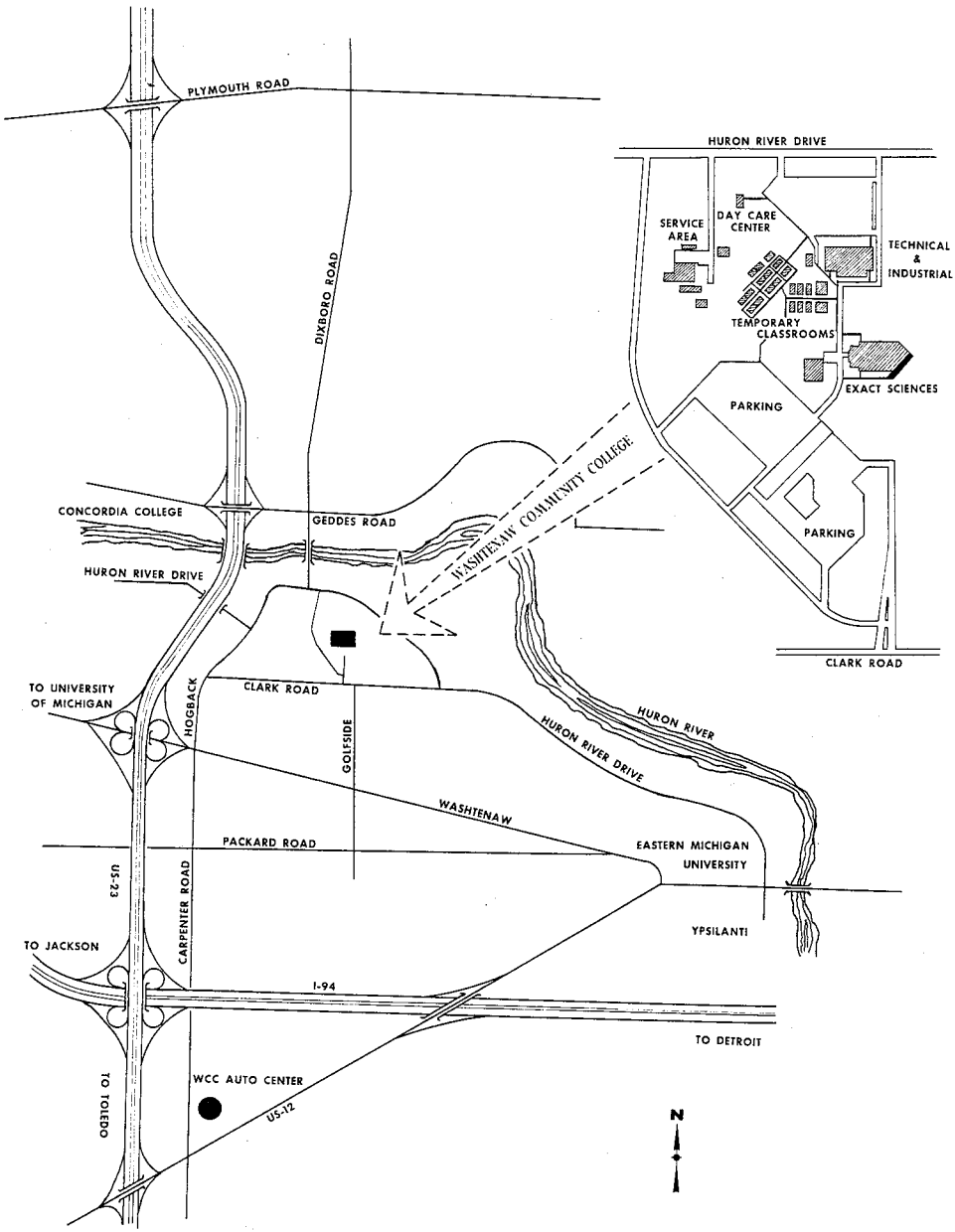
WASHTENAW COMMUNITY COLLEGE BULLETIN

CATALOG 1972-73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HURON RIVER DRIVE
SERVICE AREA
DAY CARE CENTER
TECHNICAL & INDUSTRIAL
TEMPORARY CLASSROOMS
EXACT SCIENCES
PARKING
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CLARK ROAD

WASHTENAW COMMUNITY COLLEGE

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CATALOG NUMBER SIX
PUBLISHED FEBRUARY 1972
Effective 9-1-72

Approved by the
STATE DEPARTMENT OF EDUCATION
STATE OF MICHIGAN

A Recognized Candidate for Accreditation,
NORTH CENTRAL ASSOCIATION OF
COLLEGES AND SECONDARY SCHOOLS

An Institutional Member of
AMERICAN ASSOCIATION OF JUNIOR COLLEGES

A Member of
COUNCIL OF NORTH CENTRAL JUNIOR COLLEGES

A Member of
MICHIGAN ASSOCIATION OF COMMUNITY COLLEGES

Volume 2 April, 1972 Issue 1

The Washtenaw Community College Bulletin is issued four times a year in February, April, May, and November by Washtenaw Community College, Post Office Drawer WCC, Ann Arbor, Michigan 48106. Application to mail at second-class postage rates is pending at Ann Arbor, Michigan. Form 3579 to be sent to Washtenaw Community College, Post Office Drawer WCC, Ann Arbor, Michigan 48106.

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BOARD OF TRUSTEES

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HISTORY OF THE COLLEGE

On January 15, 1965, the voters of the county gave overwhelming approval to the establishment of a publicly-supported, county-wide community college. By their vote, the citizens of the county indicated a real desire to support a comprehensive institution which would offer a variety of technical, industrial, and semiprofessional courses as well as a fully developed college transfer and general education curricula.

The first year of the college operation witnessed the translation of many ideas of citizens into positive action. In September, 1966, the College enrolled over 1200 students in some 30 different occupational programs and equally comprehensive college transfer courses of study.

In the Fall of 1965 the Board of Trustees purchased a tract of land located between Ann Arbor and Ypsilanti. Educational specifications for a new campus were written, and construction of the Technical/Industrial building was completed in the fall of 1969 and is now in use; construction of the Exact Science building is now completed and in use. While construction of these buildings was in progress, college classes continued in renovated quarters in Willow Run, the Automotive Center located on Carpenter Road, and the Health Science complex which is operated in connection with several hospitals in Ann Arbor. The College seeks to develop courses of study which will meet the needs of students, as well as provide the necessary skills needed by area business, industry, and governmental units.

The Students

Washtenaw Community College grants admission to students from a wide range of backgrounds. The student body is diversified in many ways. Student ages range from 17 to 55, and 40% of the enrollees are over 21 years of age. Currently, twice as many men are attending the College as women. Approximately 50% of all students are enrolled in occupational courses, while the other students have elected transfer and general education courses.

The Faculty

Members of the Community College faculty have a fierce commitment to outstanding teaching and counseling. Staff members have developed procedures to insure that each student receives ample qualified assistance, understanding, and information related to specific occupational goals. In addition to time spent in preparation and teaching, each instructor assists students with the challenges of their courses and adjustment to college.

The Board of Trustees has continued to enlist the assistance and support of citizens to plan and further develop the College program. This advice has enabled Washtenaw Community College to develop a wide range of technical, industrial, and semi-professional courses as well as college transfer courses of study at an accelerated rate. The names of individuals serving in an advisory capacity are listed throughout the catalog in conjunction with course offering announcements.

Objectives of the College

It is the intention of this College to open the doors of educational opportunity to students with a seriousness of purpose and an ability sufficient to profit from selected instruction. It is the intention of the Board of Trustees and faculty that the College should be more interested in what the student is ready to do than in what he has done; that an applicant should have the opportunity to undertake those programs of instruction offered by the Community College for which he is properly prepared and for which he has aptitude and ability. Once enrolled, however, each student should demonstrate satisfactory performance; there should be no compromise with quality.

It is the objective of the College to develop:

1. One- and two-year vocational, technical, and semi-professional education programs of organized, systematic instruction, designed to prepare individuals for employment.

2. A two-year general education program for the social, cultural, and personal development of individuals desiring to continue their education beyond high school.

3. General educational and pre-professional programs, both one- and two-year, transferrable to other colleges and universities.

4. Courses or complete programs which meet the cultural and vocational needs of adults.

5. College preparatory and developmental courses for adults and for those who need to make up deficiencies for college level work.

6. Personnel services including counseling for students of all backgrounds and abilities which will assist them in selecting courses of study appropriate to their capabilities and ambitions, and guidance in the attainment of their educational goals.

TO THE STUDENT: HOW TO USE THIS CATALOG

A special effort has been made to make the catalog a useful and usable document to both the full-time and part-time student. The following procedure is recommended:

1. Determine program or area of interest.
2. Make an appointment with a counselor.
3. Obtain registration materials.
4. Make an appointment with an advisor (names listed on program page).
5. In concert with advisor, elect courses as listed in the "Full-Time Sequence" column.
6. When deviations from the "Full-Time Sequence" are necessary, enter the appropriate substitutions in the "Student Program" column.
7. Have advisor initial and date the substitution. Examples of student programs that require substitutions are:

   a) Students who transfer credit from other programs or institutions.
   b) Students whose employers have special or unique requirements.
   c) Students with substantial background or experience in the field of interest.
   d) Students who desire a "tailor-made" program for occupational entry into fields related to the program listed in the catalog. (For example, a person who wishes to sell electronic equipment might select the Electronics Engineering Technician program with additional selections made in marketing and salesmanship.)
   e) Changes in either the program or time schedule as a result of institutional policy or action.
   f) Students who elect a cooperative work program through the College and an employer.

8. If you are a part-time student, choose courses in the order indicated by the number to the left of the course title under the "Part-Time Sequence" column. Take all courses marked (1) first, then all marked (2) next, and so on until all program requirements have been satisfied.
9. Check the current time schedule to insure availability of courses.
10. Complete registration materials and obtain advisor/counselor signature.

ADMISSIONS

ADMISSIONS ELIGIBILITY AND PROCEDURE

A student may apply for admission to one of the following periods:
First Semester—begins in September
Second Semester—begins in February
Summer Session—begins in June

Eligibility for Admission of First-Time Students

A student must have completed high school or its equivalent, as determined by the College.

A student who is not a high school graduate, but is 18 years of age or older, is eligible when:

a. He submits an equivalency diploma, or
b. He can profit from instructional programs for which he has the proper background, experience, and capability.

The prospective student should take the American College Test (ACT) sometime during the year preceding initial registration. Students still in high school should contact their counselors concerning this requirement. All other prospective students may secure information concerning the ACT program by calling the Director of Counseling. Students may be required to take other tests for admission as determined by the Counseling Office.

Admission Procedure

1. A student should fill out the Application for Admission form supplied by the Washtenaw Community College Registrar's Office.

2. A non-refundable application fee of $10 is required of all students who wish to enroll. A check or money order for this amount made payable to Washtenaw Community College must accompany the application.

3. The student must request his high school to send a transcript of his record to the Registrar's Office.

4. All First Time students enrolling for seven (7) or more semester credit hours are required to take the American College Test (ACT) and have the results forwarded to the Washtenaw Community College Counseling Office.

5. The student must request each of the colleges he has attended to send a complete transcript of his record to date. If presently enrolled, the student should request that an additional official transcript of his record be forwarded immediately upon completion of the present

semester's work. All transcripts must be sent from each college directly to the Registrar's Office.

6. The student must complete the Student Health Record and it is requested that he receive a medical examination and have the physician complete the Health Evaluation Form and forward to the College Nurse.

7. The student planning to attend the College on a part-time basis should follow the above procedure. When the above procedure has been completed, the applicant will be notified of his admission status.

Counseling and Registration

Counseling—At the time the applicant is informed of his admission status he is requested to arrange an appointment with a College counselor to plan his career objectives.

Registration—Prior to the beginning of the semester, each student will receive pre-registration and registration information and a scheduled period for registration. Full tuition fees must be paid at registration.

Veterans' Eligibility

Washtenaw Community College is approved for training allowance for enrolled veterans as follows:

Full Time	12 or more credits
¾ Time	9 thru 11 credits
½ Time	6 thru 8 credits
Less than ½ Time	Less than 6 credits

Prospective students who are eligible for veterans' benefits should follow the procedure below:

1. Make application for veterans' benefits at the Veterans Administration Regional Office in Detroit.

   The College recommends that each prospective student take advantage of the counseling service available to him at the regional office.

   Upon receipt of an application, the V.A. will mail to the veteran an acknowledgment of Receipt of Claim which will provide the veteran with his claim number.

   After processing the veteran's application the regional office will, if the veteran is eligible, issue a Certificate of Eligibility. The certificate is valid only at the institution named and only for the objective indicated.

2. The prospective student should bring the Certificate of Eligibility to the Registrar's office at the time of initial registration.

TUITION, FEES, AND RESIDENCY POLICY

Tuition

In-District Resident:
$12.50 per credit hour

Michigan, Out-of-District Resident:
$25.00 per credit hour

Out-of-State Resident:
$37.50 per credit hour

Courses, varying in length from several clock hours up to a semester (eighteen weeks), will be offered for part-time, adult students. Tuition for these courses will be determined by the subject content and the length of the course.

All tuition charges are subject to change by action of the Board of Trustees.

Fees

Application and records fee $10

A non-refundable fee of $10.00 is assessed one time for **all** students applying for admission to the College. This fee is collected at the time of application and must be paid before the student can register for classes.

Late registration fee ..... $ 5

In some cases students may be required to purchase certain individual supplies and materials.

All tuition and fee charges are subject to change by action of the Board of Trustees.

Refunds

Refund of seventy-five percent of tuition will be made to a student who withdraws from the College during the first ten days of classes. A fifty percent refund will be made for students withdrawing after the first ten days of classes but before the end of the fourth week of classes. No tuition refund will be made after the fourth week of classes. The $10.00 application and records fee is not refundable.

If in the case of extreme hardship a student must withdraw after the fourth week of classes and wishes to be considered for a refund, he must petition the Registrar who will refer his request to the Refund Committee.

This policy also applies to the part-time student.

The above policy also applies to a student dropping a partial course load.

Residency Policy

Tuition costs at Washtenaw Community College are based on a sharing by the student, the taxpayer of the district, and the state. District taxes supplement student tuition and state aid for **in-district** students; therefore, the tuition charged the student who lives outside the College district but within the state is greater than the tuition charged the in-district student. Students who reside out-of-state are charged the highest tuition.

In-District Resident

A student who is a resident of the Washtenaw Community College District.

Out-of-District Resident

A student who is not a resident of the Washtenaw Community College District, but is a resident of the State of Michigan.

Out-of-State Resident

A student who is a resident of, or whose parents reside in another state is classified as an out-of-state student for tuition purposes.

GENERAL REGULATIONS

Students entering college for the first time might need to be reminded of the added responsibilities of attending college. It should be recognized that the College must have a minimum number of rules if its objectives are to be accomplished. Regulations are based upon respect for the rights of others and observance of civil and moral laws. All who enroll in Washtenaw Community College must realize that success rests upon personal efforts, attitudes, honor, integrity, and common sense; that attendance at this institution is a privilege.

Credit Hours

All courses at Washtenaw Community College are given on a semester basis, and credits earned are semester credits.

Each course usually carries a specific number of credits based upon the number of hours each week for lecture and laboratory plus the estimated time which an average student spends in outside preparation.

Generally, one credit hour is earned by attending a lecture class for a fifty-

minute period, once a week, for an eighteen week session. In a laboratory class, one credit hour is granted for, from two to four, fifty minute periods per week in a laboratory.

Credit Load

The normal credit load for a full-time student is fifteen credit hours. Special permission must be obtained from the Dean of Student Services to register for more than eighteen credit hours. A full-time course load for the summer session is six to eight credit hours and special permission must be obtained from the Dean of Student Services to register for more than eight credit hours.

Students must carry at least twelve credits a semester in order to:

1. Be qualified to hold student office.
2. Qualify for the Dean's Honor List for the semester.
3. Be reported as a full time student to the Selective Service System.

Most scholarships, awards and financial aids are limited to students carrying at least twelve credits a semester. Students should determine the specific requirements from the appropriate agency.

It is recommended that employed students consult with a counselor about their course load.

Classification of Students

Full-time—a student who carries twelve or more credit hours.

Part-time—a student who carries less than twelve credit hours.

First year (Freshman)—a student who has completed fewer than twenty-eight credit hours.

Second year (Sophomore)—a student who has completed twenty-eight or more credit hours, but has not received an associate degree or has not qualified for upper division classification in a four-year college or university.

Special—a student who is enrolled for courses but is not pursuing a degree or certificate of achievement.

WITHDRAWAL FROM THE COLLEGE

Voluntary During the Semester

A student finding it necessary to withdraw from the College during the semester must initiate the withdrawal procedure in the Counseling Office.

Upon official voluntary withdrawal from the College, grades are assigned

according to the effective date of the withdrawal under the Change of Enrollment, To Drop a Course, section of this catalog.

In case of official voluntary withdrawal from the College, semester tuition and fees are subject to the refund policy shown under the Tuition, Fees, and Residency Policy Section of this catalog.

Voluntary Withdrawal at Close of Semester

Interruption of school at the conclusion of a semester does not necessitate withdrawing from the College.

Unauthorized Withdrawal

A student who leaves the College during a semester without obtaining an official withdrawal may be reported as having failed all courses. The withdrawal procedure will not take place automatically for the student who leaves campus because of illness, of either one's self or family member, but must be initiated by writing the Counseling Office.

> A student who leaves the college without withdrawing properly forfeits any tuition or deposits paid to the College.

Involuntary Withdrawal

A student who is called into the Armed Forces during the semester should present his orders for induction at the Counseling Office for appropriate action.

Grading

A system of evaluation and a means of letting the student know the degree of progress he is making can be achieved in numerous ways. One means is by testing, assigning of grades, completion of credit hours, and accumulation of grade points.

Grades	Grade points per credit hour
A—superior	4
B—excellent	3
C—average	2
D—inferior	1
F—failure	0
S—satisfactory	
U—unsatisfactory	
I—incomplete—credit withheld	
X—withdrawal—failing	
W—withdrawal	
DF—deferred	
N—non-attendance	
V—visitor	

In courses numbered below 040 or certain short courses the evaluation of a student's performance will be by the grade of 'S' (satisfactory) or 'U' (unsatisfactory). Honor points will not be given for these grades.

Grade-Point Average

Honor points or grade points measure the achievement of the student for the number of credit hours he has attempted.

A student who enrolls in college for the first time usually is not familiar with the terms grade points and grade-point average. Grade points are determined by multiplying the grade points per credit hour by the credit hour value of the course attempted. The following example will enable the student to compute his grade-point average.

Courses	Credit Hours Attempted	Final Grade	Grade Points
English	3	B	3 grade points (3×3)= 9
History	3	F	0 grade points (0×3)= 0
Mathematics	3	C	2 grade points (2×3)= 6
Electronics	2	A	4 grade points (4×2)= 8
Physics	5	C	2 grade points (2×5)=10
Physical Education	1	D	1 grade point (1×1)= 1
	17		34

Divide the total grade points by the total credit hours attempted—34 divided by 17=2.00 grade-point average.

The cumulative grade-point average is the total number of grade points earned divided by the number of credit hours attempted. It includes the number of credit hours of 'F', even though no grade points are allowed for this grade.

Grades are issued at mid-semester, at the end of each semester, and each summer session. The mid-semester grade is an indication of student progress and does not become a part of his permanent record. Both mid-semester and final grades are mailed to the home address of the student.

Repeating a Course

A student who received a grade of "D" or below may repeat the course on a credit basis.

Whenever a course is repeated on a credit basis, the last grade and credits earned replace the previous grade in computing grade-point averages. However, all entries remain a part of the student's permanent academic record.

Attendance

1. It is consistent with the College philosophy that regular class attendance

is necessary if a student is to receive maximum benefits from his work. Students are expected to attend all sessions of the classes for which they are registered. The individual instructor may determine that the quality of the student's work has been adversely affected by absence or tardiness.

2. Students should explain the reason for absence to their instructors.

3. It is the responsibility of the student to make up work missed because of any absence.

4. Students are required to be present at examinations in order to receive credit in a course.

No person is allowed to attend a class unless officially enrolled on a credit or non-credit basis with the appropriate fees paid.

Change of Enrollment

Students are expected to complete the courses in which they are registered. If a change is necessary, it may be made only with the appropriate approvals as explained below.

TO ADD A COURSE: During the first five (5) days of classes, an add must be approved by the student's academic advisor or counselor. The student must then obtain the acceptance of the division offering the course. Following acceptance the student must take his add cards to the Registrar's Office and complete the payment of tuition. A student is not officially registered in a class until the add card is accepted by the Registrar's Office. Consult the semester calendar to determine the dates of the add period.

TO DROP A COURSE: (FIRST WEEK THROUGH MID-SEMESTER EVALUATIONS) During this period the counselor or advisor must approve the drop. A student is not officially dropped from the class until the Drop Card is accepted by the Registrar's Office.

(WEEK FOLLOWING MID-SEMESTER EVALUATION AND BEFORE FINALS) If a student drops a course during this period he must obtain approval from his counselor and his instructor. If he drops the course without sufficient reason, the letter "X" (Withdrawal - Failure) will be assigned. However, if the instructor feels there is sufficient reason for the student's withdrawal the letter "W" (Withdrawal) will be assigned. All approved Drop Cards must be accepted by the Registrar's Office.

ADJUSTMENT OF TUITION: If the adding or dropping of courses changes the total number of credits in which the student is enrolled, an adjustment of tuition is made according to the policies for assessment of tuition and refunds as shown under Tuition, Fees and Residency Policy section of this catalog.

Student Evaluation (Examinations)

Washtenaw Community College believes that scheduled evaluations are a very important part of the instructional program. As such, the student should be prepared not only for mid-semester and final examinations, but for periodic tests covering various phases of instruction. The instructor will inform the student as to the time, place, and other examination requirements.

Deferred Grade 'DF'—Credit Withheld

In some courses a student may be unable to complete the required work until the following semester. If in the opinion of the instructor the student is making normal progress he may assign the 'DF'. The student must re-enroll in the course and complete the required work the following semester (summer session excluded) or the grade automatically becomes a 'W'.

Incomplete Grade 'I'—Credit Withheld

If for some reason a student has missed a final examination or has not otherwise completed all requirements for the courses as determined by the instructor, the instructor may issue an incomplete grade 'I'. The student has until the next semester (summer session excluded) to complete the requirements. If the requirements are not met during the semester following the semester the incomplete was given, the grade automatically becomes a failure 'F'.

Class Visitor "V"—No Credit

A student may enroll in credit courses on a non-credit basis, with the approval of his counselor or advisor. Such credits as the course normally carries are included as part of the total credit load and tuition assessed accordingly.

Change from Visitor to credit or credit to Visitor status is not permissible after the close of the add period. Credit may not be earned in courses taken as Visitor except by re-enrollment for credit and completion of the course with a satisfactory grade.

Graduation Requirements

To be eligible for the ASSOCIATE DEGREE a student must:

1. Complete a minimum of sixty credit hours (the last fifteen must be earned at Washtenaw Community College), including the specific subject or course requirements in the selected program. Certain programs may require more than the minimum of sixty credit hours—these must also be completed. Physical Education activity hours and credits in courses numbered below 040 do not count toward graduation.

2. Earn a minimum cumulative grade-point average at Washtenaw Community College of 2.0.

3. Complete three credit hours of English.

4. Complete three credit hours of political science. (State of Michigan requirement)

5. File the Application for Graduation form at the time of registering for the final semester. This form is available from the Registrar's Office.

To be eligible for the CERTIFICATE OF ACHIEVEMENT a student must:

1. Complete a minimum of thirty credit hours (the last fifteen must be earned at Washtenaw Community College), including the specific subject matter or course requirements of the selected program. Certain programs may require more than the minimum of thirty credit hours—these must also be completed. Physical Education activity hours and credits in courses numbered below 040 do not count toward graduation.

2. Earn a minimum cumulative grade-point average at Washtenaw Community College of 2.0.

3. Complete three credit hours in speech or English.

4. File the Application for Graduation form at the time of registering for the final semester. This form is available from the Registrar's Office.

Commencement ceremonies for all Washtenaw Community College graduates are held in the month of June. The conferring of associate degrees, the granting of certificates of achievement, and the giving of honors highlight the graduation exercises. Students receiving the associate degree or the certificate of achievement are required to participate in the commencement.

A hold may be applied to the graduation for a student who has an overdue indebtedness or other obligation to the College.

Requirements for graduation may be completed during any semester or summer session.

Seminars and Workshops

The College offers opportunities for students to enroll in short courses, conferences, workshops, and seminars. These vary in length from one or two meetings of short duration to units necessitating several clock hours accumulated over a period of weeks. These specialized courses will be offered by various divisions to meet the explicit needs of business and industrial firms in Washtenaw County.

Request for Transcript

A student requesting that a transcript of his grades be sent to an educational institution or to a prospective employer must complete the appropriate form in the Registrar's Office. There is no charge for the first copy; there is,

however, a service charge of $1.00 for each additional copy.

A hold may be applied to the release of a transcript for a student who has an overdue indebtedness or other obligation to the college.

Scholastic Honors

Recognition is given to all students obtaining high scholastic achievement while attending the College.

DEAN'S HONOR LIST: The Dean's Honor List honors all full-time students in the College who earn a 3.00 or better average for a semester. The list is prepared each semester, and posted in prominent places on the campus.

GRADUATION HONORS: High scholastic achievement is recognized at graduation for students earning a 3.00 or better average for all work completed prior to the semester of graduation. Graduation with honors is indicated on the students permanent record, the Commencement program and lists are released to the press.

Students earning a 3.75 or better are designated as "High Honors".

Dismissal

In the case of serious breaches of acceptable conduct, a student may be dismissed from the College.

COURSE NUMBERS

1. The first digit of a course number indicates its classification according to the year it should be taken.
   a. Courses numbered below 040 are developmental courses and the credits do not count toward graduation.
   b. Courses numbered 040 to 099 are college-level preparatory courses, occupational program courses, or self-improvement programs.
   c. Courses numbered 100 to 199 are freshman-level courses which should be taken during the first year of college, as they usually are prerequisite courses.
   d. Courses numbered 200 to 299 are sophomore-level courses which should be taken during the second year of college.
2. The second digit of the course number indicates the semester the course usually is offered: 1, first semester; 2 second semester; 0, 3, 4, 5, 6, 7, 8, or 9, either semester.
3. The third digit of the course number indicates the number of the course in a sequence: 1, 2, 3, 4, 5, or 6. For numbers 0, 7, 8, 9, there is no sequence involved.

STUDENT SERVICES

The Student Services staff assists with counseling, student-initiated activities, financial aids, job placement, admissions, registration, and emergency first-aid services.

Counseling

The entire faculty of Washtenaw Community College has a major commitment to help each individual student pursue a course of study planned to fulfill his goals. In order to accomplish this, instructors are committed to assisting students on an individual basis. Students are encouraged to confer with their instructors when problems or questions arise.

In addition to the assistance provided by the faculty, full-time counselors are available at the Counseling Office in the Exact Sciences Building. Each student entering the College is assigned to a counselor who will discuss his career goals and plan his initial program of classes at the College.

Counselors aid students in clarifying their vocational objectives. Interest inventories can be administered and reference made to the extensive occupational information which is available to students. In order to aid the student in planning for his future education, an extensive collection of college catalogs is maintained in the Counseling office.

The professionally trained counseling staff will work with students experiencing personal or emotional problems or may refer them to the appropriate agency or service in the community for specialized assistance.

All full-time students are required to take the American College Test (ACT) after they are admitted to complete their credentials. Results of these tests are interpreted to students and used by counselors in helping students select appropriate classes. The test is not required for admission to the College.

All students are encouraged to utilize the services provided by their counselors. Counselors are available for all part-time, full-time day, and extended-day students at the College.

Student Orientation

Orientation is conducted by counselors, students, and faculty members to assist students in their adjustment to the College, world of work, and other aspects of contemporary living. In these small groups, opportunities are provided for discussion of current problems. Through orientation, students are encouraged to develop personal contacts with College staff members.

Job Placement

Assistance is provided students completing occupational programs to secure

employment appropriate to their training at the College. Contact with business and industry in the area is maintained by instructors in Occupational Studies as well as the Job Placement Office in the Exact Sciences Bldg.

For students seeking part-time employment a record of available positions is maintained in the Job Placement Office.

Student Activities

The College encourages student activities which supplement the instructional program by providing recreational activities which will add to the student's enjoyment of life and stimulate his personal growth and social development. Opportunities for development of constructive leadership, cooperative planning, and special interests will be fostered through participation in student activities. All student activities are coordinated through the Office of Student Services.

Student Government

A Student Senate has been organized. The Senate is responsible for student government at the College and promotes the ideals of intelligent self-direction and encourages the spirit of unity and cooperation in student activities.

Athletics

The College offers the students opportunity to compete in a variety of intercollegiate sports. Cross country, basketball, track, baseball, and golf are currently offered. Other sports will be added in the future.

Washtenaw Community College is a member of the Eastern Division, Michigan Community Junior College Athletic Conference, and Region XII of the National Junior College Athletic Association.

Although relatively new in the field of intercollegiate athletics, the College teams have already earned conference and national recognition.

Intramural and extramural sports activities are organized in response to student interest.

Student Organizations

Responding to student interest, groups of students are organizing activity clubs with the assistance of the Office of Student Services. Such groups include the Future Teachers Club, Ski Club, Architectons, Bowling Club, Future Secretaries Club, etc.

Participation in the organizations will enable students to discover friends and identify activities compatible with their interests and aptitudes. Service clubs, hobby clubs, professional groups, and organizations related to occupational preparation, under the sponsorship of faculty members, will be available to all students.

Student Publications

THE VOICE is the official College newspaper. It is published by the students in conjunction with journalism instruction. Students interested in the newspaper may participate in the writing and editing of THE VOICE by contacting the faculty sponsor.

Student Health, Life, and Accident Insurance

Washtenaw Community College does not sponsor health, life, and accident insurance coverage by any particular agency. The College does, however, encourage students to examine their needs for such coverage while a student of the College. The Registrar's Office will provide information concerning opportunities to enroll in insurance programs at the time of registration should the student desire this information.

Health Service

The College Health Service provides first-aid services for students who may have emergency health problems. The office is located in the Technical and Industrial Building.

Housing

Washtenaw Community College is primarily an institution for commuting students; therefore, no dormitory facilities are provided. Students who require accommodations should contact the Office of Student Services.

Bookstore

The College will serve the student body and enhance the instructional program through the bookstore.

Books, instructional aids, equipment, materials, and supplies are readily accessible for students and staff. Costs will be kept to a minimum based on the College goal of service to students.

Student Center

The student center is used by all members of the College family—students, faculty, administration, staff, and guests. A lounging area adjoins the food service area where light lunches and snacks are provided by vending machines.

LEARNING RESOURCE CENTER

The Learning Resource Center (LRC) includes the College's library and instructional-media (I-M) facilities. The LRC provides faculty and students

with educational material in many media: books, periodicals, microfilm, microfiche, 16 millimeter (mm) film, 8mm film, filmstrips, slides, tapes, records, and transparencies. All audio-visual equipment used on this campus is also the responsibility of the LRC.

The library contains a large collection of books and periodicals dealing with all subject fields. It is arranged to provide a pleasant, relaxed atmosphere for students to study, browse, and carry out research assignments. As a result of an interlibrary loan agreement, the LRC's collection is supplemented with material from the Michigan State Library. This provides an additional source of material to assist students in completing research reports.

Students are urged to acquaint themselves with the operating policies of the LRC which have been adopted with the interest of all in mind. A HANDBOOK has been published to aid students in the effective utilization of the facilities available in the LRC. Copies of the HANDBOOK are given to each new student and copies are always available at the circulation desk.

Photocopying services are provided at the circulation desk for a nominal fee. This convenient service enables students to obtain copies of book and periodical material.

For students who enjoy listening to music, the I-M department maintains a collection of tape recordings at the circulation desk. Stereophonic tape recorders are available and are equipped with stereo headsets for listening to selected tapes. Tape recordings include vocal and instrumental music, classroom lectures, plays, poetry, and other material.

A preview room is available for viewing 8mm and 16mm films that are used in lectures and assigned by instructors. Assigned filmstrips can be studied in the library with the aid of individual viewers. All non-book material in the LRC is color-coded in the card catalog for easy reference. Filmstrips are coded red, phonograph records—green, tape recordings—orange, films (8mm and 16mm)—black, and 35mm slides—brown.

The instructional-media department handles all faculty requests for educational media materials and equipment. There is a need each semester for student assistants to work in the I-M department as projectionists, recording technicians, graphic artists, production assistants, typists, and filing clerks. Other opportunities for student employment exist in the LRC.

ACCREDITATION

Washtenaw Community College is approved by the State Department of Education, State of Michigan. The College is a member of the Council of North Central Junior Colleges, the Michigan Association of Junior Colleges, and an institutional member of the American Association of Junior Colleges.

The College has received written statements from admissions officials of

four-year colleges and universities in Michigan stating that transfer students will be accepted and that transfer credit will be granted to students who have successfully completed appropriate courses at Washtenaw Community College.

For this reason, a student who plans on transferring to a baccalaureate-degree-granting institution after completing the first two years of a four-year course can be confident that the college parallel credits earned at Washtenaw Community College will transfer without difficulty.

Immediate steps have been taken to meet nationally accepted accreditation requirements. Communication with the regional accrediting agency, North Central Association of Colleges and Secondary Schools, has led to immediate compliance with initial accreditation requirements. The College has been accepted as a recognized candidate for accreditation by the Association.

FINANCIAL ASSISTANCE

Various financial assistance programs are available to students attending or planning to attend Washtenaw Community College. Applications or information concerning financial assistance can be secured at the Office of Student Services, 310 Exact Science Building. Unless otherwise specified, the recipient of any award must be a full-time student completing a minimum of 12 credit hours as an undergraduate during each semester he receives assistance. Regardless of the type of aid received, the student has an obligation to be making reasonable progress toward the completion of his program. Those students not making this progress may be removed from financial assistance.

SCHOLARSHIPS—Scholarships provided by individuals and organizations are awarded on the basis of academic merit, financial need, leadership qualities, and other factors when specified by the donors.

TRUSTEE AWARDS—The Board of Trustees of the College has authorized the granting of a number of Trustee Awards to full and part-time students in need of financial assistance who might otherwise not be able to attend the College. Awards cover the expense of tuition.

EDUCATIONAL OPPORTUNITY GRANTS—All full-time students with exceptional financial need and academic promise who could not otherwise finance their education may be considered for an Educational Opportunity Grant. Grants range from $200 to $1,000 and may be renewed. The total grant can be no more than one-half of the total financial assistance given to the student. Students whose parents' gross annual income is $9,000 or less are prime candidates for grants. All applicants must qualify under our needs analysis system.

COLLEGE WORK-STUDY PROGRAM—All full-time students needing a job to help pay for their college expenses are potentially eligible for employment with the College under the federally supported College Work-Study Program.

These jobs may be on campus or in non-profit organizations in the community. In any event, a job is considered as another source of financial assistance and must be applied for as such.

Students may work up to 15 hours per week while they are attending classes full-time. During the summer or vacation periods when they do not have classes, students may work full-time under this program. Savings from periods of full-time employment under the College Work-Study Program would be used to defray the student's educational expenses for the following academic year. Approval for employment is based on student need as determined by our needs analysis system.

NATIONAL DEFENSE STUDENT LOANS—All full-time students may borrow up to $1,000 each academic year to a total of $5,000. Applicants may renew their loans provided they are in good standing and have financial need. The loans bear interest at the rate of three percent per year, and repayment of the principal may be extended over a ten-year period, except that the institution may require a repayment of no less than $30 per month. The repayment period and the interest do not begin until nine months after the student completes his full-time studies or becomes less than a half-time student.

If a borrower becomes a full-time teacher in an elementary or secondary school or in an institution of higher education, as much as half of the loan, as well as the accrued interest, may be forgiven at the rate of ten percent for each year of teaching service. Borrowers who elect to teach handicapped students, or in certain eligible schools located in areas of primarily low-income families, may qualify for cancellation of their obligation at the rate of 15 percent per year.

Repayment may be deferred up to a total of three years while a borrower is serving in the Armed Forces, the Peace Corps, or as a Volunteer in Service to America (VISTA). Repayment is deferred for as long as a borrower is enrolled at an institution of higher education and is carrying at least a half-time academic work load (6 credit hours).

LAW ENFORCEMENT EDUCATION PROGRAM—Students interested in this program must fill out the appropriate application and will be considered on the basis of financial need for the L.E.E.P. Loan, under our needs analysis system. This loan could be for a maximum of $1,800/year. After the person completes his program and commences his employment in law enforcement or corrections agency, his loan would be cancelled at a rate of 25 percent per year for each year that he works in the agency.

Students currently working on a full-time basis in law enforcement or with a corrections agency are eligible for tuition grants for further study to enhance their professional growth in law enforcement. The agency director or supervisor must approve the applicant's course of study.

MICHIGAN HIGHER EDUCATION ASSISTANCE AUTHORITY-FEDERAL GUARANTY LOAN PLAN—Students are eligible to apply for a MHEAA loan after they have been admitted as a full-time student to the College. Loans are

made by participating Michigan banks and other eligible lenders. Under the plan, the qualified students borrow on interim notes as needed for each college year. To qualify for this loan, the student must: (1) be a U.S. citizen; (2) demonstrate the ability and desire to complete a college course or obtain a degree; (3) show financial need for such a loan and indicate a sense of responsibility toward the ultimate repayment of any loan guaranteed by MHEAA.

Under this program, a student may borrow from a bank or participating financial institution. An undergraduate may borrow as much as $1,500; part-time students up to $500. A student from a family with an adjusted income of less than $15,000 a year pays no interest while he is in an eligible college, university, or technical school. Once enrolled at the College, a student must maintain a 2.0 honor point average to be eligible for additional loans.

Repayment of principal and interest begins when the student has ceased his course of study. At that time, the student must pay the interest cost of 7 percent per year. A student from a family with an adjusted income higher than $15,000 a year pays the entire interest on the loan, but he may borrow under the Guaranty Loan Program at 7 percent simple interest.

Applications may be secured from the lending institution; or the Office of Student Services; or MHEAA, Department of Education Loans, Grants, and Scholarships; Lansing, Michigan 48933.

BENEFITS FOR CHILDREN OF DECEASED VETERANS—MICHIGAN PUBLIC ACT 245—Children of a veteran who died of service-connected injuries or is totally disabled as a result of a service-connected injury, may be eligible for tuition waivers at Washtenaw Community College under Public Act 245. A student's eligibility terminates at the age of twenty-three. Any student who believes he is eligible should request an application from the Michigan Veteran's Trust Fund; Lansing, Michigan or the Office of Student Services. These students are also eligible to apply for monthly V.A. benefits at their local Veterans Administration Office. Ninety day, interest free loans are also available to students who qualify under Public Act 245.

G.I. BILL—Those students eligible for the G.I. Bill should contact the Veteran's representative in the Registrar's Office.

The College recommends that each prospective student take advantage of the counseling service available to him at the regional office. Students needing a short-term loan until their G.I. Bill starts, should contact the Office of Student Services for an application and recommendation to the Michigan Veteran's Trust Fund.

PERSONAL LOANS FOR TUITION—This loan is available for those students who are unable to pay their total tuition at registration. All students must make a partial payment on their tuition at registration. In-district students must pay the minimum of $35 if they carry 12 credit hours or more and $25.00 if they carry 6-11 credit hours. Deferred notes are not given for less than 6 credit hours. Out-of-county and out-of-state students must pay at least one-

half of their tuition at registration. The balance must be paid prior to midterm examinations. This allows at least six to eight weeks for full payment. Late charges will be assessed on all delinquent accounts.

Any student who can ascertain that he will be unable to pay his tuition by the deadline should apply in advance for a long-term National Defense Student Loan, if funds are available. There shall be no carryovers of personal loans from one semester to another.

All students are encouraged to make these arrangements prior to registration. It will be impossible to process Financial Aid Applications during or shortly after registration.

STUDENT EMERGENCY LOAN FUND—This fund makes short-term, interest free, loans available to students who cannot get the money from other sources. Its purpose is to help students through **unexpected emergencies.** This does not include loans for tuition. There is a $50 maximum on this fund and a late charge is assessed on delinquent accounts. Because of the limited funds available, priority goes to students who have been at the College at least one semester, and who are in good financial and academic standing.

SOCIAL SECURITY BENEFITS—These benefits are now available to full-time students in higher education. Check with your local social security office to determine your eligibility.

MARTIN D. HOPKINS MEMORIAL LOAN FUND—This short-term, interest-free, revolving emergency loan fund was set up in commemoration of Martin Hopkins, a deceased Washtenaw Community College student and veteran. His family and friends developed this loan fund to help other veterans with emergency educational expenses. Generally, there is a $50 maximum per student and a late charge is assessed on delinquent accounts. Repayments and late charges revert to the fund to assure its continuance.

EXPENSES AT WASHTENAW COMMUNITY COLLEGE

In preparing a college budget, the student should consider the following sources of income: parental or spouse's support, his own savings, summer employment, scholarships, grants, part-time employment during the college year, and loans.

Students and parents should realistically assess the cost of attending the College. The following information should be helpful to you in estimating the basic costs of attending the College as a commuting student.

TUITION—These charges vary depending upon residency. See section on Tuition, Fees, and Residency Policy.

BOOKS AND SUPPLIES—Approximately $50 per semester.

MAINTENANCE ALLOWANCE—Students residing at home should budget for meals on campus. Students maintaining their own residence should budget for rent, utilities, and food.

MISCELLANEOUS ALLOWANCE—This would include such necessary expenses as clothing, laundry, recreation dues, etc.

TRANSPORTATION—This would include the cost of bus transportation, car transportation, or if necessary, automobile expenses.

RENEWAL OF FINANCIAL ASSISTANCE

All forms of financial assistance are awarded for a period of one academic year. In general, students may continue to receive aid an additional year as long as funds are available and they continue to demonstrate financial need and the academic ability that qualified them for the initial award. However, students must reapply each year to be considered.

GENERAL INFORMATION—In the determination of financial aid, it is expected that the student, together with his parents, will contribute as much as possible to the cost of attending Washtenaw Community College. However, if the student is still in need of financial assistance, the College will assist him to the fullest extent possible.

Students receiving or wishing to receive aid must apply annually before May 30th to receive primary consideration for aid. Applications and information about financial aid may be obtained in the Office of Student Services, Washtenaw Community College, Box 345, Ann Arbor, Michigan 48107.

FINANCIAL CONTRIBUTIONS

Community support has been a major source of financial assistance for many students since the College's beginning. Scholarships and financial assistance for students have been provided by:

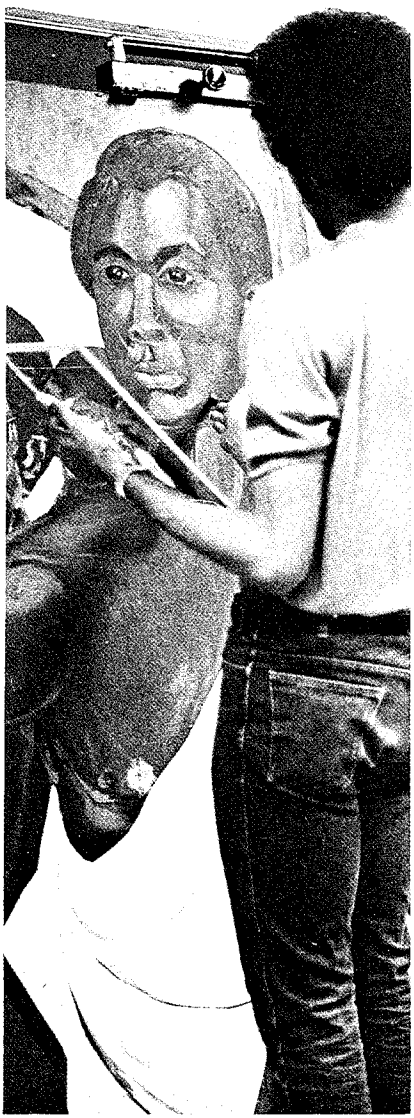
Washtenaw Asphalt Company
Kiwanis Western of Ann Arbor
Ypsilanti Jaycees
Junior Chamber of Commerce Auxiliary of Ann Arbor
Delta Sigma Theta Sorority, Inc., Ann Arbor Alumnae Chapter
Ann Arbor-Ypsilanti Altrusa Club
Welcome Wagon of Ann Arbor
Ann Arbor Evening Lions Club
George O. Ross Memorial Fund
The Thrift Shop Association of Ann Arbor
Delta Psi Omega Chapter of Alpha Kappa Alpha Sorority

L'Esprit Club
National Bank and Trust Company of Ann Arbor
Ann Arbor Federal Savings and Loan Association
Ypsilanti Savings Bank
Ann Arbor Bank
Kiwanis Club of Dexter
Alvin M. Bentley Award
Edward W. and Hattie L. Frederick Scholarship Fund
Ann Arbor Model Cities
Flint Model Cities
Puget Sound Naval Officers Wives Club
Wayne Lions Club
Coombs Scholarship
Oliver—Campbell Award
Alpha Phi Alpha Fraternity
Romulus Public Schools—Jim House Award
Washtenaw County Inter Faith Coalition of Churches
Huron Valley Chapter, National Secretaries Assn., International
Hoover Ball & Bearing Company
Huron Valley National Bank
Dr. Martin Luther King Scholarship Fund
Dexter Child Study Club
Michigan Tuberculosis & Respiratory Diseases Association
Zonta Club of Ypsilanti
Dobson-McOmber Insurance Agency, Ann Arbor
Ypsilanti-Ann Arbor Business and Professional League
American Association of University Women
Home Builders Association of Washtenaw County
H. Lynn Pickerill Scholarships
Rouser Scholarship
First Presbyterian Church, Ann Arbor
Ann Arbor News
Ann Arbor Community Center
Juliette A. Southard Award
Zion Lutheran Church
In addition many individuals have made substantial contributions.

GENERAL STUDIES PROGRAM

Students who intend to transfer to a four-year college or university after acquiring the necessary earned credits at Washtenaw Community College should review the general requirements of the college to which they will transfer.

Each college and university has developed its specific criteria for the many programs of study. The student is advised to review the particular college catalog with his counselor in order to determine course schedules. A file of both state and out-of-state catalogs is available in the Counseling Office. Proper selection of courses is requisite to the orderly transfer of credits from Washtenaw Community College to the baccalaureate degree-granting institution.



BLACK STUDIES

HISTORY

The Black Studies Program of Washtenaw Community College was born as the result of the Black Student Union demand on May 6, 1969. The development of the program is the result of students, faculty administrators, and the Board of Trustees. Although Black Studies originated with the Black Student Union, the Board of Trustees has given unanimous support to the program.

MISSION

The overall goal of the Black Studies Program is to free the minds of Black people by exposing them to the truth of the Black experience and work with them toward goals consistent with their needs and aspirations. The program is to become service-minded, constantly seeking solutions to the multiplicity of problems Black people are enduring. The program considers relevant community service, academic excellence, and future oriented plans as serious responsibilities and a noble mission. It will explore new dimensions and seek unique solutions to concerns of the Black community, develop and evaluate innovative programs keyed to rapidly changing social, economic, and political conditions of our society.

FUTURE PLANS

The Black Studies Program has enthusiastic and productive support from the Black students and the Black community. Classes and workshops are open and are attended by the entire college community. Many problems and needs are being expressed freely in this program that are not being expressed in any other place. Insight and some solutions to personal and group problems have been discovered within the program. The expressed needs and interests by students and community indicate a need for more staff and program innovations that we are committed to. We are seeking an opportunity to offer community politics; layman's law and economics, drama, African history, anthropology and research. We are in the process of developing a means of linking Black students to opportunities available in the school's occupational area.

Plans are being made presently to integrate specified Black Studies classes into various programs consistent with the goals of the particular student.

BUSINESS AND INDUSTRIAL MANAGEMENT INTERNSHIP-EXTERNSHIP PROGRAMS

The Division of Business and Industrial Management offers cooperative occupational-experience programs to interested and qualified students. These programs are known as the Business and Industrial Management Internship-Externship Programs. They are designed to implement students' academic and occupational education with on-the-job business and/or industrial experience.

The Internship-Externship Programs involve the students in real-life occupational experiences specially programmed, through the cooperative effort of the participating firms and a college program coordinator, to meet the students' particular occupational needs.

Interns and externs may be placed in all kinds of business-industrial firms and/or educational and governmental establishments. Occupational experience is available through these organizations in the diverse areas of manufacturing, wholesale and retail, office systems and procedures, data processing, and many others.

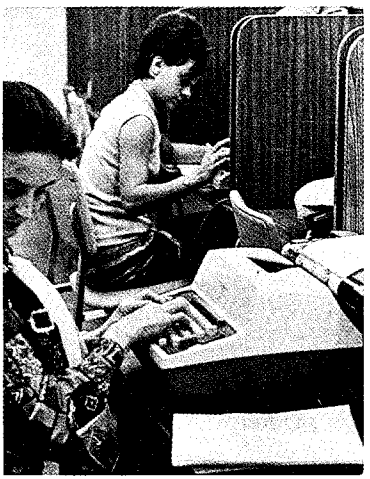
Student time schedules for the Internship-Externship Programs may be flexible to meet the students' needs. Occupational-experience assignments may be arranged on a half-day basis, alternate daily work-study combination, or alternatively—a full semester of work and/or study, or a summer occupational-experience program.

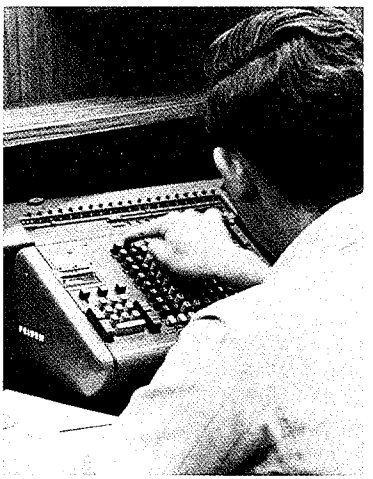
SPECIAL BUSINESS AND INDUSTRIAL MANAGEMENT COURSES AND PROGRAMS

In addition to its regularly scheduled occupational courses and programs, the Division of Business and Industrial Management has developed, specialized short course and program offerings (seminars, workshops, series of sessions, etc.) which are available on a regular basis throughout the college year. These short-course offerings are designed to meet the particular needs of the business and industrial firms and their employees in the immediate service area of Washtenaw Community College.

Included in the Business and Industrial Management short-course offerings are the following:

Basic Personal Income Tax
Key-Punch Operations
Data Processing/Unit Record Operations
Basic Personal/Career Salesmanship
Office Type Offset Duplicating Machinery Operations
Data Processing Fundamentals Seminar
Data Processing/Computer Operation and Programming





BUSINESS AND INDUSTRIAL MANAGEMENT OCCUPATIONS

BUSINESS AND INDUSTRIAL MANAGEMENT ADVISORY COMMITTEE

Mr. Roger A. Gatward, Manager ..... Chairman
Manpower, Inc.
Ann Arbor

Mr. Julius W. Few,
Sales Representative
IBM Corporation
Southfield

Mr. Robert F. Guise, Jr.,
Chairman of the Board
Com Share, Inc.
Ann Arbor

Mr. Henry J. Kruzel, Supervisor
Employee Programs & Office
Services Section
Lincoln-Mercury Division,
Ford Motor Company
Dearborn

Mr. Donald O. Parrett, Manager
Systems & Programming Dept.
Commission on Professional
& Hospital Activities (CPHA)
Ann Arbor

Mr. Wilbert M. Remington
Director of Data Processing
Operations
The Detroit Edison Company
Detroit

Mrs. Jacquelyn Ritchie, CPS,
Secretary,
Dr. S. N. Preston, Director,
Clinical Therapeutics
Parke, Davis & Company
Ann Arbor

Dr. James R. Smith
Corporate Director of Personnel
Borman's Inc.
Detroit

Mr. Earl W. Taylor, CPA
Earl W. Taylor, Co.
Ann Arbor

Faculty Coordinators:
Dr. Arthur J. Lamminen
Mr. Ronald E. Zeeb

Student Representative:
Miss Betty Lum

DATA PROCESSING ADVISORY SUBCOMMITTEE

Mr. Robert F. Guise, Jr. ..... Chairman
Mr. Donald O. Parrett
Mr. Wilbert M. Remington

Faculty Coordinators: Dr. Arthur J. Lamminen
Mr. J. Robert Wotring
Student Representative: Mr. Thomas Craig Andrew

ACCOUNTING TECHNICIAN

Two-Year Program—Code 521

ADVISORS—P. Kokkales, F. Rybo, Mrs. J. Patt

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	G-B 140	Business Occupational Foundations	3
_____	1	ACC 111	Principles of Accounting	3
_____	2	D-P 111	Principles of Data Processing	5
_____	1	MTH 092	Fundamentals of Occupational Mathematics	3
_____	5	ENG 091	English Fundamentals or	
		111	English Composition	3
				17
		SECOND TERM		Hrs.
_____	2	ACC 122	Principles of Accounting	3
_____	3	D-P 122	Data Processing Applications	5
_____	5	S-O 130	Business Machines	3
_____	4	ENG 137	American Studies (or 111 English Composition) or	
		122	English Composition	3
_____	5	SPH 100	Fundamentals of Speaking	3
				17
		THIRD TERM		Hrs.
_____	3	ACC 213	Intermediate Accounting	3
_____	4	D-P 213	Computer Programming	5
_____	6	G-B 111	Business Law	3
_____	6	EC- 211	Principles of Economics	3
_____	7	PLS 108	Government and Society	3
				17
		FOURTH TERM		Hrs.
_____	4	ACC 224	Intermediate Accounting	3
_____	8	MGT 230	Office Management	3
_____	6	MGT 200	Human Relations in Business & Industry	3
_____	7	EC-222	Principles of Economics	3
_____	8	I-E 200	Internship-Externship or Business Elective	3
		Total Credit Hours For Program—66		15

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

DATA RECORD OPERATOR

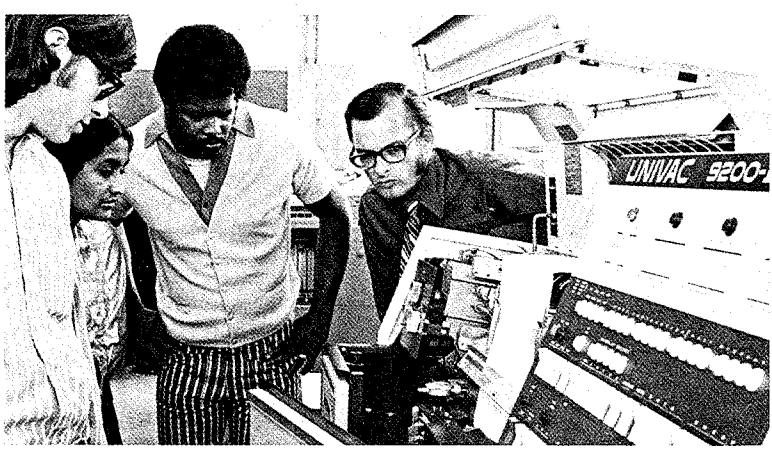
One-Year Program—Code 532

ADVISOR—R. Wotring

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	2	D-P 111	Principles of Data Processing	5
_____	1	G-B 140	Business Occupational Foundations	3
_____	1	MTH 092	Foundations of Occupational Mathematics	3
_____	2	ENG 091	English Fundamentals or	
		111	English Composition	3
				14
		SECOND TERM		**Hrs.**
_____	3	D-P 122	Data Processing Applications	5
_____	3	ACC 091	Fundamentals of Accounting or	
		111	Principles of Accounting	3
_____	4	G-B 200	Human Relations in Business & Industry	3
_____	5	I-E 200	Internship-Externship or Business Elective	3
_____	4	SPH 100	Fundamentals of Speaking	3
				17

Total Credit Hours For Program—31

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.



DATA PROCESSING TECHNICIAN
Two-Year Program—Code 531

ADVISOR—R. Wotring

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	G-B 140 Business Occupational Foundations	3
_____	1	D-P 111 Principles of Data Processing	5
_____	2	MTH 092 Foundations of Occupational Mathematics	3
_____	5	ENG 091 English Fundamentals or	
		111 English Composition	3
			14
		SECOND TERM	Hrs.
_____	2	D-P 122 Data Processing Applications	5
_____	4	ACC 091 Fundamentals of Accounting or	
		111 Principles of Accounting	3
_____	3	S-O 130 Business Machines	3
_____	6	ENG 137 American Studies (or 111 English Composition) or	
		122 English Composition	3
_____	5	SPH 100 Fundamentals of Speaking	3
			17
		THIRD TERM	Hrs.
_____	3	D-P 213 Computer Programming	5
_____	5	ACC 092 Fundamentals of Accounting or	
		122 Principles of Accounting	3
_____	6	G-B 111 Business Law	3
_____	7	EC- 211 Principles of Economics	3
_____	6	PLS 108 Government and Society	3
			17
		FOURTH TERM	Hrs.
_____	4	D-P 224 Data Processing Systems & Procedures	5
_____	7	MGT 230 Office Management	3
_____	7	MGT 200 Human Relations in Business & Industry	3
_____	8	EC- 222 Principles of Economics	3
_____	8	I-E 200 Internship-Externship or Business Elective	3
			17

Total Credit Hours For Program—65

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

PUBLIC ADMINISTRATION TECHNICIAN

Two-Year Program—Code 551

ADVISOR—R. Zeeb

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	PLS 108	Government and Society or Elective**	3
_____	2	PSY 100	Introductory Psychology	3
_____	1	MTH 092	Foundations of Occupational Mathematics	3
_____	1	ENG 091	English Fundamentals or	
		111	English Composition	3
_____	3	SPH 100	Fundamentals of Speaking	3
				15
		SECOND TERM		
_____	3	MGT 208	Principles of Management	3
_____	2	PLS 150	State and Local Government & Politics	3
_____	3	PHL 101	Introduction to Philosophy	3
_____	2	ENG 137	American Studies (or 111 English Composition) or	
		122	English Composition	3
_____	8		Elective**	3
				15
		THIRD TERM		
_____	5	MGT 240	Personnel Management	3
_____	4	ACC 091	Fundamentals of Accounting or	
		111	Principles of Accounting	3
_____	4	G-B 111	Business Law	3
_____	4	D-P 111	Principles of Data Processing*	5
_____	7	I-E 200	Internship-Externship or Elective**	3
				17

		FOURTH TERM	Hrs.
_____	6	EC-207 Basic Economic Principles	4
_____	5	ACC 092 Fundamentals of Accounting or	
		122 Principles of Accounting	3
_____	6	G-B 207 Business Communication	3
_____	7	SOC 100 Principles of Sociology	3
_____	8	I-E 200 Internship-Externship	
		or Elective**	3
			16

Total Credit Hours For Program—63

* Student may elect additional courses in data-record operations.
** Electives may be chosen from the following recommended courses:

Human Relations in Business & Industry 200
Labor-Management Relations 150
Psychology of Adjustment 209

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

PUBLIC ADMINISTRATION TECHNICIAN PROGRAM ADVISORY COMMITTEE

Mr. Ronald H. Hutson, Manager .....Chairman
The Ypsilanti Area Chamber of Commerce
Ypsilanti

Mr. Peter Caputo
(Acting) City Manager
City of Ypsilanti
Ypsilanti

Mr. J. Walter Daschner
Executive Secretary
Ypsilanti Community Chest
Ypsilanti

Mr. Clarence E. McFall
Deputy Director
Washtenaw County Citizens' Committee for Economic Opportunity, Inc.
Ann Arbor

Mr. Gary B. O'Donnell
Associate Director
Kidney Foundation of Michigan
Ann Arbor

Faculty Coordinators: Dr. Arthur J. Lamminen
Mr. Ronald E. Zeeb
Student Representative: Miss Lana L. Lutz

QUALITY CONTROL ADVISORY COMMITTEE

Mr. Thomas J. Abele, Chairman
Quality Control Office
Manufacturing Staff
Ford Motor Company
Dearborn

Mr. Stephen J. Adams
Technical Specialist
Wolverine Tube
Division of Universal Oil Co.
Allen Park

Mr. Ben Cole
Supervisor Quality Control
Bendix Aerospace
Ann Arbor

Mr. R. J. Byrne
Mfg. Staff Training
Ford Motor Co.
Dearborn

Mr. David Dillingham
Reliability Assurance
Hydra-matic Division
General Motors Corporation
Ypsilanti

Mr. James H. Derr
Reliability Engineer
General Parts Division
Ford Motor Company
Ypsilanti

Mr. Leo Harrington
Manager, Quality Control
Introl Division
Chrysler Corporation
Ann Arbor

Mr. D. D. Dodge
Manufacturing Development
Center
Ford Motor Company
Detroit

Mr. Sumner B. Tallman, Supervisor
Reliability Engineering
Hydra-matic Division
General Motors Corporation
Ypsilanti

Mr. L. P. Atwell, Manager
Reliability Department
General Parts Division
Ford Motor Company
Ypsilanti

QUALITY CONTROL TECHNICIAN/SUPERVISOR

Two-Year Program—Code 544

ADVISOR—R. L. Jackson

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
	1	MTH 109 Algebra and Trigonometry	4
	1	QC 101 Quality Control—Process	3
	1	QC 122 Quality Control—Sampling	3
	1	QC 213 Quality Control—Statistical Methods Prerequisite 101 and 122	3
	2	QC 224 Quality Control—Problem Solving Prerequisite 213	3
	3	QC 225 Quality Control—Management	3
	2	QC 226 Quality Control—Intro. Non-destructive Testing	3
		Materials or Electronic Electives Minimum	9
	1	MLG *101 Industrial Materials	3
	1	MT *105 Industrial Measuring Processes	3
	3	MLG *213 Mechanical Testing	3
	2	MLG *122 Physical Metallurgy	3
	1	EE *111 Electrical Fundamentals	4
	2	EE *122 Electrical Fundamentals	4
	3	EE *211 Basic Electronics	4
		Option #1—Science Electives Minimum Total	31
		MTH Mathematics	3
		PHY Physics	8
		CEM Chemistry	8
		ENG English	6
		PLS Political Science	3
		ELECT Elective	3
		Option #2—Management Electives Minimum Total	31
		SPH 100 Fundamentals of Speaking	3
		ELECT —— Elective	3
		ENG —— English 111 and 122	6
		EC —— Economics	6
		DP —— Data Processing	4
		ACC —— Accounting	6
		PLS —— Political Science	3

Total Credit Hours: Min. 60

* An appropriate work experience credit may be awarded in lieu of these courses.

MANAGEMENT TECHNICIAN

Two-Year Program—Code 541

ADVISORS—Mrs. B. Reddick, Mrs. E. Wilson, R. Zeeb

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	G-B 140 Business Occupational Foundations	3
_____	1	MTH 092 Foundations of Occupational Mathematics	3
_____	2	EC- 211 Principles of Economics	3
_____	1	ENG 091 Fundamentals of English or	
		111 English Composition	3
_____	3	SPH 100 Fundamentals of Speaking	3
			15
		SECOND TERM	
_____	3	MGT 208 Principles of Management	3
_____	3	MGT 160 Principles of Salesmanship	3
_____	2	S-O 130 Business Machines	3
_____	4	D-P 111 Principles of Data Processing*	5
_____	2	ENG 137 American Studies (or 111 Composition) or	
		122 English Composition	3
			17
		THIRD TERM	
_____	4	MGT 250 Principles of Marketing	3
_____	6	MGT 240 Personnel Management	3
_____	4	ACC 091 Fundamentals of Accounting or	
		111 Principles of Accounting	3
_____	5	G-B 111 Business Law	3
_____	7	I-E 200 Internship-Externship or Business Elective	3
			15

		FOURTH TERM		Hrs.
_____	6	MGT 200	Human Relations in Business & Industry	3
_____	5	ACC 091	Fundamentals of Accounting or	
		122	Principles of Accounting	3
_____	7	G-B 207	Business Communication	3
_____	8	I-E 200	Internship-Externship or Business Elective	3
_____	8	PLS 108	Government and Society	3
				15

Total Credit Hours For Program—62

* Student may elect additional courses in data-record operations.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

SALES REPRESENTATIVE

Two-Year Associate Degree Program

Advisor—R. Jackson

Sales training in a specialty area may be arranged for students in any of the listed programs by contacting the advisor.

Welding Supplies and Equipment Sales
Data Processing Office Supplies and Equipment Sales
Electronic Supplies and Equipment Sales
Dental Equipment and Supplies Sales
Hospital Radiologic Supplies and Equipment Sales
Hydraulic Equipment and Supplies Sales
Construction and Building Supplies Sales
Machine Tool and Supplies Sales
Institutional Food and Equipment Sales
Nursery and Landscaping Supplies Sales
Refrigeration and Air Conditioning Equipment and Supplies Sales
Real Estate, Insurance, Automobile, etc., Sales
Automobile Service Supplies and Equipment
Inhalation Therapy Supplies and Equipment Sales
Commercial Art Equipment and Supplies Sales

WHOLESALE AND RETAIL SALES TECHNICIAN

Two-Year Program—Code 542

ADVISOR—R. Zeeb

Student Program	Part-Time Sequence	Full-Time Sequence	
		FIRST TERM	**Hrs.**
_____	1	G-B 140 Business Occupational Foundations	3
_____	1	MTH 092 Foundations of Occupational Mathematics	3
_____	2	ENG 091 English Fundamentals or 111 English Composition	3
_____	3	SPH 100 Fundamentals of Speaking	3
_____	4	PLS 108 Government and Society	3
			15
		SECOND TERM	**Hrs.**
_____	3	MGT 250 Principles of Marketing	3
_____	2	MGT 160 Principles of Salesmanship	3
_____	4	MGT 208 Principles of Management	3
_____	1	S-O 130 Business Machines	3
_____	3	ENG 137 American Studies (or 111 English Composition) or 122 English Composition	3
_____	2	PSY 100 Introductory Psychology	3
			18
		THIRD TERM	**Hrs.**
_____	5	MGT 200 Human Relations in Business & Industry	3
_____	4	ACC 091 Fundamentals of Accounting or 111 Principles of Accounting	3
_____	6	G-B 111 Business Law	3
_____	5	EC-211 Principles of Economics	3
_____	7	I-E 200 Internship-Externship or Business Elective	3
			15

			Hrs.
	FOURTH TERM		
7	MGT 260	Sales Management	3
8	MGT 270	Advertising Management	3
5	ACC 092	Fundamentals of Accounting or	
	122	Principles of Accounting	3
6	EC-222	Principles of Economics	3
8	I-E 200	Internship-Externship or Business Elective	3
			15

Total Credit Hours For Program—63

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

WHOLESALE AND RETAIL SALES PERSON

One-Year Program—Code 543

ADVISOR—R. Zeeb

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
	1	G-B 140	Business Occupational Foundations	3
	1	MTH 092	Foundations of Occupational Mathematics	3
	2	ENG 091	English Fundamentals or	
		111	English Composition	3
	3	SPH 100	Fundamentals of Speaking	3
	4	PSY 100	Introductory Psychology	3
				15
		SECOND TERM		Hrs.
	4	MGT 250	Principles of Marketing	3
	3	MGT 160	Principles of Salesmanship	3
	5	MGT 200	Human Relations in Business & Industry	3
	5	G-B 111	Business Law	3
	2	S-O 130	Business Machines	3
	6	I-E 200	Internship-Externship or Business Elective	3
				18

Total Credit Hours For Program—33

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

CLERK-TYPIST

One-Year Program—Code 562

ADVISORS—Mrs. J. Patt, Mrs. B. Reddick, Mrs. E. Wilson

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	S-O 110	(A, B, C) Typewriting and/or Elective*	2
_____	1	S-O 100	(A, B, C) Shorthand and/or Elective**	3
_____	3	G-B 140	Business Occupational Foundations	3
_____	3	MTH 092	Foundations of Occupational Mathematics	3
_____	4	ENG 091	English Fundamentals or	
		111	English Composition	3
				14
		SECOND TERM		**Hrs.**
_____	2	S-O 110	(A, B, C) Typewriting and/or Elective*	2
_____	2	S-O 100	(A, B, C) Shorthand and/or Elective**	3
_____	4	S-O 130	Business Machines	3
_____	5	S-O 150	Office Systems and Procedures	3
_____	5	MGT 200	Human Relations in Business & Industry	3
_____	6	I-E 200	Internship-Externship or Business Elective	3
				17

Total Credit Hours For Program—31

* Typewriting credit and contact hours are progressive in accordance with student progress and proficiency level. (See catalog course description)

** Shorthand credit and contact hours are progressive in accordance with student progress and proficiency level. (See catalog course description)

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

SECRETARIAL TECHNICIAN

Two-Year Program—Code 561

ADVISORS—Mrs. J. Patt, Mrs. B. Reddick, Mrs. E. Wilson

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	S-O 110	(A, B, C) Typewriting and/or Elective*	2
_____	1	S-O 100	(A, B, C) Shorthand and/or Elective**	3
_____	2	G-B 140	Business Occupational Foundations	3
_____	1	MTH 092	Foundations of Occupational Mathematics	3
_____	3	ENG 091	English Fundamentals or	
		111	English Composition	3
				14
		SECOND TERM		Hrs.
_____	2	S-O 110	(A, B, C) Typewriting and/or Elective*	2
_____	2	S-O 100	(A, B, C) Shorthand and/or	
_____	3	S-O 130	Business Machines	3
			Elective**	3
_____	7	I-E 200	Internship-Externship or Business Elective***	3
_____	4	ENG 137	American Studies (or 111 English Composition) or	
		122	English Composition	3
_____	5	SPH 100	Fundamentals of Speaking	3
				17
		THIRD TERM		Hrs.
_____	3	S-O 100	(A, B, C) Shorthand and/or Elective**	3
_____	4	S-O 150	Office Systems & Procedures	3
_____	6	G-B 111	Business Law	3
_____	5	ACC 091	Fundamentals of Accounting or	
		111	Principles of Accounting	3
_____	8	I-E 200	Internship-Externship or Business Elective	3
				15

		FOURTH TERM	Hrs.
	7	G-B 122 Business Law	3
	6	ACC 092 Fundamentals of Accounting or 122 Principles of Accounting	3
	6	MGT 200 Human Relations in Business & Industry	3
	8	G-B 207 Business Communication	3
	7	PLS 108 Government and Society	3
			15

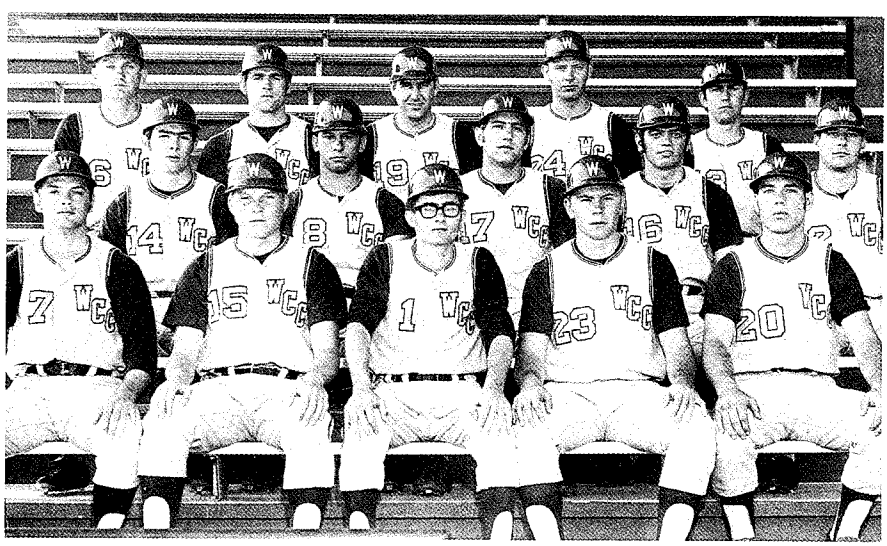
Total Credit Hours For Program—61

* Typewriting credit and contact hours are progressive in accordance with student progress and proficiency level. (See catalog course description.)

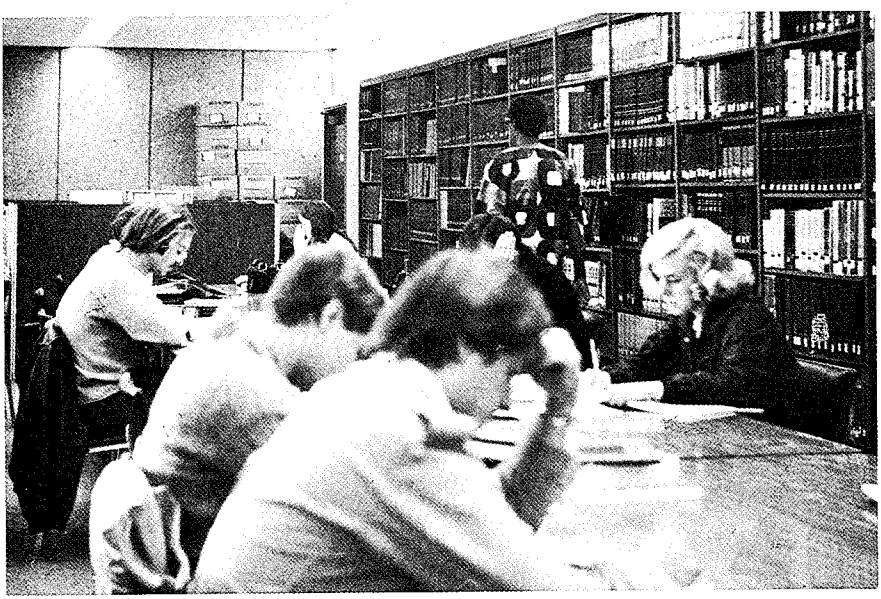
** Shorthand credit and contact hours are progressive in accordance with student progress and proficiency level. (See catalog course description.)

*** May be continued second year.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.



COMMUNITY SERVICE OCCUPATIONS



EDUCATIONAL ASSISTANT

Two-Year Program—Code 621

ADVISOR: Dr. P. W. Davis

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	EAA 111	Teacher Aide Techniques	3
_____	5	P-E 120	Healthful Living	3
_____	5	BIO 141	Basic Health Science Laboratory	1
_____	3	PSY 100	Introductory Psychology	3
_____	1	ENG	English Elective	3
_____	1	PLS 108	Government & Society	3
				16
		SECOND TERM		
_____	2	EAA 122	Teacher Aide Techniques	3
_____	2	ART 130	Art Appreciation	3
_____	3	P-E 130	First Aid	2
_____	2	EAA 209	Instructional Media & Materials	3
_____	7	EAA 189	Study Problems	3
_____	3	ENG 210	Children's Literature	3
				17
		THIRD TERM		
_____	5	HST 150	Afro-American History	3
_____	5	MTH 107	Mathematical Systems	3
_____	4	PSY 200	Child Psychology	3
_____	4	S-O 090	Fundamentals of Typewriting	1
_____	6	EAA 199	On-the-Job Training or	3
		PSY	Psychology Elective	
_____	8	EAA 189*	Study Problems	3
				16

		FOURTH TERM		Hrs.
_____	8	SOC 100	Principles of Sociology	3
_____	8	SPH 100	Fundamentals of Speaking	3
_____	7	ENG 100	Technical Communications	3
_____	7	EAA 199	On-the-Job Training or	
		PSY	Psychology Elective	3
				12

Total Credit Hours For Program—61

* Students who may choose to become a counselor aide, recreational aide, social work aide, or work in areas of special education should elect Study Problems 189 with the consent of the divisional director.
On-the-Job Training—See Divisional Director

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

EDUCATIONAL ASSISTING ADVISORY COMMITTEE

Mrs. Lola Jones
Instructor
Washtenaw Community College
Ann Arbor

Mr. Raymond Kingston
Director of Special Projects
Ypsilanti Public Schools
Ypsilanti

Mr. Jack L. Kirsh
Director of Instruction
Washtenaw County Intermediate School District
Ann Arbor

Mr. David S. Pollock
Dean, Special Projects
Washtenaw Community College
Ann Arbor

Faculty Coordinator: Dr. Paul W. Davis
Student Representatives: Mrs. Mary Cornils
Mrs. Missouri Eddins

FIRE PROTECTION TECHNOLOGY ADVISORY COMMITTEE

Lieutenant Donald Green .....Chairman
Ypsilanti Fire Department
Ypsilanti

Chief Ralph Crawford
Ypsilanti Fire Department
Ypsilanti

Chief Robert Fuller
Ypsilanti Township Fire Department
Ypsilanti

Mr. Howard Gragg
Assistant Chief
Ypsilanti Fire Department
Ypsilanti

Mr. Francis Hartman
Director
Civil Defense and Disaster Training
The University of Michigan
Ann Arbor

Chief Elmer Holtz
Adrian Fire Department
Adrian

Mr. Nolan Lee
Fire Inspector
Ann Arbor Fire Department
Ann Arbor

Chief Ralph Savina
Westland Fire Department
Westland

Mr. Frederick Schmid
Assistant Chief
Ann Arbor Fire Department

The Honorable Roy Smith
State Representative
52nd District
Ypsilanti

Chief Arthur Stauch
Ann Arbor Fire Department
Ann Arbor

Mr. Ken Warfield
Wayne Fire Department
Wayne

Faculty Coordinator: Dr. Paul W. Davis
Student Representative: Mr. Michael Jackson

FIRE PROTECTION TECHNICIAN

Two-Year Program—Code 631

ADVISOR: Dr. P. W. Davis

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
	5	ENG	English Elective*	3
		F-P 097	Labor Relations in the Public Sector	3
	1	PSY 100	Introductory Psychology	3
	7	MTH 040	Introductory Algebra	4
	1	F-P 100	Introduction to Fire Protection	3
				16
		SECOND TERM		
	4	ENG	English Elective*	3
	2	BPR 100	Blueprint Reading for Construction Trades	3
	2	F-P 122	Fire Prevention Theory & Application	3
	2	F-P 109	Fire Operation Strategy	3
	3	FLP 111	Fluid Power Fundamentals	4
				16
		THIRD TERM		
	6	SPH	Speech Elective*	3
	4	PLS 150	State & Local Government & Politics	3
	6	EC 111	Introduction To Economics	3
	3	F-P 213	Fire Investigation & Arson	3
	3	F-P 210	Introduction to Fire Administration	3
				15
		FOURTH TERM		
	7	SOC 100	Principles of Sociology	3
	3	F-P 224	Protection Systems in Industry	3
	5	MGT 240	Personnel Management	3
	5	CEM 097	Chemistry of Combustibles	3
		S-O 110A	Typewriting	2
				15

Total Credit Hours For Program—62

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

INSTITUTIONAL FOODS AND MANAGEMENT ADVISORY COMMITTEE

Mr. William H. Buettner ..... Chairman
Commercial Representative
Michigan Consolidated Gas Company
Ann Arbor

Mr. Walter Orth
Manager
Michigan Union Food Service
Ann Arbor

Mr. Joseph Bianco
Manager
Washtenaw Country Club
Ypsilanti

Mr. William J. Marzonie
General Manager
Hilton Inn
Ann Arbor

Mrs. Ann Asheton
Supervisor of Cafeteria
Ann Arbor Public Schools
Ann Arbor

Mr. Robert R. Hacker
General Manager
Weber's Inn
Ann Arbor

Mr. Michael Bibb
Manager
Flaming Pit Restaurant
Ann Arbor

Mr. Richard Carlson
Manager
Frontier Beef Buffet
Ann Arbor

Mr. Harvey Glaze
Executive Chef
Ann Arbor Town Club
Ann Arbor

Mr. William Smart
Director
Residence Hall Food Service
Eastern Michigan University
Ypsilanti

Faculty Coordinator: Mrs. Rosalinda L. Hoops
Student Representatives: Miss Barbara Sauter
Mr. James L. Mitchell

INSTITUTIONAL FOODS MANAGER

Two-Year Program—Code 641

ADVISORS: Mrs. L. Hoops, E. Alpha, P. W. Davis

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	3	IFM 100	Introduction to Restaurant Management	3
_____	4	IFM 109	Food Service Management Seminar	1
_____	2	IFM 110	Sanitation and Hygiene	2
_____	1	IFM 111	Elementary Food Preparation	6
_____	5	PSY 100	Introductory Psychology	3
				15
		SECOND TERM		
_____	3	IFM 118	Nutrition	2
_____	5	IFM 120	Organization & Management	3
_____	2	IFM 122	Quantity Food Production	6
_____	3	IFM 128	Food Merchandizing	2
_____	6	ACC 091	Fundamentals of Accounting or	
		ACC 111	Principles of Accounting	3
				16
		THIRD TERM		
_____	3	IFM 222	Advanced Quantity Food Production	4
_____	6	IFM 224	Food & Beverage Management	4
_____	7	IFM 228	Layout & Equipment	6
_____	7	ENG	English Elective	3
				17
		FOURTH TERM		
_____	8	IFM 223	Advanced Organization & Management	3
_____	8	G-B 200	Independent Directed Study	3
_____	7	PLS 108	Government & Society	3
_____	8	I-E 200	Internship-Externship	3
				12

Total Credit Hours For Program—60

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

LAW ENFORCEMENT ADVISORY COMMITTEE

Mr. Stanley Dulgeroff ..... Chairman
Director
Southeast Regional Criminal
Justice Training Center
Ann Arbor

Captain James Borst
Ypsilanti Police Department
Ypsilanti

Mr. William F. Delhey
Prosecuting Attorney
Washtenaw County
Ann Arbor

Sheriff Douglas Harvey
Washtenaw County Sheriff Department
Ann Arbor

Captain Walter Hawkins
Ann Arbor Police Department
Ann Arbor

The Reverend Fred R. Holtfreter
Associate Pastor
Zion Lutheran Church
Ann Arbor

Chief Walter Krasny
Ann Arbor Police Department
Ann Arbor

Mr. Clarence E. McFall
Assistant Director
Office of Economic Opportunity
Ann Arbor

Sgt. Raymond Dedenbach
Brighton State Police Post
Brighton

Program Coordinator: Dr. Paul W. Davis
Student Representatives: Mr. William Meisling
Mr. James Taylor

LAW ENFORCEMENT TECHNICIAN

Two-Year Program—Code 651

ADVISOR: Dr. P. W. Davis

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	PSY 100 Introductory Psychology	3
_____	1	PLS 108 Government and Society	3
_____	6	MTH 092 Foundations of Occupational Mathematics	3
_____	6	SOC 100 Principles of Sociology	3
_____	4	ENG 111 English Composition	3
			15
		SECOND TERM	Hrs.
_____	2	ENG 100 Technical Communications	3
_____	3	S-O 110 Typewriting	2
_____	2	SOC 207 Social Problems	3
_____	3	PLS 150 State & Local Government & Politics	3
_____	4	PSY 108 Dynamics of Behavior	3
_____	4	SPH 100 Fundamentals of Speaking	3
			17
		THIRD TERM	Hrs.
_____	6	L-E 097 Legal Photography	3
_____	5	SOC 250 Juvenile Delinquency	3
_____	5	SOC 202 Criminology	3
_____	6	EC 111 Introduction to Economics	3
		Elective*	3
			15
		FOURTH TERM	Hrs.
_____	7	L-E 224 Criminal Investigation	3
_____	7	L-E 209 Criminal Law	3
_____	8	L-E 200 Specialized Study	8
			14

Total Credit Hours For Program—61

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

LIBRARY TECHNOLOGY ADVISORY COMMITTEE

Miss Marjorie Tompkins .....Chairman
Assistant to Director
University of Michigan Library
Ann Arbor

Mr. Homer Chance
Director
Ann Arbor Public Library
Ann Arbor

Mrs. Katherine Waldhorn
Head Librarian
Ypsilanti Public Library
Ypsilanti

Mr. Gene B. Wilson
Reference Library
Ann Arbor Public Library
Ann Arbor

Faculty Coordinator: Dr. Paul W. Davis
Student Representative: Miss Barbara Holbrook

LIBRARY TECHNICIAN

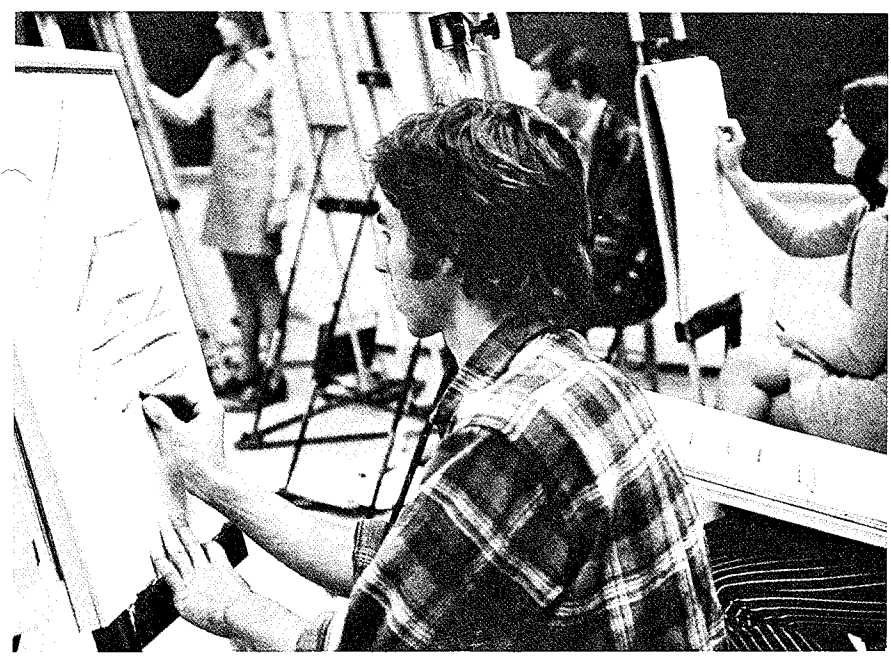
Two-Year Program—Code 623

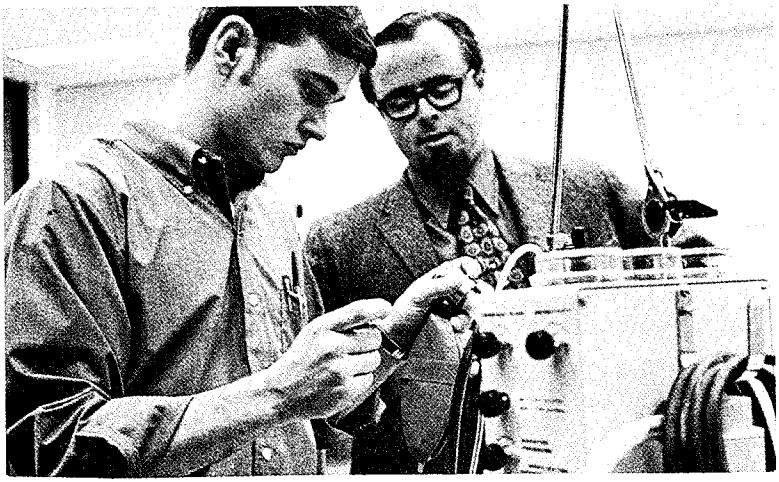
ADVISOR: Dr. P. W. Davis

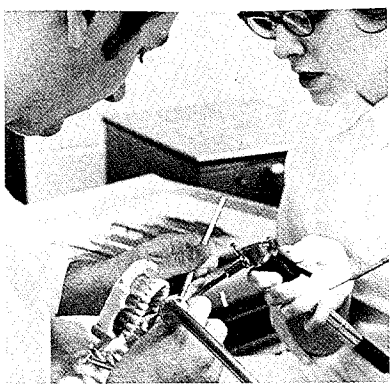
Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	LIB 111 Library Practice	4
_____	6	SPH 100 Fundamentals of Speaking	3
_____	1	S-O 110 Typewriting	2
_____	6	ENG 111 English Composition	3
_____	5	MTH 092 Foundations of Occupational Mathematics	3
			15
		SECOND TERM	Hrs.
_____	2	LIB 122 Library Practice	4
_____	6	I-E 200 Internship-Externship	3
_____	3	S-O 110 Typewriting	2
_____	2	ENG 160 Introduction to Literature	3
_____	5	PSY 100 Introductory Psychology	3
			15
		THIRD TERM	Hrs.
_____	7	I-E 200 Internship-Externship	3
_____	1	PLS 100 Introduction to Political Science	3
_____	3	S-O 150 Office Systems and Procedures	3
_____	3	ENG 213 World Literature	3
_____	8	EC 111 Introduction to Economics	3
			15
		FOURTH TERM	Hrs.
_____	8	I-E 200 Intern-Externship	3
_____	7	MGT 200 Human Relations in Business & Industry	3
_____	4	ART 130 Art Appreciation	3
_____	4	ENG 224 World Literature	3
_____	5	S-O 130 Business Machines	2
	7	PLS 108 Government & Society	3
			17

Total Credit Hours For Program—62

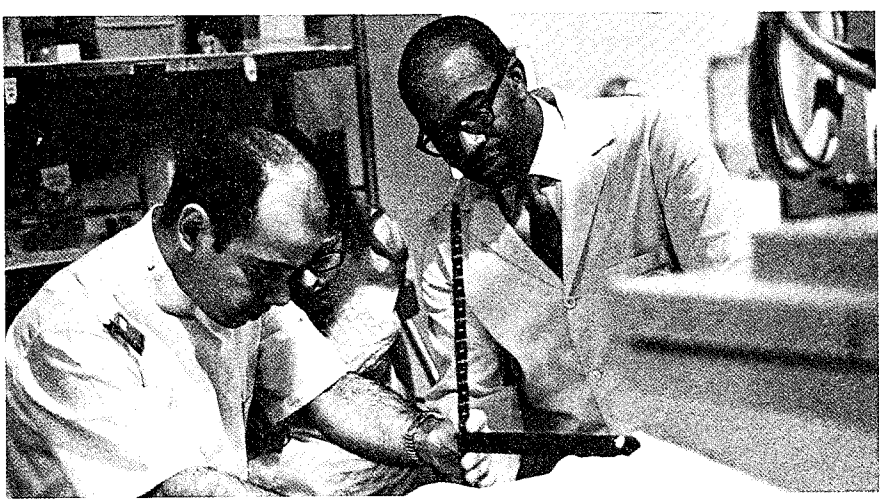
PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.







HEALTH OCCUPATIONS



DENTAL ASSISTING ADVISORY COMMITTEE

Dr. Frank Comstock ..... Chairman
Professor of Dentistry
The University of Michigan
Ann Arbor

Dr. James B. Bush
Professor of Dentistry
The University of Michigan
Ann Arbor

Dr. Burton Hodges
Dentist
Milan

Dr. Robert Lorey
Professor of Dentistry
The University of Michigan
Ann Arbor

Miss Pat Pagzkowski
Certified Dental Assistant
Ann Arbor

Mrs. Della Sell
Certified Dental Assistant
Secretary at The University of
Michigan School of Dentistry
Ann Arbor

Dr. Robert Vandersluis
Dentist
Whitmore Lake

Dr. Norman Wilner
Dentist
Dexter

Dr. Carl Woolley
Dentist
Ann Arbor

Faculty Coordinator: Miss Betty Ladley
Dental Director: Dr. Joseph Chasteen

DENTAL ASSISTANT

Two-Year Program—Code 711

ADVISOR: Miss B. Ladley

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	D-A 110	Introduction to Dental Assisting	3
_____	1	D-A 111	Dental Science	4
_____	1	BIO 140	Basic Health Science	3
_____	1	BIO 141	Basic Health Science Laboratory	1
_____	6	ENG 111	English Composition or English Fundamentals 091	3
				14
		SECOND TERM		
_____	2	D-A 120	Oral Diagnosis Technique	1
_____	2	D-A 121	Introduction to Clinical Procedures	4
_____	2	D-A 122	Advanced Dental Science	4
_____	2	S-O 110A	*Typewriting	2
_____	5		**Elective in English, Speech, or Art	3
				14
		THIRD TERM		
_____	5	D-A 200	Dental Assistant Clinical Practice	5
_____	3	D-A 210	Principles of Dental Laboratory Procedures	4
_____	3	D-A 212	Dental Office Systems and Practice Management	5
_____	3	D-A 213	Dental Roentgenology	2
				16
		FOURTH TERM		
_____	4	D-A 214	Dental Roentgenology	2
_____	6	D-A 222	Dental Assistant Clinical Practice	5
_____	6	PLS 108	Government and Society or State and Local Government 150	3
			**Elective in Psychology, Sociology, or History	3
			**Elective in Chemistry, Mathematics, Geology, or Physical Science	3-4
				17-18

Total Credit Hours For Program—61

* A student who has had one year of typing may elect a course of his choice.

** Electives subject to approval of advisor.

A student must maintain a C average in all dental courses to qualify for graduation and meet the standards of the National Certification Examination.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

INHALATION THERAPY ADVISORY COMMITTEE

Dr. Thomas J. DeKornfeld .....Chairman
Professor of Anesthesiology
The University of Michigan Hospital
Ann Arbor

Mr. Anthony G. Branch
Administrative Assistant to Chief of Staff
Veterans Administration Hospital
Ann Arbor

Mr. Alan R. Case
Administrator
Beyer Memorial Hospital
Ypsilanti

Dr. Jay S. Finch
Assistant Professor of Anesthesiology
The University of Michigan Hospital
Ann Arbor

Mr. Don E. Gilbert
Chief Inhalation Therapist
The University of Michigan Hospital
Ann Arbor

Mr. John L. Shelton
Technical Director of Inhalation Therapy
St. Joseph Mercy Hospital
Ann Arbor

Mr. Richard D. Sundstrom
Chief Inhalation Therapist
Beyer Memorial Hospital
Ypsilanti

Mr. Stephen R. Young
Assistant Administrator
St. Joseph Mercy Hospital
Ann Arbor

Mr. John J. Zugich
Associate Director
University of Michigan Hospital
Ann Arbor

Faculty Coordinator: Mr. Carl F. Hammond
Student Representative: Mr. Anthony D. Gillum, Sr.

INHALATION THERAPIST

Two-Year Program—Code 721

ADVISORS: C. Hammond, W. Simpson

Student Program

Full-Time Sequence

FIRST TERM		Hrs.
	English or Speech Elective	3
BIO 151	Inhalation Therapy Science	5
IT 113*	Nursing Arts for Inhalation Therapy	3
MTH 092	Foundations of Occupational Mathematics	3
		14

SECOND TERM		Hrs.
IT 111	Inhalation Therapy Procedures	3
IT 124	Nursing Arts for Inhalation Therapy	3
IT 125	Introduction to Applied Inhalation Therapy	1
BIO 152	Inhalation Therapy Science	4
IT 199	Clinical Practice	4
		15

SUMMER WORK EXPERIENCE

THIRD TERM		Hrs.
IT 136	Applied Inhalation Therapy	3
IT 122	Inhalation Therapy Procedures	3
ENG 100	Technical Communications	3
PSY 108	Dynamics of Behavior	3
IT 199	Clinical Practice	4
		16

FOURTH TERM		Hrs.
SOC 100	Principles of Sociology	3
PLS 150	State and Local Government and Politics	3
IT 199	Clinical Practice	4
IT 214	Seminar—Inhalation Therapy	3
IT 221	Inhalation Therapy Organization and Management	3
		16

Total Credit Hours For Program—61

High School Chemistry—ACT Test Required—One Year Algebra strongly recommended.
The Washtenaw Community College program in Inhalation Therapy is conducted in cooperation with: St. Joseph Mercy Hospital, University Hospital, The University of Michigan Medical Center, Veterans Administration Hospital—Ann Arbor—Beyer Memorial Hospital, and Wayne County General Hospital.

PART-TIME STUDENTS: Contact advisor to plan special program.
* Program has special application procedure. Contact advisor for details.

RADIOLOGIC TECHNOLOGY ADVISORY COMMITTEE

Dr. Lamar J. Hankamp .....Chairman
Chief Radiologist
St. Joseph Mercy Hospital
Ann Arbor

Mr. Larry Anderson
Assistant Administrator
St. Joseph Mercy Hospital
Ann Arbor

Mr. Ronald G. Cosby
Manager of Radiology Services
Ann Arbor

Mr. Frank J. Delatorre
Medical Radiological Technician
The University of Michigan Hospital
Ann Arbor

Mr. Robert H. Johnson
Radiology Supervisory Technician
Veterans Administration Hospital
Ann Arbor

Mr. Lawrence L. McElroy
Assistant Supervisor of Radiology Department
St. Joseph Mercy Hospital
Ann Arbor

Dr. Wayne D. Rankin
Clinical Instructor
Veterans Administration Hospital
Ann Arbor

Dr. Robert Rapp
Chief Radiologist
Veterans Administration Hospital
Ann Arbor

Dr. Herbert Spencer
Administrator
Veterans Administration Hospital
Ann Arbor

Dr. Walter M. Whitehouse
Chairman of Department of Radiology
The University of Michigan Hospital
Ann Arbor

Mr. John J. Zugich
Associate Director
The University of Michigan Hospital
Ann Arbor

Faculty Coordinator: Mr. Robert Nelson
Student Representatives: Mr. Johnny Newton
Mr. John E. Rowe

RADIOLOGIC TECHNOLOGIST
(X-Ray)

Two-Year Program—Code 741

ADVISORS: R. Nelson, W. Simpson

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
		RT 111 Fundamentals of Radiologic Technology	4
		BIO 211 Anatomy and Physiology	3
		MTH 092 Foundations of Occupational Mathematics	3
		ENG English or Speech Elective	3
		RT 199 Clinical Practice (I)	3
			16
		SECOND TERM	
		RT 122 Fundamentals of Radiologic Technology	4
		BIO 222 Anatomy and Physiology	3
		RT 120 Medical Terminology	1
		ENG 100 Technical Communications	3
		RT 199 Clinical Practice (II)	3
			14
		SUMMER WORK EXPERIENCE	
		THIRD TERM	
		RT 213 Principles of Radiologic Technology	4
		PHY 091 Radiologic Physics	3
		PLS 150 State and Local Government and Politics	3
		RT 199 Clinical Practice (III)	4
			14
		FOURTH TERM	
		RT 224 Principles of Radiologic Technology	4
		PHY 092 Radiologic Physics	3
		RT 228 Supervisory Management	2
		PSY 108 Dynamics of Behavior	3
		RT 199 Clinical Practice (IV)	4
			16
		SUMMER WORK EXPERIENCE	

Total Credit Hours For Program—60

The Washtenaw Community College program in Radiographic Technology is conducted in cooperation with: St. Joseph Mercy Hospital, University Hospital, The University of Michigan Medical Center, Veterans Administration Hospital, Ann Arbor, and Beyer Memorial Hospital, Ypsilanti.

PART-TIME STUDENTS: Contact advisor to plan special program.

MEDICAL OFFICE SPECIALIST
(Medical Office Worker)

Two-Year Program—Code 731

ADVISOR: R. Bertoia

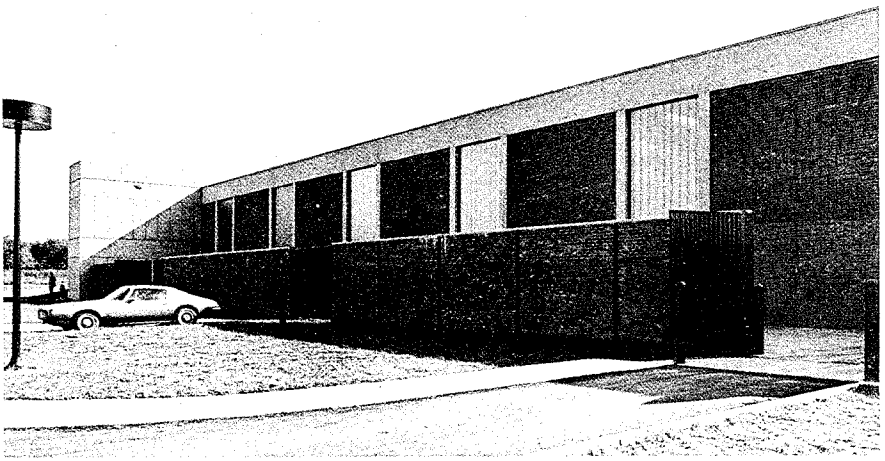
Student Program	Part-Time Sequence	Full-Time Sequence			Hrs.
		FIRST TERM			
_____	1	SO (ABC)	110	Typewriting and/or Elective*	2
_____	1	SO (ABC)	100	Shorthand and/or Elective**	3
_____	1	BIO	140	Basic Health Science	3
_____	1	BIO	141	Basic Health Science Laboratory	1
_____	3	ENG 091 or 111		English Fundamentals or English Composition	3
_____	3	MTH	092	Foundations of Occupational Mathematics	3
					15
		SECOND TERM			
_____	2	SO (ABC)	110	Typewriting and/or Elective*	2
_____	2	SO (ABC)	100	Shorthand and/or Elective**	3
_____	3	MO	189	Study Problems	3
_____	2	RT	120	Medical Terminology	1
_____				Electives	7
					16
		THIRD TERM			
_____	4	SO	150	Office Systems and Procedures	3
_____	5	GB	207	Business Communication	3
_____	7	PLS	150	State and Local Government and Politics	3
_____	6	MO	189	Study Problems	3
_____	4	DP	111	Principles of Data Processing	4
					16
		FOURTH TERM			
_____	8	MO	189	Study Problems	4
_____	5	DP	122	Data Processing Applications	4
_____	6	SOC	100	Principles of Sociology	3
_____				Elective	3
					14

Total Credit Hours For Program—61

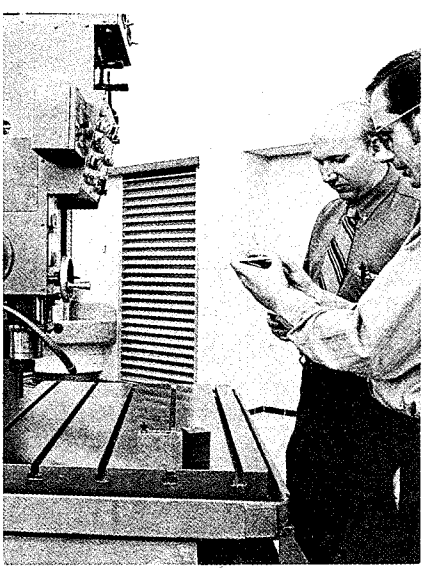
* Typewriting credit and contact hours are progressive in accordance with student progress and proficiency level. (See catalog course description.)

** Shorthand credit and contact hours are progressive in accordance with student progress and proficiency level. (See catalog course description.)

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.



TECHNICAL AND INDUSTRIAL OCCUPATIONS



AUTO BODY
ADVISORY COMMITTEE

Mr. Frank Nicholas .....Co-Chairman
Body Shop Manager
Ann Arbor Buick
Ann Arbor

Mr. Bill Yahr .....Co-Chairman
Owner
Ideal Body Shop
Ann Arbor

Mr. Clifford A. Burnham
Body Shop Manager
Zahn Auto Service
Ann Arbor

Mr. Elmer Fish
Body Repairman
White's Auto Paint Shop
Ann Arbor

Mr. Tom Hilbert
Owner
Hilbert's Garage
Ann Arbor

Mr. Clair Holland
Owner
Clair's Collision
Lincoln Park

Mr. Ed. Jones
Co-Owner
D & E Collision
Ann Arbor

Mr. Lorne Kemp
Owner
Anderson and Deck Service
Ypsilanti

Mr. Earl Nicholas
Body Repairman
Ann Arbor Buick
Ann Arbor

Mr. Norman Wenk
Owner
City Body Shop
Ypsilanti

Mr. Owen White
Owner
White's Auto Paint Shop
Ann Arbor

Faculty Coordinator: Mr. Floyd Belkola
Student Representatives: Mr. Terral Ives
Mr. Michael Spiess

AUTO BODY REPAIRMAN

One-Year Program—Code 812

ADVISOR: F. Belkola

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	2	ABR 111	Auto Body Repair Fundamentals	4
_____	1	ABR 112	Automobile Refinishing Fundamentals	4
_____	2	ABR 113	Light Body Service	1
_____	1	WF 111	Welding and Fabrication	4
_____	2	AS 110	Service Orientation	1
_____	3	AS 212	Electrical Circuits	1
_____	3	AS 213	New Car Features	1
				16
		SECOND TERM		
_____	5	ABR 123	Body Repair Methods	4
_____	5	ABR 125	Flat Rate Estimating	2
_____	4	ABR 126	Fundamentals of Frame and Unit Body Alignment	3
_____	6	AS 202	Automotive Air Conditioning	1
_____	6	PLS 108	Government and Society	3
_____	4	ENG 107	Communication Skills	3
				15

Total Credit Hours For Program—32

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

AUTO BODY SERVICE TECHNICIAN

Two-Year Program—Code 811

ADVISOR: F. Belkola

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	2	ABR 111	Auto Body Repair Fundamentals	4
_____	1	ABR 112	Automobile Refinishing Fundamentals	4
_____	2	ABR 113	Light Body Service	1
_____	1	WF 111	Welding and Fabrication	4
_____	4	MTH 092	Foundations of Occupational Mathematics	3
				16
		SECOND TERM		
_____	4	ABR 123	Body Repair Methods	4
_____	3	ABR 124	Automobile Refinishing	4
_____	5	ABR 125	Flat Rate Estimating	2
_____	3	ABR 126	Fundamentals of Frame and Unit Body Alignment	3
_____		ENG 107	Communication Skills	3
				16
		Summer		
		ABR 199	On-the-job Training, or Approved Elective	4
				4
		THIRD TERM		
_____	6	ABR 210	Frame and Unit Body Straightening	3
_____	6	ABR 211	Body Rebuilding Methods	3
_____	5	WF 102	Arc Welding	2
_____	5	AS 204	Suspension Systems	2
_____	5	AS 212	Electrical Circuits	1
_____	5	AS 213	New Car Features	1
_____			Elective	2
				14

		FOURTH TERM	Hrs.
	8	ABR 220 Collision Estimating	3
	8	ABR 222 Major Body Repair	3
	7	AS 202 Automotive Air Conditioning	1
	7	AS 215 Customer Relations	1
	7	PLS 150 State and Local Government	3
			15

Total Credit Hours For Program—61

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

AUTOMOBILE PAINT SPRAYER

One-Year Program—Code 813

ADVISOR: F. Belkola

Student Program	Part-Time Sequence	Full-Time Sequence	
		FIRST TERM	Hrs.
	2	ABR 111 Auto Body Repair Fundamentals	4
	1	ABR 112 Automobile Refinishing Fundamentals	4
	1	AS 112 Service Orientation	1
	2	ABR 113 Light Body Service	1
	4	MTH 092 Foundations of Occupational Mathematics	3
		**Elective	2
			15
		SECOND TERM	Hrs.
	3	ABR 124 Automobile Refinishing	4
	4	ABR 125 Flat Rate Estimating	2
	3	ABR 199 *On-the-job Training	3
	5	PLS 108 Government and Society	3
		ENG 107 Communication Skills	3
			15

Total Credit Hours For Program—30

** Electives subject to approval of student's advisor
* May substitute 3 hrs. Study Problems 189.
* 3 Credit Hours of On-The-Job Training 199 is required for certificate
On-the-job Training 199—10 hrs. per week per credit hour

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

AUTOMOTIVE SERVICE TECHNICIAN

Two-Year Program—Code 815

ADVISORS: B. Welch, K. Barron

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	AS 101	Automotive Electricity	2
_____	1	AS 102	Engine Operation	2
_____	1	AS 103	Basic Carburetion	1
_____	5	AS 104	Brake Systems	2
_____	1	AS 110	Service Orientation	1
_____	5	AS 150	Light Service Repair	2
_____	4	WF 101	Acetylene Welding	2
_____		PHY 090	Automotive Physics	3
				15
		SECOND TERM		Hrs.
_____	6	AS 105	Wheel Balancing and Alignment	2
_____	2	AS 106	Cranking and Charging Systems	2
_____	2	AS 107	Fuel Systems	2
_____	6	AS 108	Transmission and Power Trains	2
_____	2	AS 201	Automotive Test Equipment	2
_____	2	MTH 092	Foundations of Occupational Mathematics	3
_____		ENG 107	Communication Skills	3
				16
		SUMMER		Hrs.
_____		AS 199	On-The-Job-Training or Approved Elective	4
				4
		THIRD TERM		Hrs.
_____	7	AS 203	Automatic Transmissions	2
_____	7	AS 204	Suspension Systems	2
_____	7	AS 207	Steering Systems	1
_____	3	AS 211	Emissions	2
_____	3	AS 212	Electrical Circuits	1
_____		PLS 108	Government and Society	3
_____			Elective	3
				14

		FOURTH TERM		Hrs.
	4	AS 202	Automotive Air Conditioning	1
	8	AS 205	Diagnosis	2
		AS 208	Automatic Transmission Hydraulic Systems	2
	8	AS 210	Noise, Vibration, and Harshness	1
	8	AS 213	New Car Features	1
	4	AS 214	Heating and Air Conditioning	1
	6	AS 215	Customer Relations	1
			Elective	3
				12

Total Credit Hours For Program—61

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

AUTOMOTIVE SERVICE TECHNICIAN ADVISORY COMMITTEE

Mr. D. James Sanderson .....Chairman
Service Manager, Howard Cooper Volkswagen, Inc.
Ann Arbor

Mr. George Porter
Superintendent, Vehicle Maintenance
U.S. Post Office
Ann Arbor

Mr. Ted Glowiki
Service Manager, Naylor Motors
Ann Arbor

Mr. Donald Tickner
Mechanic, Strahley Chevrolet
Saline

Mr. John Bruckner
Owner, Bruckner Oldsmobile
Milan

Mr. Tom Deasy
Owner, Deasy Service
Ann Arbor

Faculty Coordinator: Mr. Bruce Welch
Student Representative: Mr. Jeffrey L. Eckert

AUTOMOTIVE MECHANIC

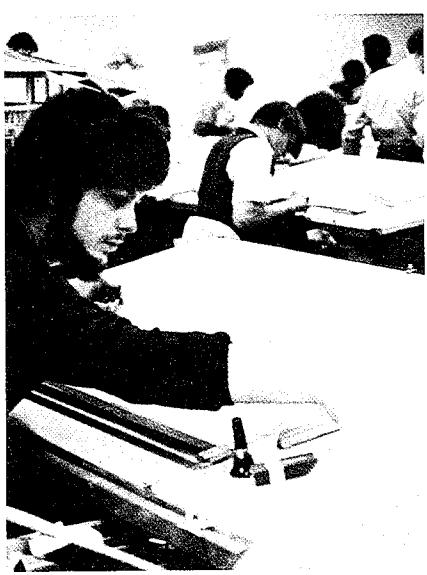
One-Year Program—Code 816

ADVISOR: T. Hopper

Student Program	Sequence Part-Time	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	AS 101	Automotive Electricity	2
_____	1	AS 102	Engine Operation	2
_____	1	AS 103	Basic Carburetion	1
_____	3	AS 104	Brake Systems	2
_____	3	AS 110	Service Orientation	1
_____	3	AS 150	Light Service Repair	2
_____	1	AS 204	Suspension Systems	2
_____	3	WF 101	Acetylene Welding	2
				14
		SECOND TERM		Hrs.
_____	4	AS 105	Wheel Balancing and Alignment	2
_____	2	AS 106	Cranking and Charging Systems	2
_____	2	AS 107	Fuel Systems	2
_____	2	AS 108	Transmission and Power Trains	2
_____	2	AS 201	Automotive Test Equipment	2
_____	4	AS 210	Noise, Vibration, and Harshness	1
_____	3	AS 211	Emissions	2
_____	4	ENG 107	Communication Skills	3
				16

Total Credit Hours For Program—30

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.



ARCHITECTURAL DRAFTING ADVISORY COMMITTEE

Mr. Warren E. Poole ..... Chairman
Assistant University Architect
The University of Michigan
Ann Arbor

Mr. Louis Boone
President
Boone & Darr, Incorporated
Ann Arbor

Mr. E. Terry Clark
Colvin, Robinson and Wright
Ann Arbor

Mr. O. S. Delancy
Lane, Riebe, Wieland Architects
Ann Arbor

Mr. John Hunter
President
Porcelain Building Products, Inc.
Ann Arbor

Mr. Joseph O'Neal
Contractor
Ann Arbor

Mr. A. Peters Oppermann
Professor
The University of Michigan
Ann Arbor

Mr. Nelson Vanderheyden
President
Jeffress-Dyer, Incorporated
Ann Arbor

Mr. John L. Wacksmuth
Commonwealth Associates Inc.
Jackson

Mr. Donald F. Wright
Architect
Colvin, Robinson, Wright and Associates
Ann Arbor

Mr. Fred E. Zrmack
Zrmack Associates
Ann Arbor

Faculty Coordinator: Mr. David R. Byrd
Student Representative: Mr. David R. Gebhardt

ARCHITECTURAL DRAFTING DETAILER

One-Year Program—Code 822

ADVISORS: D. Byrd, M. Pogliano

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
	1	ARC 111	Architectural Drawing	6
	3	S-O 090	Fundamentals of Typewriting	1
	2	ARC 117	Construction Materials	3
	4	MTH 109	Intermediate Algebra	4
	5	ENG 091	English Fundamentals or	
		ENG 111	English Composition	3
				17
		SECOND TERM		**Hrs.**
	2	ARC 122	Architectural Drawing	6
	3	ARC 120	Mechanical Equipment	2
	6	TCA 100	Perspective and Parallel Projection	4
	5	ARC 209	Surveying	3
	4	ARC 100	Specifications	1
				16

Total Credit Hours For Program—33

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

CONSTRUCTION SPECIALIST

One-Year Program—Code 823

ADVISORS: D. Byrd, M. Pogliano

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	ARC 111	Architectural Drawing	6
_____	1	ARC 117	Construction Materials	3
_____	2	ARC 207	Estimating Construction Costs	2
_____	1	BPR 100	Blueprint Reading for Construction Trades	3
_____	4	G-B 111	Business Law	3
				17
		SECOND TERM		
_____	3	ARC 109	Site Layout	3
_____	3	ARC 208	Estimating Construction Costs	2
_____	2	ARC 100	Specifications	1
_____	2	BPR 110	Blueprint Reading for Construction Trades	2
_____		OJT 199	On-the-Job Training	3
_____	4	ENG 100	Technical Communications	3
				14

Total Credit Hours For Program—31

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

ARCHITECTURAL DRAFTING TECHNICIAN

Two-Year Program—Code 821

ADVISORS: D. Byrd, M. Pogliano

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	ARC 111	Architectural Drawing	6
_____	4	S-O 090	Fundamentals of Typewriting	1
_____	1	ARC 117	Construction Materials	3
_____	5	MTH 109	Intermediate Algebra	4
_____	6	ENG 091	English Fundamentals or	
		ENG 111	English Composition	3
				17
		SECOND TERM		
_____	2	ARC 122	Architectural Drawing	6
_____	2	ARC 120	Mechanical Equipment	3
_____	5	TCA 100	Perspective and Parallel Projection	3
_____	6	ARC 209	Surveying	3
_____	3	ARC 100	Specifications	1
				16
		THIRD TERM		
_____	3	ARC 213	Architectural Drawing	6
_____	4	ARC 210	Structure in Architecture	2
_____	5	ARC 207	Estimating Construction Costs	2
_____	3	PHY 111	Introductory Physics	4
_____	2	ENG 100	Technical Communications	3
				17
		FOURTH TERM		
_____	4	ARC 224	Architectural Drawing	6
_____	4	ARC 200	Specifications	1
_____	6	ARC 208	Estimating Construction Costs	2
_____	7	PLS 108	Government and Society	3
		OJT 199	On-the-Job Training	3
				15

Total Credit Hours For Program—65

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

INDUSTRIAL DRAFTING ADVISORY COMMITTEE

Mr. William R. Corkin ..... Chairman
Assistant Superintendent Tool Room
and Machine Rebuilding
General Motors Hydra-matic Division
Willow Run

Mr. Robert Yonker ..... Recorder
Process Engineer
General Motors Hydra-matic Division
Willow Run

Mr. Michael Berkey
Senior Design Engineer
General Motors Hydra-matic Division
Willow Run

Mr. Arlan Connell
Senior Design Engineer
General Motors Hydra-matic Division
Willow Run

Mr. Lloyd Emmons
Design Checker
Bendix Aerospace
Ann Arbor

Mr. Frederick Fitts
Senior Engineer
Bendix Industrial Metrology
Ann Arbor

Mr. John Holmes
Senior Project Engineer
John H. Hoad & Associates, Inc.
Ypsilanti

Mr. Harvey Lentz
Engineer
General Motors Hydra-matic Division
Willow Run

Mr. Theodore Milek
Senior Design Engineer
General Motors Hydra-matic Division
Willow Run

Mr. Neil Navarre
Chief Draftsman
Bendix Electro-Optics Div.
Ann Arbor

Mr. David Nowak
Designer
Bendix Aerospace
Ann Arbor

Mr. Philip Teders
Chief Engineer
Sarns, Incorporated
Ann Arbor

Mr. Kuo Tu
Supervisor, Research & Development
R & B Machine Tool Company
Saline

Faculty Coordinator: Mr. Charles Koti
Student Representative: Mr. Ronald Wuerth

DRAFTSMAN-DETAILER

One-Year Program—Code 827

ADVISORS: C. Koti, E. Toogood, R. J. Packard

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	I-D 111	Industrial Drafting	4
_____	1	BPR 101	Blueprint Reading	3
_____	3	TCA 100	Perspective and Parallel Projection	4
_____	4	MTH	Mathematics Elective	4
				15
		SECOND TERM		Hrs.
_____	2	I-D 112	Descriptive Geometry	4
_____	3	I-D 122	Fundamentals of Jigs and Fixtures	3
_____	3	M-T 111	Machine Shop Theory and Practices	4
_____	2	W-F 100	Fundamentals of Welding	2
_____	4	ENG	English Elective	3
				16

Total Credit Hours For Program—31

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

INDUSTRIAL DRAFTING TECHNICIAN (TOOLING OPTION)

Two-Year Program—Code 825

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	I-D 111 Industrial Drafting	4
_____	2	M-T 111 Machine Shop Theory and Practices	4
_____	1	BPR 101 Blueprint Reading	3
_____	1	MTH 151 Applied Algebra	4
			15
		SECOND TERM	Hrs.
_____	2	I-D 112 Descriptive Geometry	4
_____	3	I-D 122 Fundamentals of Jigs and Fixtures	3
_____	2	P-S 100 Power Sources	4
_____	3	MLG 101 Industrial Materials	2
_____	2	MTH 152 Applied Geometry/Trigonometry	4
			17
		THIRD TERM	Hrs.
_____	5	TCA 100 Perspective and Parallel Projection	4
_____	7	MTL 105 *Industrial Measuring Processes	3
_____	3	I-D 107 Mechanisms	4
_____	4	N-C 100 Introduction to Numerical Control	3
_____	6	ENG 100 Technical Communications	3
			17
		FOURTH TERM	Hrs.
_____	4	I-D 213 Fundamentals of Die Drafting	4
_____	5	I-D 224 Fundamentals of Industrial Tooling	3
_____	4	MLG 202 Manufacturing Processes	3
_____	5	N-C 121 Programming for Numerical Control	3
_____	6	PLS 108 Government and Society	3
			16

Total Credit Hours For Program—65

* M-T Machine Tool Operation and Set Up 122 (4) or OJT 199 may be substituted.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

INDUSTRIAL DRAFTING TECHNICIAN (PRODUCT OPTION)

Two-Year Program—Code 826

ADVISORS: C. Koti, E. Toogood, R. J. Packard

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	I-D 111 Industrial Drafting	4
_____	2	M-T 111 Machine Shop Theory and Practices	4
_____	1	BPR 101 Blueprint Reading	3
_____	1	MTH 151 Applied Algebra	4
			15
		SECOND TERM	Hrs.
_____	2	I-D 112 Descriptive Geometry	4
_____	3	I-D 122 Fundamentals of Jigs and Fixtures	3
_____	2	P-S 100 Power Sources	4
_____	3	MLG 101 Industrial Materials	2
_____	2	MTH 152 Applied Geometry/Trigonometry	4
			17
		THIRD TERM	Hrs.
_____	5	TCA 100 Perspective and Parallel Projection	4
_____	5	I-D 206 Fundamentals of Plant Layout	3
_____	7	MTL 105 *Industrial Measuring Processes	3
_____	3	I-D 107 Mechanisms	4
_____	6	ENG 100 Technical Communications	3
			17
		FOURTH TERM	Hrs.
_____	6	TCA 101 Technical Illustration	4
_____	5	I-D 224 Fundamentals of Industrial Tooling	3
_____	7	MLG 123 Metallurgical Testing Procedures	2
_____	7	MLG 202 Manufacturing Processes	3
_____	6	PLS 108 Government and Society	3
			15

Total Credit Hours For Program—64

* M-T Machine Tool Operation and Set Up 122 (4) or OJT 199 may be substituted.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

ELECTRICAL ENGINEERING TECHNICIAN

Two-Year Program—Code 831

ADVISORS: K. Wheeler, D. Russell, J. Williams

Student Program	Part-Time Sequence	Full-Time Sequence	
		FIRST TERM	**Hrs.**
_____	1	E-E 111 Electrical Fundamentals	4
_____	1	E-E 110 Electrical Applications	2
_____	5	I-D 100 Technical Drawing	4
_____	1	MTH 109 Intermediate Algebra or MTH 109A Intermediate Algebra	3-4
_____	8	ENG 091 English Fundamentals or ENG 111 English Composition	3
			16-17
		SECOND TERM	**Hrs.**
_____	2	E-E 122 Electrical Fundamentals	4
_____	2	E-E 120 Electrical Applications	2
_____	4	E-E 127 Industrial Electricity	4
_____	2	MTH 109 Intermediate Algebra or MTH 109B Intermediate Algebra	3-4
_____	4	PHY 111 Introductory Physics	4
			17-18
		THIRD TERM	**Hrs.**
_____	3	E-E 200 Audio and Power Transmission	3
_____	5	E-E 211 Basic Electronics	4
_____	7	E-E 237 Electronic Switching and Control	3
_____	7	E-E 219 Electrical Distribution Systems	3
_____	3	E-E 210 Measurements and Instrumentation	4
			17
		FOURTH TERM	**Hrs.**
_____	6	E-E 220 Electrical Installation and Maintenance Practices	4
_____	7	PLS 108 Government and Society	3
_____	8	E-E 239 Electrical Design	3
_____	8	E-E 240 Practices and Standards Seminar	2
		Approved Non-Technical Elective	3
			15

Total Credit Hours For Program—63-65

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

ELECTRICAL AND ELECTRONICS ADVISORY COMMITTEE

Dr. V. A. Basman ..... Chairman
President
Microtron Corporation
Ann Arbor

Mr. Claybourne Mitchell, Jr. ..... Recorder
Director, Electrical Research
Control Power Corporation
Farmington Park

Dr. Chiao-Min Chu
Professor of Electrical Engineering
The University of Michigan
Ann Arbor

Mr. Harry Colestock
Manager of Engineering
RCA Industrial & Automation Products
Plymouth

Mr. Philip E. Nimmo
Staff Engineer
General Motors
Milford

Mr. Merle Leach
Senior Customer Engineer
IBM
Ann Arbor

Mr. Daniel Gray
Plant Engineering Department
Saline Plant, General Parts Division
Ford Motor Company
Saline

Mr. David E. Klingler
Vice President, Engineering
Datamax Corporation
Ann Arbor

Mr. Doug Lin
Electrical Engineer
Laser Systems Center
Ann Arbor

Faculty Coordinator: Mr. Dean Russell
Student Representative: Mr. Paul Fairchild

ELECTRONICS ENGINEERING TECHNICIAN

Two-Year Program—Code 832

ADVISORS: K. Wheeler, D. Russell, J. Williams

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	E-E 111 Electrical Fundamentals	4
_____	1	E-E 110 Electrical Applications	2
_____	5	I-D 100 Technical Drawing	4
_____	1	MTH 109 Intermediate Algebra or	
		MTH 109A Intermediate Algebra	3-4
_____	7	ENG 091 English Fundamentals or	
		ENG 111 English Composition	3
			16-17
		SECOND TERM	
_____	2	E-E 122 Electrical Fundamentals	4
_____	2	E-E 120 Electrical Applications	2
_____	4	E-E 127 Industrial Electricity	4
_____	2	MTH 109 Intermediate Algebra or	
		MTH 109B Intermediate Algebra	3-4
_____	4	PHY 111 Introductory Physics	4
			17-18
		THIRD TERM	
_____	3	E-E 200 Audio and Power Transmission	3
_____	5	E-E 211 Basic Electronics	4
_____	7	E-E 237 Electronic Switching and Control	3
_____	7	PLS 108 Government and Society	3
_____	3	E-E 210 Measurements and Instrumentation	4
			17
		FOURTH TERM	
_____	8	E-E 238 Industrial Electronic Circuits	4
_____	6	E-E 222 Communication and Pulse Circuits	4
_____	8	E-E 239 Electrical Design	3
_____	8	E-E 240 Practices and Standards Seminar	2
_____	6	Approved Non-Technical Elective	3
			16

Total Credit Hours For Program—64-66

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

ELECTRONIC SERVICE TECHNICIAN

Two-Year Program—Code 834

ADVISORS: K. Wheeler, D. Russell, J. Williams

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	E-E 111	Electrical Fundamentals	4
_____	3	E-E 101	Servicing Techniques	4
_____	1	MTH 151	Applied Algebra	4
_____	4	ENG 100	Technical Communications	3
				15
		SECOND TERM		Hrs.
_____	2	E-E 122	Electrical Fundamentals	4
_____	4	E-E 102	Appliance Repair	4
_____	3	E-E 211	Basic Electronics	4
_____	2	MTH 109	Intermediate Algebra	4
				16
		THIRD TERM		Hrs.
_____	5	E-E 212	Radio and Television Circuitry	5
_____	7	E-E 237	Electronic Switching and Control	3
_____	7	E-E 210	Measurements and Instrumentation	4
_____	5	G-B 140	Business Occupational Foundations or	
		ACC 091	Fundamentals of Accounting	3
				15
		FOURTH TERM		Hrs.
_____	6	E-E 223	Color Television	4
_____	8	E-E 224	Television Service Practices and Procedures	4
_____	6	E-E 220	Electrical Installation and Maintenance Practices	4
_____	8	PLS 150	State and Local Government or	
		PLS 108	Government and Society	3
				15

Total Credit Hours For Program—61

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

ELECTRICAL EQUIPMENT REPAIRMAN

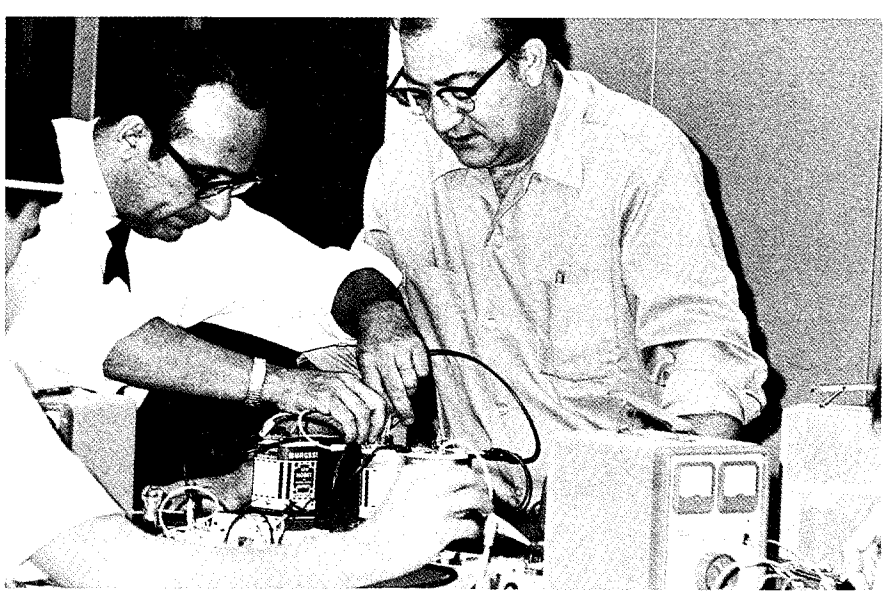
One-Year Program—Code 833

ADVISORS: K. Wheeler, D. Russell, J. Williams

Student Program	Part-Time Sequence	Full-Time Sequence	
		FIRST TERM	**Hrs.**
_____	1	E-E 111 Electrical Fundamentals	4
_____	3	E-E 101 Servicing Techniques	4
_____	1	MTH 151 Applied Algebra	4
_____	4	ENG 100 Technical Communications	3
			15
		SECOND TERM	**Hrs.**
_____	2	E-E 122 Electrical Fundamentals	4
_____	4	E-E 102 Appliances Repair	4
_____	3	E-E 211 Basic Electronics	4
_____	2	MTH 109 Intermediate Algebra	4
			16

Total Credit Hours For Program—31

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.



HYDRAULIC ASSEMBLER

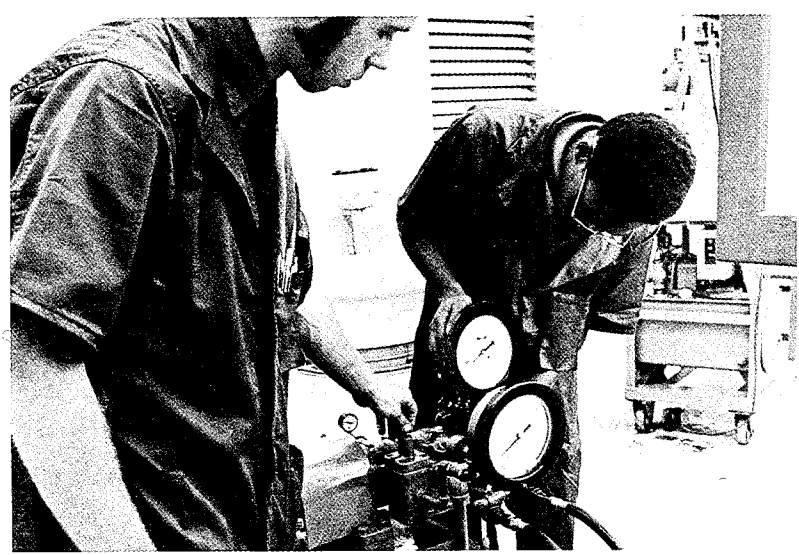
One-Year Program—Code 842

ADVISOR: G. Agin

Student Program	Part-Time Sequence	Full-Time Sequence	
		FIRST TERM	**Hrs.**
_____	1	FLP 111 Fluid Power Fundamentals	4
_____	2	FLP 214 Basic Hydraulic Circuits	3
_____	3	W-F 111 Welding and Fabrication	4
_____	4	MTH 151 Applied Algebra	4
			15
		SECOND TERM	**Hrs.**
_____	2	FLP 122 Hydraulic Generators (Pumps)	4
_____	1	FLP 226 Pneumatics	3
_____	2	BPR 104 Blueprint Reading for Fluid Power	2
_____	3	M-T 100 Machine Shop Theory	3
		SPH 100 Fundamentals of Speaking	3
			15

Total Credit Hours For Program—30

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.



FLUID POWER
ADVISORY COMMITTEE

Mr. Lee A. Sanford ..... Chairman
Sales Engineer
Numatics, Incorporated
Detroit

Mr. Marvin Dimon
Hydraulic Assembler
R & B Machine Tool Company
Saline

Mr. Mel Ellis
Maintenance Foreman
Ford Motor Company
Ypsilanti

Mr. John Eppich
Fluidics Manager
Double A Products
Manchester

Mr. Paul J. Fennema
Fluidic Engineering Supervisor
Double A Products
Manchester

Mr. William A. Hoehn
Plant Engineering Supervisor
Ford Motor Company
Saline

Mr. Joseph Ivacko
Hydraulic Foreman
Chrysler Introl Division
Ann Arbor

Faculty Coordinator: Mr. George Agin
Student Representatives: Mr. Dennis Handy
Mr. Edward Wright

FLUID POWER TECHNICIAN

Two-Year Program—Code 841

ADVISOR: G. Agin

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
	1	FLP 111 Fluid Power Fundamentals	4
	1	FLP 214 Basic Hydraulic Circuits	3
	4	E-E 111 Electrical Fundamentals	4
	1	MTH 151 Applied Algebra or MTH 109 Intermediate Algebra	4
			15
		SECOND TERM	
	2	FLP 122 Hydraulic Generators (Pumps)	4
	2	FLP 226 Pneumatics	3
	3	BPR 104 Blueprint Reading for Fluid Power	2
	5	I-D 100 Technical Drawing	4
	7	SPH 100 Fundamentals of Speaking	3
			16
		THIRD TERM	
	3	FLP 213 Hydraulic Controls	3
	2	N-C 100 Introduction to Numerical Control	3
	3	W-F 100 Fundamentals of Welding	2
	6	PHY 111 Introductory Physics	4
	7	ENG 100 Technical Communications	3
			15
		FOURTH TERM	
	4	FLP 227 Air Control Circuitry	3
	4	FLP 225 Advanced Hydraulic Circuits	3
	5	E-E 127 Industrial Electricity	4
	6	M-T 100 Machine Shop Theory	3
	8	PLS 108 Man and Society	3
			16

Total Credit Hours For Program—62

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

MECHANICAL TECHNOLOGY ADVISORY COMMITTEE

Mr. Clifford H. Wilford ..... Chairman
Supervisor, Hydraulic Pneumatics
General Motors Hydra-matic Division
Willow Run

Mr. Richard M. Williams, Jr. ..... Recorder
Electrical Engineer
G. C. Optronics, Incorporated
Ann Arbor

Mr. Tasman Dowding
Exact Sciences Division
Washtenaw Community College
Ann Arbor

Mr. Richard Emanuel
Tool Maker
General Motors Hydra-matic Division
Willow Run

Mr. Virgil Goodwin
General Motors Hydra-matic Division
Willow Run

Mr. Robert P. Nauman
Sycor Inc.
Ann Arbor

Mr. John Toth
Supervisor of Machine Rebuild
General Motors Hydra-matic Div.
Willow Run

Mr. William S. Zaharee
G. C. Optronics, Incorporated
Ann Arbor

Faculty Coordinator: Mr. Burton Lowe
Student Representatives: Miss Mary Boomus
Mr. Thomas Luczak

TOOLROOM MACHINE OPERATOR

One-Year Program—Code 853

ADVISORS: R. Mealing, B. Lowe, P. Wiernik

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	M-T 111	Machine Shop Theory and Practices	4
_____	1	BPR 101	Blueprint Reading	3
_____	3	MLG 101	Industrial Materials	2
_____	1	MTH 151	Applied Algebra	4
_____	3	ENG	English Elective	3
				16
		SECOND TERM		Hrs.
_____	2	M-T 122	Machine Tool Operation and Set Up	4
_____	2	BPR 102	Blueprint Reading	3
_____	3	MLG 123	Metallurgical Testing Procedures	2
_____	3	I-D 100	Technical Drawing	4
_____	2	MTH 152	Applied Geometry/Trigonometry	3
				16

Total Credit Hours For Program—32

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

MECHANICAL-ENGINEERING TECHNICIAN

Two-Year Program—Code 851

ADVISORS: R. Mealing, B. Lowe, P. Wiernik

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	M-T 111 Machine Shop Theory and Practices	4
_____	1	BPR 101 Blueprint Reading	2
_____	1	MTH 109 Intermediate Algebra	4
_____	5	PHS 142 Physical Science	4
_____	6	ENG 091 English Fundamentals or ENG 111 English Composition	3
			17
		SECOND TERM	
_____	2	M-T 122 Machine Tool Operation and Set Up	4
_____	2	I-D 100 Technical Drawing	4
_____	3	I-D 112 Descriptive Geometry	4
_____	2	MTH 152 Applied Geometry/Trigonometry	3
			15
		THIRD TERM	
_____	3	MLG 101 Industrial Materials	3
_____	5	E-E 111 Electrical Fundamentals	4
_____	5	FLP 111 Fluid Power Fundamentals	4
_____	3	M-T 123 Machine Tool Operation and Set Up	4
_____	5	N-C 100 Introduction to Numerical Control	3
			18
		FOURTH TERM	
_____	4	M-T 201 Machine Tool Technology	4
_____	4	MLG 123 Metallurgical Testing Procedures	2
_____	4	FLP 214 Basic Hydraulic Circuits	3
_____	6	ENG 100 Technical Communications	3
_____	6	PLS 108 Government and Society	3
			15

Total Credit Hours For Program—65

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

ELECTRO-MECHANICAL TECHNICIAN

Two-Year Program—Code 854

ADVISORS: B. Lowe, P. Wiernik

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	3	E-E 111	Electrical Fundamentals	4
_____	3	E-E 110	Electrical Applications	2
_____	1	M-T 111	Machine Shop Theory and Practices	4
_____	1	MTH 109	Intermediate Algebra	4
_____	6	ENG 091	English Fundamentals or	
		ENG 111	English Composition	3
				17
		SECOND TERM		Hrs.
_____	4	E-E 122	Electrical Fundamentals	4
_____	4	E-E 120	Electrical Applications	2
_____	1	BPR 101	Blueprint Reading	3
_____	2	M-T 122	Machine Tool Operation and Set Up	4
_____	6	MGT 150	Labor-Management Relations	3
				16
		THIRD TERM		Hrs.
_____	2	N-C 100	Introduction to Numerical Control	3
_____	2	FLP 111	Fluid Power Fundamentals	4
_____	4	E-E 211	Basic Electronics	4
_____	4	M-T 200	Machine Maintenance	3
_____	6	PLS 108	Government and Society	3
				17
		FOURTH TERM		Hrs.
_____	3	M-T 122	Machine Tool Operation and Set Up	4
_____	2	I-D 100	Technical Drawing	4
_____	5	E-E 127	Industrial Electricity	4
_____	5	W-F 100	Fundamentals of Welding	2
_____	5	N-C 121	Programming for Numerical Control	3
				17

Total Credit Hours For Program—67

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

INSPECTOR-QUALITY CONTROL

One-Year Program—Code 852

ADVISORS: R. Mealing, B. Lowe, P. Wiernik

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	2	MLG 101	Industrial Materials	2
_____	1	M-T 111	Machine Shop Theory and Practices	4
_____	1	BPR 101	Blueprint Reading	3
_____	1	MTH 151	Applied Algebra	4
_____	3	MGT 150	Labor-Management Relations	3
				16
		SECOND TERM		
_____	2	MTL 105	Industrial Measuring Processes	3
_____	2	MLG 123	Metallurgical Testing Procedures	2
_____	2	BPR 102	Blueprint Reading	3
_____	3	ENG 100	Technical Communications	3
_____	3	PLS 108	Government and Society	3
				14

Total Credit Hours For Program—30

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

METALLURGICAL TECHNOLOGY ADVISORY COMMITTEE

Mr. Douglas Glover .....Chairman
Supervisor, Research Metallurgy
Federal Mogul Corp.
Ann Arbor

Mr. Clyde Buxton
Supervisor of Metallurgy
General Motors Hydra-matic Division
Willow Run

Mr. George Feldbaum
Manager, Chemical and
Metallurgy Department
Ford Motor Company
Ypsilanti

Mr. Ronald H. Fenelon
Section Supervisor,
Quality Control Laboratories
Ford Motor Company
Ypsilanti

Mr. Walter J. Giroux
Process Metallurgist
Hoover Bearing Division
Ann Arbor

Mr. James C. Gould
Research Metallurgist
Conductron Corporation
Ann Arbor

Mr. Elden Heller
President
Chelsea Heat Treating, Inc.
Chelsea

Mr. Kenneth R. Hickmott
Chemist
General Motors Hydra-matic Division
Willow Run

Mr. S. Horton
Supervisor, Quality Control
Laboratories
Ford Motor Company
Ypsilanti

Mr. Edward Hughes
Supervisor of Metallurgy
General Motors Hydra-matic Division
Willow Run

Mr. Gordon LeBrassee
Director, Research and Development
Laboratory
Federal Mogul Division
Ann Arbor

Mr. Dan Laursen
Exact Sciences Division
Washtenaw Community College
Ann Arbor

Mr. John Maier
Metallurgist
General Motors Hydra-matic Division
Willow Run

Mr. O. K. Riegger
Director of Research
Tecumseh Products
Ann Arbor

Mr. William Scholz
Supervisor of Research
Climax Molybdenum Division
Ann Arbor

Mr. Irvin Slane
Design Engineer
North American Rockwell Corp.
Chelsea

Mr. Richard Socha
Lab Technician
Federal Mogul Division
Ann Arbor

Mr. Lauren Winquist
Supervisor, Development Engineering
Ford Motor Company
Ypsilanti

Faculty Coordinator: Mr. Robert Fatur
Student Representative: Mr. Roger A. Buxton

METALLURGICAL TECHNICIAN

Two-Year Program—Code 861

ADVISOR: R. Fatur

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	MLG 101	Industrial Materials	2
_____	1	MLG 102	Behavior of Metallic Materials	2
_____	1	CEM 111	General Chemistry	4
_____	3	MTH 109	Intermediate Algebra	4
_____	7	ENG 111	English Composition	3
				15
		SECOND TERM		Hrs.
_____	4	MLG 122	General Metallurgy	3
_____	2	MLG 123	Metallurgical Testing Procedures	2
_____	6	MLG 124	Machineability	1
_____	2	W-F 100	Fundamentals of Welding	2
_____	8	CEM 122	General Chemistry	4
_____	4	ENG 100	Technical Communications	3
				15
		THIRD TERM		Hrs.
_____	5	MLG 215	Heat Treating Processes	2
_____	5	MLG 216	General Metallography	2
_____	7	MLG 217	Mechanical Testing	3
_____	5	M-T 100	Machine Shop Theory	3
_____	3	PHY 111	Introductory Physics	4
_____	8	PLS 108	Government and Society	3
				17
		FOURTH TERM		Hrs.
_____	6	MLG 218	Metallographic Techniques	4
_____	2	MLG 202	*Manufacturing Processes	3
_____	9	MTH	Mathematics Elective	4
_____	6	PHY 122	General Physics	4
				15

Total Credit Hours For Program—62

* OJT 199 may be substituted.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

NUMERICAL CONTROL MACHINE OPERATOR

One-Year Program—Code 872

ADVISOR: D. Garrett

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	N-C 100 Introduction to Numerical Control	3
_____	1	M-T 100 Machine Shop Theory	3
_____	3	I-D 111 Industrial Drafting	4
_____	1	MTH 109 Intermediate Algebra or MTH 109A Intermediate Algebra	4
_____	4	E-E 111 Electrical Fundamentals	4
			18
		SECOND TERM	**Hrs.**
_____	2	N-C 121 Programming for Numerical Control	3
_____	2	N-C 122 Numerical Control Machine Tool Operation	3
_____	3	M-T 122 Machine Tool Operation and Set Up	4
_____	4	ENG 100 Technical Communications	3
		Elective	3-4
			16-17

Total Credit Hours For Program—34-35

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

NUMERICAL CONTROL ADVISORY COMMITTEE

Mr. David Bernhardt .....Chairman
Chief N/C Programmer
Buhr Machine Tool Company
Ann Arbor

Mr. Robert Cummings
Bench and Floor Inspector
General Motors Hydra-matic Division
Willow Run

Mr. Chester Fleszar
N/C Applications Engineer
Manufacturing Data Systems, Inc.
Ann Arbor

Mr. Otto Moehrle
Owner
Moehrle, Inc.
Ann Arbor

Mr. Lyle Relitz
Toolmaker Apprentice
Buhr Machine Tool Company
Ann Arbor

Mr. Clyde Welsh
N/C Technician
Moehrle, Inc.

Faculty Coordinator: Mr. Dallas Garrett
Student Representative: Mr. Louis Burhart

NUMERICAL CONTROL TECHNICIAN

Two-Year Program—Code 871

ADVISOR: D. Garrett

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	N-C 100 Introduction to Numerical Control	3
_____	1	M-T 100 Machine Shop Theory	3
_____	3	I-D 111 Industrial Drafting	4
_____	1	MTH 109 Intermediate Algebra or	
		MTH 109A Intermediate Algebra	3-4
_____	5	E-E 111 Electrical Fundamentals	4
			17-18
		SECOND TERM	
_____	2	N-C 121 Programming for Numerical Control	3
_____	2	N-C 122 Numerical Control Machine Tool Operation	3
_____	3	M-T 122 Machine Tool Operation and Set Up	4
_____	4	I-D 112 Descriptive Geometry	4
_____	2	Approved Elective	3-4
			17-18
		THIRD TERM	
_____	3	N-C 213 Compact II Computer Programming	4
_____	4	FLP 111 Fluid Power Fundamentals	4
_____	7	PLS 108 Government and Society	3
_____	6	ENG 100 Technical Communications	3
_____	7	Approved Elective	3-4
			16-17
		FOURTH TERM	
_____	4	N-C 224 APT III Computer Programming	4
_____	6	MTH 130 Scientific and Technical Programming	3
_____	5	I-D 122 Fundamentals of Jigs and Fixtures	3
		Approved Elective	3-4
			13-14

Total Credit Hours For Program—63-67

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

COMMERCIAL PHOTOGRAPHIC ASSISTANT

One-Year Program—Code 881

ADVISOR: J. Martin

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	TCA 214 Photography	4
_____	1	TCA 102 Lettering Techniques	2
_____	2	I-D 100 Technical Drawing	4
_____	2	MTH 092 Foundations of Occupational Mathematics	3
_____	3	ENG 100 Technical Communications	3
			16
		SECOND TERM	
_____	4	TCA 215 *Darkroom Techniques	6
_____	3	TCA 227 Graphic Reproduction	3
_____	5	TCA 226 Commercial Displays	2
_____	5	PLS 108 Government and Society	3
			14

Total Credit Hours For Program—30

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

COMMERCIAL ARTIST

Two-Year Program—Code 882

ADVISOR: J. Martin

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	ART 112	Basic Design	3
_____	1	ART 111	Basic Drawing	3
_____	2	TCA 102	Lettering Techniques	2
_____	2	I-D 100	Technical Drawing	4
_____	3	MTH 092	Foundations of Occupational Mathematics	3
				15
		SECOND TERM		Hrs.
_____	3	TCA 100	Perspective and Parallel Projection	4
_____	4	TCA 121	Advertising Layout	4
_____	4	TCA 225	Model Construction	2
_____	4	TCA 226	Commercial Displays	2
_____	5	ENG 100	Technical Communications	3
				15
		THIRD TERM		Hrs.
_____	5	TCA 101	Technical Illustration	4
_____	6	TCA 214	Photography	4
_____	6	TCA 122	Technical Rendering	4
_____	7	ART 140	Life Drawing	3
				15
		FOURTH TERM		Hrs.
_____	7	TCA 236	*Specialized Study	4
_____	8	TCA 213	Commercial Rendering	4
_____	9	TCA 227	Graphic Reproduction	4
_____	8	PLS 108	Government and Society	3
				15

Total Credit Hours For Program—60

* OJT 199 may be substituted.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

TECHNICAL AND COMMERCIAL ART ADVISORY COMMITTEE

Mr. Sam Fine .....Chairman
President
Sam Fine Associates, Incorporated
Ann Arbor

Mr. Lauren Wild .....Recorder
President
Lauren Wild Advertising
Ann Arbor

Mr. Earnest Calabro
Mechanical Design Engineer
Bendix Electro-Optics Division
Ann Arbor

Mr. Clifford Dickson
Manager
Art Department, Ford Engineering
Dearborn

Mr. Walter Grimminger
Commercial Artist
Warren

Mr. Irving Lloyd
Consultant
Irving Lloyd Photographic
Ann Arbor

Mr. John Moore
Commercial Artist
Drury Lacy Inc.
Ann Arbor

Mr. Robert Pace
Sales Representative
Nord Photo Engineering Inc.
Minneapolis, Minn.

Mr. Charles Roberts
Production Manager
Edwards Brothers
Ann Arbor

Faculty Coordinator: Mr. John Martin
Student Representative: Mr. Robert W. Cleveland

TECHNICAL ILLUSTRATOR

Two-Year Program—Code 884

ADVISOR: J. Martin

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	ART 112 Basic Design	3
_____	1	ART 111 Basic Drawing	3
_____	2	TCA 102 Lettering Techniques	2
_____	2	I-D 100 Technical Drawing	4
_____	3	ENG 091 English Fundamentals or	
		ENG 111 English Composition	3
			15
		SECOND TERM	
_____	3	TCA 100 Perspective and Parallel Projection	4
_____	4	TCA 225 Model Construction	2
_____	4	TCA 226 Commercial Displays	2
_____	4	BPR 101 Blueprint Reading	3
_____	5	MTH 092 Foundations of Occupational Mathematics	3
_____	6	ENG 100 Technical Communications	3
			17
		THIRD TERM	
_____	5	TCA 101 Technical Illustration	4
_____	6	TCA 214 Photography	4
_____	7	TCA 122 Technical Rendering	4
_____	7	M-T 100 Machine Shop Theory	3
			15
		FOURTH TERM	
_____	8	TCA 227 Graphic Reproduction	4
_____	9	TCA 236 *Specialized Study	5
_____	8	PLS 108 Government and Society	3
_____	9	PSY 150 Industrial Psychology or	
		PSY 100 Introductory Psychology	3
			15

Total Credit Hours For Program—62

* OJT 199 may be substituted.

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

PUBLICATIONS TECHNICIAN

Two-Year Program—Code 883

ADVISOR: J. R. Steinbach

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	ENG 111	English Composition	3
_____	1	SPH 100	Fundamentals of Speaking	3
_____	1	ENG 100	Technical Communications	3
_____	3	PHY 111	Introductory Physics	4
_____	4	PLS 150	State and Local Government **or**	
		PLS 108	Government and Society **or**	
		PLS 100	Introduction to Political Science	3
				16
		SECOND TERM		
_____	2	ENG 122	English Composition	3
_____	2	JRN 115	Introduction to Mass Media	3
_____	2	MTH 092	Foundations of Occupational Mathematics or Mathematics Elective	3
_____	4	TCA 121	Advertising Layout	3
_____	6	SPH 103	Radio and Television Speech	3
				15
		THIRD TERM		
_____	5	JRN 101	Writing for Mass Media	3
_____	3	TCA 214	Photography	4
_____	5	TCA 227	Graphic Reproduction	4
_____	6	MGT 160	Principles of Salesmanship or	
		E-C 211	Principles of Economics	3
_____	7	OJT 199	On-the-Job Training or Elective**	2-3
				16-17
		FOURTH TERM		
_____	7	PSY 150	Industrial Psychology **or**	
		PSY 100	Introductory Psychology	3
_____	8	ENG 270	Creative Writing or	3
_____	4	ENG 160	Introduction to Literature	3
_____	8	OJT 199	On-the-Job Training or Elective**	3-4
			Non-Technical Elective***	3
				15-16

Total Credit Hours For Program—62-64

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

COMBINATION WELDER MECHANIC

One-Year Program—Code 892

ADVISOR: D. Gray, L. Morgan

Student Program	Part-Time Sequence	Full-Time Sequence		Hrs.
		FIRST TERM		
_____	1	W-F 111	Welding and Fabrication	4
_____	2	W-F 112	Welding and Fabrication	4
_____	1	BPR 103	Blueprint Reading for Sheet Metal	2
_____	4	ENG 091	English Fundamentals	3
_____	3	MLG 101	Industrial Materials	2
				15
		SECOND TERM		
_____	3	W-F 123	Welding and Fabrication	4
_____	4	W-F 124	Welding and Fabrication	4
_____	2	MLG 122	General Metallurgy	3
_____	5	MTH 151	Applied Algebra	4
				15

Total Credit Hours For Program—30

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

WELDING AND FABRICATION ADVISORY COMMITTEE

Mr. Walter Samonek .....Chairman
Plumbers and Steam Fitters Apprentice Trades Union
Brooklyn

Mr. Edward Brown
Brown's Welding
Chelsea

Mr. William Frederick
Chief Engineer
Photon Sources
Plymouth

Mr. John McGill
Exact Sciences Division
Washtenaw Community College
Ann Arbor

Mr. Edward Reichmann
Supervisor
Superior Tank and Welding Company
Dearborn

Mr. Burley Trew
Quality Welding Company
Brighton

Faculty Coordinator: Mr. Daniel C. Gray
Student Representative: Mr. Richard Perry

WELDING AND FABRICATION TECHNICIAN

Two-Year Program—Code 891

ADVISOR: D. Gray, L. Morgan

Student Program	Part-Time Sequence	Full-Time Sequence	Hrs.
		FIRST TERM	
_____	1	W-F 111 Welding and Fabrication	4
_____	2	W-F 112 Welding and Fabrication	4
_____	2	MLG 101 Industrial Materials	2
_____	7	BPR 106 Blueprint Reading for Welding	2
_____	3	ENG 091 English Fundamentals	3
			15
		SECOND TERM	
_____	3	W-F 123 Welding and Fabrication	4
_____	4	W-F 124 Welding and Fabrication	4
_____	8	MLG 122 General Metallurgy	3
_____	1	MTH 151 Applied Algebra	4
			15
		THIRD TERM	
_____	5	W-F 215 Welding and Fabrication	3
_____	6	I-D 100 Technical Drawing	4
_____	9	FLP 111 Fluid Power Fundamentals	4
_____	5	MLG 215 Heat Treating Processes	2
_____	4	ENG 100 Technical Communications	3
			16
		FOURTH TERM	
_____	6	W-F 226 Welding and Fabrication	3
_____	7	M-T 111 Machine Shop Theory and Practices	4
_____	10	BPR 103 Blueprint Reading for Sheet Metal	3
_____	8	MTH 152 Applied Geometry/Trigonometry	4
_____	9	PLS 108 Government and Society	3
			17

Total Credit Hours For Program—63

PART-TIME STUDENTS: Students who can take 6-9 credit hours per term should follow the order of courses to be taken as shown to the **LEFT** of the course title. For example, the fifth term a student would elect all courses numbered 5. A similar election would be made for each of the other terms to complete the program.

APPRENTICE TRAINING AND TRADE RELATED INSTRUCTION

Manufacturing and Construction

The main purpose of the TRI Program is to provide manufacturing and construction firms with the opportunity to participate in training programs which will assist their employees in becoming more skilled.

Apprentice Training and Employee Training

Required related instruction is provided for most apprenticable trades. The College's TRI coordinator works directly with the apprentice and the sponsoring firm to meet these requirements. The related instruction program has been approved by the Bureau of Apprenticeship and Training of the U.S. Department of Labor, and the Michigan State Department of Education.

Sponsoring firms are invited to contact the College concerning individual employees who wish to participate.

Pre-Apprenticeship Training

Individuals who desire to enter an apprenticeship program, but who have not passed the required entrance examination are invited to contact the College counseling staff or the TRI coordinator. An individual pre-apprenticeship curriculum can be arranged which will help prepare for most industrial apprenticeship entrance examination. Placement cannot be guaranteed in an apprenticeship program. Placement is at the mutual discretion of employers, employees, and organizations representing the skill trades involved.

Affirmative Action Program

For information on construction trades or the Affirmative Action Program contact a coordinator in Room 204, Technical and Industrial Building.

Associate Degree Program for Skilled Tradesmen

The Associate Degree can be awarded to skilled tradesmen upon earning sixty (60) hours or more of credit and complying with other College requirements. All credits earned in the Trade Related Instruction Program may be applied to the Degree. Credit earned at other institutions offering trade related subjects will be evaluated and may be applicable.

Associate Degree Program
for
Skilled Tradesmen

(A Sample Program)

EXAMPLE

	CREDIT HOURS
Evaluation of Apprenticeship Program	1 to 32
(Most skilled tradesmen have earned 25 to 32 credit hours completing their apprenticeship program)	

Option and additional credits needed for those concentrating on continuing university studies in ENGINEERING, EDUCATION, OR SCIENCE.

SCIENCES (Selected from Mathematics, Physics or Chemistry)	8 to 24
ENGLISH	6
POLITICAL SCIENCE	3
SOCIAL SCIENCE	3

Option and additional credits needed for those concentrating on continuing university studies in MANAGEMENT.

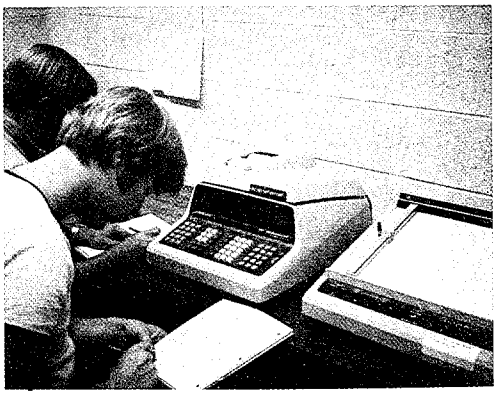
SCIENCES (Selected from Mathematics, Physics or Biology)	8
ENGLISH	6
SPEECH	3
POLITICAL SCIENCE	3
ECONOMICS	6
ACCOUNTING	6

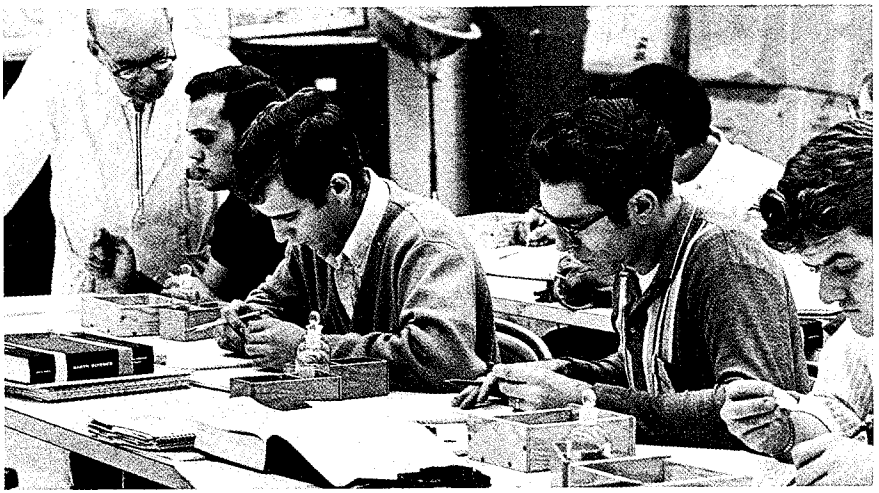
Arrangements for completing other two-year technical programs may be made by contacting the Trade Related Instruction Coordinator or a counselor.

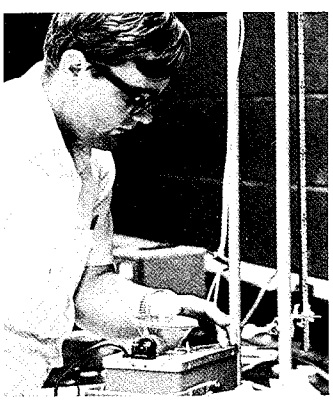
EXAMPLE: **NUMERICAL CONTROL OPTION**
for Toolmakers, Diemakers, Machinists, etc.

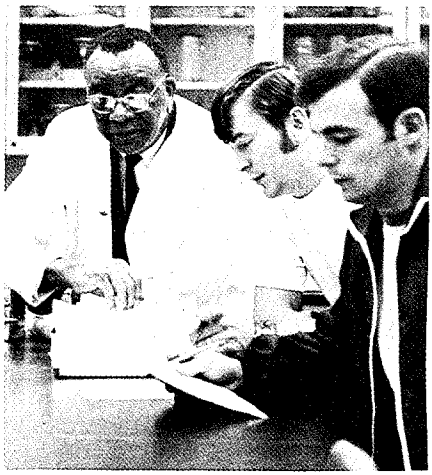
NC 121	Programing for N/C	3
NC 223	Computer Assisted Programing	3
FLP 111	Fluid Power Fundamentals	4
EE 111	Electrical Fundamentals	4
DP 111	Principles of Data Processing	4
ENG 100	Technical Communications	3
PLS 108	Government and Society	3
	Electives (including O-J-T if desired)	6

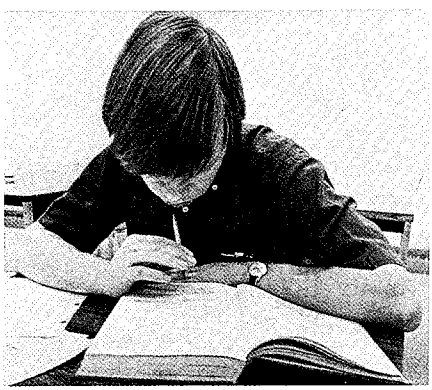
* Six credit hours for time spent as an indentured apprentice may be awarded if the employer's apprentice program is approved and/or meets the College's requirements.

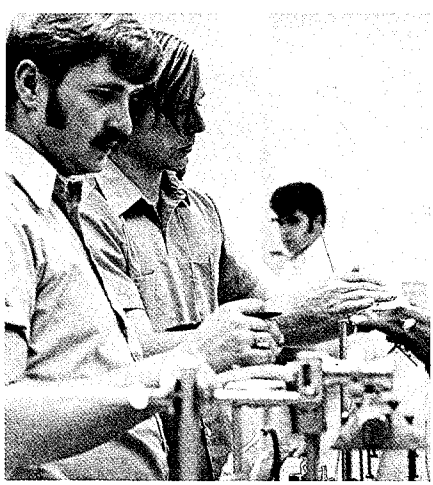










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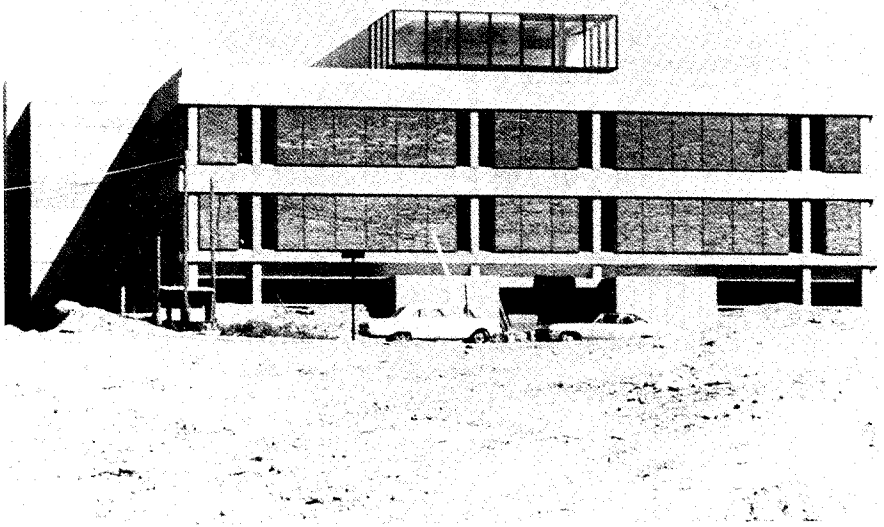
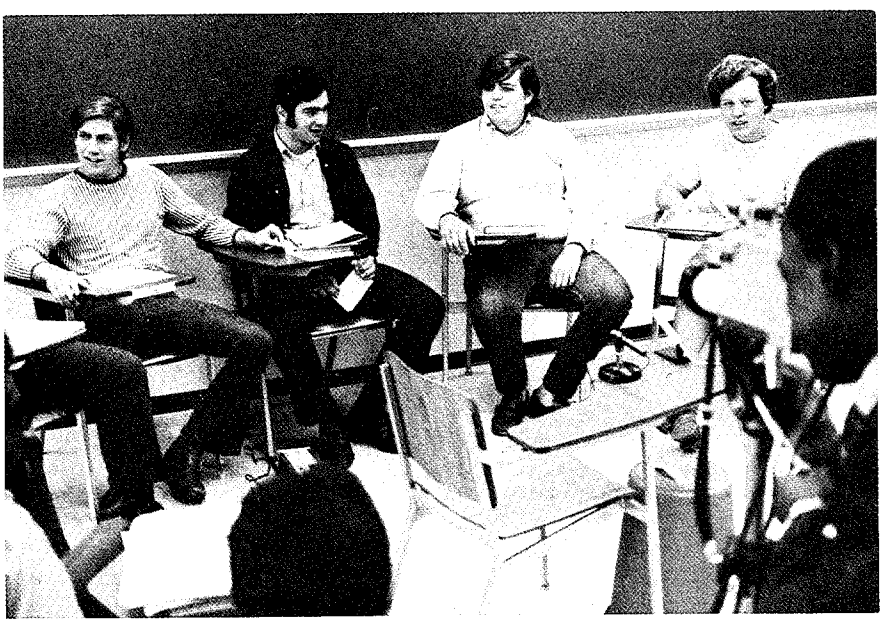


COURSE DESCRIPTIONS



(ACC) ACCOUNTING

091 Fundamentals of Accounting .....3 credit hours

Prerequisite or co-requisite: Business Occupational Foundations 140 and Basic Mathematics 031 or divisional consent.

A beginning course in accounting which introduces the student to the theory and practice of modern double-entry accounting systems and procedures. Emphasis is placed on the development of an understanding of basic financial records and forms and on ability to apply elementary accounting concepts to business and/or industrial situations. Designed for the non-Accounting student. (3 hours per week)

092 Fundamentals of Accounting .....3 credit hours

Prerequisite: Fundamentals of Accounting 091 or equivalent.

Continuation of Accounting 091. Fundamentals of accounting covering financial statements, controlling accounts, types of ownership interest, and income and expense. Designed for the non-Accounting student. (3 hours per week)

111 Principles of Accounting .....3 credit hours

Prerequisite: Business Occupational Foundations 140 and Foundations of Occupational Mathematics 092 or divisional consent.

An introductory study of accounting principles to acquaint the student with the theory and logic that underlie accounting practices and procedures. Emphasis is placed upon the role of accounting in developing essential information about business and/or industrial organizations and their operations. Course coverage includes the accounting cycle, financial statements, controlling accounts, special columnar journals, and the voucher system. This is the first of two accounting courses required of all Business Administration transfer students. (3 hours per week)

122 Principles of Accounting .....3 credit hours

Prerequisite: Principles of Accounting 111 or equivalent.

An introduction to the accounting function as it applies to the ownership, income and expense, and cost aspects of business and/or industrial enterprise. Accounting is perceived as an essential function in the achievement of enterprise goals. Special emphasis is placed upon interpretation of accounting data. Course materials relate to the business partnership, corporation, and industrial manufacturing. This is the second of two accounting courses required of all Business Administration transfer students. (3 hours per week)

213 Intermediate Accounting .....3 credit hours

Prerequisite: Principles of Accounting 111 and Principles of Accounting 122 or equivalent.

A detailed study of the application of accounting theory to specialized phases of the accounting process such as the treatment of cash and temporary investments, receivables, inventories, investments, plant and equipment, and financial statements in general. (3 hours per week)

224 Intermediate Accounting .....3 credit hours

Prerequisite: Intermediate Accounting 213 or equivalent.

Continuation of Intermediate Accounting 213—including study of techniques for review and analysis of financial statements, intangibles, deferred charges, assets and liabilities, capital stock and surplus, income and earnings, funds-flow and cash-flow, and financial ratios. (3 hours per week)

(ANT) ANTHROPOLOGY

150 Religions of the World .....3 credit hours

A study of the religions of non-literate peoples and of the great religions of the world from an anthropological perspective. Emphasis on the role each religion plays in a specific culture. (3 hours per week)

200 Introduction to Anthropology .....3 credit hours

Introduction to the principal fields of anthropological study and fundamental concepts in terms of their concern with the nature of man as it is revealed in his development of culture. (3 hours per week)

(ARC) ARCHITECTONICS

100 Specifications .....1 credit hour

An introduction to the uniform system for filing material specifications and the organization and preparation of building specifications. (1 hour per week)

109 Site Layout .....3 credit hours

A lecture and field course dealing with the principles of site layout of construction projects. Approved site plans, builders level transit, tape chain, and preferred equipment are demonstrated and used. (3 hours per week)

111 Architectural Drawing .....6 credit hours

An introduction to light frame construction and requirements including the preparation of working drawings for the construction of structures classified as "Light Frame Structures." (12 hours per week)

117 Construction Materials .....3 credit hours

A survey of typical types of materials used in basic construction. Emphasis is placed on the properties, selection, and building techniques appropriate for a wide range of materials. Included are woods, metals, plastics, glass, and aggregate materials. (3 hours per week)

120 Mechanical Equipment .....2 credit hours

A survey of heating, ventilating, plumbing, and electrical equipment used in building construction. Special emphasis is given to standard methods of cataloging such technical data. Students prepare mechanical specifications for the structures studied in Architectural Drawing 111. (2 hours per week)

122 Architectural Drawing .....6 credit hours

Prerequisite: Architectural Drawing 111

Preparing architectural drawings from diagrammatic sketches, pictures, surveys, and conference notes from an individual. The student is taught to develop preliminary studies and working drawings for an architectural project approved by the instructor. (12 hours per week)

200 Specification Preparation .....1 credit hour

Prerequisite: Specifications 100

An in depth study of the uniform system of communication used throughout the building industry, as required by the specification writer.

Documentation of specification data related to building construction projects is researched and organized into contract specifications. (1 hour per week)

207 Estimating Construction Costs .....2 credit hours

Prerequisite: Construction Materials 117 and Mechanical Equipment 120

An introduction to the methods of estimating construction costs for building construction projects involving the use of quantitative survey methods of estimating materials, labor, equipment. Methods of computing overhead and profit are included. (2 hours per week)

208 Estimating Construction Costs .....2 credit hours

An advanced course in estimating construction cost. For larger scale

construction projects. The course involves a more detailed type of building constructions. (2 hours per week)

209 Surveying .....3 credit hours

Prerequisite: Applied Algebra 151

A lecture and field course on the process of surveying and the analysis of the data collected. (4 hours per week)

210 Structure in Architecture .....2 credit hours

An introduction to the use of structural members (i.e., steel, timber, and reinforced concrete, etc.) (2 hours per week)

213 Architectural Drawing .....6 credit hours

Prerequisite: Architectural Drawing 122

Major problems in architectural drawing are studied through the preparation of drawings and cost estimates for a moderate sized building such as a school or church. (12 hours per week)

224 Architectural Drawing .....6 credit hours

Prerequisite: Architectural Drawing 213

Major problems in architectural drawings are presented through the preparation of drawings and cost estimates for a large size building project such as a shopping center or multi-story apartment. (12 hours per week)

(ART) ART

111 Basic Drawing .....3 credit hours

This beginning course in drawing explores the basic problem of observation (training the eye to see) and articulation (training the hand to express what is seen) through pencil, charcoal, pen and ink studies. (6 hours per week)

112 Basic Design .....3 credit hours

Two-dimensional problems in design and composition. Exploration of the elements of design, such as line, form, texture, and color, using a wide variety of media. (6 hours per week)

113 Black Drawing and Painting .....3 credit hours

The purpose of this class is to bring the drawing and painting talents of students into the arena of the Black experience.

Students are taught drawing, painting, layout, composition, mural painting, water color, oil, pastel, and ink drawings.

Our attempt is to correlate their art work into a Black concept. This way, we hope to help breach some of the gaps between the various communities, (Black & white—academic & non-academic) etc. through this visual means. (6 hours per week)

114 Painting .....3 credit hours

Prerequisite: Basic Drawing 111 and Basic Design 112

Development of painting skills exploring a wide range of expression based on still life, landscape, and the human figure. (6 hours per week)

122 Basic Drawing .....3 credit hours

A continuation of Basic Drawing 111, this course offers further exploration into the techniques of drawing. Several new media are introduced. (6 hours per week)

123 Basic Design .....3 credit hours

Prerequisite: Basic Design 112

A continuation of Basic Design 112 with the emphasis on three-dimensional design and structural composition. (6 hours per week)

125 Painting .....3 credit hours

Prerequisite: Painting 114

A continuation of Painting 114, with emphasis on developing an individual painting style. (6 hours per week)

130 Art Appreciation .....3 credit hours

An inquiry into the ways in which art reflects, extends and shapes experience. Architecture as environment and its effect on us; contemporary art as a statement of our present condition; film as an art form; art of the past as expressing attitudes of its time. Class discussion, short papers, and projects. (3 hours per week)

140 Life Drawing .....3 credit hours

Further exploration and experimentation with drawing as a means of

expression. Emphasis is on conceptual development and graphic communication through figure drawing. (6 hours per week)

141 Black Art Appreciation .....3 credit hours

The general goal of this course is to use the visual concept of art to aid in the emergence of Black people in America. We hope to teach the necessity to think, to develop and to manifest intelligence and manhood, using art as the medium. (3 hours per week)

(ABR) AUTO BODY REPAIR

111 Auto Body Repair Fundamentals .....4 credit hours

An introductory course in auto body repair fundamentals. Repairs are made on damaged body panels while studying the working properties of automobile sheet metal and basic damage conditions. Analyzing typical damage conditions and establishing accepted repair procedures are an important part of this course. (8 hours per week)

112 Automobile Refinishing Fundamentals .....4 credit hours

An introductory course in the methods and procedures used with automobile refinishing materials. Acrylic lacquers and enamels are used to spray paint automobile body panels and complete automobiles. Proper use of refinishing materials and the development of basic skills and knowledge of the trade are stressed. (8 hours per week)

113 Light Body Service .....1 credit hour

An introduction to the principles of alignment and servicing of body components. Students are exposed to the adjustments of various designs of hinges, latches, window regulators and the problems involved in servicing body trim, hardware, and the sealing of water and dust leaks. Correct fit and the function of body parts are stressed. (3 hours per week)

123 Body Repair Methods .....4 credit hours

Prerequisite: Auto Body Repair Fundamentals 111 and Welding and Fabrication 111 or Consent of Division

A detailed study of the automobile body that includes the use of hydraulic jacks and accessories to make repairs common to the front, side, and rear sections of automobiles damaged by collision. Repair jobs are selected to provide the student diversified experience on body trim and hardware, panel replacement, and aligning various body components. (8 hours per week)

124 Automobile Refinishing .....4 credit hours

Prerequisite: Automobile Refinishing Fundamentals 112

A continuation of the units begun in Automobile Refinishing Fundamentals 112 including the improvement of skills, mixing and matching of high metallic colors, spot repair and complete refinishing using acrylic lacquers and enamels. Special color effects including the use of "candy" and metal flake are studied. Proper use of materials and quality workmanship are stressed. (8 hours per week)

125 Flat Rate Estimating .....2 credit hours

An introductory course designed to expose the student to the use of flat rate manuals to determine parts and labor prices in estimating damaged automobiles. Emphasis is placed on the procedures used to establish complete and accurate prices in preparing the estimate. (3 hours per week)

126 Fundamentals of Frame and Unit Body Alignment .....3 credit hours

Prerequisite: Consent of Division

A study of the common types of body frame damage and the equipment used to make repairs. Laboratory assignments include instruction in the use of frame gauges, diagrams, and portable body-frame straightening equipment to make a diagnosis and set up corrective hook ups. (4 hours per week)

210 Frame and Unit Body Straightening .....3 credit hours

Prerequisite: Consent of Division

A study of the problems involved in repairing various body frame designs. Lab work includes advanced instruction in using portable frame straightening equipment to diagnose and straighten common damage conditions. (7 hours per week)

211 Body Rebuilding Methods .....3 credit hours

Co-requisite: Frame and Unit Body Straightening 210

A demonstration lab course which stresses the methods and procedures involved in straightening and aligning the automobile body and replacing various body components. Repair jobs are selected in conjunction with Frame and Unit Body Straightening 210 as being representative of front end, unit body, and rear end collision. (7 hours per week)

220 Collision Estimating .....3 credit hours

Prerequisite: Consent of Division

Extensive practice in preparing estimates of automobile collision damage. Emphasis is placed on the economics of repairing as opposed to replacing damaged body panels as well as customer and employee relations. Field trips to area dealers and collision shops provide diversified experience in estimating typical damage and developing individual style in preparing complete and accurate estimates. (5 hours per week)

222 Major Body Repair .....3 credit hours

Prerequisite: Frame and Unit Body Straightening 210 and Body Rebuilding Methods 211

A continuation of units begun in Body Rebuilding Methods 211. Emphasis is placed on Body and Frame Alignment practices, repairing and replacing extensively damaged body sections. (7 hours per week)

(A-S) AUTOMOTIVE SERVICE

101 Automotive Electricity .....2 credit hours

An introduction to fundamentals of electricity, storage batteries, and battery ignition. The operation of storage batteries and battery ignition systems are covered both in theory and practical application on live cars. (4 hours per week)

102 Engine Operation .....2 credit hours

The principles, design, construction, and operation of modern automotive engines are studied both in theory and practical application on live cars. (4 hours per week)

103 Basic Carburetion .....1 credit hour

Theory of operation and service procedures for one and two barrel carburetors are studied. Classroom instruction is coordinated with servicing live units. (4 hours per week) 9 weeks

104 Brake Systems .....2 credit hours

A study of hydraulic and mechanical principles applied to automotive drum and disc systems. Students perform repairs on live vehicles. (4 hours per week)

105 Wheel Balancing and Alignment .....2 credit hours

A detailed study of wheel alignment and balancing. Students perform wheel and steering diagnosis and repairs on live units. (4 hours per week)

106 Cranking and Charging Systems .....2 credit hours

Prerequisite: Automotive Electricity 101

A continuation of Automotive Electricity 101 including the operation and service of cranking systems and both A.C. and D.C. charging systems. Tests and adjustments are made on live vehicles whenever possible. (4 hours per week)

107 Fuel Systems .....2 credit hours

Prerequisite: Automotive Electricity 101 and Basic Carburetion 103

A study of the fuel systems including the operation and service of emission controls. The use of test equipment and tune up procedures are stressed as necessary for the efficient operation of emission equipped automobiles. (4 hours per week)

108 Transmission and Power Trains .....2 credit hours

A detailed study of construction, operation, and service techniques for conventional driveline units. Students receive practical experience on passenger cars and light trucks. (4 hours per week)

109 Engine Rebuilding .....2 credit hours

Prerequisite: Engine Operation 102

Specialized instruction in procedures to completely rebuild an engine. Mechanical operations such as cylinder boring, piston service, rod and cap reconditioning are stressed. Complete engine is tested for performance on dynamometer. (4 hours per week)

110 Service Orientation .....1 credit hour

An introductory course designed to acquaint students with the tools and equipment used in automobile service industry. Specialized instruction in use and care of tools and measuring devices is included. (3 hours per week)

150 Light Service Repair .....2 credit hours

Course includes principles and practical application in these areas: cooling systems, exhaust systems, tire servicing, lubrication, used car reconditioning, and new car preparation. (4 hours per week)

201 Automotive Test Equipment .....2 credit hours

Prerequisite: Consent of Division

The testing of automotive engines and components, using the latest

test equipment and procedures. The engine, cranking systems, fuel systems, ignition and charging systems are covered, along with the equipment necessary to make the tests. (4 hours per week)

202 Automotive Air Conditioning .....1 credit hour

Specialized instruction in the operation and service of automotive air conditioning, including diagnosing and charging of units on live vehicles. (4 hours per week) 9 weeks

203 Automatic Transmissions .....2 credit hours

Prerequisite: Consent of Division

A detailed study of automatic transmissions including principles of operation and repair procedures. Classroom instruction is coordinated with experience in servicing live units. (4 hours per week)

204 Suspension Systems .....2 credit hours

Prerequisite: Wheel Balancing and Alignment 105

Nomenclature, theory, and service of the passenger cars and light trucks is covered. Emphasis is placed on servicing live vehicles. (4 hours per week)

205 Diagnosis .....2 credit Hours

Prerequisite: Consent of Division

An application of diagnosing procedures used in automotive dealerships and garages. Course designed to cover all phases of diagnosis. (4 hours per week)

206 Engine Performance Measurement .....3 credit hours

Prerequisite: Consent of Division

A detailed study in engine performance factors and operating characteristics. Engine and chassis dynamometers are used to measure torque and horsepower both at engine and rear wheels. (4 hours per week)

207 Steering Systems .....1 credit hour

A detailed study of manual and power steering systems. Operating principles, overhaul procedures, testing and diagnosis are stressed. (3 hours per week)

208 Automatic Transmission Hydraulic Systems .....2 credit hours

Prerequisite: Automatic Transmissions 203

A detailed study of automatic transmission hydraulic systems. Special emphasis is given to testing and diagnosis; classroom instruction is closely coordinated with servicing live units.

209 Disc Brakes .....1 credit hour

A study of hydraulic principles as applied to automotive disc brakes systems. Specialized instruction in disc brake service procedures, including rotor refinishing, are stressed. (4 hours per week) 9 weeks

210 Noise, Vibration, and Harshness .....1 credit hour

This course will define the various types of noise, vibration, and harshness conditions associated with tires and drive trains. Procedures needed to diagnose and correct problems will be included. (3 hours per week)

211 Emissions .....2 credit hours

Prerequisite: Fuel Systems 107 or Consent of Division

The major emphasis of this class will be the cause of the emission problems and their control. Federal regulations will be discussed and individual automobile manufacturers systems of control will be covered in detail. (4 hours per week)

212 Electrical Circuits .....1 credit hour

This class will be a study of the various electrical circuits of the automobile which would include lights, horn, windshield wiper, power windows, and seats, including trouble shooting procedures. (4 hours per week for 8 weeks)

213 New Car Features .....1 credit hour

This class will cover the new features introduced during the model year in which the class is offered. Each year it will be modified to include the current items in body and mechanical which are new. (4 hours per week for 8 weeks)

214 Heating and Air Conditioning .....1 credit hour

Prerequisite: Automotive Air Conditioning 202 or Consent of Division

This class will be the study of the automatic air conditioning systems which are current. The fundamentals of mixing and control will be covered as well as their application to individual systems. (4 hours per week for 8 weeks)

215 Customer Relations .....1 credit hour

This class is designed to provide a graduated scale of activities to help

the student achieve a greater competency of expression and a sense of confidence in communicating his thoughts and ideas to customers. (4 hours per week)

(BIO) BIOLOGY

107 Field Ecology .....3 credit hours

The course consists of a field study of plants and animals and their relationships to their environment with emphasis on their effects on man and his society. Great emphasis will be put upon outdoor activity in and on the campus conifer forest, glacial ponds, fields and the Huron River system. Trips will be taken to other areas such as larger glacial lakes and drainage systems. This will be augmented by lab activities with the use of collected specimens. (4 hours per week)

108 Human Ecology .....3 credit hours

An introduction to the problems of population, pollution, and environmental control. Basic background in human evolution, ecological concepts, current ecological problems and the outlook for the future will be investigated. Recent writings by researchers in these areas will be an important part of the course. (3 hours lecture)

111 Concepts of Biology .....4 credit hours

Intended for non-science students but essential for biology majors. A survey of the principles coupled with a detailed study of the major concepts of biology with emphasis on intermediate metabolism, DNA, RNA, population interactions, embryology, and genetics. Involved are three hours of lecture and four of laboratory. (7 hours per week)

122 Human Biology .....4 credit hours

An introduction for the beginning student in biology or the general student that wants a background in the structure and functions of the human body. The laboratory work is basic, but extensive. It includes such exercises as the dissection of a fetal pig, human blood cell counting, blood pressures and operation of a physiograph. Involved are three hours of lecture and four of laboratory. (7 hours per week)

123 Physiology .....1 credit hour

(Human Biology 122 must be taken concurrently)

Intended for Physical Education majors who require a five credit Biology Course. (1 hour per week)

127 Botany .....4 credit hours

Prerequisite: Concepts of Biology 111

A field and laboratory investigation of plants is carried on during the two lecture hours and four laboratory hours per week providing a detailed study of structure and function. (6 hours per week)

128 Zoology .....4 credit hours

Prerequisite: Concepts of Biology 111.

A field and laboratory investigation of the animal kingdom is carried on during the two lecture and four laboratory hours per week providing a detailed study of classification, evolutionary relationships, structure, and functions. (6 hours per week)

140 Basic Health Science .....3 credit hours

A core science course for health science students. Subject matter drawn from anatomy, physiology, bacteriology, microbiology, and pathology. Basic Health Science Laboratory 141 must be elected concurrently. (3 hours per week)

141 Basic Health Science Laboratory .....1 credit hour

A laboratory designed to accompany Basic Health Science 140 or other health area lecture courses. (2 hours per week)

151 Inhalation Therapy Science .....5 credit hours

Intended for Inhalation Therapy students only. An in-depth survey of the anatomy of the respiratory system, scientific units, chemistry, physics, and the physiology of the excretory and respiratory system with major stress on the practical applications of pure academic theory to the field of Clinical Inhalation Therapy. Involved are four hours of lecture and two hours of laboratory. (6 hours per week)

152 Inhalation Therapy Science .....4 credit hours

Prerequisite: Inhalation Therapy Science 151

A direct continuation of Inhalation Therapy Science 151 intended for Inhalation Therapy students only. Lecture will center on fluid and electrocytic balance, acid-base balance, and a brief survey of the anatomical systems which remain from the Inhalation Therapy Science 151 course. Allied laboratory sessions will investigate the fields of pharmacology, microbiology, and pathology. Involved are three hours of lecture and two hours of laboratory. (5 hours per week)

211 Anatomy and Physiology .....3 credit hours

Designed primarily for students on Health Science programs. A detailed study of the gross and microscopic structures of the skeletal, muscular, digestive, and respiratory systems stressing function to structure relations. (3 hours per week)

217 Microbiology .....5 credit hours

Prerequisite: Concepts of Biology 111.

An introduction to the study of micro-organisms in which the morphology, physiology, and immunology of these organisms are studied. (9 hours per week)

222 Anatomy and Physiology .....3 credit hours

Prerequisite: Anatomy and Physiology 211.

A continuation of Anatomy and Physiology 211 with stress on the anatomical and physiological relationships of the circulatory, excretory, reproductive, endocrine, and nervous systems. (3 hours per week)

(BLS) BLACK STUDIES

141 Black Art Appreciation .....3 credit hours

The general goal of this course is to use the visual concept of art to aid in the emergence of Black people in America. We hope to teach the necessity to think, to develop and to manifest intelligence and manhood, using art as the medium. (3 hours per week)

157 Afro-American Music .....3 credit hours

The aim of this course is to acquaint the student with the development of musical events, institutions, and techniques derived from African musical heritage, and its influence on music in the Americas. (3 hours per week)

113 Black Drawing and Painting .....3 credit hours

The purpose of this class is to bring the drawing and painting talents of students into the arena of the Black experience.

Students are taught drawing, painting, layout, composition, mural painting, water color, oil, pastel, and ink drawings.

Our attempt is to correlate their art work into a Black concept. This way, we hope to help breach some of the gaps between the various com-

munities, (Black & white—academic & non-academic) etc. through this visual means. (6 hours per week)

150 Afro-American History .....3 credit hours

Survey and analysis of the literature and some of the problems and interpretations of the history of the Afro-American from the Revolutionary War to the present. (3 hours per week)

181 Black Literature .....3 credit hours

A critical analysis of Black emotions expressed in the world of literature with the goal of raising the level of Black consciousness. (3 hours per week)

107 Black Psychology .....3 credit hours

A study of the psychological dynamics of the Black experience. An assessment of sociocultural factors that determines the Black psyche. (3 hours per week)

(BPR) BLUEPRINT READING

100 Blueprint Reading for Construction Trades .....3 credit hours

Elementary blueprint reading for persons in the construction trades. Architectural construction prints and drawings are used as the basis of instruction. (3 hours per week)

110 Blueprint Reading for the Construction Trades .....2 credit hours

An advanced blueprint reading course for persons in the construction trades with emphasis on larger scale building construction projects. (2 hours per week)

101 Blueprint Reading .....3 credit hours

Fundamentals of blueprint reading as applied to the manufacturing industry. Basic drafting principles are studied as applied to specific problems. This course is designed for: pre-engineers, draftsmen, machine operators, machine repairmen, electronic technicians, inspectors, and supervisors. (3 hours per week)

102 Blueprint Reading .....3 credit hours

Prerequisite: Blueprint Reading 101

Advanced blueprint reading principles. Included are tool, jig and fixture,

die and body prints. Special emphasis is given to inspection and measurement. (3 hours per week)

103 Blueprint Reading for Sheet Metal .....3 credit hours

Fundamentals of blueprint reading as applied to the fabrication of sheet material. Special emphasis is given to sheet metal fabrication and fastening methods. (3 hours per week)

104 Blueprint Reading for Fluid Power .....2 credit hours

Fundamentals of reading hydraulic, pneumatic, and fluidic prints. ASA, JIC, ANST symbols are studied and identified in typical circuit applications. Identification and familiarization with common components is included. (3 hours per week for 8 weeks)

105 Blueprint Reading—Electrical Prints .....2 credit hours

Fundamentals of reading elementary electrical prints and drawings including block diagrams, electrical symbols, schematics, logic diagrams, and component boards. Emphasis is placed on components, hardware, and wire identification. (3 hours per week for 8 weeks)

106 Blueprint Reading for Welding .....2 credit hours

Fundamentals of interpreting welding symbols and standard fabrication drawings as used on prints for castings, sheet materials, non-metallic welding, and other fabricated products. (3 hours per week for 8 weeks)

(CEM) CHEMISTRY

057 Introductory Chemistry .....3 credit hours

A preparatory course for the student who has no background in high school science or algebra. This course may be taken by the student wishing to improve his background before taking General Chemistry 111, or by the student desiring a terminal exposure to chemistry. Credit for Introductory Chemistry 057 is contingent on the successful completion of either Introductory Chemistry Laboratory 058 or General Chemistry 111. (3 hours per week)

058 Introductory Chemistry Laboratory .....1 credit hour

Co-requisite or prerequisite: Introductory Chemistry 057

A laboratory experience in basic chemical laboratory practices and procedures. Introductory Chemistry Laboratory 058 should be elected to accompany Introductory Chemistry 057 except for those students intending to elect General Chemistry 111. (3 hours per week)

097 Chemistry of Combustibles .....3 credit hours

An eight week lecture-demonstration course designed for firemen. Topics covered include basic chemistry with emphasis on hazardous and explosive materials. A research paper is required. (3 hours per week)

111 General Chemistry .....4 credit hours

Prerequisite: High school chemistry, 1 year high school algebra.

A beginning general college chemistry course which includes the laws of chemical combination, states of matter, atomic and molecular structure, bonding, and other basic principles. General Chemistry 111 has three 1-hour lectures and one 3-hour laboratory per week. (6 hours per week)

122 General Chemistry .....4 credit hours

Prerequisite: General Chemistry 111.

A continuation of General Chemistry 111, including ionic equilibria and qualitative analysis. The accompanying laboratory will include the qualitative identification of unknown substances, and the quantitative determination of unknown substances using elementary instrumental techniques. General Chemistry 122 has two 1-hour lectures, and two 3-hour laboratory sessions per week. (8 hours per week)

211 Organic Chemistry .....3 credit hours

Prerequisite: General Chemistry 111

A lecture course dealing with nomenclature, stereo-chemistry, and reactions of aliphatic and aromatic compounds. (3 hours per week)

218 Analytical Chemistry .....4 credit hours

Prerequisite: General Chemistry 122.

The study of quantitative separation and determination of chemical substances through the use of gravimetric, volumetric, optical, and electrometric methods. Analytical Chemistry 218 has two 1-hour lectures, and two 3-hour laboratory sessions per week. (8 hours per week)

222 Organic Chemistry .....5 credit hours

Prerequisite: Organic Chemistry 211 and General Chemistry 122.

A continuation of Organic Chemistry 211 involving the study of the derivatives of aliphatic and aromatic compounds. The accompanying laboratory will stress techniques used in the preparation and handling of organic compounds. Organic Chemistry 222 has three 1-hour lectures and two 3-hour laboratory sessions per week. (9 hours per week)

224 Biochemistry .....4 credit hours

Prerequisite: Organic Chemistry 211

The study of the structure, occurrence, synthesis, function and metabolism of proteins, amino acids, peptides, carbohydrates, fats, nucleaic acids and enzymes from a laboratory analysis point of view. (4 hours per week)

225 Biochemical Laboratory Techniques .....4 credit hours

Co-requisite: Biochemistry 224

A study of biochemical laboratory techniques related to the isolation, purification, analysis and activity of biochemically important compounds. (6 hours per week)

230 Chemical Literature .....1 credit hour

Prerequisite: General Chemistry 122.

Intended both for the chemical technician and the chemical engineer the course gives a systematic introduction to the use of chemical literature. (Audio-tutorial)

238 Instrumental Analysis .....6 credit hours

Prerequisite: Organic Chemistry 211 and Analytical Chemistry 218.

A course in instrumental methods of chemical analysis intended primarily for the chemical technician. Instrument design and repair will be emphasized. The accompanying laboratory will stress the operation of all of the common instrumentation of a modern chemical laboratory. Instrumental Analysis 238 has three one-hour lectures and two 4-hour laboratories per week. (11 hours per week)

(D-P) DATA PROCESSING

111 Principles of Data Processing .....5 credit hours

Prerequisite or co-requisite: Foundations of Occupational Mathematics 092 and first year standing or divisional consent.

An introduction to the principles and concepts of data processing including elementary computer programming techniques. Machine practice exercises are combined with classroom instruction to relate the various units of data processing equipment to the electronic computer. (4 hours per week PLUS minimum 4-6 practice hours)

122 Data Processing Applications .....5 credit hours

Prerequisite: Principles of Data Processing 111 or equivalent.

Course designed to acquaint the student with data processing applications in business and/or industrial operations. Emphasis is given to the development of an understanding of machine-systems for processing data and the advantages inherent in mechanization. Includes a study of data processing applications in the areas of inventory control, payroll accounting, accounts receivable, and accounts payable. (4 hours per week PLUS minimum 4-6 practice hours)

213 Computer Programming .....5 credit hours

Prerequisite: Data Processing Applications 122 or equivalent.

An applied study of the functions of specific data processing equipment including a complete exposition of the COBOL (common business-oriented language) system and an introduction to the FORTRAN (formula translation) and other pertinent language systems of computer programming. Course coverage provides the student with insights into the universally adaptable programming systems concepts. (4 hours per week PLUS minimum 4-6 practice hours)

224 Data Processing Systems and Procedures .....5 credit hours

Prerequisite: Data Processing Applications 122 and/or Computer Programming 213 or equivalent.

An introduction to the principles and concepts of programming systems and procedures thereby enabling the student to develop the essential groundwork for more advanced study of the programming systems. Major emphasis is on the purposes and functions of the various types of programming systems and procedures and their relevance to business-industrial enterprise. (4 hours per week PLUS minimum 4-6 practice hours)

(D-A) DENTAL ASSISTING

110 Introduction to Dental Assisting .....3 credit hours

Prerequisite: Admission to the Dental Assisting Curriculum

An orientation to dentistry. This is a study of the history of dentistry, its professional organizations, ethics, and the role of the modern dental health team. The student will be introduced to the dental operatory, equipment, and instruments as they relate to his role as a chairside assistant.

111 Dental Science .....4 credit hours

This course deals with the anatomy and physiology of the head, oral cavity, and the teeth. Emphasis is placed on dental terminology and development of the human dentitions.

120 Oral Diagnosis Technique .....1 credit hour

A clinical course designed to actively involve the student in applying his knowledge of collecting diagnostic data and the formulation of treatment plans for dental patients. Case summaries and presentations will be written on actual clinical cases being treated in the Washtenaw Community College Dental Clinic.

121 Introduction to Clinical Procedures .....5 credit hours

As a pre-clinical course the student will be exposed to the dental assistant's role in assisting the doctor in operating techniques. The student will gain experience in manipulation of dental materials, their chemical and physical properties, and instrumentation in each operative procedure in the dental operatory. (5 hours per week)

122 Advanced Dental Science .....4 credit hours

Prerequisite: Dental Science 111

Continuation of Dental Science 111. A study of the relationship of systemic health to oral health, oral pathology, diet and nutrition. The principles of oral hygiene, operative dentistry, oral surgery, anesthesia, and dental prosthetics are emphasized. Detailed presentations are given in medical emergencies and the use of therapeutics in dentistry.

200 Dental Assistant Clinical Practice .....5 credit hours

The student is required to matriculate through a sequence of clinical experience. This sequence utilizes the facilities of Washtenaw Community College Dental Clinic and the University of Michigan School of Dentistry. The student will be assigned the required hours by the Dental Assistant Coordinator. (20 hours)

210 Principles of Dental Laboratory Procedures .....4 credit hours

A demonstration and laboratory course in which the student constructs various dental devices used in diagnoses and treatment of dental conditions. Fabrication of diagnostic models, temporary restorations, custom impression trays, and gold castings are emphasized. (5 hours per week)

212 Dental Office Systems and Practice Management .....5 credit hours

Prerequisite: 1 year of high school typing or Typewriting 110A

Emphasis is placed on filing, dental record systems, oral and written communication, and utilization of office equipment. Problem oriented sessions and projects enable the student to develop practical knowledge of the Dental Assistant's role in business office management. This course is team taught by the Business and Industrial Division and the Dental Assistant Department.

213 Dental Roentgenology .....2 credit hours

Principles, techniques, and precautions in the operation of dental X-ray equipment are studied. Film processing methods are covered in detail. Credit will be given only after satisfactory completion of Dental Roentgenology 214.

214 Dental Roentgenology .....2 credit hours

Prerequisite: Dental Roentgenology 213

A clinical course in making X-ray exposures on patients participating in the Washtenaw Community College Dental Clinic. Emphasis is placed on safety and X-ray techniques. Credit for Dental Roentgenology 213 and 214 will be given when this course has been satisfactorily completed.

222 Dental Assistant Clinical Practice .....5 credit hours

Advanced techniques in clinical procedures are offered through continued experience at Washtenaw Community College Dental Clinic and the University of Michigan School of Dentistry. The student will progress through a sequence of private dental offices within the community and actively participate in both general and specialty practices. (20 hours)

(E-C) ECONOMICS

111 Introduction to Economics .....3 credit hours

A general education course in economics relating to the consumer, production, national income and growth, banking and credit, markets and prices. For those not majoring in business administration or social sciences. (3 hours per week)

211 Principles of Economics .....3 credit hours

Study of the American economic system including the nature of economics, resources, business organization in the United States, pricing and allocation of resources, distribution of income. Required of all business administration transfer students. (3 hours per week)

222 Principles of Economics .....3 credit hours

Prerequisite: Successful completion of Principles of Economics 211.

Continuation of principles including money, banking, price levels, volume of economic activity, public finance, international economics, and economic growth. Required of all business administration transfer students. (3 hours per week)

(EAA) EDUCATIONAL AIDE/ASSISTANT

111 Teacher Aide Techniques .....3 credit hours

Techniques of showing and explaining interesting and constructive art work, songs, games, music, dances, sand and water play for nursery and elementary school children. (3 hours per week)

122 Teacher Aide Techniques .....3 credit hours

Relationship of the teacher aide to the professional teacher and administrator. Limitations of the teacher aide; further development of the techniques approached in 111. (3 hours per week)

189 Study Problems .....3 credit hours

Directed activities in a major occupational area; a period of concentrated effort to an assigned problem working with faculty or a recognized specialist in the occupation; the demonstration of the individual's development of understanding and skill development within the selected occupation.

209 Instructional Media and Materials .....3 credit hours

A practical and comprehensive approach to the applications of visual materials and auditory aids. (3 hours per week)

(E-E) ELECTRICITY—ELECTRONICS

110 Electrical Applications .....2 credit hours

Co-requisite: Student must be simultaneously enrolled in Electrical Fundamentals 111

Laboratory experiments applying electrical theory and calculations to electrical circuits. (Required of those students in the Electronic Engineering Technician Program.) (3 hours per week)

111 Electrical Fundamentals .....4 credit hours

Prerequisite: Applied Algebra 151
Co-requisite: Intermediate Algebra 109 or 109A; Electrical Applications 110 (for Electronics-Engineering and Electrical Technicians only)

Fundamentals of electric current generation, measurement, and application. Magnetic phenomena, AC wave generation and measurement, alternating current transformers, capacitive and inductive reactance. The use of oscilloscopes; AC current, volt, and watt meters; signal generator; V.O.M.; and impedance bridge. (6 hours per week)

120 Electrical Applications .....2 credit hours

Prerequisite: Electrical Fundamentals 111 and Electrical Applications 110. Student must be simultaneously enrolled in Electrical Fundamentals 122

A continuation of Electrical Applications 110. The course work will parallel that of Electrical Fundamentals 122. Required of those students in the Electronic-Engineering Technician program. (3 hours per week)

122 Electrical Fundamentals .....4 credit hours

Prerequisite: Electrical Fundamentals 111, preceded or accompanied by Intermediate Algebra 109 or 109B

Exercises solving parallel and complex circuit problems, alternating current generation, commutation, and rectification. Fundamental D.C. and A.C. motors and generators and their equivalent circuits. Common motor starting and speed controls. An introduction to Delta, Wye, and three phase transformation. Solid and vacuum tube diodes are introduced. (6 hours per week)

127 Industrial Electricity .....4 credit hours

Prerequisite: Electrical Fundamentals 111, preceded or accompanied by Electrical Fundamentals 122

Electrical conductors, wiring diagrams, series, shunt, and compound direct-current generator and motor principles including: commutation winding, torque and speed calculations. Single and three phase transformers and their equivalent circuits. Impedance and voltage transformation. A.C. motors (shaded pole, synchronous, capacitor start, squirrel cage, induction-repulsion), motor controls, segments of the National Electric Code are presented. (6 hours per week)

200 Audio and Power Transmission .....3 credit hours

Prerequisite: Electrical Fundamentals 122 and Electrical Applications 120

Electro-magnetism and magnetic circuits; network theorems; series and parallel resonant circuits; impedance transformation and matching; AC and DC coupling methods. The "j" operator is used extensively. (3 hours per week)

210 Measurements and Instrumentation .....4 credit hours

Prerequisite: Applied Algebra 151 and Electrical Fundamentals 111

This course presents the theoretical and practical aspects of precision electrical and mechanical measurements. Included are: measuring standards, mathematical evaluation of errors, systems and units of measurement, basic standards, mechanical-electrical and magnetic test equipment. Laboratory exercises provide a first hand knowledge of the principles involved in the calibration and certification of laboratory instruments. (6 hours per week)

211 Basic Electronics .....4 credit hours

Prerequisite: Electrical Fundamentals 111 and 122

Transistor and vacuum tube theory and equivalent circuits; amplifier circuits and applications; familiarization with various electronic components and instruments. (6 hours per week)

219 Electrical Distribution Systems .....3 credit hours

Prerequisite: Preceded or accompanied by Audio and Power Transmission 200

A detailed study of residential, industrial, and commercial electrical systems; wiring diagrams and techniques; substations and distribution panels. Typical electrical blueprints are used by the students. Field trips are scheduled to inspect area power stations, industrial complexes, and construction sites. (3 hours per week)

220 Electrical Installation and Maintenance Practices .....4 credit hours

Prerequisite: Electrical Fundamentals 122

A comprehensive study of typical electrical equipment, tools, and hardware. The course includes remote controls, industrial and commercial lighting, principles of illumination, electrical conductors, materials, installation and maintenance of equipment, power factor correction, trouble shooting procedures, and other subjects appropriate for the electrical maintenance technician. Hands-on application is emphasized to develop skills in these areas. (6 hours per week)

222 Communication and Pulse Circuits .....4 credit hours

Prerequisite: Electronics 211 and Audio and Power Transmission 200

The theory and use of resonant circuits; oscillators; detectors; and pulse circuits. (6 hours per week)

237 Electronic Switching and Control (Logic) .....3 credit hours

Preceded or accompanied by: Electrical Fundamentals 111, or consent of the division

A presentation of the theory of electronic and fluidic logic accompanied by problems using "AND" gates, "OR" gates, shift registers, time delays and counters, M.I.L. and machine-printed logic symbols. The binary number system and Boolean Algebra are applied. Magnetic storage theory is included. (4 hours per week)

238 Industrial Electronic Circuits .....4 credit hours

Prerequisite: Basic Electronics 211 and Audio and Power Transmission 200

The study and use of silicon controlled rectifiers; special solid state devices, and gas filled tubes; industrial applications of electronics to such problems as precision timing, light regulation, and electronic control of industrial machinery. A study is made of printed circuitry, micro-module, and other packaged circuits as well as JEDEC, ASA, and EIA standards. (6 hours per week)

239 Electrical Design .....3 credit hours

Prerequisite: For graduation candidates only

Directed activity in electricity or electronics. In consultation with the instructor, the student will select and construct a project. He will design the circuit, draft the layout, select and acquire the components, construct, test, and debug the finished product. (3 hours per week)

240 Practices and Standards Seminar .....2 credit hours

Prerequisite: For graduation candidates only

Group study of current electrical practices and standards. The course will include: ASA standards; segments of FCC and NEC rules and regulations; manufacturing techniques; familiarization with catalogs, products, and vendors; specification writing; professional ethics and hiring practices. Attendance at professional electrical exhibitions is encouraged. (2 hours per week)

090 Introductory Electricity .....3 credit hours

Introductory course for the student who has had no previous instruction in electricity-electronics. An introduction to electron theory, magnetism, electro-magnetism, sources of electricity, electrical units, alternating current generation, inductance, and reactance. (3 contact hours)

101 Servicing Techniques .....4 credit hours

Prerequisite: Preceded or accompanied by Electrical Fundamentals 111

Application of basic AC-DC principles through the construction and use of "in the field" trouble-shooting devices. Emphasis is given to the use and care of hand and power tools and measuring instruments used by repairmen. (6 hours per week)

102 Appliance Repair .....4 credit hours

Prerequisite: Servicing Techniques 101

Specialized study of the electrical circuits and basic mechanisms of household electrical appliances. Application of Ohm's Law, electrical measurements and interpretation of circuits and diagrams are emphasized. Skills are developed in the use of hand tools, electrical instruments, and in special servicing techniques which are employed in the servicing of large and small electrical and electro-mechanical appliances. (8 hours per week)

212 Radio and Television Circuitry .....5 credit hours

Prerequisite: Basic Electronics 211

The emphasis of this course is the circuitry involved in home entertainment equipment. Circuit tracing, trouble analysis, repair and alignment are covered. Specialized transmitter circuitry is also covered. (9 hours per week)

223 Color Television .....4 credit hours

Prerequisite: Radio and Television Circuitry 212

This course is designed to train the student in the principles of color television. Aspects covered include wave form analysis, alignment, and trouble-shooting of color circuitry. The NTSC Color television signal is analyzed in detail. (6 hours per week)

224 Television Service Procedures and Practices .....4 credit hours

Prerequisite: Preceded or accompanied by Color Television 223

Circuit analysis of radio and television receivers. Troubles that occur most frequently in circuits and components are discussed together with recommended diagnostic and repair techniques. Students are given practical training on "bugged" sets and on inoperable equipment supplied by instructors and other students. Students are also instructed in the importance of customer relations in describing receiver failures and servicing. (6 hours per week)

(ENG) ENGLISH

030 Writing Workshop .....3 credit hours

English 030 (Writing Workshop) is a Laboratory course for those students who feel they are not prepared for the regular English composition classes. Students work at their own speed on materials appropriate to their writing capabilities. In English 030 primary emphasis is placed on the basic writing skills. Students are given individual instruction in the Workshop. They may advance during the semester and receive appropriate credit for either English 091, 111 or 122. Students can be referred for help from any course or program throughout the College. (3 hours per week)

030A Writing-Reading .....3 credit hours

Instruction provided in areas of reading and writing for students needing improvement in basic skills. The course emphasizes both class and individual instruction. Recommended for students who desire to further their education in either two-year or four-year institutions. (3 hours per week)

040 Reading .....3 credit hours

The aim of this course is to provide the remedial reader with basic reading skills. A program of instruction is individually designed for each student based on his diagnostic reading test and a personal interview. (3 hours per week)

105 Reading .....3 credit hours

Prerequisite: Permission of instructor.

This course is designed for the competent student interested in improving his study skills, reading speed, and comprehension. Reading techniques appropriate to academic materials are stressed. (3 hours per week)

280 Psychology of Reading and Writing .....2 credit hours

A treatment of methods of teaching reading, writing, and spelling from the standpoint of the psychological principles involved. Includes an appraisal of diagnostic and remedial techniques in these subjects. Incorporates exhibits and demonstrations of teaching aids and devices. (2 hours per week)

091 English Fundamentals .....3 credit hours

This course is designed to provide the occupational student with an adequate and practical background in kinds of writing necessary in his chosen field. The course is tailored to the specific needs of each student. English Fundamentals 091 is in no way remedial for English Composition 111. (3 hours per week)

100 Technical Communications .....3 credit hours

This course provides the student with the skills to communicate by means of writing, speaking, and demonstration, and is designed primarily for those studying to be technicians in industry, the health occupations, and business.

In addition to improving writing and speaking skills of a technical nature, the student will learn the methods of reporting factual information through the analysis of problems and events related to his technical specialty. The uses of audio-visual equipment, the creating of graphic presentations, and the development of an appreciation of precise reporting through the use of elementary statistics are all parts of this course. (3 hours per week)

107 Communication Skills .....3 credit hours

Spelling, vocabulary, sentence structure, organization of oral communications, business correspondence and forms, writing of technical reports. Analysis of written material for tone, style, and clarity with individual speech analysis, business and social conversations, information talks, explanations and demonstrations. Supplementary reading assignments include suitable models for the student in his writing. (4 hours per week)

137 American Studies .....3 credit hours

This course is designed to acquaint the student with a variety of literature—literature in the broadest sense—which reflects the spirit, anxieties, and aspirations of the American people. Whenever appropriate, excursions into related arts and media will be made. English 137 is substitute for English 092 in Business Programs. (3 hours per week)

101 Writing for Mass Media .....3 credit hours

See (JRN) JOURNALISM for course description.

115 Introduction to Mass Media .....3 credit hours

See (JRN) JOURNALISM for course description.

111 English Composition .....3 credit hours

English Composition 111 and 122 constitute a sequence designed for students who intend to transfer to senior colleges and universities. The student will write both in-class and outside themes frequently. Reading materials will serve as the basis for these themes and for classroom discussions. (3 hours per week)

122 English Composition .....3 credit hours

Prerequisite: English Composition 111.

A continuation of English Composition 111, during which a full-length research paper will be written and additional literary materials introduced. (3 hours per week)

270 Creative Writing .....3 credit hours

Prerequisite: Permission of instructor or division.

A course in the fundamentals of creative writing through the analysis of various forms of writing and frequent written exercises in fiction, poetry, and basic playwriting. While the student is encouraged to develop writing skills according to his own interests and abilities, the course is based on the assumption that an understanding of the skills involved in creative writing will also make the student a better reader of the masterpieces of poetry, fiction, and drama. This course is also designed for adults who are seeking an avocation in creative writing, and are interested in learning the fundamentals of the craft. (3 hours per week)

160 Introduction to Literature: Poetry and Drama .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

An introduction to the study of poetic and dramatic literature, this course is designed to give an understanding of literature through close reading and discussion of selected works of poetry and drama. (3 hours per week)

170 Introduction to Literature: Short Story and Novel .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

A companion course to Introduction to Literature: Poetry and Drama 160. In both, encouragement will be given to the student to evolve his own criteria for assessing the value of a literary work. (3 hours per week)

181 Black Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111 or Permission of Instructor.

A critical analysis of Black emotions expressed in the world of literature with the goal of raising the level of Black consciousness. This course is an introduction to contemporary Black literature, letters and thought. On arrangement with the instructor, some students may receive credit in English 095 Black Literature instead of English 181. (3 hours per week)

207 The Literature of the Bible .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111 or permission of instructor.

A study of the content and literary forms of the Old and New Testaments,

and their influence on the literatures of the world to the present day. (3 hours per week)

210 Children's Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

A general survey of the prose, poetry and illustrated books suitable for the elementary grades. Required by most institutions of students entering elementary education. Also for those in library studies or work, or useful as a general education course for parents. (3 hours per week)

211 American Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

A study of our nation's literature from the beginnings to the Civil War, stressing the major authors of the period. There will be an effort to relate the trends of the period to contemporary problems and readings. (3 hours per week)

222 American Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

A continuation of American Literature 211, covering the period from the Civil War to the present. There will be an effort to relate the trends of the period to problems and readings occurring before the Civil War. (3 hours per week)

212 English Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

A study of English literature from the Anglo-Saxon period through the eighteenth century. Readings stress the major authors from Chaucer to Johnson. (3 hours per week)

223 English Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

English literature continued. A study of representative writers of the Romantic, Victorian, and Modern periods. (3 hours per week)

213 World Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

World Literature 213 and 224 is a sequence which attempts an approach

to the eternal values of man through literary masterpieces written from the time of ancient Greece to the present. (3 hours per week)

224 World Literature .....3 credit hours

Prerequisite: English Fundamentals 091 or English Composition 111.

A continuation of World Literature 213, the second part of this sequence offers a detailed study of some of the great literary experiences since the Renaissance and attempts to show how they have contributed to our present cultural heritage. (3 hours per week)

(F-P) FIRE PROTECTION TECHNOLOGY

097 Labor Relations in the Public Sector .....3 credit hours

Labor Relations as it applies to the public employee. Labor laws that apply to the public sector, simulated collective bargaining procedures, and case studies will be discussed. This requires one field study report.

100 Introduction to Fire Protection .....3 credit hours

A course in the history and development of fire protection; the role of the fire service in the development of civilization; personnel in fire protection; introduction to general fire hazards; and a discussion of the problems and possible solutions for current and future fire protection. (3 hours per week)

122 Fire Prevention Theory and Application .....3 credit hours

Prerequisite: Introduction to Fire Protection 100

The development of fire prevention laws and ordinances for elimination of fire hazards; inspection organization, practices, and procedures; theory and application of laws and ordinances in modern concepts of fire prevention. (3 hours per week)

109 Fire Operations Strategy .....3 credit hours

The aspects of tactics and strategy in extinguishing fires; pre-fire plans; organization of the fireground, including techniques of using available equipment and manpower; a study of conflagrations and the techniques of predicting fire severity. Emphasis will be placed on the development of thinking skills in relation to crisis. (3 hours per week)

210 Introduction to Fire Administration .....3 credit hours

A course in the practical application of records, reports, and training; the municipal fire problem, organization for fire protection to include manpower, equipment, and facilities; principles of organization; methods of supervision and discipline; relations with the public and other city departments; the

budget and purchasing practices; a study of rating systems and their application to the fire service; and discussion of the proper ways to handle personnel problems, grievances, and employee suggestions. (3 hours per week)

213 Fire Investigation and Arson .....3 credit hours

The fireman's role in arson investigations; the method and mechanics of protecting, searching, and controlling the fire scene; determining the point of origin, path of fire travel and fire causes; interviews and interrogations; recognizing and preserving evidence; Michigan arson laws; alibis, motives, and proving the corpus delicti; preparation of the case, court testimony, and reports and records; juvenile fire setters. (3 hours per week)

224 Protection Systems in Industry .....3 credit hours

Attitudes prevalent in industry toward fire protection; development of fire and safety organizations in industry; relationships between private and public fire protection organizations; industrial obligations to communities in regard to fire and safety; current trends, deficiencies, and possible solutions for fire protection problems facing industry today. (3 hours per week)

(FLP) FLUID POWER

111 Fluid Power Fundamentals .....4 credit hours

Basic components of hydraulic and pneumatic systems as well as a general understanding of the basic laws and formulas. Pumps control valves, actuators, ASA, JIC, ANSI symbols are used for circuit construction and print reading. Laboratory experiences include assembly and disassembly of components and construction of hydraulic circuits. (5 hours per week)

122 Hydraulic Generators (Pumps) .....4 credit hours

Prerequisite: Fluid Power Fundamentals 111 or consent of Division.

Experience with a variety of different types and styles of pumps including piston, vane, gear, and combination pumps. Construction, testing, and maintenance procedures provide the laboratory experiences. (5 hours per week)

201 Plumbing and Pipefitting .....3 credit hours

A practical study of plumbing and pipefitting fundamentals as well as the classifications and functions of boilers, steam and hot water heating systems. Heating Code is also included. (3 hours per week)

202 Plumbing and Pipefitting .....4 credit hours

A continuation of Plumbing and Pipefitting 201 involving the study of

water supply, waste disposal, drainage, venting, unit sanitation equipment, and Plumbing Codes. (4 hours per week)

213 Hydraulic Controls .....3 credit hours

Components used in the control of hydraulic fluids are studied. Emphasis is placed on pressure, direction, and volume control assemblies. Manual, electrical, pneumatic, mechanical, and hydraulically operated valves are studied and demonstrated in typical circuits. (4 hours per week)

214 Basic Hydraulic Circuits .....3 credit hours

Prerequisite: Fluid Power Fundamentals 111 or consent of Division.

The fundamentals, review of components, and necessary computations for basic hydraulic circuits. Trouble-shooting techniques in the hydraulic circuit, including the importance of oil viscosity and line component malfunctons are stressed. (4 hours per week)

225 Advanced Hydraulic Circuits .....3 credit hours

Prerequisite: Basic Hydraulic Circuits 214 or consent of Division.

The operations, applications, and maintenance of hydraulic circuits to typical machines such as: lathe, broach, mill and die-cast machines. Circuit design and component sizing is stressed. Model implications for fluidics are introduced. (4 hours per week)

226 Pneumatics .....3 credit hours

Basic air systems as a power medium in industrial applications, such as presses, clamps, transfer devices, etc. Valves, cylinders, motors, compressors, regulators filters, and other power components are included. (4 hours per week)

227 Air Control Circuitry .....3 credit hours

Testing, design, and construction of various air circuits used to **control** industrial machines. Emphasis is placed on numatrol air circuitry and fluidic controls. (4 hours per week)

(FRN) FRENCH

111 First Year French .....3 credit hours

This course is designed for those who are beginning, or who wish to review their foreign language study. Emphasis is on the oral-aural approach. (4 hours per week)

122 First Year French .....3 credit hours

Prerequisite: French 111 or permission of instructor.

A continuation of French 111. Class conversation, elementary readings, and language laboratory practice stress the spoken language and help develop a basis for further study. (4 hours per week)

213 Second Year French .....3 credit hours

Prerequisite: French 122 or permission of instructor.

Advanced conversations and readings emphasize several cultural aspects of the language and continue the work done in French 111 and 122. Students with good high school backgrounds in French may be eligible for admission to this course without having taken French 111 and 122. (4 hours per week)

224 Second Year French .....3 credit hours

Prerequisite: French 213 or permission of instructor.

This is a continuation of French 213. Short-wave broadcasts and language laboratory practice augment the oral-aural method. (4 hours per week)

(G-B) GENERAL BUSINESS

111 Business Law .....3 credit hours

Text and case study of the general laws applicable to business covering the nature of law, courts and court procedures, crimes and taxes, contracts, agency, labor relations, and partnerships. (3 hours per week)

122 Business Law .....3 credit hours

Prerequisite: Business Law 111.

The study of corporations, property, sales, negotiable instruments, insurance, and bankruptcy. (3 hours per week)

140 Business Occupational Foundations .....3 credit hours

Prerequisite: First year standing.

An introductory study of the functions, objectives, problems, organization, and management of modern business and/or industrial enterprise. Designed to acquaint the student with the free-enterprise system of business-economic activity and the impact of the consumer and governmental forces upon the system. The student develops an insight into the vital role of the administrative (management) function in our economy as a whole and in the operation

of a single business unit. The student is provided with a practical orientation, exploration, and background of information in the career opportunities available in business and industry. (3 hours per week)

200 Independent Directed Study .....2-6 credit hours

Prerequisite: Divisional consent.

A planned program of study in selected business-industrial subject matter under the guidance and direction of a regular staff member. Designed to supplement classroom study in a way that will enhance the student's total educational experience. Includes readings, analyses, conferences, reports. Variable credit.

NOTE: Meeting time is on an "arranged" basis.

207 Business Communication .....3 credit hours

Prerequisite: Second year standing or divisional consent.

A course to develop the student's oral and written communication skills as they relate to business and/or industrial enterprise. Emphasis is placed upon the social and psychological aspects and the public relations function of business communication, along with its prime purpose of transmission of information and persuasion. The student develops an awareness of the importance of clarity, conciseness, accuracy and appropriateness of tone in all types of business communication—oral and written. Includes business correspondence and reports, and the gathering, preparation, organization, and presentation of data. (3 hours per week)

(GEO) GEOGRAPHY

100 Geography and the Environment .....3 credit hours

Geographic principles underlying the patterns of man's activities on the earth's surface. Includes problem-solving in land use, air and water standards, population control, and leisure in conservation. (3 hours per week)

150 Urban Geography .....3 credit hours

Deals with the spatial aspects of urban development. Primarily the focus is upon cities. This focus is broadened to include all areas that are sufficiently city-like in housing density and land use characteristics to be referred to as urban. Includes analysis of comprehensive city and regional planning as related to land use. (3 hours per week)

200 Michigan: Geography and History .....3 credit hours

A comprehensive survey of the various types of natural resources and regions within the state and of the cultural adjustment man has made to

natural conditions. Special emphasis will be placed on points of history with geographic interest. The economic, social, and political development of the territory is shown as a part of the history of the Great Lakes area. (3 hours per week)

(GLG) GEOLOGY

100 Introductory Geology .....4 credit hours

A course designed primarily for students who desire to obtain a broad perspective of the science. Practical training in earth science, including work with minerals, rocks, fossils, maps, meteorology, astronomy, and oceanography, and a field trip to points of geologic interest is included in the three weekly laboratory hours. (5 hours per week)

109 Common Rocks and Minerals .....3 credit hours

Involved is the identification of rocks and minerals; the study of an area as revealed in rocks and minerals. Especially useful for prospective elementary school teachers. (3 hours per week)

114 Physical Geology .....4 credit hours

Physical features of the earth with special reference to their origin and significance along with interpretation of topographic maps and the study of common rocks and minerals. A field trip is involved in the two hours of lecture and three hours of laboratory. (5 hours per week)

125 Historical Geology .....4 credit hours

Prerequisite: Physical Geology 114.

A study of the development of North America as a typical continent, covering the formation of mountains, plains, and evolution of life on land and water, and the identification of fossils and interpretation of geologic maps. Field trips are involved. (5 hours per week)

(HST) HISTORY

101 Western Civilization to 1700 .....3 credit hours

Cultural and institutional development of the early Orient and Classical and Medieval Europe will be stressed. Students planning to transfer to a senior college are expected to take History 101 and History 102 in the freshman year. (3 hours per week)

102 Western Civilization Since 1700 .....3 credit hours

A study of cultural developments and growth of institutions from 1700 to the present. Emphasis upon the expansion of European civilization. A foundation for the understanding of contemporary world problems. (3 hours per week)

150 Afro-American History .....3 credit hours

Survey and analysis of the literature and some of the problems and interpretations of the history of the American Black from the Revolutionary War to the present. (3 hours per week)

201 United States, 1500-1865 .....3 credit hours

Introductory American history from pre-Columbian Europe to the close of the Civil War. Broad survey with emphasis on the growth of institutions and ideals as they were brought from Europe and modified and developed here. (3 hours per week)

202 United States, 1865-Present .....3 credit hours

General survey of American society and politics since the Civil War. Special emphasis on social and cultural factors as well as politics. A continuation of United States, 1500-1865 201, but no prerequisite necessary. (3 hours per week)

(I-D) INDUSTRIAL DRAFTING

100 Perspective and Parallel Line Projection .....4 credit hours

See (TCA) Technical-Commercial Art for course description.

100 Technical Drawing .....4 credit hours

The graphic language, free-hand sketching, lettering, pictorial drawing, orthographic drawing techniques, geometry of technical drawing, auxiliaries, and related technical terms. (6 hours per week)

107 Mechanisms .....4 credit hours

The principles of linkage, cams, centros, displacements, motions, velocities, mechanisms, and vectors are studied and their applications presented graphically. (4 hours per week)

111 Industrial Drafting .....4 credit hours

Prerequisite: Technical Drawing 100 or consent of industrial drafting faculty.

Standard practice and procedures, materials, tool design standards, commercial standards, cutting tools, and production tooling are included in this basic course. (6 hours per week)

112 Descriptive Geometry .....4 credit hours

Prerequisite: Technical Drawing 100 or consent of Divisional Director.

The study of points, lines, and planes and their relationships in space. Emphasis is given to the practical application of principles to actual problems as they occur in industry. (6 hours per week)

122 Fundamentals of Jigs and Fixtures .....3 credit hours

Prerequisite: Industrial Drafting 111 and Descriptive Geometry 112.

The basic types of jigs and fixtures and their combined use are studied. Development of skills in the proper location of a part, in detailing and preparation of assembly drawings are stressed. The use of standard parts catalogs in researching is continually emphasized. (6 hours per week)

206 Fundamentals of Plant Layout .....3 credit hours

Prerequisite: Consent of Division.

The nomenclature and the basic approaches used for factory product flow, equipment utilization, and factory layout are studied. The principles of various types of material-handling equipment and the necessary facility services are investigated. (3 hours per week)

213 Fundamentals of Die Drafting .....4 credit hours

Prerequisite: Fundamentals of Jigs and Fixtures 122 or concurrent registration.

The nomenclature and the basic types, principles and standards used in the design of dies is studied. Special attention is given to the use of standard parts catalogs and the standard die detailing and assembly drawing practices. (6 hours per week)

224 Fundamentals of Industrial Tooling .....3 credit hours

Prerequisite: Fundamentals of Jigs and Fixtures 122.

The nomenclature and the basic principles of industrial tool design, including preparing tooling specifications, cost analysis, practice production scheduling, and basic drafting standards for numerical controlled machining. (6 hours per week)

251 Fundamentals of Electronic Drafting .....4 credit hours

Prerequisite: Technical Drawing 100 or consent of Division.

Principles and practices of basic electronic drafting including the use of block diagrams, electronic symbols, schematic drawings, logic diagrams, wire lists, electronic component and hardware identification. Basic materials, finishes, and component board layout are also studied. (4 hours per week)

(I-T) INHALATION THERAPY

111 Inhalation Therapy Procedures .....3 credit hours

This is a comprehensive course dealing with the equipment used by the inhalation therapist. The course involves principles of operation, makes and models, advantages, maintenance and repair, methods and the demonstration and practice of the various analyzers and tests, humidifiers and humidity rooms, masks and catheters, nebulizers and aerosols, resuscitators, respirators, regulators, tents, and incubators. (4 hours per week)

113 Nursing Arts for Inhalation Therapy .....3 credit hours

The nursing problems relative to patients receiving inhalation therapy will be presented, analyzed, and discussed. The organization of the hospitals and public health nursing services will be discussed. The relationship of the nursing service, inhalation therapy, and physical therapy will be presented. Practical demonstrations in nursing and physical therapy procedures will be given. (3 hours per week)

122 Inhalation Therapy Procedures .....3 credit hours

Prerequisite: Inhalation Therapy Procedures 111.

This course is a continuation of Inhalation Therapy Procedures 111. (4 hours per week)

124 Nursing Arts for Inhalation Therapy .....3 credit hours

Prerequisite: Nursing Arts for Inhalation Therapy 113.

This course is a continuation of Nursing Arts for Inhalation Therapy 113. (3 hours per week)

125 Introduction to Applied Inhalation Therapy .....1 credit hour

This course of study is designed as an introduction to the major unit in inhalation therapy. The trainees will receive classroom instruction concerning the use of inhalation therapy as related to the various medical and surgical specialties. (1 hour per week)

136 Applied Inhalation Therapy .....3 credit hours

This course is a continuation of Introduction to Applied Inhalation Therapy 125. Major emphasis in this class will be placed on: (1) emergency and accident room (2) internal medicine (3) obstetrics (4) pediatrics (5) surgery, general (6) surgery, thoracic and (7) neurosurgery. (3 hours per week)

189 Study Problems .....2-8 credit hours

Prerequisite: Consent of Inhalation Therapy Coordinator.

Directed activities in a major occupational area; a period of concentrated effort to an assigned problem working with faculty or a recognized specialist in the occupation; the demonstration of the individual's development of understanding and skill development within the selected occupation.

199 Inhalation Therapy Clinical Practice .....1-6 credit hours

Prerequisite: Consent of Inhalation Therapy Coordinator.

Students who are enrolled in health occupations are required to meet certain registry requirements through clinical practice and work experience. The inhalation therapy coordinator will inform students of the number of credit hours they will need to carry each term. Additionally, students will be informed of the number of clock hours and content of the clinical or work experience through their coordinator.

219 Seminar—Inhalation Therapy .....3 credit hours

In this course, three hours every week will be scheduled for seminar discussions of current problems, therapeutic complications, review of current literature, reports of scientific meetings, and round table discussions. (3 hours per week)

221 Inhalation Therapy Organization and Management .....3 credit hours

A survey course covering practical supervisory problems arising in the management of an inhalation therapy department. Topics covered include: personnel management, budgeting, the need for and use of procedure manuals, the relation of the inhalation therapy department head to his medical director and hospital administrator, management and structure of in-service training programs, the use of job descriptions, purchasing policies, and techniques of evaluating new equipment. (3 hours per week)

(IFM) INSTITUTIONAL FOODS AND MANAGEMENT

100 Introduction to Restaurant Management .....3 credit hours

A course of orientation designed to give the history, organization, prob-

lems, and opportunities in the restaurant industry. A study of restaurant functions; promotional and personnel functions of management; trends and developments in the industry today. (3 hours per week)

109 Food Service Management Seminar .....1 credit hour

Course to acquaint the students with trends and job opportunities in food service. A series of lectures by resource person represented by all areas of food service industry. (1 hour per week)

110 Sanitation and Hygiene .....2 credit hours

Importance of sanitation to the food service; layman's bacteriology, communicable diseases; food poisoning; pest control; cleaning and sanitizing. Personal hygiene—(2 hours per week)

111 Elementary Food Preparation .....6 credit hours

Production and use of food and materials, development of standards of food preparations; the effect of these factors upon economic, nutritive value and aesthetic appeal of food materials. (2 hours lecture & 8 hours lab)

118 Nutrition .....2 credit hours

General principles of nutrition as it pertains to selection of foods; nutritional needs of all age groups; the meaning of food to people; the relation of food and nutrition to health-menu planning. (2 hours per week)

120 Organization & Management .....3 credit hours

Types of organization, functions of management; tools of management; recruitment, selection, training and evaluation; labor policies and collective bargaining; human relation technique in personnel management. (3 hours per week)

122 Quantity Food Production .....6 credit hours

Application of principles of food preparation and planning to quantity production and service use of institutional equipment. Students in the laboratory will assume various positions of responsibility on a rotation basis. (2 hours lecture & 8 hours lab)

128 Food Merchandizing .....2 credit hours

Principles of Food Merchandizing; Importance of Merchandizing; and Practical Applications. (2 hours per week)

222 Advanced Quantity Food Production .....4-6 credit hours

Importance of quality in the development of systematic relationships between food, time, labor, equipment and costs in quantity food production.

Quality procurement policies for food and other items of expense. Evaluation of new product information. (2 hours lecture & 8 hours lab)

223 Advanced Organization & Management .....3 credit hours

Analysis of management problems; work methods and control systems in Volume Feeding—Case Studies. (3 hours per week)

224 Food & Beverage Management .....4 credit hours

Principles of marketing applied to service industries, advertising, promotion and public relation. Analysis of management functions, responsibilities, ethics, managerial skills. (2 hours lecture & 6 hours lab)

228 Layout & Equipment .....6 credit hours

This course is designed to provide the student with knowledge and skills needed in these areas for more efficient production, service and controls in a food and beverage operation. Planning is stressed; time and motion principles employed and layout and design analysis methods utilized. (2 hours lecture & 8 hours lab)

(I-E) INTERNSHIP—EXTERNSHIP

200 Internship-Externship .....3 credit hours

Prerequisites: (Internship) Student in a two-year program must have completed minimum of one year of college, or equivalent. Student in a one-year program must have completed one semester of college, or equivalent. Students must have been enrolled full-time—12 credit hours or more—in the immediately preceding semester. (Externship) Student must have satisfactorily completed minimum of 6 credit hours in the immediately preceding semester.

Internship-Externship opportunities are available to interested and qualified students of Business and Industrial Management Programs. Internships are programs of study designed to enable full-time students to gain simultaneous occupational experience, which is integrated with their academic studies. Externships are programs of study designed for full-time employees for occupational upgrading purposes and are integrated with their job activities. Students planning to enroll for Internship-Externship credit should first review their plans with their academic adviser and the Internship-Externship Program Coordinator to ensure proper program planning and to secure the appropriate divisional director's permission. No more than 12 credit hours of supervised, integrative occupational experience through the Internship-Externship Programs may be applied toward the Associate Degree, and no more than 6 credit hours toward a one-year Certificate of Achievement. (1-hour weekly seminar plus directed field projects.)

(JRN) JOURNALISM

101 Writing for Mass Media .....3 credit hours

Emphasis is on developing elementary reporting and editing skills: news writing, rewriting, and copy editing. Course also deals with ethics and responsibilities of workers in mass media. Students gain practical experience by writing and editing College news publications. (3 hours per week)

115 Introduction to Mass Media .....3 credit hours

Designed primarily to give students opportunity to produce communication in various media, thus broadening their awareness of problems and workings of mass media. Students will tape radio broadcasts, work with film, create commercials and documentaries on video tape, design billboards, write and edit a newspaper and magazine. (3 hours per week)

(L-E) LAW ENFORCEMENT

097 Legal Photography .....3 credit hours

The use of photography as a legal analytical agent in crime solution. A specialized course covering the basic mechanics of photography for use as a tool in crime detection. Selected field projects will be assigned.

200 Specialized Study .....8 credit hours

A means for accreditation of specialized training curriculums taken under the supervision of such law enforcement agencies as the FBI and the Michigan Law Enforcement Training Council. Documentary proof will be required and a descriptive written narrative relative to the specialized experience.

209 Criminal Law .....3 credit hours

For either lawyer or layman; designed to broaden the understanding of the student concerning the various agencies involved in the administration of criminal law. Emphasis is placed upon the more important law enforcement functions from arrest to executive pardon. (3 hours per week)

224 Criminal Investigation .....3 credit hours

Investigative techniques; criminalistics; case studies; including discussion on quantum of proof in criminal investigations and probative value of physical evidence. (3 hours per week)

(LIB) LIBRARY

111 Library Practice .....4 credit hours

An introduction to techniques and information needed by supportive staff in libraries; widely used classification schemes, quick reference tools, and major bibliographies; use of the card catalog and the typing of catalog cards. (6 hours per week)

122 Library Practice .....4 credit hours

Emphasis on circulation, preparation, and maintenance of library materials. Order of books, bindery preparation, financial records, and other type records. (6 hours per week)

NOTE: The first professional degree in librarianship is the Master's Degree, requiring five years of schooling beyond high school graduation. The present two-year course for library technician is meant only to prepare persons who will assist the professional librarian, and does not substitute for the librarian's education provided by graduate library schools.

(MGT) MANAGEMENT AND MARKETING

150 Labor-Management Relations .....3 credit hours

A study of the fundamental forces affecting the labor-management relationship. Development of insights into the growth, objectives, and methods of organized labor; and the significant managerial problems involved in dealing with labor. Analysis of the legal and institutional framework for collective bargaining; and the nature, content, and problem areas of the collective bargaining process—economic and operational factors, labor markets, comparison with foreign labor movements, public policy. (3 hours per week)

160 Principles of Salesmanship .....3 credit hours

Prerequisite: Business Occupational Foundations 140 or divisional consent.

A study of the basic principles and concepts of the sales function in modern business-industrial enterprise in the marketing of goods and services. Included is an analysis of sales techniques, the sales "cycle", sales demonstrations, as well as personal career salesmanship. Emphasis is given to creativity in selling, and the impact of socio-economic and psychological factors related to consumer needs, motivations, and product performance as they affect the sale of consumer and/or industrial goods and services. (3 hours per week)

200 Human Relations in Business and Industry .....3 credit hours

Prerequisite: Second year standing or divisional consent.

A practical study of the modern concepts of administrative principles and practices with special emphasis on the human relations aspect of management responsibility as it affects employee attitudes, morale, and productivity. Major emphasis is on relationships among individuals and/or small groups, with problem-oriented sessions used to realistically relate the course materials to the human relations aspect of modern business-industrial enterprise. (3 hours per week)

208 Principles of Management .....3 credit hours

Prerequisite or co-requisite: Principles of Economics 211 and second year standing or equivalent.

A study of the basic principles of management at the administrative, staff, and operational (line) levels of modern business and/or industrial enterprise. The student develops an understanding of the universality of management functions and principles, and insights into the historical development of management concepts, and their evolution into a modern management philosophy. (3 hours per week)

230 Office Management .....3 credit hours

The application of the principles of management to the planning, organization, and control of office work. The direction and control of services and performance, simplification of procedures and methods, and the establishment of standards and planning of physical facilities and business forms are also included. (3 hours per week)

240 Personnel Management .....3 credit hours

Prerequisite: Business Occupational Foundations 140 and Principles of Management 208 or equivalent.

An exposition of the fields of activity covered in modern personnel work. Topics covered are employment techniques, wages and hours, job evaluation, training, employer ratings, collective bargaining, employment counseling, and collateral benefits such as pensions and fringe benefits. (3 hours per week)

250 Principles of Marketing .....3 credit hours

Prerequisite or co-requisite: Principles of Economics 211 and second year standing or equivalent.

A study of the institutions and functions developed for carrying on trade operations, retail and wholesale agencies, elements of marketing efficiency, the cost of marketing, price maintenance, unfair competition, and the relationship of government to marketing. (3 hours per week)

260 Sales Management .....3 credit hours

Prerequisite: Business Occupational Foundations 140 and Principles of Salesmanship 160 or equivalent.

A study of the managerial functions of planning, organization, and direction of sales effort; the management of sales and services. Personnel and control of sales operations are emphasized. (3 hours per week)

270 Advertising Management .....3 credit hours

Prerequisite or co-requisite: Principles of Marketing 250 or equivalent or divisional consent.

A practical managerial approach to the study of the basic principles and concepts which underlie advertising practice and procedure in the marketing-promotional and distribution aspects of modern business-industrial enterprise operations. Course coverage includes the role of advertising in the individual firm (micro-analysis) and the total economy (macro-analysis); also advertising objectives, methods, techniques, preparation, research, surveys, copywriting, layout, media selection, and testing advertising effectiveness, as well as advertising rates and budgetary factors. (3 hours per week)

(MTH) MATHEMATICS

031 Basic Mathematics .....3 credit hours

A review of mathematics involving whole numbers, fractions, decimals and percentage. Diagnostic tests are utilized to determine appropriate areas of concentration for each student. When finished with the above topics, students may study supplementary units preparatory to introductory algebra or continue immediately to Foundations of Occupational Mathematics 092. Taught with programmed text material in the Mathematics Laboratory. (3 hours per week until completed)

040 Introductory Algebra .....4 credit hours

Prerequisite: Basic Mathematics 031 or proficiency examination.

Intended for the student who has not had beginning (first year) algebra or who needs review. An introduction to the basic concepts including sets, properties of the real number system, operations on algebraic expressions, relations and functions, solution and graphing of linear and quadratic equations and inequalities, and systems of equations. (5 hours per week)

092 Foundations of Occupational Mathematics .....3 credit hours

Prerequisite: Basic Mathematics 031 or proficiency examination.

Intended for the business, technical and vocational, or health science student to provide concepts and practical computational skills that are commonly encountered in occupational usage. The course is comprised of programmed units in directed numbers, practical algebra, percent application, ratio and proportion, graphing, statistics, metric system, geometry, and numeration. An attempt is made to individualize the course depending on the student's course of study. Course is conducted in the Mathematics Laboratory. (3 hours per week until completed)

105 Creative Mathematics .....2 credit hours

Prerequisite: Introductory Algebra 040 or one year of high school algebra.

A laboratory setting allows students to perform individual or group experiments in any of three main areas: elementary computer programming, elementary game theory, and probability. The student may choose from a number of prepared experiments or pursue a chosen topic in one of these subject areas. (2 hours per week)

107 Mathematical Systems .....3 credit hours

An introductory course designed for the elementary teacher involving the basic concepts of numbers and number systems. An intuitive approach is used in teaching the topics of sets, logic, whole numbers, integers, rationals, and real numbers, other number systems, plane geometry, and functions. Mathematical understanding will be developed through physical applications in the laboratory. (2 hours lecture—2 hours laboratory per week)

109 Intermediate Algebra .....4 credit hours

Prerequisite: Either Introductory Algebra 040 or one year high school algebra.

The course is designed both to develop necessary skills for the engineering, scientific or vocational student and to provide the background for further work in mathematics. Major content areas are: real numbers, relations and functions, lines and planes, quadratic equations, complex numbers, polynomial functions, exponents and logarithms, and applications. (4 hours per week)

109-A Intermediate Algebra .....3 credit hours

Prerequisite: Either Introductory Algebra 040 or one year high school algebra.

The first half of Intermediate Algebra 109 covered at a slower pace and with additional material on directional numbers and quadratic equations. (3 hours per week)

109-B Intermediate Algebra .....3 credit hours

Prerequisite: Intermediate Algebra 109-A or 1½ years of high school algebra.

The second half of Intermediate Algebra 109 covered at a slower pace. (3 hours per week)

110 Trigonometry .....3 credit hours

Prerequisite: Intermediate Algebra 109 or Intermediate Algebra 109-A or one and one-half years of high school algebra.

Not a prerequisite for Precalculus 111. Major content areas include functions, trigonometric functions of angles, solution of triangles, circular functions, inverse trigonometric functions, graphs, identities and equations. (3 hours per week)

111 Precalculus .....4 credit hours

Prerequisite: Intermediate Algebra 109 or two years of high school algebra.

This course serves as a college level algebra course and is designed to provide the background for a solid study of calculus and analytic geometry. A study of the abstract nature of mathematics including sets, implications, methods of proof, number systems, mathematical induction, binomial theorem, vectors, matrices, determinants, inequalities, relations, algebraic and exponential logarithmic and trigonometric functions of a real variable, and graphing. (4 hours per week)

122 Calculus with Analytic Geometry .....5 credit hours

Prerequisite: Precalculus 111.

Intended for the transfer student who plans to major in mathematics, science, or engineering. Includes limits, continuity, differentiation and integration of algebraic functions, and applications. (5 hours per week)

128 Basic Statistics .....4 credit hours

Prerequisite: Introductory Algebra 040 or one year of high school algebra.

A basic course for students in Business Administration, Education, Psychology, Social Science, Engineering, and all other fields in which measurements and predictions are made. Includes an elementary study of the tabulation of data, graphic representation, measures of central tendency and dispersion, probability, types of distributions, sampling, hypothesis testing, and elementary aspects of correlation. (4 hours per week)

130 Scientific and Technical Programming .....3 credit hours

A course in Fortran programming and basic mathematical techniques suitable for use with computers. Other computer languages are touched upon and some attention is given to numerical control. Selected programs will be written, compiled, and executed by the student. Suitable for both vocational and science students who will need to use mathematics and computers as tools of their professions. Both lecture and laboratory time are involved. (3 hours per week)

151 Applied Algebra .....4 credit hours

Prerequisite: Basic Mathematics 031 or proficiency examination.

Designed to meet the mathematical needs of technical and vocational students. Includes a study of basic properties of real numbers, measurement, linear and quadratic equations, areas, volumes and graphs. Machine and building trade applications are utilized. (5 hours per week)

152 Applied Geometry-Trigonometry .....4 credit hours

Prerequisite: Applied Algebra 151 or Introductory Algebra 040.

This course combines applied geometry and applied trigonometry. The first part of the course is devoted to developing the basic geometry necessary for solving practical problems while the second part of the course concentrates on the application of trigonometry to the solution of problems related to triangulation. Includes basic geometric theorems, formulas for areas and volumes, trigonometric functions, numerical solution of right and oblique triangles, polyhedrons and applications. (4 hours per week)

209 Linear Algebra .....3 credit hours

Prerequisite: Calculus and Analytic Geometry 122.

An introductory course in linear algebra designed for those students who have been exposed to at least one course in calculus. It should also prove to be applicable to those planning to go into the physical, biological, management and social sciences. Topics to be discussed are: the algebra of matrices, the determinant, vector spaces, subsystems, the transpose of a matrix, orthogonality, the characteristic and minimum polynomials, and diagonalizable operators. Not a required part of the calculus sequence, but may be taken concurrently with Calculus and Analytic Geometry 213. (3 hours per week)

213 Calculus with Analytic Geometry .....5 credit hours

Prerequisite: Calculus with Analytic Geometry 122.

A continuation of Calculus with Analytic Geometry 122. The major topic areas are functions, exponential functions, volumes of solids of revolution, trigonometric functions, polar coordinates, arc length, curvature, techniques of integration, and approximate integration. (5 hours per week)

224 Calculus with Analytic Geometry .....5 credit hours

Prerequisite: Calculus with Analytic Geometry 213.

A continuation of Calculus with Analytic Geometry 213. Includes extensive applications of differentiation and integration, differential equations, vector functions, hyperbolic functions, areas of surfaces of revolution, partial differentiation, multiple integrals and series. (5 hours per week)

229 Introduction to Numerical Analysis .....3 credit hours

Prerequisite: Calculus with Analytic Geometry 213 and Scientific and Technical Programming 130.

An introduction to mathematical methods applicable to the digital computer including finite differences, numerical integration and differentiation, solution of linear and non-linear equations, and solution of ordinary differential equations with initial conditions. This course will also include the writing and executing of programs involving these methods. (3 hours per week)

237 Finite Mathematics for Business .....3 credit hours

Prerequisite: Introductory Algebra 040 or proficiency examination (equivalent to one year of high school algebra).

Especially suited to student intending to continue with further training in the business area. Topics covered include sets, logic, probability, matrices, linear programming, and theory of games. (3 hours per week)

(M-T) MECHANICAL TECHNOLOGY

100 Machine Shop Theory .....3 credit hours

Precision and semi-precision instruments and their applications are studied and used. Included also are basic principles of machine tool operations. Selected films are used to supplement the laboratory experiences. (3 hours per week)

101 Millwright Theory .....2 credit hours

A comprehensive study of millwright practices encompassing major units such as: millwright fundamentals, fibre and steel rope, hoisting, structural woods and steels, scaffolding, strengths of timber and metal beams, cranes and derricks, rigging, transporting heavy shop equipment, accident prevention, standards, laws and codes. The maintenance of bearings, belts, chain drives and conveyors is included. (2 hours per week)

111 Machine Shop Theory and Practices .....4 credit hours

Precision and semi-precision instruments and their applications are studied and used. Included also are basic principles of machine tool operations. Selected films are used to supplant the laboratory experiences. Practical experience is provided on the lathe, mill, O.D. and I.D. grinders. (6 hours per week)

122 Machine Tool Operation and Set-Up .....4 credit hours

Prerequisite: Machine Shop Theory and Practices 111 or consent of the instructor.

Designed to improve the student skills to increase his speed in the operating of the basic tool room machines (lathe, vertical mill, horizontal mill, O.D. grinder, I.D. grinder, jig bore, drill press). (6 hours per week)

123 Machine Tool Operations and Set-Up .....4 credit hours

(A continuation of 122) Emphasis is placed on the student's ability to complete an assigned project. The student will have to do all his planning, scheduling, machining, and fabricating that is necessary to complete his assigned project. (6 hours per week)

200 Machine Maintenance .....2-6 credit hours

(Students may elect up to 4 credit hours/semester)

Basic industrial machines are disassembled, inspected, and tested for part replacement or repair. Manufacturing specifications and tolerances are used as the basis for determining machine condition. (4 to 8 hours per week)

201 Machine Tool Technology .....4 credit hours

Prerequisite: Machine Tool Operation and Set Up 122.

Advanced methods of adjusting and using common machine tools. Typical industrial applications to demonstrate measuring instruments, gauges, thread cutting, gear cutting, speeds and feeds, tolerances, tool grinding, indexing and gearing. (6 hours per week)

205 Diecast Die and Mold Design Fundamentals .....3 credit hours

This course presents to the mold maker the basic fundamentals of mold construction. The fundamental processes and basic construction of plastic molds (compression, transfer, and injection), molds for die castings (pressure moldings of non-ferrous alloys), and rubber molds are discussed. (3 hours per week)

(M-O) MEDICAL OFFICE SPECIALIST
(Medical Office Worker)

189 Study Problems .....2-8 credit hours

Prerequisite: Consent of Division.

Directed activities in a major occupational area; a period of concentrated effort to an assigned problem working with faculty or a recognized specialist in the occupation; the demonstration of the individual's development of understanding and skill development within the selected occupation.

(MLG) METALLURGY

101 Industrial Materials .....2 credit hours

An introduction to basic materials and processes of industry including metals, alloys, plastics, wood, concrete, lubricants, and adhesives. Standard systems of labeling and classifying materials and special uses will be covered. Demonstrations and film will be used to supplement lecture material. (2 hours per week)

102 Behavior of Metallic Materials .....2 credit hours

A study of the principles of physics as applied to metallic materials. Included will be thermal expansion and contraction, strengths of materials, effects of heat, corrosion and repeated loading on properties. Demonstrations showing changes in properties will provide the laboratory experience. (2 hours per week)

122 General Metallurgy .....3 credit hours

A survey of the field including laboratory testing, general heat treatment, alloys and alloy systems, effects of welding, weld testing, classification systems for metals and alloys. The laboratory experience will consist of testing metals and welds, preparation of samples for microscopic examination, as well as demonstrations to supplement classroom lectures. (4 hours per week)

123 Metallurgical Testing Procedures .....2 credit hours

An introduction to laboratory procedures for testing and data taking. Specific emphasis is placed on correct procedures, errors in method, reliability, handling of data, and interpretation of results. (2 hours per week)

124 Machineability .....1 credit hour

A study of the relationship between composition of metals, their structure, and the machining characteristics they produce. Common metals and

alloys will be discussed and specific machining problems analyzed. (1 hour per week)

215 Heat Treating Processes .....2 credit hours

An application of the principles of heat treatment of steel and certain non-ferrous alloys. Included will be hardening, tempering, annealing, normalizing, spheroidizing, surface hardening processes, hardenability, and age hardening. Laboratory and lecture serve to relate theory and practice. (2 hours per week)

216 General Metallography .....2 credit hours

Co-requisite: Heat Treating Processes 215.

A comprehensive introduction to the equipment and processes used in the study of metals and alloy systems. Methods of sample preparation for microscopic examination and photography will be studied. Wet and dry photographic techniques and equipment will be used to related structures and properties in the laboratory. (2 hours per week)

217 Mechanical Testing .....3 credit hours

Prerequisites: Metallurgical Testing Procedures 123, Industrial Materials 101, or consent of Division.

An advanced study of the methods of testing materials and assemblies. Covered in detail will be tests including tension, compression, torsion, fatigue, impact, hardness, bending, and non-destructive methods. (4 hours per week)

228 Metallographic Techniques .....4 credit hours

Prerequisite: General Metallography 216, General Metallurgy 122.

A continuation of the units begun in General Metallography and General Metallurgy with advanced microscopic analysis, microhardness testing, analysis of failures, microscopic measurements, and instrument calibration. (6 hours per week)

202 Manufacturing Processes .....3 credit hours

An introduction to modern industrial processes. Weekly tours to local manufacturing concerns will correlate with classroom discussion on basic manufacturing techniques. Forging, casting, rolling, machining, welding, powder metallurgy, plating, testing, and heat treating are some of the areas to be covered. (3 hours per week)

(MTL) METROLOGY

105 Industrial Measuring Processes .....3 credit hours

Theory and practice in the use and care of measuring devices including ring gauges, plug gauges, snap gauges, air gauges, optical flats, profilometers, optical comparators, and many types of electronic measuring gauges. Application of these devices is made to typical problems. (5 hours per week)

(MUS) MUSIC

130 Band .....1 credit hour

This course in performance is open to all students and the public upon registration for the course. It may be repeated for credit up to a maximum of four times. (2 hours per week)

140 Chorus .....2 credit hours

This course in performance is open to all students and the public upon registration for the course. It may be repeated for credit up to a maximum of four times. (3 hours per week)

150 Basic Musicianship .....3 credit hours

This course is designed to give the prospective school teacher singing, music reading, and theory experience in the elements of music. It acquaints the student with concepts of rhythm and tonality, with the aim of developing musical skills and understanding. (3 hours per week)

157 Afro-American Music .....3 credit hours

The aim of this course is to acquaint the student with the development of musical events, institutions, and techniques derived from African musical heritage, and its influence on music in the Americas. (3 hours per week)

160 Music Appreciation .....3 credit hours

An introduction to music, the aim of this course is to acquaint the student with the major works of music through recordings. Presentations will deal with the rudiments of music, their function in a variety of works, different styles, and the growth and development of musical forms. (3 hours per week)

(N-C) NUMERICAL CONTROL

100 Introduction to Numerical Control .....3 credit hours

The principles, history, and applications of Numerical Control with special emphasis on tape formats and programming techniques. Point-to-point and continuous path programs are written, studied, and demonstrated. (3 hours per week)

121 Programming for Numerical Control .....3 credit hours

Manual programming for N/C machines including tab sequential, word address, and fixed sequential formats. An introduction to computer programming including Adapt, Remapt, Compact, APT, Split, and Action languages. Special emphasis is placed on fixture design for N/C machining. (4 hours per week)

122 Numerical Control Machine Tool Operation .....3 credit hours

Precision set-up and operation of N/C machine tools. Special emphasis is placed on the time-saving techniques used in profitable N/C machine tool operation. (4 hours per week)

213 Compact II Computer Programming .....4 credit hours

The Compact II language is studied and demonstrated. Special emphasis is placed on the use of the terminal and plotter to solve N/C problems with the aid of Compact II. Computer tape preparation and verification techniques are practiced by all students. (4 hours per week)

224 APT III Computer Programming .....4 credit hours

Advanced computer programming techniques. Including 4 and 5 axis problems. The APT language is studied and each student writes computer programs using each of the various APT language capabilities. Communications are made with the aid of a terminal and plotter. The students will use various computers to solve N/C problems which will be verified on the plotter, terminal, and N/C machine tools. (4 hours per week)

(OJT) ON-THE-JOB TRAINING

199 On-The-Job Training .....1-6 credit hours

Washtenaw Community College offers cooperative occupational-experience programs to interested and qualified students in both the Occupational and General Studies areas. These programs are designed to produce a learn-

ing situation (training station) which would be impossible or undesirable to reproduce in a campus environment.

The student may be placed in a training station in business and industrial firms as well as educational and governmental establishments. Training station assignments may be arranged on (a) a half-day basis (b) daily alternating work and study (c) alternating work and study each semester (d) a summer occupational experience program.

Students planning to enroll for OJT 199 credit must first review their plans with their advisor and the Coordinator of Cooperative Occupational Education to obtain their approval.

No more than six OJT 199 credits may be applied to a certificate of achievement and no more than twelve OJT 199 credits may be applied to Associate Degree requirements.

(PHL) PHILOSOPHY

101 Introduction to Philosophy .....3 credit hours

Introduction to basic philosophical principles, methods, and problems by a close study of representative philosophers. Emphasis on analytical and speculative functions. (3 hours per week)

250 Logic .....3 credit hours

Prerequisite: English Composition 111.

Emphasis on modern methods of deductive proof and the theory of communications with applications for industry, business, and government trainees. (3 hours per week)

(P-E) HEALTH, PHYSICAL EDUCATION, AND RECREATION

110 Principles of Safety .....2 credit hours

Stress is placed on the scope of safety problems in school, home, and industry, along with securing and evaluating up-to-date information on the safety needs of individuals. (2 hours per week)

120 Healthful Living .....3 credit hours

A look at man in relation to his environment: a view of how the body functions and what can be done to keep it functioning toward an effective life.

Specific objectives are to provide information that will help the student

make intelligent decisions regarding his health and the health of those affected by him, and to bridge the gap between modern scientific research and the college student's view of personal health. The course is designed to provide the student with an awareness and understanding of the functions of his own body and to direct him toward an intelligent concern for the health and welfare of those around him. (3 hours per week)

121 Seminar in the Smoking Controversy .....1 credit hour

The course will be geared to give the student understanding and knowledge of the many aspects that contribute to the smoking controversy. Through active participation in the weekly meetings and projects, it is hoped that this class will not only affect those who attend, but others who may be indirectly affected by the seminar participants. (1 hour per week)

122 Seminar in Weight Control .....1 credit hour

Objectives are to make available information about weight control and to explain practical application of this information to an individual's life. Informal discussion and projects are essential in meeting these objectives. (1 hour per week)

130 Standard American Red Cross First Aid .....2 credit hours

Outlined by the American Red Cross, this course consists of lectures, textbooks, and practice work in first aid. A certificate is awarded to each student completing the course. (2 hours per week)

137 Techniques of Officiating—(men) .....2 credit hours

The course consists of a study of the rules and techniques involved in officiating various interscholastic sports. The official's duties, personal characteristics, relationships with coaches and school administrators will be emphasized. The course will consist of classroom and laboratory experiences. Practical experience will be gained by officiating in intramural games, intercollegiate meets and scrimmages. (2 hours per week)

(PEA) PHYSICAL EDUCATION ACTIVITY COURSES

The importance lies in their contribution to such educational objectives as organic development, neuromuscular coordination, and social efficiency.

The basic skills, strategy, and rules will be stressed. A substantial portion of the class meetings will be given to individual problems. Time is alloted for actual game play.

1. Activity courses may be taken as short-term or semester courses, but they will all meet a minimum of 32 hours.

2. All lecture classes will meet the full semester.

3. College-transfer students are strongly urged to meet their four-year college activity-hour requirements during the freshman and sophomore years.

111 Physical Education .....2 hours

Activities include calisthenics, basketball, soccer, and touch football.

122 Physical Education .....2 hours

Participation and instruction in such activities as gymnastics, softball, volley ball, and track.

140 Intermediate Swimming .....2 hours

100 Conditioning Activities .....2 hours

105 Individual Sports .....2 hours

Archery
Bowling
Golf
Weightlifting

106 Dual Sports .....2 hours

Badminton
Fencing
Tennis
Table Tennis

107 Team Sports .....2 hours

Basketball
Softball
Volley ball
Flag football

141 Varsity Cross Country .....2 hours

(Prerequisite: Permission of the coach)

150 Varsity Tennis .....2 hours

(Prerequisite: Permission of the coach)

151 Varsity Basketball .....2 hours

(Prerequisite: Permission of the coach)

160 Varsity Track and Field .....2 hours

(Prerequisite: Permission of the coach)

172 Varsity Wrestling .....2 hours

(Prerequisite: Permission of the coach)

182 Varsity Baseball .....2 hours

(Prerequisite: Permission of the coach)

192 Varsity Golf .....2 hours

(PHS) PHYSICAL SCIENCE

142 Environmental Science: Planet Earth .....4 credit hours

A one-semester introductory course which surveys the sciences dealing with the origin and physical nature of the Earth. The basic principles of astronomy, geology, chemistry, and physics are related to applications in earth science. Problems of man's use and misuse of his physical environment are discussed. A two-hour laboratory is designed to give students first-hand experience with the tools and methods used by scientists. (5 hours per week)

(PHY) PHYSICS

090 Automotive Physics .....3 credit hours

A specialized study of certain basic principles of physics selected for their usefulness in automotive technology. Included among the topics covered are fluids, heat, properties of matter, work, power, and energy. Instruction takes place in the laboratory through the solution of practical problems. (4 hours per week)

091 Radiologic Physics .....3 credit hours

Provides the student with both specialized information on X-ray equipment and the theoretical background to make it meaningful. Covered are: fundamentals of electrical and radiation physics and the basic principles underlying the operation of X-ray equipment and auxiliary devices. This is a lecture course with no laboratory. (3 hours per week)

092 Radiologic Physics .....3 credit hours

Prerequisite: Radiologic Physics 091.

A continuation of Radiologic Physics 091 with emphasis on construction and operation of X-ray equipment. (3 hours per week)

111 Introductory Physics .....4 credit hours

Prerequisite: Introductory Algebra 040 or Applied Algebra 151

Designed for both liberal arts and vocational students who have had no physics. The course surveys the major topics of physics: mechanics, heat, wave motion, electricity, light, and atomic theory. A three-hour laboratory each week enables students to learn the use of basic scientific instruments and the techniques used in the science laboratory. Transfers as college physics only if followed by General Physics 122. Will transfer by itself as a general science or vocational credit. (6 hours per week)

122 General Physics .....4 credit hours

Prerequisite: Intermediate Algebra 109 and either Introductory Physics 111 or a year of high school physics. Scientific and Technical Programming 130 (MTH) is recommended.

Expands on the basic concepts covered in Introductory Physics 111, in both the lecture and laboratory experiences. Three hours of laboratory and three hours of lecture and recitation. (6 hours per week)

211 Analytical Physics .....5 credit hours

Prerequisite: General Physics 122 or equivalent. Calculus with Analytical Geometry 122 (corequisite with instructor's permission).

For students intending to major in science or engineering, this course emphasizes problem solving in the areas of mechanics, heat, and wave motion. Calculus is incorporated into the course. Three-hour laboratory plus four lecture-recitation hours. (7 hours per week)

222 Analytical Physics .....5 credit hours

Prerequisite: Analytical Physics 211.

Continues to develop mathematical models of physical phenomena in the areas of electricity, magnetism, light, and atomic theory. Three-hour laboratory plus four hours of lecture and recitation. (7 hours per week)

(PLS) POLITICAL SCIENCE

108 Government and Society .....3 credit hours

Particular emphasis is placed on the nature and operation of American national and state governments. Techniques, processes, and machinery of popular control (public opinion, interest groups, parties and elections); executive, legislative, and judicial functions. Includes emphasis on social process and group patterns in society. MEETS THE MINIMUM REQUIREMENTS OF MICHIGAN LAW FOR THE ASSOCIATE DEGREE. (3 hours per week)

150 State and Local Government and Politics .....3 credit hours

Forms and functions of state and local governments in the United States; the growth of the urban community in America and consequent development of its social and political problems. The organization and process of government in the urban complex with interactions of city, town, state, and metropolitan-wide governments analyzed. Methods of studying community decision-making will be evaluated. Michigan, Washtenaw County communities, and metropolitan Detroit will be drawn upon frequently for resource material and for purposes of illustration. MEETS THE MINIMUM REQUIREMENTS OF MICHIGAN LAW FOR THE ASSOCIATE DEGREE. (3 hours per week)

200 International Relations .....3 credit hours

An introduction to the nature and problems of international politics. An examination of the development of the modern state system, nationalism and imperialism. The techniques and instruments that govern international relations, power politics, and international organization in the nuclear age are analyzed. (3 hours per week)

201 Principles of Political Science .....3 credit hours

A course emphasizing the general principles and problems of modern government, with emphasis on American institutions and experience. For those planning to transfer and to major in social sciences. MEETS THE MINIMUM REQUIREMENTS OF MICHIGAN LAW FOR THE ASSOCIATE DEGREE. (3 hours per week)

230 Political Parties and Pressure Groups .....3 credit hours

An analysis of American political parties and pressure groups; emphasizes their origins, functions, organization, methods, and the relationship between party politics and public opinion. (3 hours per week)

(P-S) POWER SOURCES

100 Power Sources .....4 credit hours

Introduction to the fundamental principles of pneumatics, hydraulics, and electricity. Advisors may substitute appropriate specialty courses when student's background and experience have been evaluated. (6 hours per week)

(PSY) PSYCHOLOGY

100 Introductory Psychology .....3 credit hours

An introduction to the scientific study and interpretation of human behavior, surveying such topics as psychological development, learning, thinking, motivation, emotions, perception, intelligence, aptitudes, and personality. Basic principles and their practical applicaton are discussed. (3 hours per week)

107 Black Psychology .....3 credit hours

A study of the psychological dynamics of the Black experience. An assessment of sociocultural factors that determines the Black psyche. (3 hours per week)

108 Dynamics of Behavior .....3 credit hours

Systematic presentation of issues, concepts, principles, and theories in the study of human adjustment. Includes analysis of adjustment, motivation, frustration and conflict, learning, defense and escape mechanisms, fear and repression, psychoneurosis, anxiety reactions, personality measurement, psychoanalysis and psychotherapy. (3 hours per week)

150 Industrial Psychology .....3 credit hours

Includes human efficiency, workers' satisfactions, group relations. Conditions and methods of work, performance rating, attitude studies, safety training, supervision, motivation, personal adjustment, labor-management problems. (3 hours per week)

200 Child Psychology .....3 credit hours

Stresses the child as an individual, his original nature and temperament, and his position as part of the group. Introduction of social raw materials is considered. In addition, such topics as the conditioning and re-conditioning of behavior patterns, and the individuality and similarity of responses are developed. (3 hours per week)

201 Child Psychology Seminar .....2 credit hours

Prerequisite: Child Psychology 200.

A continuation of Child Psychology 200 for students to explore individual topics. (2 hours per week)

207 Social Psychology .....3 credit hours

Designed to give students an understanding of the influence of social interaction upon the development of personality. Interaction between the individual and society is stressed. Includes emphasis on group dynamics and sensitivity training. (3 hours per week)

209 Psychology of Adjustment .....3 credit hours

A study of the processes involved in the adjustment of the individual to the problems of everyday living. Emphasis given to the study of the development of techniques or adjustment to meet conflict situations in the social environment. Includes applications of psychology in human relations and in careers. (3 hours per week)

257 Abnormal Psychology .....3 credit hours

A course dealing with the abnormalities of certain types of personalities, their origin, symptoms, developments, and treatment, short of psychiatric competence. Main topics—simple maladjustment; disturbances of emotional nature, of perception, memory, judgment, thought; disorders of mobility, speech, etc.; early symptoms of schizophrenia. (3 hours per week)

(Q-C) QUALITY CONTROL

101 Process Quality Control .....3 credit hours

Process Quality Control presents the basic concepts of data variation and control chart technique. Analysis of industrial data is demonstrated through the use of frequency distribution employing the normal curve concept. An indepth working knowledge of process control is imparted through the use of statistical control charts.

122 Sampling Quality Control .....3 credit hours

Sampling Quality Control presents the theory of probability and basic concepts of statistical sampling. The development of sampling plans, effect of sample size and acceptance number on the probability of acceptance, and the use of interpretation of sampling acceptance plans are discussed. Military 105D, sequential, and variable sampling are introduced and their effectiveness and industrial application are analyzed. Laboratory demonstrations and class participation are used extensively.

213 Quality Control by Statistical Methods .....3 credit hours

Prerequisite: Process Quality Control 101, Sampling Quality Control 122

Quality Control by Statistical Methods presents statistical inference into testing for differences in sample means, variability, and fraction defectives. The concepts of linear correlation, analysis of variance and design of experiments are introduced. Practical problems encountered in industrial quality control are solved in the classroom to illustrate the techniques presented.

224 Quality Control Problem Solving .....3 credit hours

Prerequisite: Quality Control by Statistical Methods 213

Quality Control Problem Solving provides the essential techniques required in industrial problem solving. A thorough review of advanced control and statistical methods is directed toward solutions of practical problems in the automotive, metal working, chemical processing, and electronic fields.

225 Quality Control Management .....3 credit hours

This course presents the total quality control concept in planning, organizing, and implementing an effective system. Details of how to plan a quality system, set up the organizational structure, integrate the support activities, install controls, and measure the results are discussed. The work of quality information equipment engineering is outlined. The main jobs of quality control are defined in terms of design control, material control, product control, and special studies.

226 Introduction to Nondestructive Testing .....3 credit hours

Introduction to Nondestructive Testing is a general introduction into the more important aspects of nondestructive testing as related to quality conrol and product quality assurance. A brief review of physical laws of light, wave motion, magnetism, and electricity is introduced to show the relation of theory to applications. Lecturers will be supplemented with field trips consisting of visits to plant, equipment manufacturer, or classroom demonstration of equipment or application technique by an industrial representative.

(R-T) RADIOLOGIC TECHNOLOGY

(X-RAY)

111 Fundamentals of Radiologic Technology .....4 credit hours

A detailed study of the basic positions for radiography of the osseous system. Topics covered in this course include: professional ethics, basic radiation protection, function of the X-ray unit and radiographic positioning. (5 hours per week)

120 Medical Terminology .....1 credit hour

A study designed to acquaint the student with the origin and structure of medical terms. The intent of this course is to help the student interpret and understand requests for radiographic examinations and to read and to understand medical articles and reports. (1 hour per week)

122 Fundamentals of Radiologic Technology .....4 credit hours

Prerequisite: Fundamentals of Radiologic Technology 111

Theory and application of radiographic exposure and X-ray film processing. Emphasis is on evaluation of X-ray exposure technique for obtaining diagnostic information on X-ray film. Radiographic positioning of the skull will be included in this course. (5 hours per week)

189 Study Problems .....2-8 credit hours

Prerequisite: Consent of Radiologic Technology coordinator

Directed activities in a major occupational area; a period of concentrated effort to an assigned problem working with faculty or a recognized specialist in the occupation; the demonstration of the individual's development of understanding and skill development within the selected occupation.

199 Radiologic Technology Clinical Practice .....1-6 credit hours

Prerequisite: Consent of Radiologic Technology coordinator

Students who are enrolled in radiologic technology are required to meet certain registry requirements through clinical practice and work experience. The radiologic technology coordinator will inform students of the number of credit hours they will need to carry each term. Additionally, students will be informed of the number of clock hours and content of the clinical or work experience through their coordinator.

213 Principles of Radiologic Technology .....4 credit hours

Prerequisite: Fundamentals of Radiologic Technology 122

This course includes topographic anatomy, advanced radiographic positioning, radiation protection to the patient and personnel, intraoral radiography and seminars in radiation therapy. (5 hours per week)

224 Principles of Radiologic Technology .....4 credit hours

Prerequisite: Principles of Radiologic Technology 213

A survey of trauma and disease. Seminars in special radiographic procedures, equipment maintenance and departmental administration will be included in this course. (5 hours per week)

228 Supervisory Management .....2 credit hours

An analysis of the role and responsibilities of the radiologic technology supervisor in the hospital and related facilities. Major concerns will involve managerial functions of planning, organizing, staffing, directing and controlling the department of radiology. (2 hours per week)

(S-O) SECRETARIAL AND OFFICE

130 Business Machines .....3 credit hours

Prerequisite: Foundations of Occupational Mathematics 092 or equivalent.

Instruction in the basic mathematical processes—addition, subtraction, multiplication, division—on modern calculating machines of both listing and non-listing types. Instruction in operation and use of duplicating and transcribing machinery and equipment. Emphasis throughout the course is on machine applications to mathematical problem-solving in business and industry. (3 hours per week PLUS minimum 5-6 practice hours)

100 Shorthand .....3 credit hours

An integrative program of study in Gregg shorthand designed to meet the vocational standards of the modern business office. Emphasis is placed on shorthand principles and practices, development of transcription techniques and skills, and the ability to transcribe office-style dictation found in business and other specialized fields such as insurance, law, and medicine. Credit and contact hours are progressive and are contingent on student progress as determined by proficiency tests undertaken upon completion of predetermined phases (100A, B, C) of the course work. (4 hours per week PLUS minimum 8-10 practice hours)

200 Machine Shorthand .....2 credit hours

An integrative, applied approach to the study of modern machine shorthand designed to acquaint the student with the theory and principles of machine shorthand as it relates to business and industry and other specialized fields. Initial emphasis is given to developing the student's awareness of the mechanics and operational aspects of the shorthand machine. Skill development and speed building in recording and transcribing notes are then pursued in normal sequence. Course credit and contact hours are progressive and are contingent on student progress as determined by proficiency tests undertaken upon completion of predetermined phases (200A, B) of the course work. (2 hours per week PLUS minimum 6-8 practice hours)

090 Fundamentals of Typewriting .....1 credit hour

A basic typewriting course designed to meet the needs of the non-

secretarial student in developing reasonable typing skills. (2 hours per week PLUS 4-6 practice hours)

110 Typewriting .....2 credit hours

An integrative, programmed approach to the development of the secretarial student's operative skill in typewriting as a vocational tool. Course coverage includes training in the mastery of the keyboard, development of proper techniques, building speed and accuracy, exposure to basic typing applications (business communications, tabulation problems, manuscripts, office forms, etc.). Credit and contact hours are progressive and are contingent on student progress as determined by proficiency tests undertaken upon completion of predetermined phases (110A, B, C) of the course work. (3 hours per week PLUS minimum 6-8 practice hours)

150 Office Systems and Procedures .....3 credit hours

Prerequisite or co-requisite: High school typewriting proficiency or concurrent enrollment in typewriting or equivalent.

A practical study of the fundamental systems and procedures comprising the modern business-industrial and/or professional office. Emphasis is upon developing the student's insights into the responsibilities of the office staff, personal qualifications, human relations factors, and their essential relationship to the effective integration of all office systems and procedures. Includes the study of filing and records systems, telephone and telegraph communications, written reports, transcribing and duplicating machinery and equipment. Problem-oriented sessions and projects enable the student to develop a practical view of the office system and its vital role in the administration of the total business-industrial and/or professional organization. (3 hours per week)

(SOC) SOCIOLOGY

100 Principles of Sociology .....3 credit hours

Emphasis is placed on basic concepts used in an analysis of social behavior and the processes by which new members of group are oriented to prevailing patterns of behavior. A study of the process of cultural change basic to all program in social work, or advanced work in the social sciences. (3 hours per week)

150 Marriage and the Family .....3 credit hours

Designed for all students, the aim of the course is to promote stable marital relations. Special emphasis on the psychology of sex, adjustment of the individual to problems of everyday living, techniques of adjusting to conflict situations, emotions, perception, personality. (3 hours per week)

202 Criminology .....3 credit hours

An examination of the theories which attempt to explain criminal behavior. The punishment vs. rehabilitation schools of thought will be dealt with as will capital punishment. Attention will also be given to the functioning of police and court systems. (3 hours per week)

207 Social Problems .....3 credit hours

Problems of satisfying human needs and wants are considered. These include socio-psychological (non-economic) needs and wants as well as treatment of the ways in which resources are allocated and products distributed in response to economic needs and wants. Emphasizes cross-cultural and historical perspectives. The significance of change through time, of continuing transition to industrialism with the major theme being the disruptive disparity between the rates of technological and societary change and consequent need to cultivate sciences concerned with human behavior. (3 hours per week)

250 Juvenile Delinquency .....3 credit hours

Growing up process of late childhood and adolescence from sociological and cultural viewpoint. Problems of the individual in his social environment and group forces which lead to his maladjustment and sociological principles for working with youth from the viewpoint of parent, teacher, police, and youth organization leader. (3 hours per week)

(SPN) SPANISH

111 First Year Spanish .....3 credit hours

This is a beginning course in Spanish and stresses the spoken language through practice in the language laboratory. (4 hours per week)

122 First Year Spanish .....3 credit hours

Prerequisite: Spanish 111 or Permission of Instructor.

The work begun in Spanish 111 is continued, with additional stress on readings and class conversations. (4 hours per week)

213 Second Year Spanish .....3 credit hours

Prerequisite: Spanish 122 or Permission of Instructor.

This course is designed for those who have good backgrounds in Spanish, and who wish to continue their study of the language. (4 hours per week)

224 Second Year Spanish .....3 credit hours

Prerequisite: Spanish 213 or Permission of Instructor.

A continuation of Spanish 213, with advanced readings and conversations, and more attention to Spanish culture. (4 hours per week)

(SPH) SPEECH

030 Developmental Speech .....2 credit hours

Improvement of vocabulary, spoken grammar, pronunciation, and articulation. Critical treatment of individual speaking problems. Pre-recorded practice tapes for student use with a tape recorder. The language laboratory will be used when needed. If a student elects Writing Workshop 030 or Reading 040, and intends to take Fundamentals of Speaking 100, he must take Writing Workshop 030 as a prerequisite. (4 hours per week)

100 Fundamentals of Speaking .....3 credit hours

Instruction in essential speech processes and skills is offered. Organization of speeches and effective delivery will be studied through the use of practical problems. (3 hours per week)

103 Radio and Television Speech .....3 credit hours

Prerequisite: Fundamentals of Speaking 100 or Permission of Instructor.

The history of broadcasting in the United States with emphasis on the formation of the FCC and the development of public regulation of broadcasting. Broadcasting organization from the local station to the network. Radio and television studios, their equipment and operation. (3 hours per week)

183 Advanced Public Speaking and Persuasion .....3 credit hours

Prerequisite: Fundamentals of Speaking 100 or Permission of Instructor.

A continuation of theory and practice in the principles of effective public speaking. Course includes practice in securing the acceptance of ideas through psychological appeal as well as logical reasoning. (3 hours per week)

185 Public Speaking and Debate .....3 credit hours

Prerequisite: Fundamentals of Speaking 100 or Permission of Instructor.

An introduction to the rhetoric of persuasive and argumentative speaking. The historical and contemporary forms of debate. Experience in the preparation and delivery of major speeches, and experience in team debating. (3 hours per week)

186 Forensics—Debate .....1 credit hour

Prerequisite: Fundamentals of Speaking 100 or Permission of Instructor.

Students interested in competition debate will be given the opportunity to debate other collegiate novice debate teams in the immediate area. There will also be opportunities for tournament debating. May be repeated for credit. (2 hours per week)

187 Oral Intepretation of Literature .....3 credit hours

Prerequisite: Fundamentals of Speaking 100 or Permission of Instructor.

Extensive practice in reading aloud for contemporary communication situations. The course concentrates on effective oral communication of the written word in such forms as news stories, reports, advertising, poetry, and other forms of literature in various speaking situations including use of the public address system and tape recording. Recommended for students entering elementary education. (3 hours per week)

191 Basic Acting and Directing .....3 credit hours

Prerequisite: Fundamentals of Speaking 100 or Permission of Instructor.

Acting as a speech experience, developing confidence, emotional perception, and an objective appraisal by the average student of his own special speech talents. Through the performance of dramatic roles the second-semester speech student achieves a greater freedom of movement and vocal variety in any public situation. It also provides the fundamentals of theatre work for the student who would like to continue his experience through local community theatre. (3 hours per week)

192 Basic Staging .....3 credit hours

Prerequisite: Fundamentals of Speaking 100 or Permission of Instructor.

Make-up; lighting, costuming; set design; the history of the theatre building from the Greeks to the present. (3 hours per week)

(TCA) TECHNICAL-COMMERCIAL ART

100 Perspective and Parallel Projection .....4 credit hours

Prerequisite: Technical Drawing 100 or consent of Division

A detailed study of developing ideas by three dimensional drawing techniques. Emphasis is placed on the fundamentals of oblique, one point, point, isometric, dimetric, trimetric and three point perspective projection. (6 hours per week)

101 Technical Illustration .....4 credit hours

Prerequisite: Perspective and Parallel Projection 100 or consent of Division

Illustration projects utilizing perspective and parallel projection and mechanical art aids. Information for problems is obtained from blueprints, written communication, and other sources. Assignments will deal with the presentation of assemblies, exploded views, section, and phantom drawings used by automotive, aircraft, and electronics industries. (6 hours per week)

102 Lettering Techniques .....2 credit hours

Prerequisite: Basic Drawing 111 and Basic Design 112 or consent of Division

Fundamentals of lettering layout techniques and the various materials used for designing posters, billboards, brochures, and other commercial advertising forms. (4 hours per week)

111 Basic Drawing .....3 credit hours

See Art for course description.

112 Basic Design .....3 credit hours

See Art for course description.

120 Commercial Rendering .....4 credit hours

Prerequisite: Perspective and Parallel Projection 100 or consent of Division

An introduction to the various materials and rendering techniques used by the commercial artist. Assignments will deal with the rendering of commerical illustrations with water colors, tempera, acrylics, pastels, colored pencils, and pen and ink. (6 hours per week)

121 Advertising Layout .....4 credit hours

Prerequisite: Perspective and Parallel Projection 100 and Basic Drawing 111 and Basic Design 112 or consent of Divisicn

An application of various techniques and methods used to develop commercial advertising art. A simulation of studio situations and problem solving from rough lettering and layout to final art. (6 hours per week)

122 Technical Rendering .....4 credit hours

Prerequisite: Commercial Rendering 120 or consent of Division

Fundamentals of rendering techniques and the various compatible materials used in industry by the technical illustrator. Projects will be directed in parallel and perspective shadow construction. Stipple, smudge, and French rendering of geometrics and airbrush and brush photographic retouching. (6 hours per week)

123 Basic Design .....3 credit hours

See Art for course description.

214 Photography .....4 credit hours

Principles, practices, and the basic application and limitations of photography as a communication form used in business and industry. Assigned field practices in the use of the still camera, composing, lighting exposure, and photo darkroom processing. (6 hours per week)

215 Darkroom Techniques .....6 credit hours

Development of skills needed by technicians in commercial X-ray, dental, and other types of darkrooms used in business and industry. All major phases of darkroom work including film processing, print making, photographic supplies handling and equipment maintenance are practiced. (12 hours per week)

225 Model Construction .....2 credit hours

Prerequisite: Basic Design 112, Basic Drawing 111 and Perspective and Parallel Projection 100 or consent of Division

Visualization and construction of three-dimensional forms from blueprints, sketches, and schematics; using wood, plastic, cardboard, clay, and plaster for construction. Emphasis placed on use of shop equipment; blueprint reading, use of model construction materials, and cost estimating. (4 hours per week)

226 Commercial Displays .....2 credit hours

Prerequisite: Model Construction 225 or consent of Division

Utilization of design, color, materials, and presentation techniques used to construct three dimensional models with emphasis given to full scale and animated displays. (4 hours per week)

227 Graphic Reproduction .....4 credit hours

A survey of the basic processes and techniques used to reproduce graphic materials. Included is a systematic study of the following equipment: letterpress, blueprint machine, spirit duplicators, electrostatic copiers, silk screens, and light duty offset presses. Emphasis is placed on the techniques used for properly preparing and finishing copy for reproduction. (6 hours per week)

236 Specialized Study .....2-8 credit hours

Prerequisite: Consent of Division

An opportunity for students to work independently with faculty consultation in major study areas of Commercial Art and Technical Illustration. Directed periods of concentrated effort on assignments to demonstrate the individual's development and understanding within selected occupational areas. Major study areas of specialization may include: animation and cartooning, medical illustration, animal illustration, commercial photography, graphic reproduction, advertising and lettering, layout, fashion illustration, and commercial displays. (4 hours per week)

(W-F) WELDING AND FABRICATION

100 Fundamentals of Welding .....2 credit hours

A basic combination welding course dealing with oxy-acetylene and arc welding. Designed to meet the needs of students enrolled in Auto Body Repair, Auto Mechanics, Detailer Draftsman, etc. Typical applications are made in a laboratory setting. (4 hours per week)

101 Acetylene Welding .....2 credit hours

A basic course designed for students who need a knowledge of oxy-acetylene welding and a degree of skill required by industry. This course is primarily for students whose occupations are associated with welding. (3 hours per week)

102 Arc-Welding .....2 credit hours

An introductory course in arc welding covering theory and practice. Proper procedures for various welding positions are taught. Both AC and DC welding is covered. Electrode identification, classification, and their proper applications to typical operations are applied. (3 hours per week)

103 Heli-Arc Welding .....2 credit hours

Instruction is given in tungsten, inert gas, shielded arc welding, with manually operated torch, on such metals as aluminum, stainless and mild steels. The instruction includes theory directly related to the composition and properties of these metals. (3 hours per week)

111 Welding and Fabrication .....4 credit hours

The use of oxy-acetylene equipment to perform such operations as butt, lap, and fillet welds using filler rods. Flame cutting, brazing, and silver soldering are included. Safety procedures and practices of gas welding are emphasized. (8 hours per week)

112 Welding and Fabrication .....4 credit hours

The use of arc welding equipment both A.C. and D.C. to perform such operations as butt, lap, and fillet welds. Using bare and shielded electrodes, all purpose and special electrodes. Study of electrical welding, power supplies and electrodes is included. Safety procedures are stressed. (8 hours per week)

123 Welding and Fabrication .....4 credit hours

Prerequisite: Welding and Fabrication 111

Advanced instruction in oxy-acetylene welding with emphasis on "out of position" welded joints. Procedures are covered and put in practice for fabricative welded joints on steel plate and pipe. Related theory included. (8 hours per week)

124 Welding and Fabrication .....4 credit hours

Prerequisite: Welding and Fabrication 112

Advanced instruction in arc welding using both A.C. and D.C. arc welding equipment. Emphasis on "out of position" welded joints in mild steel, alloy steels, and pipe procedures are covered for cutting, beveling, and fabricating various welded joints. Related theory, codes, and standards are included. (8 hours per week)

215 Welding and Fabrication .....3 credit hours

Prerequisite: Consent of Division

Tungsten-inert-gas shield arc welding with manually operated torch on such metals as aluminum, mild steel, and stainless steel. Technical theory directly related to tig welding including the composition and properties of metals is included. (6 hours per week)

226 Welding and Fabrication .....3 credit hours

Prerequisite: Consent of Division

Specialized oxy-acetylene welding, inert-gas-shielded arc, and consumable carbon dioxide welding. Emphasis is given the welding of various metals such as aluminum, stainless steel, high alloy steels, and cast iron. Procedures for welding of the exotic metals such as titanium, tantalum, columbium, zirconium, and molybdenum are included. (6 hours per week)

ADMINISTRATIVE STAFF

Albert, Rudolph A. .....Coordinator, Instructional Media
B.S.—Bradley University
M.A.—The University of Michigan

Anthony, Melvin .....Director, Student Services
B.A.—The University of Michigan
M.A.—The University of Michigan

Bacalis, Jean .....Supervisor, Accounting
San Diego State College
Wayne State University
The University of Michigan

Braun, George J., Jr. .....Controller
A.B.—The University of Michigan
M.B.A.—The George Washington University

Davis, Paul W. .....Director, Community Service Occupations
B.S.—Ball State University
Ed.M.—Ball State University
Ed.S.—Wayne State University
Ph.D.—The University of Michigan

Dobson, Charleen A. .....Supervisor, Day Care Center
B.S.—The University of Michigan

Ford, Andrew F. .....Director, Technical and Industrial
B.S.—Wayne State University
M.Ed.—Wayne State University

Hill, Pauline L. .....Assistant Supervisor, Day Care Center
Washtenaw Community College

Hower, Guy W. .....Director, Counseling and Guidance
B.B.A.—The University of Michigan
M.A.—The University of Michigan

Jackson, Robert L. .....Coordinator, Trade Related Instruction
Journeyman-Tool and Die and Diecast Die Maker
Henry Ford Community College
Tool and Processing Engineer

Jelneck, William E. .....Business Manager
B.S.—Detroit Institute of Technology

Jones, James A. .....Dean, Student Personnel Services
B.A.—Southern Illinois University
M.S.—Southern Illinois University

Kleinhenn, Alton L. .....Registrar
General Motors Institute

Lamminen, Arthur J. .....Director, Business and Industrial Management
B.S.—Tri-State College
M.A.—Michigan State University
Ph.D.—Indiana Northern University

Mallory, Richard H. .....Director, Auxiliary Services
B.S.—University of Detroit

Murray, James P. .....Head of Data Processing
Grand Rapids Junior College
IBM and Honeywell Education Centers

Pittman, William .....Director, Buildings and Grounds
University of Wisconsin
Michigan State University

Plummer, Robert H. .....Director, Social Sciences
B.A.—Wabash College
M.S.—Indiana University
Ed.D.—Indiana University

Pollock, David S. .....Dean, Special Projects
A.B.—The University of Michigan
M.A.—Eastern Michigan University

Ponitz, David H. .....President
A.B.—The University of Michigan
M.A.—The University of Michigan
Ed.D.—Harvard University

Taylor, O'Leta .....Supervisor, Payroll and Staff Benefits
West Virginia Business College
Washtenaw Community College
The University of Michigan

Thomson, Mehran, Jr. .....Director, Exact Sciences
B.A.—Eastern Michigan University
M.B.S.—University of Colorado

Wolven, Frederick F. .....Director, Communication Arts
A.B.—Central Michigan University
M.A.—Central Michigan University

Wooden, John P. .....Dean, General Studies
B.S.—Winona State College
M.A.—New Mexico State University

FACULTY

Agin, George C. ..... Fluid Power
B.S.—Wayne State University
M.A.—Eastern Michigan University
General Motors Training Center

Albright, Vernon L. ..... Political Science
B.A.—The American University
M.A.—University of Maryland

Alexander, W. E. ..... Biology
B.S.—Hampton Institute
M.S.—University of Wisconsin
M.A.—The University of Michigan

Alpha, Emil T. ..... Institutional Foods and Management
Cooks—Bakers School, Salsberg Eiseler Hotel, Stuttgart, Germany
Dieticians License, State of New York
Commercial Food Preparation Teachers Training Course
Cornell University School of Hotel Administration

Amaru, Augustine ..... Political Science
B.A.—Boston University
M.A.—Michigan State University

Barron, Kenneth ..... Automotive Service
B.S.—Central Michigan University

Belkola, Floyd E. ..... Auto Body Repair and Refinishing
General Motors Training Center
DuPont Refinishing School
Bear Frame School

Bellers, Clifford ..... Physical Education
B.B.A.—Eastern Michigan University
M.A.—Eastern Michigan University

Bellers, Robert ..... Electronics Laboratory Coach
A.D.—Washtenaw Community College
Electronics Engineering Technician Trade School
Electronics Communication, Grantham Electronics Trade School
F.C.C. License

Bertoia, Roger R. .... Coordinator, Occupational-Vocational Cooperative Educ
B.S.—The University of Michigan
M.S.—The University of Michigan

Biederman, Rosalyn ..... Spanish
B.A.—Ohio State University
M.A.—Ohio State University

Bila, Dennis W. ..... Mathematics
B.S.—Central Michigan University
M.A.—Wayne State University

Bollweg, John J. ..... Philosophy
Ph.B.—Northwestern University
M.A.—Roosevelt University

Bosch, Barbara J. ..... Library Technician
Washtenaw Community College
Henry Ford Community College
Friden Educational Center

Bottorff, Ralph S. ..... Mathematics
B.A.—University of Northern Iowa
M.A.—University of Illinois

Boyd, Cleo Y. ..... English
B.A.—Eastern Michigan University
M.A.—New York University
B.D.—Colgate Rochester Divinity School

Brown, Eugene N. ..... Automotive Service Laboratory Coach
A.D.—Washtenaw Community College

Burden, Dennis ..... Counselor
A.A.—Jackson Community College
B.A.—The University of Michigan
M.S.—California State College

Bylsma, Donald, Jr. ..... Sociology
B.S.—Wayne State University
M.A.—Wayne State University
Ph.D.—The University of Michigan

Byrd, David R. ..... Architectural Drafting
Hampton Institute College and Trade School
N.C.A.R.B. Certified
Registered Architect—D.C., Maryland, West Virginia, Michigan

Campbell, Benjamin I. ..... Psychology
B.M.—Peabody Institute
M.A.—The University of Michigan

Carson, Robert L. ..... Mathematics
A.A.—Lower Columbia College
B.S.—Western Washington State College
M.A.—Wayne State University

Charlton, Eleanor ..... Secretarial Science (on leave)
B.S.—Central Michigan University
M.A.—Central Michigan University

Chasteen, Joseph ..... Dental Assisting
D.D.S.—The University of Michigan

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A.M.—The University of Michigan

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B.R.E.—Grand Rapids Baptist College
M.A.—Western Michigan University

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B.A.—The University of Michigan
M.A.T.—Northwestern University
M.A.—Northwestern University

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B.S.—University of Colorado
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Daisher, Nollie M. ..... English
B.S.—Wayne State University
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M.A.—Syracuse University
Ampex Video Institute

Dowding, Tasman A. ..... Mathematics
B.S.—Kent State University
Ed.M.—Kent State University

Eaglin, Marguerite ..... Counselor
B.S.—Eastern Michigan University
M.A.—Eastern Michigan University
S.A.—Eastern Michigan University

Eggertsen, Nita W. ..... Speech
A.B.—Brigham Young University
M.A.—The University of Michigan

Fatur, Robert A. ..... Metallurgical Technology
Wayne State University
Detroit Institute of Technology

Garrett, Dallas O. ..... Numerical Control
B.S.—Wayne State University
M.A.—Eastern Michigan University
Numatrol Circuit Design School
Illinois Institute of Technology Research Institute

Gaughan, John T. ..... English
B.A.—St. Mary's College
B.D.—St. Mary's College
M.A.—Eastern Michigan University

Glusac, Ivan C. ..... Geography
B.S.—Wayne State University
M.A.—The University of Michigan

Gores, Lynn ..... Financial Aids Officer
B.A.—Western Michigan University
M.A.—The University of Michigan

Gray, Daniel C. ..... Welding and Fabrication
Journeyman Pipe Fitter and Boilermaker
Air Force Technical School
Certified Welder—Navy, Air Force, Army

Griswold, George H. ..... Chemistry
B.A.—College of Wooster
M.S.—Eastern Michigan University

Hakeem, Ivan P. ..... Sociology
I.D.D.—Agricultural Institute
A.B.—Clark College
M.A.—Atlanta University

Hammond, Carl F. ..... Inhalation Therapy
B.S.—Eastern Michigan University
A.R.I.T. (American Registry of Inhalation Therapists)

Hanson, Charlotte ..... Speech
A.B.—The University of Michigan
M.A.—The University of Michigan

Hastings, Janet G. ..... Mathematics
B.A.—The University of Michigan
M.A.—Cornell University

Hentz, Gary R. ..... Counselor
B.S.—Eastern Michigan University
M.A.—Eastern Michigan University

Herridge, Eileen ..... Counselor
B.A.—University of Washington
M.A.—The University of Michigan

Hinds, Dwight D. ..... Physics
B.S.—Eastern Michigan University
M.S.—Michigan State University

Hofmann, Susan ..... Counselor
B.A.—City College of New York
M.A.—The University of Michigan

Holmes, George H., III ..... History
B.A.—University of North Carolina
M.A.—Xavier University

Hoops, Rosalinda L. ..... Institutional Foods and Management
B.S.—University of the Philippines
M.S.—Oklahoma State University

Hopper, Thomas W. ..... Automotive Service Laboratory Coach
Certificate—Army Mechanic School
Ford Motor Institute

Horowitz, Frederick A. ..... Art
B.A.—Yale University
B.F.A.—Yale University
M.F.A.—The University of Michigan

Hunt, Barbara ..... English
B.A.—University of Toledo
M.A.—The University of Michigan

Hutchison, Ira ..... Automotive Body Laboratory Coach
General Motors Training Center
General Motors Paint School

Jordan, Virginia ..... Psychology-Sociology
Ph.B.—University of Chicago
M.A.—University of Chicago

Kapp, George ..... Physics Laboratory Coach
A.D.—Washtenaw Community College

Kokkales, Paul C. ..... Accounting
B.S.—Eastern Michigan University
M.A.—The University of Michigan

Kollen, G. Michael ..... Psychology
B.A.—Knox College
M.A.—New Mexico Highlands University
M.A.—The University of Michigan

Koti, Charles D. ..... Industrial Drafting
Lawrence Institute of Technology
Wayne State University

Ladley, Betty A. ..... Dental Assisting
A.A.—Grand Rapids Junior College
C.D.A.—American Dental Assisting Association

Laursen, Dan ..... Geology
M.Sc.—University of Copenhagen
M.Ed.—University of Copenhagen
Ph.D.—University of Copenhagen

Lawrence, Morris J. ..... Music
Certificate—Straight Business College
B.S.M.E.—Xavier University
M.M.—The University of Michigan

Lewis, William A. ..... Mathematics
B.S.—North Carolina College at Durham
M.A.—The University of Michigan

Lockard, Jon ..... Black Art
Certificate—Meinzinger Art School
Certificate—Obleton Advertising Company
Wayne State University
Missionaries of the New Truth

Lowe, Burton C. ..... Mechanical Technology
Journeyman—Industrial Machinist, Machine Repairman
Ford Motor Company Apprenticeship School

Martin, Herbert L. ..... Psychology
B.A.—Eastern Michigan University
M.A.—Eastern Michigan University

Martin, John W. ..... Technical-Commercial Art
Certificate—Miensinger Art School
Certificate—Arts and Crafts Art School
A.A.—Macomb County Community College

McClatchey, Merrill W. ..... Speech
B.A.—Wayne State University
M.A.—Columbia University

McClellan, Elwood ..... Speech
B.A.—Michigan State University
M.A.—The University of Michigan

McGee, Sophie ..... English
A.B.—The University of Michigan
M.A.—The University of Michigan

McGill, John B. ..... Physics
B.S.—Eastern Michigan University

McNally, Robert C. ..... Counselor
Four Year Graduate—General Motors Institute
M.B.A.—The University of Michigan
M.A.—University of Detroit

Mealing, Percy ..... Mathematics and Physics
B.A.—Talladega College
M.A.—The University of Michigan

Mealing, Robert C. ..... Mechanical Technology (on leave)
Journeyman, Industrial Machinist-Machine Repairman
Ford Motor Company Apprenticeship School
B.S.—Wayne State University

Meeks, Sandra S. ..... Nurse
B.S.N.—The University of Michigan
Registered Nurse

Mickelson, Joan M. ..... History
B.A.—St. Teresa College
M.A.—Eastern Michigan University

Miller, Louis R. ..... Political Science
B.S.—Eastern Michigan University
M.A.—The University of Michigan

Mitchell, W. Bede ..... English
A.B.—Wayne State University
M.A.—Wayne State University

Morgan, Lester ..... Welding and Fabrication
Journeyman, Pipe Fitter-Boilermaker
Ford Motor Company Apprenticeship School
The University of Michigan

Moy, William ..... Psychology
A.B.—Valparaiso University
M.A.—The University of Michigan

Nagel, Rosemarie ..... English
A.B.—The University of Michigan
M.A.—The University of Michigan

Nelson, Robert ..... X-Ray Technology
Alexian Brothers Hospital School of Radiologic Technology
R.T.—The American Registry of Radiologic Technologists
A.A.—Fort Scott Community Junior College

Niehaus, Paul J. ..... Biology/Health Sciences
B.A.—Eastern Michigan University
M.S.—The University of Michigan

Nissly, Daniel ..... Audio Visual Technician
Ferris State College
Jackson Community College
Washtenaw Community College

Packard, R. James ..... Industrial Drafting
B.S.M.E.—University of Wisconsin

Patt, Jerry ..... Secretarial Science and General Business
B.S.—Eastern Michigan University

Paulson, Robert W. ..... General Business
B.S.—University of New Hampshire
M.S.—University of New Hampshire

Phibbs, John ..... Graphics Technician
A.D.—Washtenaw Community College

Pierce, Flavia P. ..... History
B.A.—St. Joseph College
M.A.—Georgetown University

Pogliano, Michael F. ..... Architectural Drafting
B.S.—The University of Michigan
Registered Architect, Michigan
N.C.A.R.B. Certified

Pool, Milton H. ..... Chemistry, Physics
B.S.—Eastern Michigan University

Prichard, Lawrence ..... Mathematics
B.S.—Eastern Michigan University
M.A.—Eastern Michigan University

Radick, Lawrence J. ..... Foreign Languages and English
B.A.—Michigan State University
M.A.—Michigan State University

Reddick, Bella G. ..... Secretarial Science and General Business
B.A.—St. Augustine's College
M.A.—The University of Michigan

Rees, Gerald M. ..... Physics
B.S.—The University of Michigan
M.S.—The University of Michigan

Reeves, Robert A. ..... Speech
B.A.—Eastern Michigan University
M.A.—Eastern Michigan University

Roberts, Alvin E. .....Coordinator, Black Studies
B.S.—Prairie View A&M College
M.S.W.—Wayne State University

Roberts, Shirley .....Clinical Psychologist
B.A.—The University of Michigan
M.A.—The University of Michigan

Ross, Donald L. .....Mathematics
B.S.—Eastern Michigan University
M.A.—The University of Michigan
M.A.T.M.—University of Detroit

Russell, Dean A. .....Electricity-Electronics
B.S.—Eastern Michigan University
M.A.—Eastern Michigan University

Rybo, Frank J. .....Accounting and Finance, General Business
General Motors Institute

Salerno, Douglas .....English and Journalism
A.A.—Kellogg Community College
B.A.—Western Michigan University
M.A.—Western Michigan University

Simpson, William J. .....Counselor
B.S.—Alabama State College
M.S.W.—Wayne State University

Sims, Donald .....Admissions Officer
B.S.—Wayne State University
M.A.—The University of Michigan

Slepsky, Lawrence .....Coordinator, Physical Education/Athletics
B.S.—Eastern Michigan University
M.A.—Eastern Michigan University
Ed.S.—Eastern Michigan University

Smitley, Lynn .....Physical Education
B.S.—Eastern Michigan University
M.S.—The University of Michigan

Spencer, James E. .....Biology
B.A.—Kalamazoo College
M.S.—The University of Michigan

Steinbach, J. Raymond .....English
B.S.—Michigan State University

Stillwell, Ruthmary .....English
B.A.—The University of Michigan

Stotland, Dorothy E. ..... English
A.B.—The University of Michigan
M.A.—The University of Michigan

Strayer, James L. ..... Biology
B.A.—Eastern Michigan University
M.A.—The University of Michigan

Susnick, Stuart ..... Anthropology
B.A.—Brooklyn College

Tatar, George D. ..... Biology
B.S.—The University of Michigan
M.S.—The University of Michigan

Tigner, Johnnie W. ..... Assistant Coordinator, Black Studies
A.D.—Washtenaw Community College

Thomas, Ervin ..... Coordinator, Step-Up
B.A.—Wayne State University

Toogood, Emery ..... Drafting
B.S.—Central Michigan University
M.A.—The University of Michigan

Vass, Steven T. ..... Economics
B.S.—Academy of Military Science
B.S.Ed.—Black Hills State College
M.A.—The University of Michigan

Vrabel, George ..... Placement Counselor
B.S.—Western Michigan University
M.A.—Wayne State University

Walker, W. James ..... Automotive Mechanics
A.D.—Washtenaw Community College
Certificate—Ford Motor Company Autolite Division

Weidner, Hal R. ..... English
A.B.—Columbia College
M.A.—The University of Michigan

Welch, Bruce H. ..... Automotive Service
B.S.—Central Michigan University
M.A.—The University of Michigan
Delco Remy Automotive Electrical School

Wheeler, Kenneth L. ..... Electricity-Electronics
B.S.E.E.—Detroit Institute of Technology
Senior Member Institute of Electrical and Electronic Engineers

Wiernik, Peter ..... Mechanical Technology
Highland Park College
Wayne State University
Journeyman Toolmaker and Machinist

Williams, Calvin E. ..... Counselor
B.A.—Western Michigan University
M.A.—The University of Michigan

Williams, Johnny L. ..... Electronics
U.S. Navy Retired (1942-1967)—Radio Electronics

Wilson, Evylyn Y. ..... Secretarial Science
B.S.S.S.—Ohio University
M.S.—Ohio University

Wirbel, Johanna V. ..... Counselor
B.A.—Kent State University
M.A.—The University of Michigan

Wotring, J. Robert ..... Data Processing
B.A.—University of Philippines

Zaremba, Ernest ..... Psychology
A.B.—The University of Michigan

Zeeb, Ronald E. ..... Business Administration, Marketing
B.S.—Eastern Michigan University

Zenian, Paul ..... Art
B.S.—The University of Michigan
M.F.A.—The University of Michigan

INDEX

STUDENT COURSE RECORD

_____
(name)

ENROLLED WASHTENAW COMMUNITY COLLEGE_____
(date)

COURSE	CR. HRS.	INSTRUCTOR'S NAME	GRADE

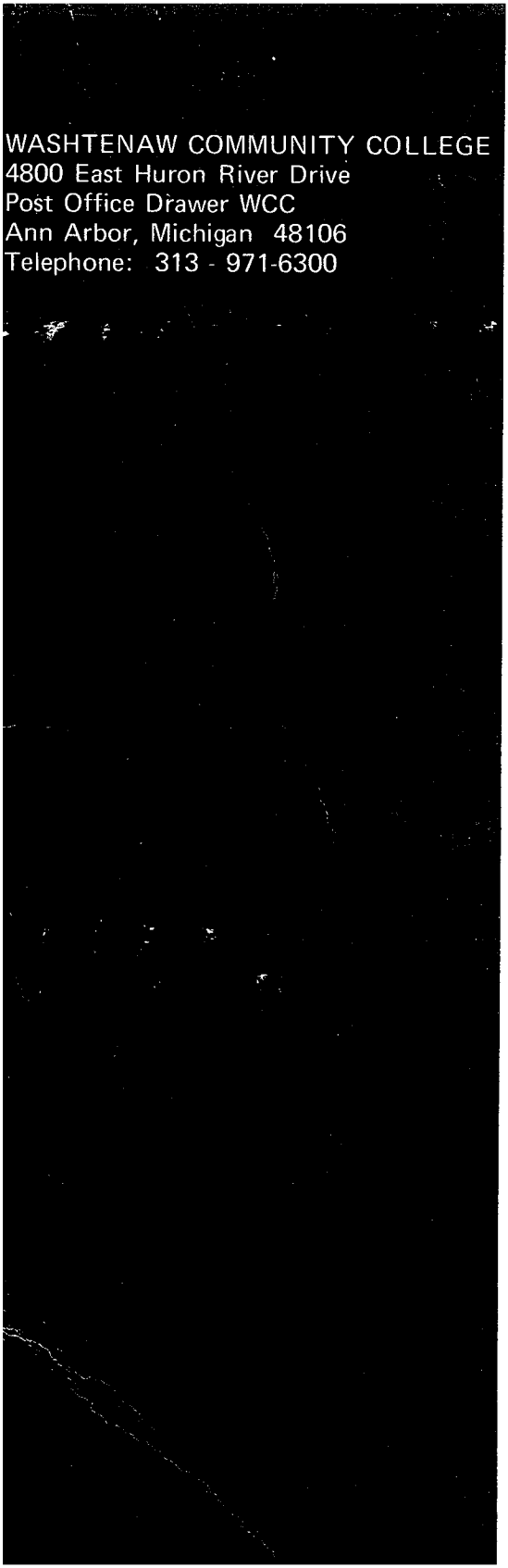
TO THE STUDENT: HOW TO USE THIS CATALOG

A special effort has been made to make the catalog a useful and usable document to both the full-time and part-time student. The following procedure is recommended:

1. Determine program or area of interest.
2. Make an appointment with a counselor.
3. Obtain registration materials.
4. Make an appointment with an advisor (names listed on program page).
5. In concert with advisor, elect courses as listed in the "Full-Time Sequence" column.
6. When deviations from the "Full-Time Sequence" are necessary, enter the appropriate substitutions in the "Student Program" column.
7. Have advisor initial and date the substitution. Examples of student programs that require substitutions are:

   a) Students who transfer credit from other programs or institutions.
   b) Students whose employers have special or unique requirements.
   c) Students with substantial background or experience in the field of interest.
   d) Students who desire a "tailor-made" program for occupational entry into fields related to the program listed in the catalog. (For example, a person who wishes to sell electronic equipment might select the Electronics Engineering Technician program with additional selections made in marketing and salesmanship.)
   e) Changes in either the program or time schedule as a result of institutional policy or action.
   f) Students who elect a cooperative work program through the College and an employer.

8. If you are a part-time student, choose courses in the order indicated by the number to the left of the course title under the "Part-Time Sequence" column. Take all courses marked (1) first, then all marked (2) next, and so on until all program requirements have been satisfied.
9. Check the current time schedule to insure availability of courses.
10. Complete registration materials and obtain advisor/counselor signature.



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