Variation. Power Factor Improvement, Selection of Protective Devices. System Grounding, Systems Planning, Medium Voltage Switchgear, High Voltage Switchgear, Protective Relays, Energy Conservation and Power Management.
Prerequisites: 7736. 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. No 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, EKG's, mechanical recorders, ICU's and CCU's 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. Corequisites: 7754. No lab fee charged.

7754 FCC License Preparation **3-0-3**
Preparation for FCC radio-telephone operators licenses. Technical and legal aspects.
Prerequisites: 7743. Corequisites: 7753. No lab fee charged.

7755 Electrical Estimating **2-3-3**
Blueprint reading, take-off techniques, specifications, estimating procedure, unit pricing, pricing sheets, summary sheets, proposals, checking methods, computerized estimating techniques.
Prerequisites: None. Lab fee charged.

7757 Electrical Maintenance **3-2-3**
To include insulation testing, commutator and slip ring maintenance, testing and troubleshooting control circuits, emergency repair of AC and DC machinery, mechanical maintenance of electrical machinery. Also reviews economics in staffing and management; stocking parts, record keeping methods, safety techniques, coordination of protective devices for distribution systems and other electrical apparatus.
Prerequisites: 7746, 7735 or 7758. No lab fee charged.

7758 Industrial Motors & Controls **3-2-3**
Fundamentals, applications and selection of DC and 3Ø 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: 7720 or 7702, 7728. No lab fee charged.

7759 Biomedical Instrumentation II **4-2-4**
Course presents a survey of the more complex and specialized devices used for patient care and diagnosis. Advanced equipment malfunction isolation and test instruments 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.

7768 Digital Systems III **3-3-4**
Microprocessor applications. Continuation of 7741. Emphasis on interfacing microprocessor systems to real world tasks. Applications include parallel input/output. Digital to analog and analog to digital converters. Serial communications, and use of the microprocessor as an intelligent controller.
Prerequisites: 7748. Lab fee charged.

7799 Special Problems Seminar - Electrical/ Electronics **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 **3-3-3**
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 SMAW apply to this course.
Prerequisites: None. Lab fee charged.

7820 Shielded Metal Arc Welding Processes **3-3-4**
The operation of AC and DC arc welding equipment. Studies are made of welding heat, polarity, electrode application. Laboratory experience to include joining of commonly used metals. GAS metal arc welding (MIG welding) theory and application are introduced. The American Welding Society designation of GMAW and SMAW both apply to this course.
Prerequisites: 7810. 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.
Corequisites: 1171 or 1191. No lab fee charged.

7911 Construction Methods **3-1-3**
Introduces the student to the various methods of construction. To include excavation and equipment foundation systems, and forming, floor-wall-roof framing systems. To also include the principles of reinforced concrete and methods of structural steel design.
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, slope staking, pipe layout. "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, use of the state plane coordinate system, with emphasis on Ohio, Kentucky, and Indiana.
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 include force analysis of friction and hydrostatic pressure, and an introduction into the relation between stress and strain.
Prerequisites: 1192, 2292. No lab fee charged.

7935 Computer Applications (Civil) **3-2-3**
Advanced pile handling, monitor graphics and animation. Civil engineering software development and usage.
Prerequisites: 7030, 1192, 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. 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.
Corequisite: 7945. No lab fee charged.

7943 Estimation and Inspection **3-2-3**
It is a technical course that has been designed to give the student an understanding of bidding procedures, quantity take off of materials and their relationship to the construction contracts. Description of materials and how different materials affect the bid. Study of installation procedure and how they affect the bid. Study and analysis of the unit of measurement of work. Estimation of the quantity of materials needed to finalize construction project.
Prerequisites: 1191. No lab fee charged.

7944 Strength of Materials (Civil) **3-2-3**
An introductory course in the application of engineering mechanics to analysis of Civil Engineering structures. Topics of instruction include analysis of connections, membrance stresses and beams. The concepts of centroids and moment of inertia are applied to design problems.
Prerequisites: 7934. No lab fee charged.

7945 Structural Design I **3-2-3**
A design course in which the principles of engineering mechanics are applied to design of simple structures. Topics of instruction include space frames, beam analysis and columns.
Prerequisites: 7934. 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 channel hydraulics with application to highway drainage channels, median swales, culverts and gutters. Introductions to pipe network problems.
Prerequisites: None. No lab fee charged.

7948 Site Development **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.

7952 Contracts and Specifications **3-0-3**
Common usage and practice in law and preparation of contracts and specifications for housing, building construction and engineering services. Examples of actual contracts and specifications relative to A.I.A. and CSI formats.
Prerequisites: None. 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 **2-4-3**
A design course in which the principles of engineering mechanics are applied to reinforced concrete structures. Topics of instruction include the ultimate strength concept of design, and an introduction to indeterminate frame analysis.
Prerequisites: 7944, 7945. Lab fee charged.

7955 Soils Engineering Technology **2-3-3**
An introductory course in Soils and Foundation Engineering Technology. Topics of instruction include: soil index properties, classification, exploration, sampling, compaction, strength, slope stability and dewatering operations.
Prerequisites: 7934. Lab fee charged.

7957 Environmental Engineering Technology **3-1-3**
An introductory course in the methodology of addressing environmental pollution. Topics of instruction include the technological approach to abatement of pollution in: solid waste, hazardous waste, potable water treament, domestic wastewater treatment and industrial wastewater treatment.
Prerequisites: 7947. 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 and Basic Aerodynamics **3-2-3**
Learn to perform ground engine run-up and flight control movement check and taxi procedure. Learn aircraft physical laws and perform numerical computations. Lift, thrust and drag. Stability of aircraft.

Effects of balance.
Prerequisites: None. No lab fee charged.

8101 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: None. Lab fee charged.

8102 Machine and Hand Tools **1-4-3**
Identify and select aircraft hardware and materials. Fabricate and install rigid and flexible fluid lines and fitting.
Prerequisites: None. Lab fee charged.

8103 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 Regulations.
Prerequisites: None. No lab fee charged.

8110 Aircraft Fuels and Fuel Systems **1-4-2**
Inspect, check and repair pressure fueling, transfer, defueling, and fuel 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: 8102. No lab fee charged.

8120 Airframe Structure **5-5-5**
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: 8100. No lab fee charged.

8121 Airframe Hydraulic and Pneumatic Systems **1-4-2**
Repair hydraulic and pneumatic power system components. Inspect, check, service, troubleshoot and repair hydraulic and pneumatic power systems.
Prerequisites: 8102. No lab fee charged.

8122 Materials and Processes **2-3-3**
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.
Prerequisites: 8102. Lab fee charged.

8130 Airframe Systems, Hydraulic & Pneumatic Landing Gears **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: 8121. No lab fee charged.

8131 Airframe Structures, Sheet Metal **3-7-4**
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, high-shear rivets, cherry lock rivets.
Prerequisites: 8103. Corequisites: 7009. Lab fee charged.

8140 Aircraft Electrical Systems **5-5-5**
Repair aircraft electrical system components. Install, check and service airframe electrical wiring, controls, switches, indicators, and protective devices. Inspect, check, troubleshoot, service, and repair alternating current and direct current electrical systems. Service compound and shunt 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: 8131. No lab fee charged.

8141 Aircraft Instrument, Communication and 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 auto-pilot, 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: 8120. No lab fee charged.

8142 Flightline Maintenance I **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: 8110, 8121. No lab fee charged.

8150 Aircraft Electrical Generating Systems **3-2-3**
Direct current and alternating current generation. Study of theory of operation disassembly, overhaul and installation. Adjustment of regulators and troubleshooting the system.
Prerequisites: 8110, 8131. No lab fee charged.

8151 Airframe Assembly & Rigging **3-7-5**
Rig fixed-wing aircraft. Rig rotary-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: 8131. Lab fee charged.

8152 Flightline Maintenance II **2-3-3**
Identify and select cleaning materials, perform cleaning and corrosion control. Perform powerplant conformity and airworthiness inspection.
Prerequisites: 8142. No lab fee charged.

8160 Powerplant Theory, Reciprocating **5-5-5**
Introduction to the design, manufacture, overhaul and repair of piston and engines and their installation. Overhaul of an opposed engine. Inspect and repair a 14-cylinder or larger radial piston engine.
Prerequisites: 8122. Lab fee charged.

8161 Powerplant Lubrication **3-2-3**
Identify and select proper lubricants. Inspect, check, service, troubleshoot and repair powerplants lubrication systems.
Prerequisites: None. Corequisites: 8160. No lab fee charged.

8162 Propellers **3-2-3**
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. Install, troubleshoot, and repair engine exhaust systems.
Prerequisites: 8100, 8103. No lab fee charged.

8170 Powerplant Theory, Turbine **5-5-5**
Introduction to the design, manufacture, overhaul and repair of turbine engines and their installation. Inspect, check, service, trouble-shoot and repair turbine engine installation, fuel control and ignition systems.
Prerequisites: 8160. No lab fee charged.

8171 Fuel Metering Systems **3-2-3**
Inspect, check, service, troubleshoot and repair reciprocating fuel injection systems.
Prerequisites: None. 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. Lab fee charged.

8180 Turbine Powerplant Systems Components **6-4-6**
Introduction to the design, function, repair and servicing of turbine fuel controllers. Practice of installation of control units and trimming of turbine fuel control units. Practice of adjustment of idle speed, and use of charts to turbine air inlet and exhaust systems.
Prerequisites: 8170. No lab fee charged.

8181 Powerplant Carburetor Fuel System **6-4-6**
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. Repair engine cooling system components. Inspect, check, troubleshoot, service and repair engine cooling system.
Prerequisites: 8171. No lab fee charged.

8182 Airframe and Powerplant Comprehensive **3-2-3**
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

Maintenance Technician License.
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.

9201, 9202, 9203, 9204, 9205 Cooperative Employment
2-3 Credit Hours Each Term
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.

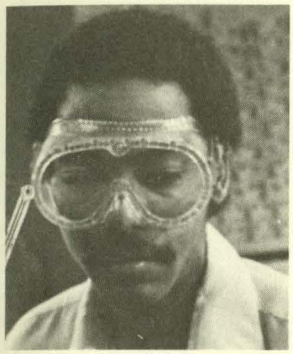
9301, 9302, 9303, 9304, 9305 Cooperative Employment
2-3 Credit Hours
Usually on an alternating term basis, the Health Technologies student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of 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.

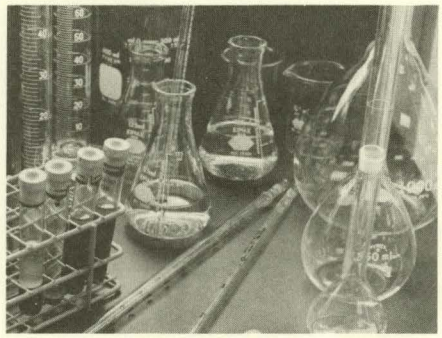
9311, 9312, 9313, 9314, 9315 Clinical Cooperative Education
2-3 Credit Hours
The Health Technologies student is placed in a clinical experience that relates to his or her program. This affords the student the opportunity to make practical application of the knowledge and skills acquired in the didactic phase of the program. With each succeeding clinical cooperative education term the student is able to assume more responsibility and perform higher level duties in the clinical experience because of what he or she has learned from the previous term(s) of experience and the added knowledge and skills acquired in each college term. In order to have credit toward programs, students, upon completion of the course, must successfully complete a proficiency examination or must document having met the course requirements related to each technology area. Participation in a clinical cooperative education 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.

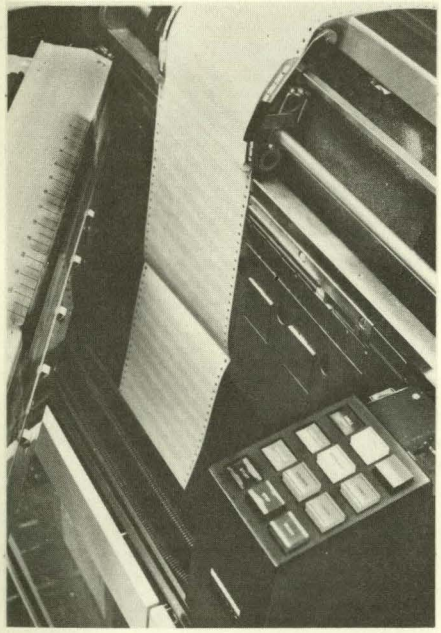
9401, 9402, 9403, 9404, 9405 Cooperative Employment
2-3 Credit Hours
Usually on an alternating term basis, the Engineering Technology student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application 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 Technologies Division co-op policies and procedures required to earn credit.
Prerequisites: None. No lab fee charged.

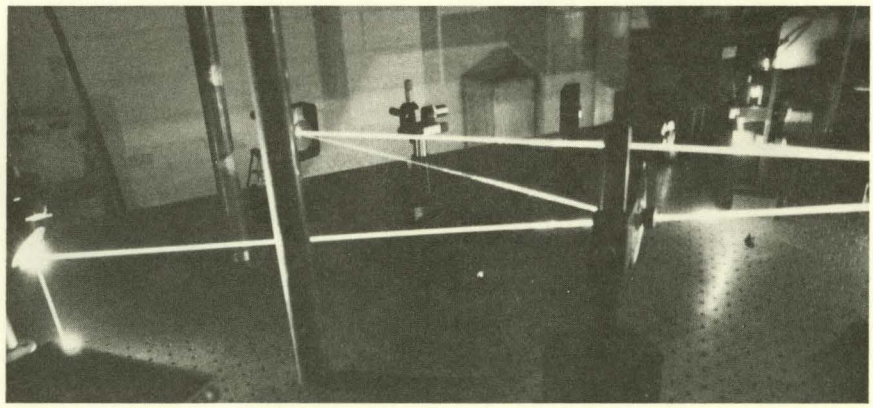
9501, 9502, 9503, 9504 Cooperative Employment
2-3 Credit Hours
Usually on an alternating term basis, the Ornamental Horticulture student is placed on a full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of the 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. 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.

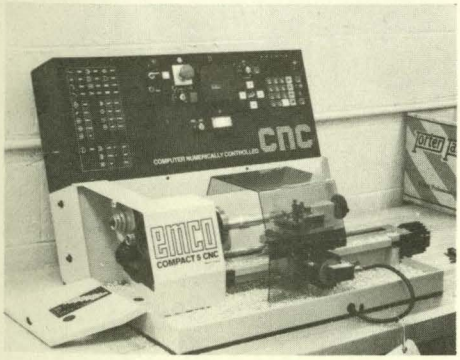
9601, 9602, 9603, 9604, 9605 Cooperative Education
2-3 Credit Hours
Usually on an alternating term basis, the Math/Science Technology student is placed on full-time (32-40 hour) job that ideally relates to his or her class work. This affords the student the opportunity to make practical application of 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 Math/Science Technologies Division co-op policies and procedures required to earn credit.
Prerequisites: None. No lab fee charged.











FACULTY & STAFF CATALOG/HANDBOOK 83-84

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William Booth Memorial Hospital
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M.A., Central Michigan University

Allgeier, Susan, ... Adjunct Clinical Instructor, Respiratory Therapy Program
Bethesda Hospital
A.A.S., Cincinnati Technical College

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Our Lady of Mercy Hospital
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Ballinger, David C., ... Vice President for Academic Affairs
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Barlag, Frank ..... Coordinator
Student Financial Aid
B.A., Christian Brothers College

Bartlow, Richard, ... Instructor, Physical Science/Mathematics Division
A.A.S., Ohio University
B.S., Ohio University
M.S., Xavier University

Baskind, Marc A., ... Instructional Assistant to the Dean
Communication Skills/ Social Sciences Division
B.A., Washington University
M.A., Indiana University

Batra, Prem N., ... Coordinator, Physical Science/ Mathematics Division
M.S., University of Cincinnati
Ph.D., University of Cincinnati

Battistone, Carmen ... Professor Emeritus, Communication Skills/Social Science Division
B.S., Kent State University
M.Ed., Xavier University

Berry, Johnnie Mae ..... Librarian Emeritus
B.A., Fisk University
B.S., Hampton Institute

Blocher, C.R.T., Sally .....Coordinator, Health Technologies Division
B.S., Ohio Northern University

Boggio, Johnnie F., ... Director of Development
B.A., University of Kentucky
M.Ed., University of Florida

Bonem, Stewart J., ... Instructor, Business Technologies Division
B.A., Miami University
M.B.A., Miami University

Bonner, Eleanor V., ... Director, Affirmative Action, Human Resources & Staff Development
B.S., Hampton Institute
M.A., Michigan State University

Bonner, Lois, ISCLT ..... Adjunct Clinical Instructor, Surgical Technology Program
Our Lady of Mercy Hospital
B.S., Trenton State College

Bove, Stephen M., ... Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College

Brown, J. Terry, ... Coordinator, Engineering Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Brown, Richard D., ... Instructor, Business Technologies Division
B.S., Franklin University
M.Ed., University of Cincinnati

Bruning, Lois, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program
St. Francis Hospital
R.N., Good Samaritan Hospital

Callahan, Paul R., ... Director, Extended Services & A.I.S.
B.S., University of Cincinnati
M.Ed., Xavier University

Campbell, Connie L., ... Coordinator, Business Technologies Division
B.S., Campbellsville College
M.Ed., University of Cincinnati

Candella, Vicki J., ... Director of Computer Systems, Programming & Operations
A.A.B., Cincinnati Technical College
B.S., Xavier University

Carroll, Michael T., ... Coordinator, Engineering Technologies Division
A.A.S., Cincinnati Technical College

Carter, Evelyn, R.N., RRA ..... Adjunct Clinical Instructor Medical Record Program
Jewish Hospital
R.N., St. Catharine's General Hospital
RRA, University of Pennsylvania

Cayse, Dan A., CPA ..... Program Director, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Clark, Rosemary V., R.R.A. ..... Coordinator, Health Technologies Division
B.A., Edgecliff College
M.A., Xavier University
RRA, St. Louis University

Coffe, Eileen I., R.N. ..... Coordinator, Health Technologies Division
B.S., University of Manitoba
R.D., University of Michigan

Combs, Deborah ..... Coordinator, Business Technologies Division
B.S., University of Cincinnati

Coomer, Glenn, R.R.T ..... Adjunct Clinical Instructor, Respiratory Therapy Program
Bethesda Hospital
A.S., University of Kentucky
B.S., University of Cincinnati

Coomes, Anne, RRA ..... Adjunct Clinical Instructor, Medical Record Program
St. Elizabeth Medical Center
B.S., Nazareth College

Corgan, Randall J., ... Director, Academic Affairs
Business Technologies Division
A.A.S., University of Cincinnati
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Craig, Barbara, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program
Providence Hospital
A.S.N., St. Clair County Community Hospital

Craigo, Robert W., ... Dean, Engineering Technologies Division
B.S., West Virginia Institute of Technology
M.S., University of Cincinnati

Dabe, Kimball, R.R.T ..... Adjunct Clinical Instructor, Respiratory Therapy Program
Children's Hospital Medical Center
A.A., Orlando Junior College
B.S., Florida Technological University

Dadey, Donald ..... Professor Emeritus, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Davidson, Ronald A., M.T. (ASCP) ..... Instructor, Health Technologies Division
B.S., University of Cincinnati

Davis, Grace A. ..... Instructor, Developmental Education
B.S., Miami University

Davis, Sharon ..... Counselor, Developmental Education
B.A., Kent State University
M.Ed., Kent State University

Denson, Jeannine ..... Coordinator, Health Technologies Division
R.N., Springfield Community Hospital

DeNu, Paul A., P.S. ..... Coordinator, Engineering Technologies Division
B.S.C.E., University of Cincinnati
M.S.C.E., Purdue University

Derickson, Jr., Joseph B., ... Coordinator, Business Technologies Division
B.B.A., Eastern Kentucky University

DeVol, Vincent J., ... Instructor, Engineering Technologies Division
Certificate, Parks College of St. Louis University
Air Frame and Powerplant Technician License

DiPilla, Reginangelo A., ... Coordinator, Engineering Technologies Division
B.S., Parks College of St. Louis University
M.S., Air Force Institute of Technology

Disher, Teresa, M.T. (ASCP) ... Adjunct Clinical Instructor, Medical Laboratory Program
Clermont County Hospital
B.S., Georgetown College

Dortin, David, Jr., D.O. ..... Adjunct Clinical Instructor, Respiratory Therapy Program
Jewish Hospital
B.A., Youngstown State University
D.O., Kansas City College of Osteopathic Medicine

Ehrlinger, Claire, ... Coordinator, Business Technologies Division
B.S., Michigan State University

Elder, Sr. M. Clarita, OP, ART .. Adjunct Clinical Instructor, Medical Record Program
St. George Hospital

Elmer, Robert V., ... Coordinator, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Eveslage, Robert W., R.R.T ..... Coordinator, Health Technologies Division
B.S., University of Cincinnati
M.S., Indiana University

Farrer, James A., ... Coordinator, Engineering Technologies Division
A.E., Southern Technical Institute
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Fehrenbach, Dorothy, ART .... Adjunct Clinical Instructor, Medical Record Program
Our Lady of Mercy Hospital

Ficorilli, Sharon, M.T. (ASCP) .. Adjunct Clinical Instructor, Medical Laboratory Program
Deaconess Hospital
B.S., University of Cincinnati
M.A., Central Michigan University

Flamm, Elmer C., ... Instructor, Communication Skills/ Social Sciences Division
A.B., Xavier University
M.Ed., Xavier University

Froehlich, Jerry A., ... Coordinator, Physical Science/ Mathematics Division
A.A.S., Ohio College of Applied Science
B.S., University of Cincinnati
M.Ed., Xavier University

Funk, Hal G., ... Division Coordinator, Facilities and Labs, Engineering Technologies Division
B.S., Ohio State University
M.Ed., University of Cincinnati

Galloway, Annie Ruth, ... Instructor, Business Technologies Division
B.S., Bowling Green State University
M.Ed., Bowling Green State University

Glaser, Frances, R.N. ..... Adjunct Clinical Instructor, Medical Record Program
Summit Nursing Home
R.N., Mercy School of Nursing
B.S., University of Cincinnati

Glenn, Terrence J., ... Director, Research & Planning/Executive Coordinator, Consortium Activities
Social Sciences Division
B.S., Xavier University
M.Ed., Xavier University

Graff, Gary A., ... Division Coordinator, Engineering Technologies Division
A.A.S., Ohio College of Applied Science
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Gratton, Alfred ..... Professor Emeritus, Business Technologies Division
B.S., Clarkson College
M.B.A., Xavier University

Green, Marcus M., ... Instructor, Communication Skills/ Social Sciences Division
B.S., University of Cincinnati

Heink, Harry R., ... Instructor, Communication Skills/ Social Sciences Division
A.B., Eastern Kentucky State College
M.Ed., Xavier University

Hendrix, Richard E., ... Coordinator, Business Technologies Division
B.S., Bowling Green State University
M.Ed., Xavier University

Hirsch, Edward A. ..... Instructor, Developmental Education
B.S., Salmon P. Chase College

Hoeweler, Janice L. ..... Instructor, Developmental Education
B.S., University of Illinois

Hollstegge, Linda S., ... Instructor, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.A., University of Cincinnati

Hoover, Tonda, R.R.T ..... Adjunct Clinical Instructor, Respiratory Therapy Program Jewish Hospital
B.S., University of Cincinnati

Hopper, Suzanne, R.D. ..... Adjunct Clinical Instructor, Dietetics Program Cincinnati Health Department
B.S., West Virginia University
R.D., University of Cincinnati Hospital

Horton, James H., ... Director, Learning Resource Center
B.S., Indiana State University
M.S., Indiana State University

House, Clifford R., ... President Emeritus
B.A., Fairmont State College
B.Ed., Xavier University

Hubbard, John H., P.E. ..... Coordinator, Engineering Technologies Division
B.S.C.E., Tufts University
M.S., University of Pittsburgh

Huffaker, Brian ..... Coordinator, Business Technologies Division
B.S., Ohio State University

Hunley, Marcha ..... Instructor, Communication Skills/ Social Sciences Division
M.A., University of Cincinnati

Hurley, John E., ... Director, Athletics & Student Activities
B.S., Bowling Green State University
M.S., Ohio University

Iacobucci, Frank A., ... Instructor, Physical Science/ Mathematics Division
B.S., United States Military Academy
M.Ed., Xavier University

James, Judd H., ... Coordinator, Engineering Technologies Division
B.S.M.E., University of Cincinnati

Johnson, James E., ... Instructor, Physical Science/ Mathematics Division
B.S., Florida Southern College
M.Ed., Rutgers University

Jonas, Charles E., ... Division Coordinator, Engineering Technologies Division
B.S., Ball State University
M.Ed., University of Cincinnati

Jones, Lois, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program Mercy Hospital-North
R.N., Mercy Hospital

Jones, Michael H., ... Instructor, Communication Skills/ Social Sciences Division
B.F.A., University of Cincinnati

Kaminski, Geraldine M., M.T. (ASCP) ..... Dean, Health Technologies Division
B.S., University of Dayton
M.T.S., Catholic University of America
D.A., Catholic University of America

Keefer, Joan, RRA ..... Adjunct Clinical Instructor, Medical Record Program Cincinnati General Hospital
B.A., Carlow College

Keenan, Joseph N., ... Coordinator, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Keller, Mary Lee ..... Instructor, Communication Skills/ Social Sciences Division
B.A., Edgecliff College

Kinsella, John ..... Coordinator, Business Technologies Division
Master Chef, London City & Guilds Institute
Royal Institute of Public Health & Hygiene

Kinzie, Paul W., ... Coordinator, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Klayer, Walter J., ... Coordinator, Engineering Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Knepp, Edward P., M.T. (ASCP) ..... Coordinator, Health Technologies Division
B.S., Ohio University

Knepp, Linda ..... Instructor, Developmental Education
B.S., Capitol University

Kobberdahl, C. E. ..... Instructor, Business Technologies Division
B.S., University of North Dakota
M.Ed., University of Cincinnati

Kober, Thomas E., ... Assistant Dean, Health Technologies Division
B.A., Earlham College
M.S., University of Cincinnati
Ph.D., University of Cincinnati

Krismer, Marianne, R.D. ..... Coordinator, Health Technologies Division
B.S., Edgecliff College
M.Ed., University of Cincinnati
R.D., University of Cincinnati General Hospital

Kuehm, David ..... Instructor, Business Technologies Division
B.A., Concordia Teachers College

Kuehn, Irvin C. ..... Professor Emeritus, Business Technologies Division
B.S., Eastern Kentucky University
M.A., Eastern Kentucky University

Lach, Jane, RRA ..... Adjunct Clinical Instructor, Medical Record Program St. Francis Hospital
B.A., Indiana University
B.S., Indiana University

Laemmle, Carolyn G., M.T. (ASCP) ..... Coordinator, Health Technologies Division
B.A., Edgecliff College
M.T. (ASCP), St. Mary's Memorial Hospital School of Medical Technology

Lalley, John ..... Instructor, Physical Science/ Mathematics Division
B.S., Thomas More College

LaVallee, Mary C., RRA ..... Coordinator, Health Technologies Division
B.A., Edgecliff College
RRA, Graduate Hospital, University of Pennsylvania

Layne, Ellen R. ..... Instructor, Developmental Education
B.A., University of Cincinnati
B.S., University of Cincinnati

Leicht, Albert G., ... Coordinator, Business Technologies Division
B.S., West Virginia Institute of Technology
M.S., South Dakota State University

Lewis, Janice ..... Financial Aid Counselor/ Systems Analyst, Financial Aid Office
A.A.B., Cincinnati Technical College

Lieberman, Hope P. ..... Instructor, Developmental Education
B.S., Wright State University
M.Ed., University of Cincinnati

Liette, Beth, RRA ..... Adjunct Clinical Instructor, Medical Record Program Cincinnati General Hospital
B.S., Indiana University

Lower, Joe R., ... Coordinator, Business Technologies Division
B.S., Ohio State University
M.A., Ohio State University

Macke, James ..... Coordinator, Business Technologies Division
B.S., Xavier University
B.A., Xavier University
M.B.A., Xavier University

Manser, Carol, R.D. ..... Adjunct Clinical Instructor, Dietetics Program St. Francis Hospital
B.S., Illinois State University
R.D., Good Samaritan Hospital

Marcotte, James E., ... Instructional Specialist, Developmental Education
A.A.S., Purdue University
B.S., Indiana State University
M.Ed., University of Cincinnati

McCarthy, Dale W., ... Director of Facilities
A.A.S., Cincinnati Technical College

McKawan, Deborah, M.T. (ASCP) ..... Adjunct Clinical Instructor, Medical Laboratory Program Clinton County Memorial Hospital
B.S., Ohio State University

Meador, Linda D., ... Counselor, Admissions Office
B.S., Tuskegee Institute
M.A., Tuskegee Institute

Mellinger, Daniel O., ... Instructor, Communication Skills/ Social Sciences Division
A.B., University of Tennessee
M.Ed., University of Cincinnati

Merlin, Naomi ..... Para-professional, Business Technologies Division
A.A.S., Lexington Technical Institute

Meyer, Don J., ... Instructor, Engineering Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Miller, Tom, ... Coordinator, Business Technologies Division
B.S., West Virginia Institute of Technology

Mindhardt, Katye L., ... Instructor, Business Technologies Division
A.A.B., University of Cincinnati
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Morgan, Bonnie, ART ..... Adjunct Clinical Instructor, Medical Record Program Ft. Hamilton-Hughes Memorial Hospital

Mullins, Billy D., ... Instructor, Engineering Technologies Division
B.S.E.E., University of Kentucky

Murray, Jr., Walter R., ... Assistant to the President, Institutional Development
B.A., Vanderbilt University
M.M., Vanderbilt University

Nakoff, Michael H., ... Coordinator, Business Technologies Division
B.S., University of Cincinnati

Nichey, Wilma Jean, ART ..... Adjunct Clinical Instructor, Medical Record Program Holmes Hospital
A.A.S., Cincinnati Technical College

Nolan, Timothy D., ... Instructor, Communication Skills/ Social Sciences Division
A.B., Xavier University

Norton, Jude, PA, CST ..... Instructor, Health Technologies Division
A.A.S., Cincinnati Technical College
B.A., Northern Kentucky University
M.S., University of Cincinnati

Ognenoff, Vasil D., ... Coordinator, Business Technologies Division
B.S., Indiana University

Owsley, Louis E., ... Instructor, Business Technologies Division
B.S., Xavier University
M.Ed., University of Cincinnati

Pape, Martha, RRA ..... Adjunct Clinical Instructor, Medical Record Program Children's Hospital Medical Center
A.A.S., Cincinnati Technical College
B.S., Eastern Kentucky University

Patrick, Gail, ART ..... Adjunct Clinical Instructor, Medical Record Program Providence Hospital
A.A., Eastern Kentucky University

Penman, Robert, M.D. ..... Adjunct Clinical Instructor, Respiratory Therapy Program Bethesda Hospital
M.D., Edinburgh University School of Medicine

Penn, Leonard R., ... Instructor, Business Technologies Division
B.A., University of Cincinnati
M.Ed., Xavier University

Phillips, Verale W., CDP ..... Coordinator, Business Technologies Division
A.A., University of Cincinnati
B.S., University of Cincinnati
M.B.A., Xavier University
Certificate, Data Processing, Institute for Certification of Computer Professionals
Certificate, Data Education, Certification Council

Pitman, Jr., Lloyd L. ..... Instructor, Business Technologies Division
B.S., University of Cincinnati
M.Ed., Xavier University

Pizzuto, Miriam ..... Coordinator, Educational Relations

Pucke, Lawrence E. .... Instructional Assistant to the Dean Physical Science/ Mathematics Division
B.S., Xavier University
M.Ed., Xavier University

Rasche, Ann I., ... Dean, Student Services
B.A., College of Mount St. Joseph
B.Ed., University of Cincinnati
M.Ed., University of Cincinnati

Resnick, Kathleen, ... Instructional Specialist, Developmental Education
B.S., Thomas More College
M.Ed., University of Cincinnati

Rhein, William G., ... Coordinator, Engineering Technologies Division
B.S.I.M., University of Cincinnati
M.B.A., University of Cincinnati

Richter, Laura, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program Christ Hospital
R.N., Indiana University

Richter, Marge, ART ..... Adjunct Clinical Instructor, Medical Record Program Mercy Hospital
A.A.S., Cincinnati Technical College

Rinck, H. Anthony, ... Coordinator, Engineering Technologies Division
B.S., Xavier University
M.Ed., Xavier University

Roebke, Mary, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program Good Samaritan Hospital
R.N., Good Samaritan Hospital

Rupp, Rodney, ... Instructor, Physical Science/ Mathematics Division
B.S., University of Cincinnati
B.Ed., University of Cincinnati

Rush-Ossenbeck, Tim, ... Coordinator, Engineering Technologies Division
B.S., University of Cincinnati

Sabins, Diane, RRA ..... Adjunct Clinical Instructor, Medical Record Program Providence Hospital
B.S., Ohio State University

Sanborn, Cyra D. ..... Instructor, Developmental Education
B.A., Wellesley College
M.Ed., Xavier University

Sanders, Ralph W., ... Instructor, Engineering Technologies Division

Schaller, Roger N., ... Coordinator, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S., State University of Wisconsin

Schlimm, Frederick B., ... President
B.S., Xavier University
M.Ed., Xavier University

Schmidt, Robert, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program Brown County General Hospital
R.N., Jewish Hospital

Schlueter, Ralph C., ... Coordinator, Physical Science/ Mathematics Division
B.S., Xavier University
M.Ed., Xavier University

Schmidt, Jean ..... Instructor, Developmental Education
A.B., University of Kentucky
M.Ed., Xavier University

Sefton, J. Richard, ... Instructor, Business Technologies Division
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Shaw, Kimberly, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program Deaconess Hospital
R.N., Deaconess Hospital
B.S., University of Cincinnati

Smith, Sarah, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program Ft. Hamilton-Hughes Memorial Hospital
R.N., St. Vincents Hospital

Smith, Swanya d'Andre, ... Instructor, Business Technologies Division

Speckert, Robert E., ... Coordinator, Engineering Technologies Division
A.A.S., Cincinnati Technical College
B.S., Miami University

Spraley, Judith, M., R.N. ..... Coordinator, Health Technologies Division
B.S.N., Mount St. Joseph College

Stark, Thomas J., ... Dean, Physical Science/ Mathematics Division
B.S., Xavier University
M.Ed., Xavier University

Steidley, V. Kenneth, ... Coordinator, Engineering Technologies Division
B.S., Northeast Missouri State University

Stewart, Briggetta E., ... Coordinator, Business Technologies Division
A.A.B., Cincinnati Technical College
Certified Protection Personnel, American Society for Industrial Security

Stewart, Sheryl ..... Coordinator, Business Technologies Division
B.A., Thomas More College

Stoll, Kenneth V., ... Division Coordinator, Engineering Technologies Division
B.S., Miami University
M.Ed., University of Cincinnati

Stoutenborough, Frances, R.N. ..... Adjunct Clinical Instructor, Surgical Technology Program Mercy Hospital-South
R.N., Good Samaritan Hospital

Sulek, Carl E., ... Professor Emeritus, Business Technologies Division
B.S., Ohio University
M.Ed., University of Cincinnati

Sullivan, Elizabeth ..... Coordinator, Business Technologies Division
B.S., Miami University

Thinnes, Priscella, RRA ..... Adjunct Clinical Instructor, Medical Record Program St. George Hospital
B.S., Indiana University

Throckmorton, Carol ..... Counselor, Admissions Office
B.A., University of Richmond
M.Ed., University of Hawaii

Tulloss, William S., ... Instructor, Physical Science/ Mathematics Division
B.E.E., Ohio State University
M.S.E.E., Ohio State University
M.S., Xavier University

Twitty, James, M.T. (ASCP) ..... Adjunct Clinical Instructor, Medical Laboratory Program Dearborn County Hospital

Uhl, Robert, M.T. (ASCP) ..... Adjunct Clinical Instructor Medical Laboratory Program St. Francis Hospital
B.S., Thomas More College
M.Ed., Xavier University

Vaughn, A. Wayne, ... Vice President, Finance & Business Affairs
B.S., Miami University
B.A., Miami University

von Kampen, Karl N., ... Coordinator, Business Technologies Division
B.S., Bradley University
M.S., Bradley University

Wagner, John P., ... Director, Counseling Services
B.S., University of Cincinnati
M.Ed., University of Cincinnati

Walters, Nancy L., M.T. (ASCP), CMA ..... Coordinator, Health Technologies Division
A.B., Lindenwood College

Walton, Gary, ... Director, Publishing Operations
A.A.B., Cincinnati Technical College
B.S., University of Cincinnati

Warman, Charles E., ... Senior Vice President Emeritus
B.Ed., University of Cincinnati
M.Ed., Xavier University

Watts, Olivia, R.N. ..... Coordinator, Health Technologies Division
B.S.N., University of Cincinnati

Webster, Gary M., ... Coordinator, Engineering Technologies Division
B.S.E.E., Ohio State University

Wieland, Eugene T., ... Administrator
B.B.A., University of Cincinnati
M.B.A., Indiana University

Wiesner, Catherine R., .. Instructor, Communication Skills/ Social Sciences Division
A.B., Miami University
M.A., Miami University

Wilkins, Lois, R.D. ..... Adjunct Clinical Instructor, Dietetics Technology Cincinnati Health Department
B.S., University of Cincinnati
R.D., Veterans Administration Center, Los Angeles

Winkle, LaVerne, ... Instructor, Engineering Technologies Division
E.E., University of Cincinnati

Wolf, Ann, R.D. ..... Adjunct Clinical Instructor, Dietetics Program Nutrition Consultant
R.D., Michael Ries Hospital

Wyatt, Walter W., ... Director, Cooperative Education Business Technologies Division
B.S., Ohio State University

Yoshikawa, Catherine, M.T. (ASCP) ..... Adjunct Clinical Instructor, Medical Laboratory Program Daniel Drake Memorial Hospital
B.S., University of Cincinnati

Zawadzki, Joan, R.N. ..... Adjunct Clinical Instructor, Respiratory Therapy Program Nightingale Medical Services
R.N., Mt. Sinai School of Nursing

Ziegel, Kim T., ... Instructor, Communication Skills/ Social Sciences Division
B.A., Columbia University
M.A., Indiana University
M.Ph., Yale University

Ziegler, Immanuel ..... Professor Emeritus Physical Science/Mathematics Division

Ziegler, Lawrence J., ... Instructor, Communication Skills/ Social Sciences Division
B.A., Mount St. Mary Seminary
B.S., Mount St. Mary Seminary
M.Ed., Xavier University

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Buford Payne ..... Payne-Van Hart & Associates
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William Viox ..... Viox & Viox
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Data Management & Data Processing Technologies
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Gustave Neuss III ..... Gustave Neuss Associates
Bob Powell ..... Levi's Accessories, Inc.
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Bruce Ullrey ..... Von Lehman, Kist & Co.
Lois VanWinkle ..... Ft. Hamilton Hughs Hospital
James Windsor ..... Automatic Data Processing

Dietetics Technology

Jean Crocker-Lakness, R.D. ... Children's Hospital Medical Center
Jane Gillis, R.D. ..... Christ Hospital
Dr. Anita Howe, R.D., Ed. D. ..... Cincinnati Health Department
Carol Manser ..... St. Francis/St. George Hospital
Jude Norton, P.A. ..... Cincinnati Technical College
Mary Helen Palmer, R.D. ..... University of Cincinnati
Mary Ann Panzeca, D.T. ..... Three Rivers Convalescent Center
Joe Piepmeyer, R.D. ..... St. Elizabeth Medical Center
Robin Scott, D.T. ..... Children's Hospital Medical Center
Ann Wolf, R.D. ..... Consultant Dietitian

Electro-Mechanical Engineering Technology

John Dooley ..... General Electric Co.
Alex Fodor ..... Kettering Labs
Troy Fultz ..... Cincinnati Milacron
Greg Goetz ..... Cincinnati Milacron
James T. Mettey ..... Cincinnati Electronics
Kevin O. Miller ..... Storage Technology Corp.
William Stross ..... Metcut Research
Tom Tenkman ..... American Laundry
William R. Zimmerman ..... Siemens-Allis, Inc.

Electronics Engineering Technology

Dan Beddard ..... Cinox
Joseph Cassagrande ..... General Electric Co.
Max Cohn ..... KDI Precision
Vern Dahl ..... Cincinnati Electrosystems
Tom Roykamper ..... Hunkar Labs
Steven Shaffer ..... Reams Controls
Dale Timmester ..... Cincinnati Gas & Electric Co.
Dan Wright ..... Cincinnati Word Processing

Floriculture Technology

William Broxterman ..... Broxterman Greenhouse
Beth Durban ..... Adrians Flower Shop
Roger Feist ..... West Hills Greenhouse
Rob Hagee ..... Fred J. Murphy Wholesale Florists
Jack Herb ..... Jack Herb Florist
Sherry Mathis ..... Down to Earth Plantscaping
Jane Revkin ..... Petal Pushers
John Tolos ..... Krueger-Maddux Greenhouses
Jack Wormold ..... Hills Floral Company

Graphic Communications Technology

Ron Detmer ..... Printing Industries Assoc. of Ohio
Ed Kobman ..... Retired
Wray Peal ..... Cloudsley Co.
Paul Riedel ..... Western-Southern Life Insurance Co.
Ron Schlensker ..... Quality Typesetting Co.
James Wermes ..... Gibson Greeting Card, Inc.
Robert Zschau ..... S. Rosenthal Co.

Hotel-Restaurant Management Technology

Jenny Bayliss ..... Stouffers Towers
Bill Carr ..... Ramada Hotel
Bob Dunbar ..... Harley Hotel
Earl Hatt ..... Quality Hotel
Tim Lacey ..... ARA Services
Suzanne Macke ..... The Resort Inn
Wade Michaels ..... Howard Johnson Hotel
Paul Olding ..... Holiday Inn

Industrial Laboratory Technology

Robert Aylesworth ..... Retired
Richelle Becker ..... Drackett Company
Bruce Beimesch ..... Emery Industries, Inc.
William H. Boyd ..... Procter & Gamble
Justine Clark ..... Formica Corporation
Eric Decker ..... Emery Industries, Inc.
Patricia Griffiths ..... Zonic Corporation
Lawrence J. Kamphake ..... U.S. EPA

Laser/Optics Technology

Brown Cooper ..... General Electric Company
John Downey ..... Laser Plane, Inc.
Al Geiser ..... Cincinnati Electronics
Dr. James Hardy ..... NCR
Mike Heglin ..... LMH Technologies
Dr. Robert Hengehold ..... Wright Patterson AFB
Dr. John Lang ..... Procter & Gamble
Gene Moss ..... NIOSH
Norman Neal ..... Cincinnati Milacron
Dr. Gary Neiheisel ..... Armco Steel Corporation
Robert A. Olson ..... Systems Research Labs
Jim Rockwell ..... Rockwell Associates, Inc.

Loss Control Technology

Jack Bywater ..... Hamilton County Courthouse
Stanley M. Carle ..... John Shillito Company
Jack Collins ..... Hamilton County Courthouse
Ronald Cottrell ..... Fifth Third Bank
Ronald Heineman ..... Frisch's
Donald Huesman ..... Cincinnati Milacron
William Mantz ..... Armco Steel Corporation
Elmer J. Reis ..... U.S. Shoe Corporation
Frank H. Rhodes ..... Swallens, Inc.
Henry Sandman ..... University of Cincinnati
Cpt. Ed Schneuer ..... Cincinnati Fire Department
Bruce Snyder ..... Good Samaritan Hospital
James Stauder ..... Armco Steel Corporation
Michael Theisen ..... Children's Hospital Medical Center
Larry Wilson ..... Emery Industries
Daniel Wolfangel ..... Hamilton County Court House
Larry Zakem ..... Electronic Eye

Mechanical Design Engineering Technology

Jim Balcom ..... Hauck Design Company
Vince Bidlingmeyer ..... Young & Bertke Company
John Fink ..... R.A. Jones Company
Greg Hauck ..... Hauck Design Company
Werner Jessen ..... Alexander & Associates
Carl Koors ..... Cincinnati Inc.
Bob Sears ..... LeBlond-Makino Machine Tool Co.
Carl Steele ..... Xomox Corp.

Medical Assisting Technology

Paulette Cunningham, M.A. ..... Charles Dillard, M.D.
Janice Delamar ..... Group Health Associates
Richard Jubelirer, M.D. ..... Private Practice
Tina Kyrios, M.A. ..... Mayfield Neurological Institute
Lee Moeller, R.N. ..... Group Health Associates
Donna Percy, M.A. ..... Group Health Associates
Becky Petersen, M.A. .....
Alan Schulman ..... Attorney
Newell Skinner, M.A. ..... Alvin Darden, M.D.
Sheila Stuckey, M.A. ..... Mayfield Neurological Institute
Pamela Toepfer, M.A. ..... Group Health Associates
Cynthia Wright, M.A. ..... Group Health Associates

Medical Laboratory Technology

Genevieve Alexander ..... Booth Memorial Hospital
Lois Bonner ..... Shriners Burns Institute
L. Elaine Bouldin ..... Veterans Administration Hospital
Bradley Copeland, M.D. ..... Veterans Administration Hospital
Werner Donath, M.D. ..... St. Francis/St. George Hospital
Paul Laemmle ..... Jewish Hospital
Harriet Saunders ..... Deaconess Hospital
Susan Tuerck ..... Bethesda North Hospital
James Twitty ..... Dearborn County Hospital
Robert Uhl ..... St. Francis/St. George Hospital
Cathy Yoshikawa ..... Drake Memorial Hospital

Medical Record Technology

Brian Besenfelder, ART ..... Emerson North Hospital
Beverly Edmonds ..... CTC Student
Martha Fowler, RRA ..... University Hospital
Lela McFerrin, RRA ..... Children's Hospital Medical Center
Gloria McGee, ART ..... Glen Manor Nursing Home
Melinda Nickelson, RRA ..... The Jewish Hospital
Gail Patrick, ART ..... Providence Hospital

Office Specialist Technologies

Richard Adams ..... South-Western Publishing Company
Beverly Burke-Gray ..... Procter & Gamble
William Knapp ..... DeCenso & Knapp, Attorneys
Julia Pitts ..... Procter & Gamble
John Roth ..... City of Cincinnati
Edith Schnelle ..... Ohio Knife Company
Juanita P. Simmons ..... Procter & Gamble
Linda U. Vermillion ..... The Kroger Company

Ornamental Horticulture Technology

Dick Allison ..... Allison Landscaping
Bob Bartel ..... Greater Cincinnati Airport
Robert Davis ..... Hamilton County Extension Service
Julie Durban ..... Landscape Designer
Joe Motz ..... Motz Maintenance
Joseph T. Obermeyer ..... Natorp's
Steve Sandfort, R.F. ..... City of Cincinnati
Thomas Smith ..... Spring Grove Cemetery
Earl Wilson ..... Thornton-Wilson, Inc.

Real Estate & Property Management Technologies

Ben Allen ..... Ben Allen Realtors
C. Barry Barnhorn ..... Barnhorn Realtors
Frank Bedell ..... West Shell Realtors
Edward T. Hamann ..... Hamann, Herking & Associates, Inc.
D. Michael Holbrook ..... Fletcher Mortgage Co.
Ed McBride ..... McBride & Assoc.
David McDonald ..... Comey & Shepherd Realtors
Ann Franks Thompson ..... Robers Gold Key Realtors
John Toelke ..... West Shell Realtors
Eunice Younkers ..... Henry A. Leist, Realtor

Respiratory Therapy Technology

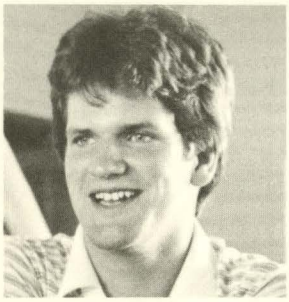
Susan Allgier, RRT ..... Children's Hospital Medical Center
Richard Beiting, CRTT ..... Bethesda North Hospital
David Dortin, Jr., M.D. ..... The Jewish Hospital
Dennis Eisenhut, RRT ..... Bethesda Hospital
Peter Enyeart, M.D. ..... Bethesda Hospital
Alan Fry ..... Greater Cincinnati Hospital Council
Tonda Hoover, RRT ..... The Jewish Hospital
Michael Moore, RRT ..... University Hospital
Michael Mullarkey, RRT ..... Deaconess Hospital
Steven Schreck, RRT ..... Christ Hospital
Charlotte Schreckenhofer, CRTT ..... Shriner's Hospital
Tom Slay, RRT ..... Providence Hospital
Edward Tinney, CRTT ..... Mercy South Hospital
Joseph Zawadzki, RRT ..... Good Samaritan Hospital

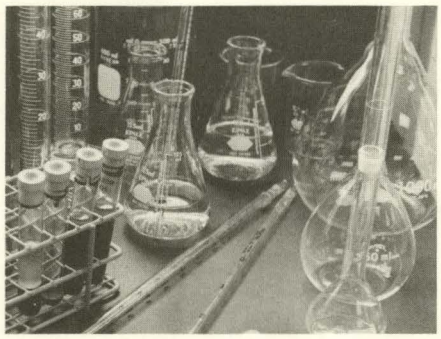
Sales Marketing & Industrial Sales Marketing Technologies

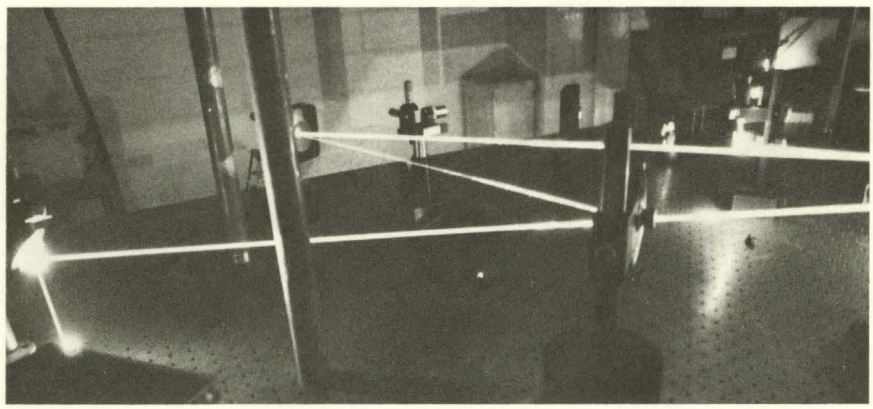
Joe Bauer ..... Swallens, Inc.
Ralph Estes ..... Sales Marketing Executives Assn.
Bob Flannery ..... Formica Corp.
Bob Johnson ..... Kinney Shoes
Herbert P. Schaffer, Sr. ..... M & I Associates, Inc.
Ken Sheppard ..... Retired
Ruth Van Gorden ..... Merten Company
Richard A. Wanamaker, CBC ..... The Wm. Powell Co.
Steve Wolf ..... Suburban Kitchens

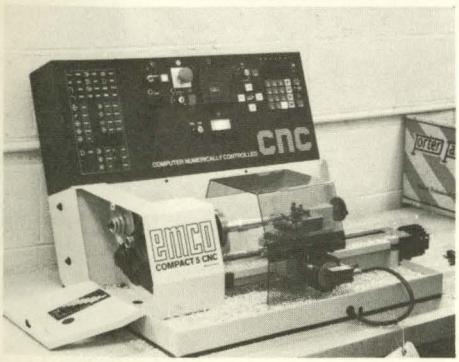
Surgical Technology

Linda Bohman, CST ..... Bethesda Hospital
Robert Bower, M.D. ..... University Hospital
Lois Bruning, R.N. ..... Providence Hospital
Jeannine Denson, R.N. ..... Cincinnati Technical College
Nancy Fox, R.N. ..... Our Lady of Mercy Hospital
Peggy McGarr, R.N. ..... St. Elizabeth Medical Center
Sue Pierce, R.N. ..... University Hospital
Kenneth Wilkens, CST ..... Providence Hospital
Lawrence Ziegler ..... Cincinnati Technical College









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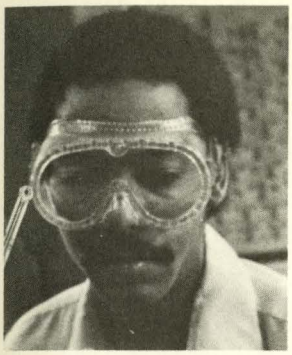

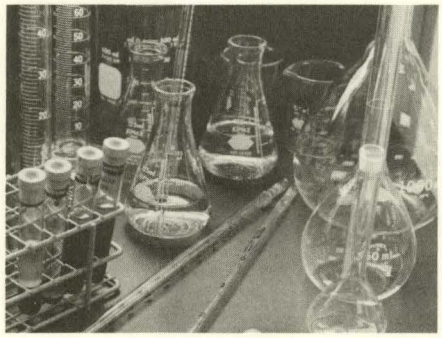

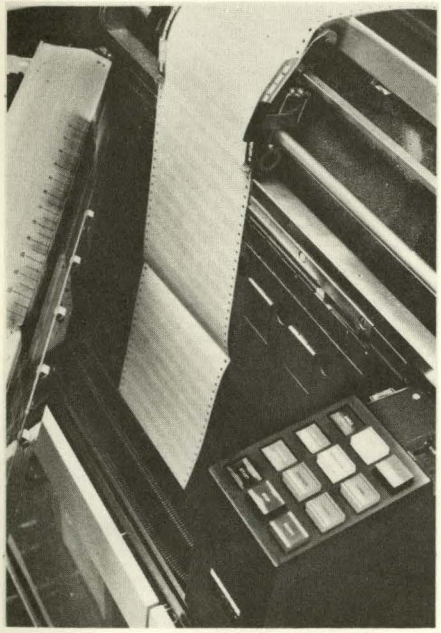

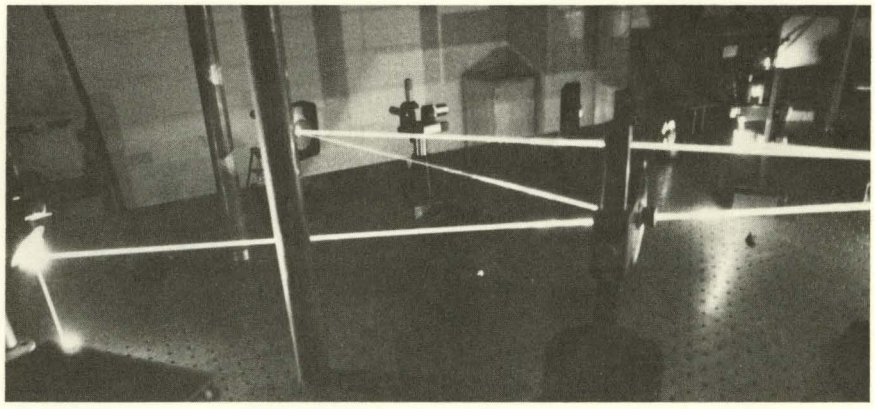

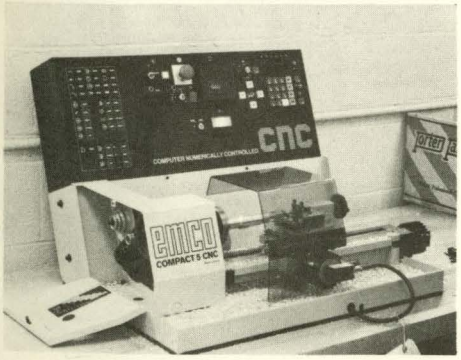

CALENDAR
CATALOG/HANDBOOK 83-84

CALENDAR
CATALOG/HANDBOOK 83-84

SEPTEMBER, 1983

AUGUST 16 — PRE-REGISTRATION, BUSINESS TECHNOLOGIES DIVISION
AUGUST 17 — PRE-REGISTRATION, HEALTH TECHNOLOGIES DIVISION
AUGUST 18 — PRE-REGISTRATION, ENGINEERING TECHNOLOGIES & PHYSICAL SCIENCE/MATHEMATICS DIVISIONS

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	August 29	30 Registration 8:30 a.m. - 8:30 p.m.	31 June Term Ends	1 No Classes/Offices Open	2 June Term Grades Due - 4:00 p.m.	3
4	5 Labor Day/College Closed	6 No Classes/Offices Open Last day to withdraw with 100% refund — Sept. term	7 September Term classes begin Registration: 8:30 a.m. - 8:30 p.m. Senior Citizens Registration June term grade reports mailed	8 Rosh Hashanah Late fee assessed for registration	9	10
11	12	13 Last day to register for September term or add courses except co-op and extensions Last day to withdraw with 80% refund — September term November term pre-registration begins (ends October 7) Petition deadline/ November Term grads.	14	15	16	17 Admissions Test Yom Kippur
18	19	20 Last day to register for co-op FTE reporting date Career Information Sessions (9:00 a.m. & 7:00 p.m.) Business	21 Engineering Math/Sciences	22 Pre-Business Workshop Health	23	24
25 Commencement	26	27 Board of Trustees Meeting	28	29	30	

OCTOBER, 1983

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3	4	5	6	7 November term pre-registration ends	8 Admissions Test
9	10	11 Last day to change "I" grades from June term	12 Columbus Day Bills for November term mailed	13	14 Co-op Information sheets due — September term	15
16	17	18 Career Information Sessions (9:00 a.m. & 7:00 p.m.) Health	19 Engineering Math/Science	20 Business	21	22
23 30	24 31 Halloween	25 Last day to withdraw with a "W" Board of Trustees Meeting	26	27	28 Distribution grade report lists — September term	29

NOVEMBER, 1983

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	**2** Bills for November term due No pays — voided pre-registration	**3**	**4**	**5**
6	**7**	**8** Election Day Registration 8:30 a.m. — 8:30 p.m.	**9** September term ends "IP" Course From Preceding Term Ends	**10** No Classes/Offices Open Last day to withdraw with 100% refund — November term	**11** College Closed Veterans Day	**12**
13	**14** November Term Classes begin Registration 8:30 a.m. — 8:30 p.m. Senior Citizens Registration September term grades due 4:00 p.m.	**15** Late fee assessed for registration	**16**	**17** Queen City Classic Basketball Tournament (At CTC) Pre-Business Workshop September Term grade reports mailed	**18** Last day to register for November term or add courses except co-op Last day to withdraw with 80% refund — November term January term pre-registration begins (ends December 16) Petition deadline/ January Term grads.	**19** Admissions Test
20	**21**	**22** Board of Trustees Meeting	**23** CTC vs. Miami U.— Hamilton (away 7:30)	**24** Thanksgiving College Closed	**25** College Closed	**26**
27	**28** Thomas More J.V. vs. CTC (home 7:30)	**29** Last day to register for co-op	**30**			

DECEMBER, 1983

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 Hanuka	**2** Delta vs. CTC (home 7:30)	**3** CTC vs. Owens Tech. (away 2:00)
4	**5**	**6** Sinclair vs. CTC (home 7:30)	**7**	**8**	**9** Brevard Christmas Tourney (away)	**10** Admission Test
11	**12**	**13** Career Information Sessions (9:00 a.m.) Business	**14** Engineering Math/Science	**15** CTC vs. Clark Tech (away 7:30) Health (also 7:00 p.m.)	**16** January term pre-registration ends	**17** CTC vs. Thomas More J.V. (away 5:30)
18	**19**	**20** Last day to change "I" grades from September term	**21** Bills for January term mailed CTC vs. Shawnee St. (away 7:30)	**22**	**23** Co-op Information sheets due — November term	**24**
25 Christmas Day	**26** College Closed	**27** Offices Open	**28** Offices Open	**29** Offices Open	**30** Offices Open	**31**

Winter Recess

JANUARY, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 New Year's Day	**2** College Closed	**3** Classes Resume	**4**	**5** Last day to withdraw with a "W" Distribution grade report lists November term	**6** CTC vs. Lakeland (away 8:00)	**7** CTC vs. CCC-Metro (away 3:00)
8	**9**	**10** CTC vs. Vincennes (away 7:30) Career Information Sessions (9:00 a.m. & 7:00 p.m.) Health	**11** Bills for January term due no pays — voided pre-registration Engineering Math/Science	**12** Business	**13** Ohio Valley vs. CTC (home 1:00)	**14**
15 Martin Luther King's Birthday	**16** Registration 8:30 a.m. — 8:30 p.m.	**17**	**18** Shawnee St. vs. CTC (home 7:30)	**19**	**20** "IP" courses from preceding term ends November term ends Last day to withdraw with 100% refund — January term	**21** CCC-Metro vs. CTC (home 7:30)
22	**23** College Closed Martin Luther King Day observed	**24** January Term begins Registration 8:30 a.m. — 8:30 p.m. Senior Citizens Registration Board of Trustees Meeting CTC vs. Edison St. (away TBA)	**25** Late fee assessed for registration November term grades due — 4:00 p.m.	**26**	**27** November term grade reports mailed	**28** Lakeland vs. CTC (home 7:30)
29	**30** Last day to register for January term or add courses except co-op April term pre-registration begins (ends February 24) Last day to withdraw with 80% refund — January term Petition deadline/ April Term grads.	**31** Northwestern vs. CTC (home 7:30)				

FEBRUARY, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	**2**	**3** CTC vs. Sinclair (away 7:00)	**4** Admissions Test
5	**6** Last day to register for co-op Vincennes vs. CTC (home 7:30)	**7**	**8**	**9** CTC vs. Northwestern (away 7:30)	**10**	**11** Owens Tech vs. CTC (home 2:00)
12	**13**	**14** Valentines Day	**15** Miami U.-Hamilton vs. CTC (home 7:30)	**16**	**17**	**18** CTC vs. Ohio Valley (away 2:00)
19	**20** Presidents Day College Closed	**21** Career Information Sessions (9:00 a.m.) Business Engineering Math/Science Health (also 7:00 p.m.)	**22**	**23** OJCAC Tourney (TBA)	**24** April term pre-registration ends	**25** Admissions Test
26	**27** Last day to change "I" grades from November term	**28** Board of Trustees Meeting	**29** Bills for April term mailed			

MARCH, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2 Co-op Information sheets due — January term	3
4	5	6	7	8	9	10 Admissions Test
11	12	13 Last day to withdraw with a "W"	14	15 Priority Deadline for financial aid reapplication	16 Distribution grade report lists January term Last day to apply for '83-'84 Pell Grant	17 St. Patrick's Day
18	19	20 Career Information Sessions (9:00 a.m.) Health (also 7:00 p.m.)	21 Bills for April term due No pays — voided pre-registration Engineering Math/Science	22 Business	23	24
25	26 Registration 8:30 a.m. — 8:30 p.m.	27 Board of Trustees Meeting	28 "IP" course from preceding term ends January term ends	29 No Classes/Offices Open	30 No Classes/Offices Open January term grades due — 4:00 p.m. Last day to withdraw with 100% refund — April term	31

APRIL, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	**2** April term classes begin Registration: 8:30 a.m. — 8:30 p.m. Senior Citizens Registration January term grade reports mailed	**3** Late fee assessed for registration	**4**	**5**	**6** Last day to withdraw with 80% refund — April term Last day to register for April term or add courses except co-op June term pre-registration begins (ends May 4) Petition deadline/ June Term grads.	**7**
8	**9**	**10**	**11**	**12**	**13** Last day to register for co-op	**14** Admissions Test
15	**16**	**17** Passover begins	**18**	**19**	**20** Good Friday College Closed	**21**
22 Easter	**23**	**24** Business Board of Trustees Meeting	**25** Engineering Math/Science	**26** Health	**27**	**28**
29	**30**					

Career Information Session (9:00 a.m. & 7:00 p.m.)

MAY, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	**2**	**3**	**4** June term pre-registration ends	**5** Admissions Test
6	**7** Last day to change "I" grades from January term	**8**	**9** Bills for June term mailed	**10**	**11** Co-op Information sheets due — April term	**12**
13	**14**	**15**	**16**	**17**	**18**	**19** Admissions Test
20	**21**	**22** Last day to withdraw with a "W" Health (also 7:00 p.m.) Board of Trustees Meeting	**23** Career Information Sessions (9:00 a.m.) Engineering Math/Science	**24** Business	**25** Distribution grade report lists April term	**26**
27	**28** Memorial Day observed College Closed	**29**	**30** Bills for June term due No pays — voided pre-registration	**31**		

JUNE, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4	5	6 "IP" courses from preceding term end April term ends	7 No Classes/Offices Open	8 Admissions Test April term grades due — 4:00 p.m.	9
10	11	12	13	14	15	16
17	18	19	20	21	22 Admissions Test	23
24	25	26 Board of Trustees Meeting	27	28	29	30

JULY, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4 Independence Day	5	6 Admissions Test	7
8	9	10	11	12	13	14
15	16	17	18 Career Information Session All Technologies (9:00 a.m.)	19	20 Admissions Test	21
22	23	24	25	26	27	28
29	30	31				

AUGUST, 1984

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3 Admissions Test	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28 Board of Trustees Meeting	29	30	31	

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CINCINNATI TECHNICAL COLLEGE
3520 Central Parkway
Cincinnati, OH 45223
(513) 559-1520
Admissions Office 559-1537

**SPECIAL
4th
CLASS
RATE**