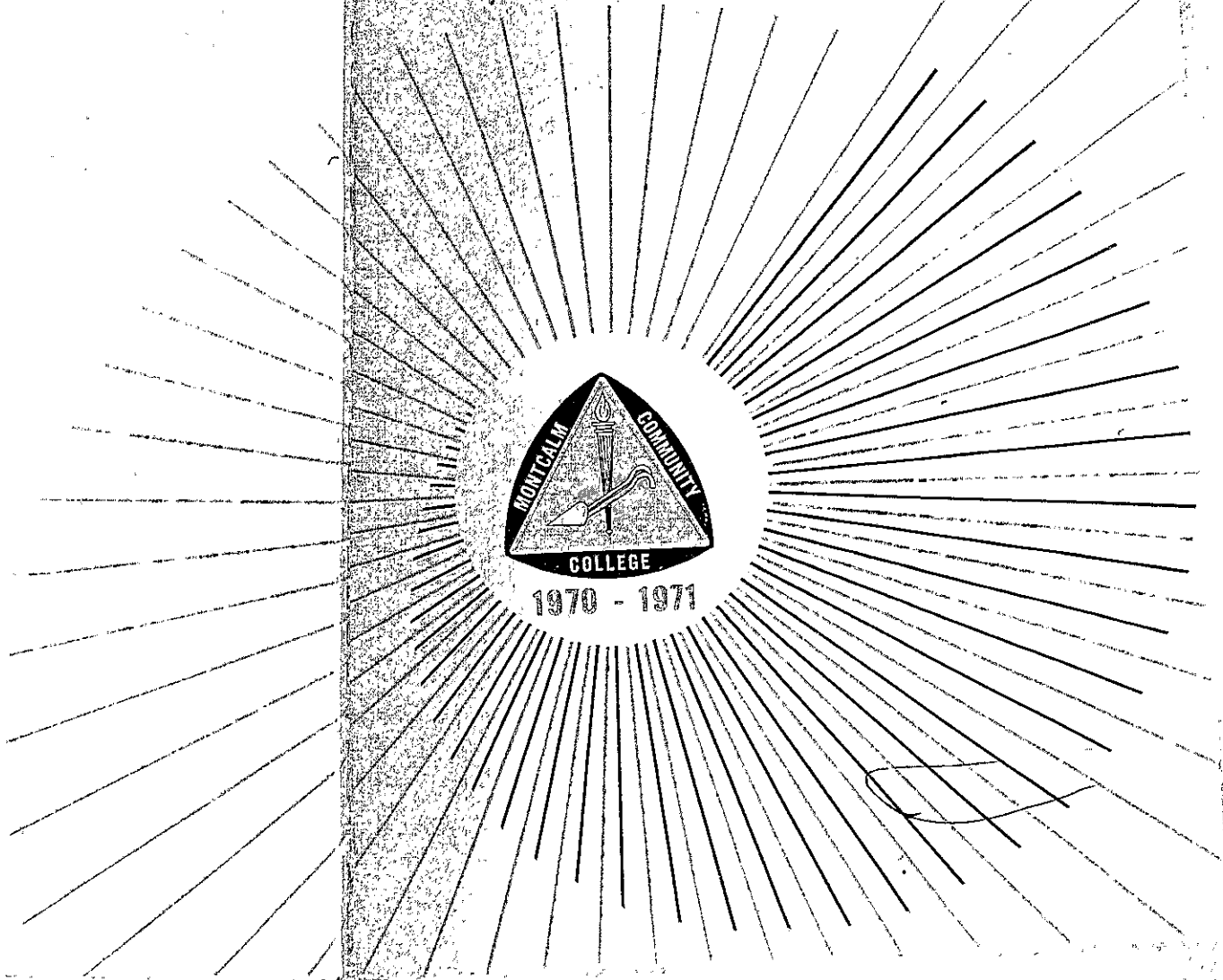




"Created to Serve"

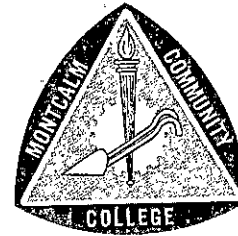
Montcalm
Community
College



1970 - 1971

1970 - 1971

CATALOG



MONTCALM
COMMUNITY COLLEGE

Sidney, Michigan 48885

Telephone
Area 517 - 328 - 2111

MONTCALM COMMUNITY COLLEGE

ACADEMIC CALENDAR - 1970-1971

First Semester: August 24 - December 18, 1970

August 17 Professional meetings
 August 17-21 Registration, faculty departmental meetings and preparation time
 August 24 Classes begin
 August 24-28 Late Registration
 September 7 Labor Day Holiday, All Buildings Closed (Classes resume September 8)
 November 26 and 27 Thanksgiving Holidays, All Buildings Closed (Classes resume November 30)
 December 14-18 Final Examinations
 December 18 Semester ends

Between Semester Information:

December 21, 1970-
 January 1, 1971 Holiday Period
 December 25 and January 1 All Buildings Closed
 January 4-8 Registration
 January 7 and 8 Faculty professional meetings and preparation time

Second Semester: January 11 - May 14, 1971

January 11 Classes begin
 January 11-15 Late Registration
 April 5-9 Spring Vacation (Classes resume April 12)
 May 10-14 Final Examinations
 May 14 Semester ends

Summer Session, 1971 - To be announced

BOARD OF TRUSTEES

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 Orville Trebian, Vice-Chairman
 Beatrice Doser (Mrs. Fred), Treasurer
 Grace Greenhoe (Mrs. Harold), Secretary
 Willard H. Braman, Trustee
 Dr. Larry Disher, Trustee
 Dr. Harold Steele, Trustee
 Dr. Donald Fink, Ex-Officio

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Donald D. Fink, Ed.D.,	President
Clifford J. Bedore, Jr., Ed.D.,	Business Manager
Howard D. Bernson, M.A.,	Director of Community Services
John B. Carlson, M.L.S.	Director of Learning Resources
D. Gary Moore, M.A.	Dean of Vocational/Technical Studies
Leslie K. Morford, M.A.	Dean of Academic Studies
Robert F. Tupper, Ed. Spec.	Dean of Students

GENERAL STAFF

Verla Cummings (Mrs. Ed), A.B.	Librarian
Gloria Morrison (Mrs. Dale), M.A.	Counselor
Donald Mullens, M.A.	Counselor
Alden Perkins	Bursar

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ABOUT THE COLLEGE

A HISTORICAL REVIEW

The College came into being in the Fall of 1963 as an idea in the minds of a group of public-spirited citizens. It had become obvious to the people of Montcalm that such factors as distance to existing colleges, rising educational costs, increasing demands upon institutions of higher education, and the growing specialization of the work force were combining to form a mandate for local post-high school education.

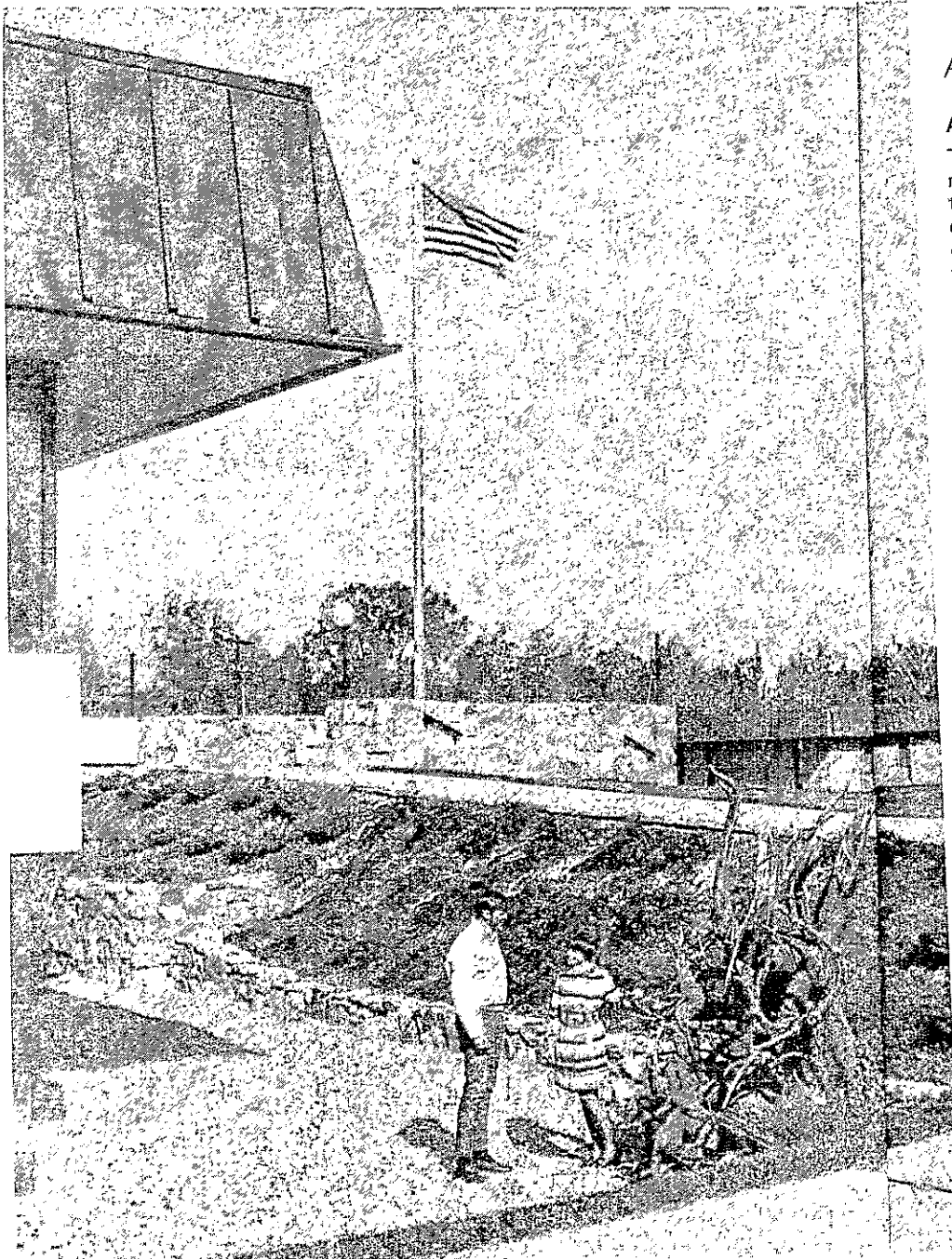
Under the sponsorship of the Montcalm Area Intermediate School District Board of Education, a Citizens' Study Committee was formed and began pre-establishment research under the chairmanship of Attorney Charles W. Simon, Jr., of Edmore. William J. Seiter, Intermediate District Superintendent, served as professional consultant to the Committee, and the late Dr. Max Smith, then Director of Community College Cooperation at Michigan State University, was appointed as the Study Director.

That the Citizens' Study Committee had performed its task well and had properly informed area residents of its conclusions was borne out on March 2, 1965, when the College was established by an overwhelmingly favorable vote. Also, the first Board of Trustees was elected, and a one-mill annual tax levy was established at this election.

The President and Business Manager began their work with the College on August 1, 1965. In September the completion of a joint site survey conducted by Dr. Smith and Dr. Raymond Young, University of Michigan, resulted in the purchase of 158 acres on Sidney Road for the campus site. This was expanded in August, 1966, by the purchase of 80 additional acres contiguous to the original land and a two-acre parcel at the corner of the original campus was acquired in November, 1968. As was earlier recommended by the Citizens' Study Committee, the campus is near both the geographical and population centers of the district, available from all directions by surfaced county and state highways.

Architect for the campus Master Plan and Phases I and II of construction is the firm of Daverman Associates, Inc., of Grand Rapids.

Construction bids for the Learning Resources Center, a Two-Story Academic Center and the Service Building/Heating Plant were opened on September 9, 1966, with actual building activity beginning on October 3. Official ground-breaking ceremonies were held on the Campus on September 26 with Governor George Romney as the speaker. On April 18, 1967, contracts were awarded for the construction of a Vocational Shop Building designed to house such programs of instruction as Automotive Mechanics, Machine Tooling and Welding. At the same time the buildings themselves were under construction, work also proceeded on all utility services, initial landscaping and parking areas.



September 26, 1967, became another landmark date for Montcalm Community College. Just one year after Governor Romney had broken the ground in a symbolic launching of the building program, Lt. Governor William G. Milliken delivered a stirring address at the Dedication of Buildings. He spoke from the Library Bridge to a large audience assembled on the Campus Atrium. The Two-Story Academic Center had already been occupied on September 5, 1967, and the first classes were held in the new Vocational Shop on November 15.

The Learning Resources Center was completely occupied by March 1, 1968, and the new One-Story Classroom Building opened for classes on August 25, 1969. This facility has a number of interesting features, including air-conditioning to make possible year-around instruction.

Moving to verify the commitment of Montcalm Community College to a strong vocational/technical program, the Dean of Vocational/Technical Studies was employed on February 1, 1966, and the first full-time programs of study in this division opened on August 29. Teaching in the academic fields also began on this date with study being offered in five courses.

On August 1, 1966, the Learning Resources Director began the work of developing a comprehensive study center for the Montcalm Community College campus.

The appointment of the College's first Dean of Students on July 1, 1967, signaled the initiation of formal counseling, admissions, and registration programs. Under the Dean, such activities as the student newspaper, choir, student government and interscholastic athletics were begun in the 1st semester of the 1967-68 academic year, and others have been added during the ensuing two years.

Because of the rapidly developing participation in the full time General Academic program of studies in 1967-68, the Academic Deanship was begun on a part time basis in January, 1968. This position became full time by the 1969-70 academic year.

Beginning on February 1, 1969, the Community Services Division of the College officially opened under its newly-appointed Director. This Division assumed responsibility for adult education, short courses, in-service training, conferences, cultural events, and other similar educational activities. A three-year grant from the W. K. Kellogg Foundation has assisted Montcalm Community College in becoming a National Demonstration Center for Community Services in rural colleges.

Montcalm Community College has reached a milestone in its development. The college will pass its fifth anniversary on March 2, 1970. Within that five-year period she has developed the spectrum of educational services expected of a community college—vocational/technical education, a collegiate-level academic transfer program, a well-developed counseling program including evening assistance for adults, general education for those not pursuing degrees or certificates, and an aggressive community services division. All of this is taking place in five new buildings on the beautiful 240-acre campus. Cooperating with community school centers in other counties, extension courses are now also being taught for adults desiring community college study.

Having been appointed to Recognized Candidacy for Accreditation on March 23, 1969, the college is now organizing itself in a program of study and self-appraisal leading to complete accreditation. Working with the Board of Trustees, a staff of 38 full-time professionals is now guiding Montcalm to its position within the higher education community in Michigan and making high quality training and study available to citizens of the district and surrounding areas. That dream shared by those citizens in 1963 has become a college campus, a faculty, and a student body—a community of learning dedicated to the service and well-being of the people it serves.

EDUCATIONAL OBJECTIVES OF THE COLLEGE

Montcalm Community College subscribes fully to the following institutional objectives:

1. To provide vocational and technical study leading to occupational competence at the semi-professional and skilled levels; also to assist in upgrading the skills of employed persons.
2. To provide academic study at the freshman and sophomore levels transferable to senior institutions and acceptable toward a baccalaureate degree.
3. To provide assistance for all students through social, vocational, and educational counseling and guidance.
4. To provide general education for those who study primarily to become more knowledgeable about their cultural, social, and scientific environment.
5. To provide adult and continuing education, both through the regular curriculum and through study designed to meet specific objectives.
6. To provide a center for community service through exhibits, lectures, concerts, and similar activities in the Humanities; also, to provide facilities in which community groups may carry on similar projects.
7. Through an organized program of student activities, to provide for growth in social skills and the development of responsible community citizenship.

Being aware that the above objectives describe a comprehensive community college, the staff and trustees of Montcalm are utilizing them as guidelines in the orderly development of this College.

However, to describe the objectives of Montcalm Community College solely in such general terms is stating only one aspect of the goals. The important purposes are better defined in terms of the people who will participate in the educational program, the instructors and students—the community of learners mentioned above. Only to the extent that the educational needs of students are met will the objectives of Montcalm Community College be realized.

In establishing the programs, certain assumptions have been made regarding these needs:

1. At least 50% of the student body will request programs in the vocational/technical fields.
2. At least 10% of the enrolled students will successfully transfer to senior institutions to complete work on a baccalaureate degree, and some of these will be in technical programs at Montcalm Community College.
3. All students—youth and adult, academic and vocational/technical, transfer and non-transfer—will expect to understand a great deal about today's complex society after completing study at this institution.
4. All students will anticipate a quality collegiate program of studies—including skillful teaching, opportunities for creative thinking, and the challenge to become self-directive in their academic life.
5. Each student at Montcalm Community College expects that the chief outcome of his educational experience at this institution will be the skill, mental awareness, and persistent desire to become a lifetime learner.

Both the institutional and personal objectives stated above become a mandate to those in whom the responsibility for the development of this College has been vested. These will consistently form the master guidelines against which decisions regarding the program of studies, building design, and provisions for student life are measured.

ACCREDITATION

Almost from the moment the President began his work with Montcalm Community College, the institution has aggressively followed the prescribed steps which will lead to accreditation under the North Central Association of Colleges and Secondary Schools. By late 1965 the Association had appointed Dr. Daryl Pendergraft of the State University of Northern Iowa as the Consultant/Examiner for Montcalm.

To expedite the transfer of Montcalm students to four-year institutions during the normal period of five or more years before accreditation, Michigan public and private colleges and universities have assured—in writing—the acceptance of academic credits at full value for which a grade of C or better has been earned at Montcalm Community College.

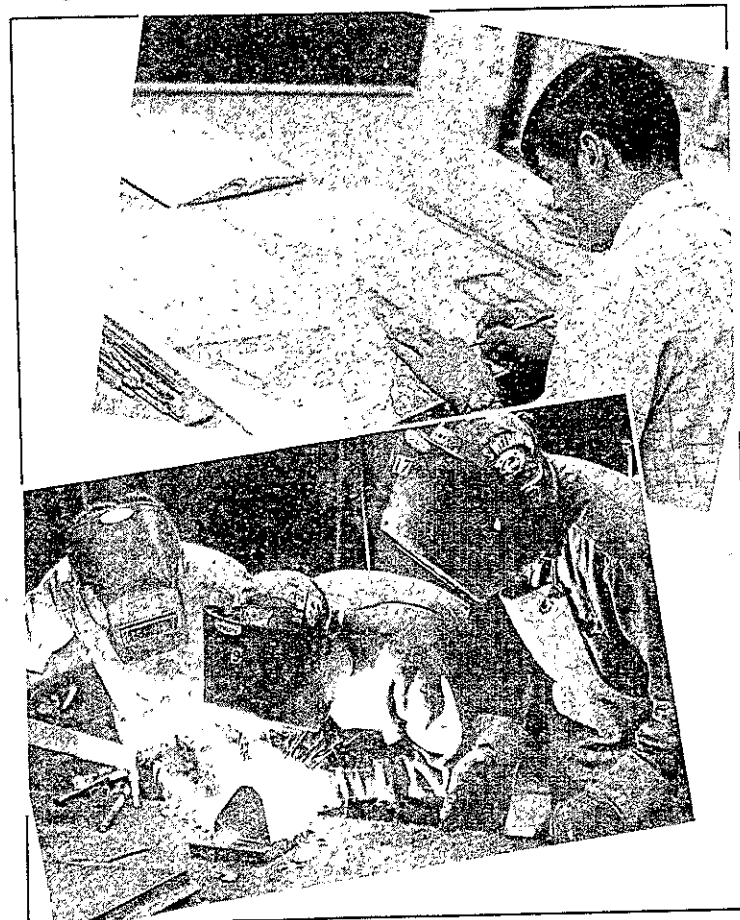
While technical and vocational courses are designed primarily to promote occupational competency for students enrolled in the programs, certain State universities have agreed to appraise these Montcalm credits for possible transfer where they are appropriate to a student's degree program.

Montcalm Community College was awarded status as a Recognized Candidate for Accreditation by the North Central Association in

April of 1969, in the minimum time possible. Under the policies of the Association, a Recognized Candidate has three years in which to complete all the requirements for full membership in the Association. Montcalm Community College is presently involved in an extensive Self-Study and intends to complete this study by June, 1971. Upon completion of the study, an Accreditation Examination will be conducted by the Association. Following this visitation, a decision will be rendered by the Association concerning the application for accreditation.

In sum, Montcalm Community College is moving, successfully and on schedule, toward full accreditation.

Montcalm Community College holds full membership in the American Association of Junior Colleges, the North Central Council of Community and Junior Colleges, the Michigan Community College Association, and the Michigan Association of Junior and Community Colleges.



THE EDUCATIONAL PROGRAM

The educational program at Montcalm Community College is based upon the uncomplicated philosophy having as its chief goals the following outcomes:

1. For the academic student—a two-year college education of high quality providing a firm grasp of the basic areas of knowledge: Communication Skills, Social Science, Natural Science, and the Humanities. Also, it is urged that at least basic proficiency be gained in Mathematics. In addition to this basic core of learning, a series of electives will permit students to explore areas of special interest.

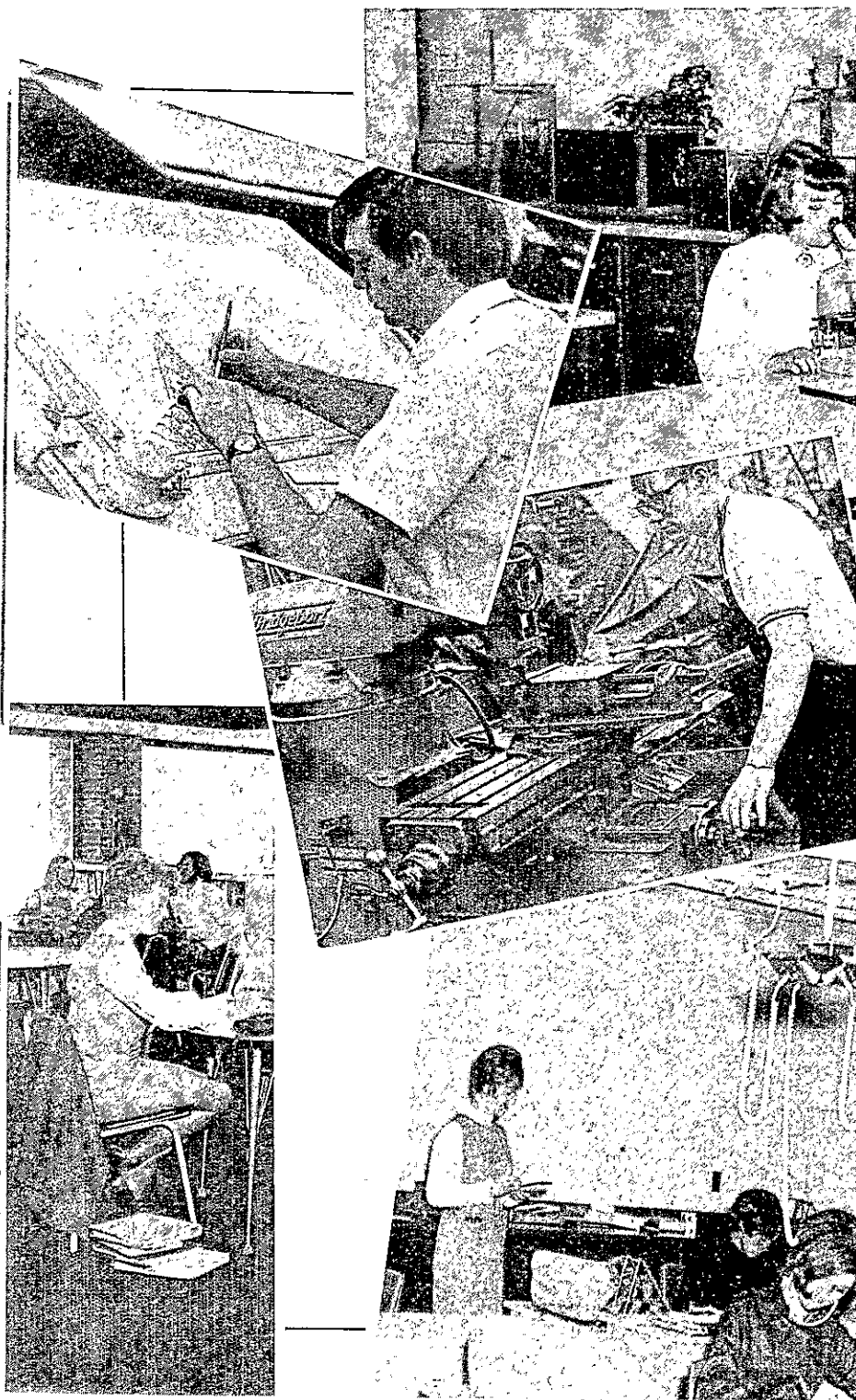
It is believed that a sophomore graduate cannot be considered fully educated until prescribed work has been completed in the entire General Education program described above. Also, it is expected that the student who completes two years of academic study will have an understanding of how knowledge is gained in each academic discipline and will possess the skill and desire to become a lifetime learner.

2. For the vocational/technical student—a high degree of occupational competence at the skilled or semi-professional level. It is expected that the graduate will be able to demonstrate a high degree of job performance as well as the ability to accept new, related responsibility.

For the technical student who will seek the associate degree as well as occupational competence, successful completion of portions of the General Education core will also be required. Because the associate degree technician will frequently assist professional workers—physicians, engineers, dentists, etc.—he is expected to have competence in the realm of ideas and theories as a necessary complement to his skill training.

For the vocational student, any academic training will be related specifically to the job skill which he is learning; for example, mathematics will be of a technical nature and directly connected with the skill being taught.

3. For any student—an opportunity to explore both the academic and vocational/technical studies while still qualifying for an associate degree. Where educational goals are not aimed specifically at transfer to a four-year college or at a skill specialty, students may enjoy greater flexibility in planning their program of studies along lines of varied interest.
4. For non-degree, non-certificate students—the opportunity to study for increased understanding, for greater job skill, or for other



personal reasons without reference to formal, prescribed educational pursuits.

In all cases, the student at Montcalm Community College will be expected to pursue his chosen course of study with enthusiasm and the best effort of which he is capable at all times. Neither students nor their instructors should approach the learning task with an attitude of mediocrity. A high quality of performance is a consistent demand of all in this community of learning.

DEGREES

Three degrees will be granted at Montcalm Community College:

1. Associate in Arts and Sciences
2. Associate in Applied Arts and Sciences
3. Associate in Basic Studies

Every person desiring to complete any one of the three degrees will be required to earn at least 60 semester credits in the prescribed programs of study listed later in this catalogue.

Some programs, particularly in the technical studies, may require a greater number of credits to complete skill and general education requirements.

At such time as facilities make on-campus instruction possible in physical education, requirements for graduation will be raised to include two semesters in that area, or a total of 62 credits. However, during the 1970-71 academic year, physical education will be available as an elective subject but will be optional for graduation. Physical education activities credits will not be accepted as part of the 60 required for graduation.

CERTIFICATE PROGRAMS

A number of educational programs at Montcalm Community College will be of a different emphasis or length than those leading to an Associate Degree. Students successfully completing these courses will receive a certificate of achievement in lieu of the degree. Two examples of this are in the field of Practical Nursing and Automotive Mechanics. The former is of a length and content specified by the Michigan Board of Nursing. The latter, though a two-year course, is so structured with specific job knowledge that no time is available for completion of the General Education requirements for the degree.

It is anticipated that a number of programs, most of them of a vocational nature, will be organized under a similar structure in the future. Students will be awarded appropriate recognition of their achievement in these and may, if desire, complete the Associate Degree by fulfilling the required General Education core and earning a grand total of 60 credit hours.

COMMUNITY SERVICES DIVISION

A new challenge has become one of the major purposes of the Community College—Community Services. At the present time, Montcalm Community College intends to expand services to the community. Through its Community Services program, the Community College will offer a variety of services beyond its well-established degree and certificate programs. Community Services at Montcalm College provides for self development and community improvement by offering non-credit courses, extension credit courses, adult counseling, cultural enrichment activities, exhibits, public forums on issues, etc.

Community services constitute a response of the community college to the needs of the community. The complexities of urbanization, minority group problems and racial tension, economic and technological changes, environmental decline, cultural and leisure time needs, and poverty are examples of some of the challenges facing communities. Community services becomes the cutting edge whereby the community college attempts to meet the challenge of the changing community.

GENERAL EDUCATION PHILOSOPHY

Montcalm Community College has a basic educational philosophy of which the student should be aware. The College is committed to the following premises:

1. That setting personal goals is a lifelong process, and success in life often depends upon fulfilling those goals which one has set for himself. Also, that goal-setting is often a shaping and re-shaping process in which the student is an active participant who must find a greater awareness of himself in society.

Further, that while the short time spent at Montcalm Community College does not fulfill many lifetime goals, the daily close contact between instructor and learner helps establish goals and plan how to achieve them.

2. That all educational pursuits are of equal dignity. As Governor George Romney remarked at the Montcalm Community College Groundbreaking Ceremonies on September 26, 1966, "All work is good, whether it is done with the head or the hands."

The College foresees that its student body will be about equally divided between the academic and vocational/technical divisions and anticipates the same high level of accomplishment in both. Further, it is believed that a person whose major emphasis lies in one division would benefit from educational experiences in the other.

3. That General Education, as presented by Montcalm Community College and described later in this catalog, is a most effective means of providing for knowledgeable citizenship through the understanding of our physical, social and cultural world.

Further, that the General Education approach is also effective in providing the basic groundwork for upper division collegiate study after transfer to senior institutions.

4. That stimulating, exciting and challenging teaching is vital to learning.
5. That instruction at Montcalm Community College must provide the basis for continuous lifelong learning.
6. That high standards of moral and spiritual character are an essential attribute for personal well-being.

INSTRUCTIONAL FACILITIES

The 1967-68 academic year became the time for transition from teaching classes in rented or borrowed facilities to full-scale, on-campus operation in buildings designed especially for Montcalm Community College. During the year, students and their instructors began using the Two-Story Academic building, the Vocational Shop building, and then the Learning Resources Center. Also completed was the Heating Plant/Service Building.

The Learning Resources Center is the central study area of the college and is an integral part of the educational program. The physical facilities provide individual study carrels, group seating, conference rooms, an electronic listening laboratory for both individual and group audio study, and a separate reading laboratory. The materials collection includes a carefully chosen and growing book collection of over 15,000 volumes, approximately 250 periodicals and newspapers, microfilm titles for back issues of needed journals, and several hundred disc and tape recordings.

In addition to regular classrooms, the Two-Story Academic facility features three demonstration/lecture rooms for the sciences, each accompanied by a well-equipped laboratory; the business secretarial wing with laboratories for business machines and shorthand transcription; the Practical Nursing facilities; and the Drafting and Design rooms.

Newest addition to the campus is the One-Story Academic Building, first put into use on August 25, 1969. In addition to a number of regular classrooms, its special features include two lecture/demonstration halls seating nearly 100 and 140 persons respectively, with two small-group seminar rooms immediately adjacent.

Early planning for instructional facilities at Montcalm Community College provided for a building which would accommodate both technical degree and vocational programs of study. However, facilities for a number of the classroom-oriented occupational studies—Practical Nursing, Business Education, Drafting—were integrated into the

Two-Story unit. During the 1966-67 year it became obvious that there was a rapidly growing need for instructional space related to the industrial/mechanical skills. Consequently, planning began in January, 1967, for the Vocational Shop Building which was ready for use by Automotive Mechanics students in November, 1967. This facility was also prepared for the teaching of Welding, Industrial Technology and Apprenticeship beginning in January, 1968.

As this catalog is being prepared the Montcalm Community College Trustees are about to ask for bids on a major expansion of the Vocational Shop Building. This will provide for about double the present floor space, will greatly expand the Automotive Mechanics area, and will provide a special Machine Tool Shop along with two classrooms.

Other projects, as yet unannounced, are in the preliminary planning stages.



STUDENT SERVICES

Robert F. Tupper, Dean of Students, Ed.S. Western Michigan University

Gloria Morrison (Mrs.), M.A. Wayne State University, Counselor
Donald Mullens, M.A. Western Michigan University, Counselor

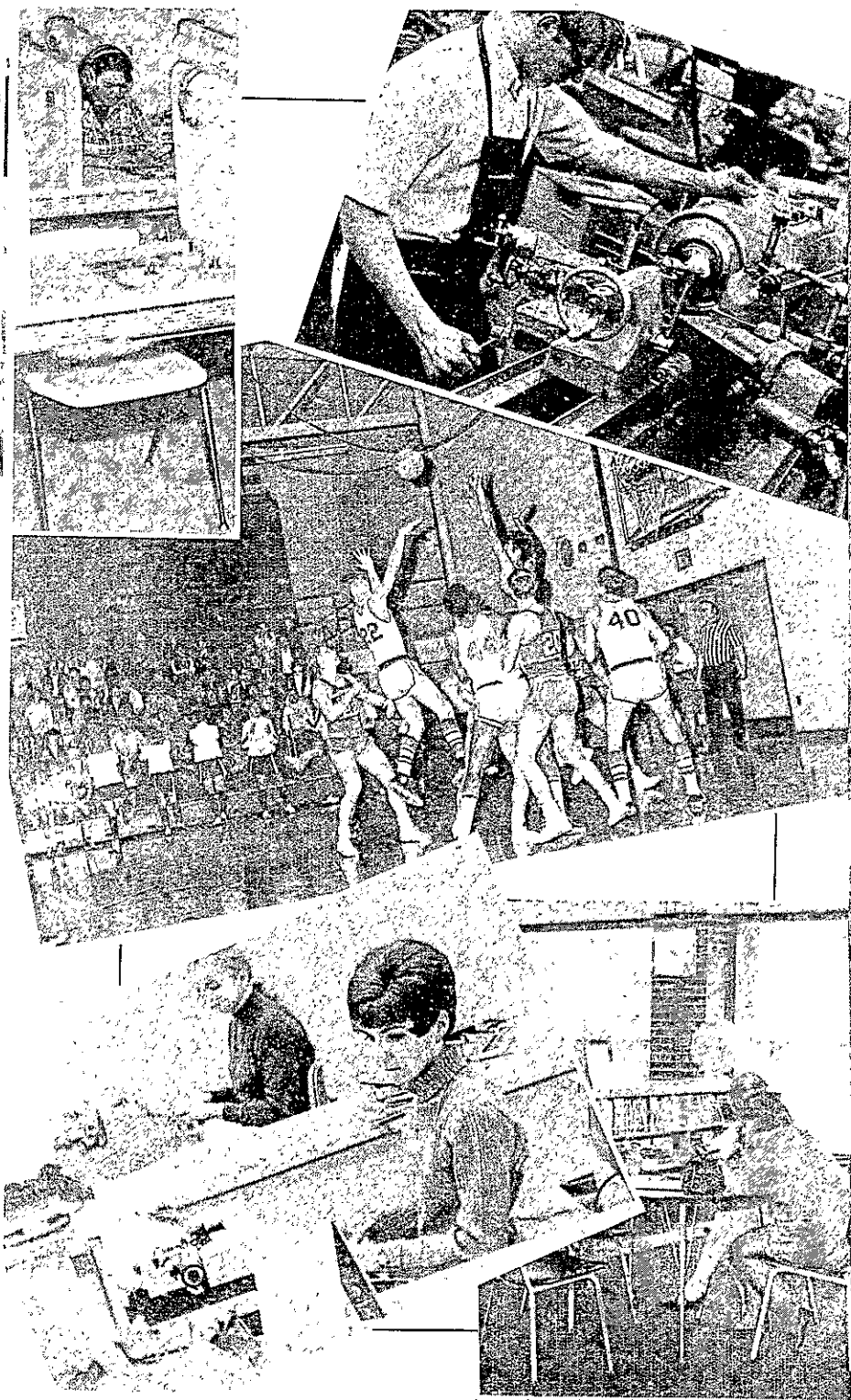
It is the intent of Montcalm Community College that Student Services shall exist for one purpose: to enhance and make more effective the instructional program of the College. Such services as counseling and financial aid, for example, are designed to eliminate specific personal problems which, if unresolved, might interfere with a student's ability to function as a learner. Provision of all other services is in a like spirit.

The program of services and activities for students will grow and evolve with developing needs and demands. By and large, the services reviewed below will operate under the direction of the Dean of Students.

ADMISSION

The student body at Montcalm Community College will include persons at varied admissions status: new, transfer, continuing, and part-time. The college adheres to an "Open Door" admission policy as provided in the Policy Manual of Montcalm Community College. Students shall be admitted to the College without regard to race, color, national origin, sex, or creed. The admission procedure for each group is described below.

1. **New College Students.** For those applicants who have never before attended a post-high school educational institution, the following steps must be completed:
 - a. Submit an application blank (available at your high school office or the Admissions Office). Include a check for the \$5 Application Fee.
 - b. Request that your high school office forward two copies of your transcript of grades and standardized test results to the Director of Admissions, Montcalm Community College.
 - c. Take the American College Tests (ACT) on one of the national testing dates (full information available from high school counselors). Have a copy of the results forwarded to Montcalm Community College (Code #2029).
 - d. Secure a Montcalm Community College Physical Examination form and have it completed by your family physician and forwarded to the Director of Admissions. Note: the physical examination must include a TB skin test or chest x-ray.
 - e. Report for your entrance counseling interview as scheduled for interpretation of your ACT scores and placement within the various programs.
 - f. Male students: Montcalm Community College will need to know your Selective Service Board name and number and your own number. Your admission, registration, and continuing enrollment status will be reported to the proper Board by the College.



2. **Transfer Students.** For those applicants who have, at some time, attended other post-high school institutions the following steps must be completed:
- Submit the regular application blank, commenting on the institutions attended (application blank available at the Admissions Office). Include a check for the \$5 Application Fee.
 - Request that the college(s) as well as your high school forward a copy(s) of your transcript of grades to the Director of Admissions, Montcalm Community College. The transcript should include a statement of your academic standing at your former institution.
 - Secure a Montcalm Community College Physical Examination form and have it completed by your family physician and forwarded to the Director of Admissions. Note: The physical examination must include a TB skin test or chest x-ray.
 - Report for your entrance counseling interview as scheduled by the counseling office.
 - Transfer students who have been dismissed for academic or social reasons from their last institution of attendance will be required to wait a full semester before entering the academic program at Montcalm Community College.
 - Male students: Montcalm Community College will need to know your Selective Service Board name and number and your own number. Your admission, registration, and continuing enrollment status will be reported to the proper Board by the College.
3. **Continuing Students.** Part and full-time students who were enrolled for the previous semester or summer session need not reapply for admission. However, certain students—particularly those in part-time programs during 1969-70—will be required to follow these procedures:
- If the student has completed 12 semester hours of study or more at Montcalm Community College and has not already done so, he must complete the formal application procedures. This includes primarily all steps described in section 1 for New College Students. This applies to all students completing 12 or more semester hours whether or not they plan to earn a degree or certificate from Montcalm Community College.

COUNSELING

The counseling service is an integral part of the Student Services program at Montcalm Community College. Counselors are available in the counseling center on the lower level of the Learning Resources Center. After the initial admissions interview, appointments in the counseling center will be upon the initiative of the students themselves. Counseling appointments may be made in advance, but certain hours will be designated for "drop-in" conferences. Typical problems which may be discussed with the counseling staff are difficulties with academic classwork, personal and social problems, vocational goals, interpretation of test results, and others.

ACADEMIC ADVISING AND COUNSELING

At the present time, students will plan each semester's program with the assistance of one of the counselors. However, each student should become familiar with his or her curriculum requirements. Students planning to transfer should review the graduation requirements not only of Montcalm Community College, but also of their intended transfer institution.

Students are encouraged to discuss their program and vocational/educational goals with members of the college faculty.

HOUSING

Although Montcalm Community College has been established primarily as a commuting college, many non-resident students have found suitable housing in near-by communities. A growing awareness of area residents to the housing needs of college students has led to the availability of apartments, rooms and cottages for rental purposes. Several private investors are apparently planning near-by housing units. The College, however, assumes no responsibility for the securing, supervision or administration of off-campus housing. Should a student desire to take up residence nearer the campus, necessary arrangements should be made by the individual with local residents.

FOOD SERVICES

The informal study area located on the lower level of the Learning Resources Center will serve initially as the food service facility for the campus. A number of vending machines and a snack bar will be available.

HEALTH SERVICE

The Health Service Center is located on the lower level of the Learning Resources Center. This facility is equipped with typical first aid materials and two cots for use in case of sickness or accident. This facility is under the supervision of the Dean of Students, who will also make arrangements for care of more serious health emergencies in a nearby medical center.

The College Health Service will appraise the entrance physical examination reports of new students and will note irregularities or problems requiring special attention.

BOOKSTORE

The College Bookstore is located on the lower level of the Learning Resources Center. Its primary purpose is to provide for the purchase—at the lowest price possible—of textbooks, special equipment, and other materials required for the successful pursuit of course work. Other supplementary reading materials and sundry articles will be made available as the demand develops. Bookstore hours will be arranged for the greatest convenience of the students and faculty and will be posted in a prominent place.

STUDY AREAS

In addition to the Informal Study Area located in the lower level of the Learning Resources Center, a considerable amount of formal study opportunity is available in the College Library. Individual carrels, tables and chairs, and informal seating are all available in the facility.

Study in the Library is expected to be conducted in a manner which will provide little interference with the work of other students using the facility.

PLACEMENT

The Dean of Students will receive and post offers for summer and part-time employment. Students desiring such employment should also register their names with the Dean of Students for quick reference when job offers are discussed with prospective employers.

Placement for vocational/technical graduates will be carried on chiefly between instructors and employers. The Dean of Students will maintain a record of local industrial and business employment personnel to contact for job placement in the Montcalm area.

Educational placement, within the Montcalm Community College programs of instruction as well as other collegiate institutions, is the responsibility of the Counseling Office. A library of college catalogs will be maintained in this office for assistance in educational placement. Assistance will be offered in applying for admission, securing financial aid, etc.

FINANCIAL AID AT MONTCALM COMMUNITY COLLEGE

By its very nature, the community college is one of the least expensive institutions of higher education in existence. A basic reason for this is that most of these institutions are for commuting students thereby eliminating the necessity of board and room charges. Other advantages also contribute to the low cost for individuals.

However, it is recognized that personal and family financial circumstances may cause even the minimal costs of community college attendance to be a barrier to higher education. It is for this reason that Montcalm Community College is developing a system of financial aids to assist the student in eliminating that barrier.

Loans and Work-Study Opportunities. Montcalm Community College has been approved by the Michigan Higher Education Assistance Authority for participation in the financial aids program sponsored by the Michigan State Legislature. Through this program, loans to individuals for higher education purposes are guaranteed by the Legislature which pays the interest charges during the time of college attendance. Several local Montcalm area banks are participants in the Authority, and application for MHEAA should be made directly with them. High school counselors and the Montcalm Community College Admissions Office have information regarding member banks.

In addition, the College is under the loan provisions of the National Defense Education Act (NDEA). A special feature of these loans is the forgiveness of a portion of the debt for those preparing to enter certain professions. Information regarding this program is available at Montcalm Community College.

Under the College Work-Study program of the federal Economic Opportunity Act, a number of on-campus part-time jobs will be available to students carrying a full study program. Information on these jobs is available from the Dean of Student's office.

In addition, full-time students will be eligible for up to fifteen hours per week of on-campus employment sponsored by Montcalm Community College. Students employed in this program will serve in the science laboratories, library, food service area, as clerical assistants and in other similar functions. In providing these positions, need will be a primary factor, but past employment experiences and basic ability to perform the work will also be considered.

Educational Opportunity Grants. This Federal program of assistance is intended for students of great financial need. Grants range from \$200 and up per academic year depending on demonstrated financial need. They must be matched with assistance of an equal amount in a package which may include other grants, loans, or campus employment. These grants may be renewed each year of the undergraduate program if the individual continues to qualify.

Scholarships and Grants. The Michigan Higher Education Assistance Authority also provides for a program of scholarships for which Montcalm Community College has been declared a participating institution. Students taking the qualifying examination may designate this College as the institution at which their scholarships will be used.

The awarding of an MHEAA grant depends upon performance on a competitive examination and the amount granted is determined by need.

A number of local scholarships are offered each college year. Some of these financial aids include:

- Greenville Junior Chamber of Commerce
- Greenville Lions Club
- Marsh Ford Sales of Greenville
- Farm Bureau
- Stan and Marion Kemp Scholarships
- Greenville Southside Child Study Club
- United Memorial Hospital Guild
- Sheridan Lions Club
- Montcalm Community College Board of Trustees

The Board of Trustees provides two full tuition scholarships to graduating high school students who have demonstrated outstanding academic and citizenship ability during their high school years and who have enrolled at Montcalm Community College. The students must be residents of the Montcalm Area Intermediate School District.

Many new local scholarships are made available each year.

STUDENT ACTIVITIES

The objectives of the Student Activities Program at Montcalm Community College are as follows:

1. Student activities exist for the purpose of enhancing and making more effective the instructional program of the college.
2. Student activities provide for the total growth of the student and includes the social, personal, physical and academic phases of the student's life.
3. Student activities complement the academic and vocational aspects of the student's life by providing meaningful experiences outside of the classroom.
4. Student activities provide for participation by the greatest number of students possible in some form of meaningful activity. This requires as broad a program as possible.
5. The student activity program should provide for the needs of students.

The Dean of Students works with student groups to provide for the organization of appropriate activities as the need for them arises. During the last two college years the following major activities were initiated:

Student Government. Montcalm Community College firmly believes that members of the student body can take a constructive, creative part in the establishment and enforcement of regulations affecting students at the College. Student government provides an organized means of open communication between the student body and the faculty and administration of the College.

Student Newspaper. The official student newspaper, *The Post*, provides an opportunity for the students of Montcalm College to communicate with one another as well as with other colleges, the public, the faculty and the administration while practicing the skills necessary in quality and responsible journalism.

Intramurals and Athletics. M.C.C. offers a full intramural program, including such activities as touch football, volleyball, basketball, softball and bowling. Other activities for men and women will be added to this program as the need and interest of students is indicated.

The Centurions of M.C.C. participated in varsity basketball, baseball, cross country and golf during the 1969-70 school year. Additional varsity teams will be initiated as sufficient interest is indicated.

Choir and Pep Band. These organizations were organized during the 1967-68 school year and have proved to be an integral part of student life.

Student Organizations. Many student organizations have been started in the short history of Montcalm Community College. Some of these organizations include: Business Leaders Club, Cheerleaders, Ski Club, Freedom Forum, Spanish Club and Drama Club. Several other special interest clubs and organizations are being planned.

ACADEMIC INFORMATION

Certain academic policies, regulations, and practices prevail at Montcalm Community College. These provide the basic framework within which a student's achievement and academic status are expressed. Their appearance here is to be interpreted as official policy of the college enabling the community of learning to function.

SEMESTER SYSTEM

Montcalm Community College operates on the basis of two semesters per year. The first semester begins in the late Summer in order to close by the Christmas holidays. The second semester opens in early January and ends about mid-May. Six and eight-week summer school sessions are also offered by the college.

CLASSIFICATION OF STUDENTS

Freshman—A student who has completed less than twenty-five semester hours of study.

Sophomore—A student who has successfully completed at least twenty-five semester hours of study but who has not yet qualified for an associate degree or a certificate.

Full-time—By legal definition, one who carries twelve or more semester hours of study. However, the student must bear in mind the 60-credit requirement for an associate degree and his probable desire to graduate after four semesters of study.

Part-time—A student carrying less than twelve semester hours.

GRADUATION REQUIREMENTS

Students working toward a certificate or diploma in a vocational/technical field must complete all established requirements for the award, including a 2.0 grade point average.

Those pursuing an associate degree must complete not only the required 60 semester credits but also the proper sequence of courses as herein presented, with an overall 2.0 grade point average. When physical education is offered, 62 credits will be required for graduation.

Transfer students who have earned credits at other institutions of higher education may request that these credits be applied toward an Associate Degree at Montcalm Community College. However, 24 credits of the 60 presented for graduation must be earned at Montcalm Community College, and the student must be enrolled at this institution during the final semester before receiving his degree.

SELECTION OF COURSE OF STUDY

Selection of a student's program of study takes place at the admission counseling interview prior to registration and/or the start of classes. During the counseling interview the student will be advised of specific course requirements necessary for completion of his program.

Exceptions to specific program requirements will be made only by the Dean of the appropriate division of the College or the Dean of Students and/or his designated representative. Exceptions must be authorized in writing.

CLASS ATTENDANCE

It is the policy of Montcalm Community College that all students shall attend all classes in the courses for which they are registered. Absence from classes shall, in no way, relieve the student from completion of assigned work. The necessity for regular attendance at all class meetings should be obvious to instructors and students alike. Excessive absenteeism may result in dismissal from a class or from the College.

The matter of regular class attendance shall be resolved between each instructor and his students. Some absences—for reasons of illness, field trips, and other like occurrences—is unavoidable, and advance arrangements should be made for completion of work whenever possible.

FINAL EXAMINATIONS

Final examinations are an integral part of the academic requirements at Montcalm Community College. The examinations will be of greater time length than most individual class periods and will be administered on a college-wide schedule during the final week of any semester.

There will be no college-sponsored interference with final examinations. Absence from an examination will be considered unexcused except in extreme situations. Make-ups of missed final examinations in such cases shall be arranged between the student and instructor.

VETERANS

Montcalm Community College has been approved for study under the "G. I. Bill" by the Veterans Administration.

Applications for entitlement to G. I. Bill benefits and information regarding study for ex-servicemen and women at Montcalm Community College are available at the Admissions Office.

GRADING SYSTEM

Academic achievement will be appraised and recorded by means of the following system of letter grades:

Grade	Definition	Honor Point Value
A	Excellent performance	4
B	Good, often above average performance	3
C	Average performance	2
D	Passing performance, but often poor or below average	1
E	Failure	0
W	Withdrew while passing	0
F	Withdrew while failing	0

I	Incomplete, with permission to complete requirements
V	Audit status only*
(N)	Preceding a grade indicates credit is not recommended for transfer - terminal credit only.

*Audit applies to the situation where a person pays tuition for a course but is not necessarily required to complete assignments, outside readings or tests and examinations. Audit credit will not be used to fulfill requirements for the G.I. Bill or the Selective Service system.

Assigning of grades is the complete and irrevocable responsibility of each instructor.

INCOMPLETE GRADES

The I grade will be employed sparingly. It will be awarded in the case where a student has found it impossible to complete required course work by the close of a semester for reasons beyond his control. It is an indication by the instructor of his belief that the student will receive a passing grade when the requirements have been fulfilled.

The I should be made up as follows:

1. If the course is part of a sequence in which successful completion of the present semester is requisite to pursuing the next, the I grade must be removed prior to the beginning of the ensuing semester unless the student is given permission by the instructor to do otherwise.
2. If completion of the course in which an I has been awarded is not requisite for continuation of a sequence, the I must be removed by the middle of the ensuing semester.
3. The I grade is computed as an E grade in determining grade average.

THE GRADE POINT AVERAGE

The grade point average is valuable both to the student and the College. It allows the student to assess his total academic performance as of any particular point in his study at Montcalm Community College. On the other hand, the College is able to evaluate an individual's performance against institutional grade requirements, admission standards of transfer colleges, eligibility requirements for interscholastic activities, and for other similar essential purposes.

Computation of the Grade Point Average is as follows:

Course	Grade	Honor Pts.	Credit Hrs.	Grade Point
X	A	4	3	12
XX	B	3	4	12
Y	B	3	4	12
YY	C	2	1	2
Z	C	2	4	8
Totals			16	46

To find the Grade Point Average:
 $46 \div 16 = 2.875$ (GPA)

The cumulative grade point average for all work completed is the total number of grade points earned divided by the total of all semester credit hours for which a grade has been assigned (except W). This calculation must include semester credit hours for which the grade earned was E, even though no honor points are awarded for that grade.

When a student repeats a course for which an E or F grade was earned on the first attempt, the semester credit hours for both times will be included in the calculation of the Grade Point Average. When a student repeats a course for which he first received an E or F grade, both the original grade and the repeated course grade are entered upon the student's permanent record.

Only those semester credit hours for which passing grades were received will be counted toward fulfillment of graduation requirements.

COURSE REPETITION

A student must repeat any course for which he has received a final grade of E or F if it is a part of the required sequence for graduation or completion of a certificate.

A student may repeat a course for which a final grade of D has been awarded if he desires to improve his Grade Point Average. However, semester credits for this course will be accepted only once towards graduation or completion, though the credits and honor points for both enrollments in the course will be used in the calculation of the cumulative Grade Point Average.

HONORS

Each semester a Dean's Honor List will be issued including the names of all students whose semester Grade Point Average exceeds 3.50. The President's Honor List will include those whose semester GPA is 4.00.

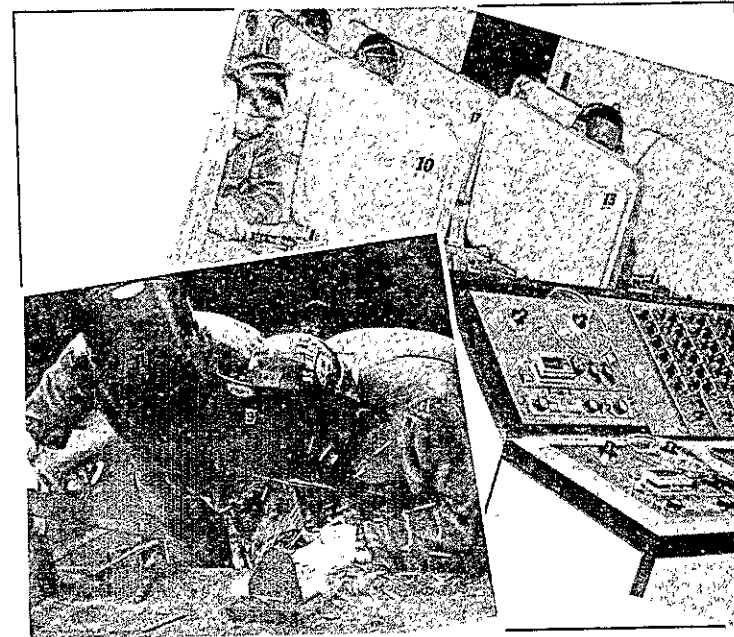
Distinguished Dean's Scholars will include those who have completed at least two semesters of study with a cumulative GPA exceeding 3.50. The President's Scholars will be those who have completed two or more semesters with a cumulative GPA of 4.00.

ACADEMIC PROBATION AND DISMISSAL

For Students Pursuing an Associate Degree, College Transfer or Certificate. All students who hope to earn an Associate Degree or Certificate in either the academic or vocational/technical studies, or who hope to transfer to a four-year institution, will be subject to the following grade point regulations:

1. Students who achieve less than a 1.00 GPA (D average) during their first semester at Montcalm Community College will be dismissed for academic reasons. Students dismissed may refer to item 5 below.

2. Failure to achieve at least a 1.70 Grade Point Average at the end of the first semester will result in the student's being placed on academic probation.
3. A student will continue on probation until his cumulative Grade Point Average has been raised to 2.0 or above.
4. While on probation, a student must achieve a 2.0 Grade Point Average each semester. Failure to do so will result in academic dismissal.
5. A student subject to academic dismissal may follow one of three courses of action:
 - a. He may accept the dismissal.
 - b. He may request assistance in the Counseling Center, primarily to explore the advisability of a change of curriculum. If such a change is decided upon, the counselor will make his recommendation in writing concerning the student's status. Written approval for continuing in a program will be sought from the Dean of the Division into which the student wishes to enter.
 - c. A student dismissed from Montcalm Community College for academic reasons may appeal before the Dean of Students for special consideration.
6. Students dismissed for academic reasons, either from Montcalm Community College or any other college, may be required to wait for a full semester before re-entering the College.
7. Students transferring into Montcalm Community College shall be subject to all regulations stated above from the beginning of their enrollment.



FINANCIAL INFORMATION

TUITION

Resident of Montcalm Community College District: \$9.50 per credit hour.

Michigan Non-Resident Students: \$15.00 per credit hour.

Out-of-State Students: \$23.00 per credit hour.

PLEASE NOTE: The Trustees of Montcalm Community College sincerely desire to keep the cost of attending this institution as low as possible for the student. However, tuition charges are a direct reflection of the present economy, and the costs of operating a college are—like the economy itself—changing rather rapidly.

At the time of publication of this Catalog, no tuition change has been necessary, nor is one contemplated for the balance of the 1969-70 academic year. However, if a tuition change becomes necessary for the following academic year, all present students and new 1970-71 applicants will be notified immediately by letter.

Residents and non-residents and out-of-state students are defined as follows:

Resident Students

1. Students now living with their parents or legal guardian, providing the parents or legal guardian reside within the boundaries of Montcalm Community College District.
2. Students under 21 years of age whose parents are not living or for whom there is no legal guardian, providing they reside within the boundaries of Montcalm Community College District.
3. Single students under 21 years of age who have resided within the boundaries of Montcalm Community College District for at least six months immediately prior to the first day of classes.
4. Married students under 21 years of age who have resided within the boundaries of Montcalm Community College District for at least six months immediately prior to the first day of classes.

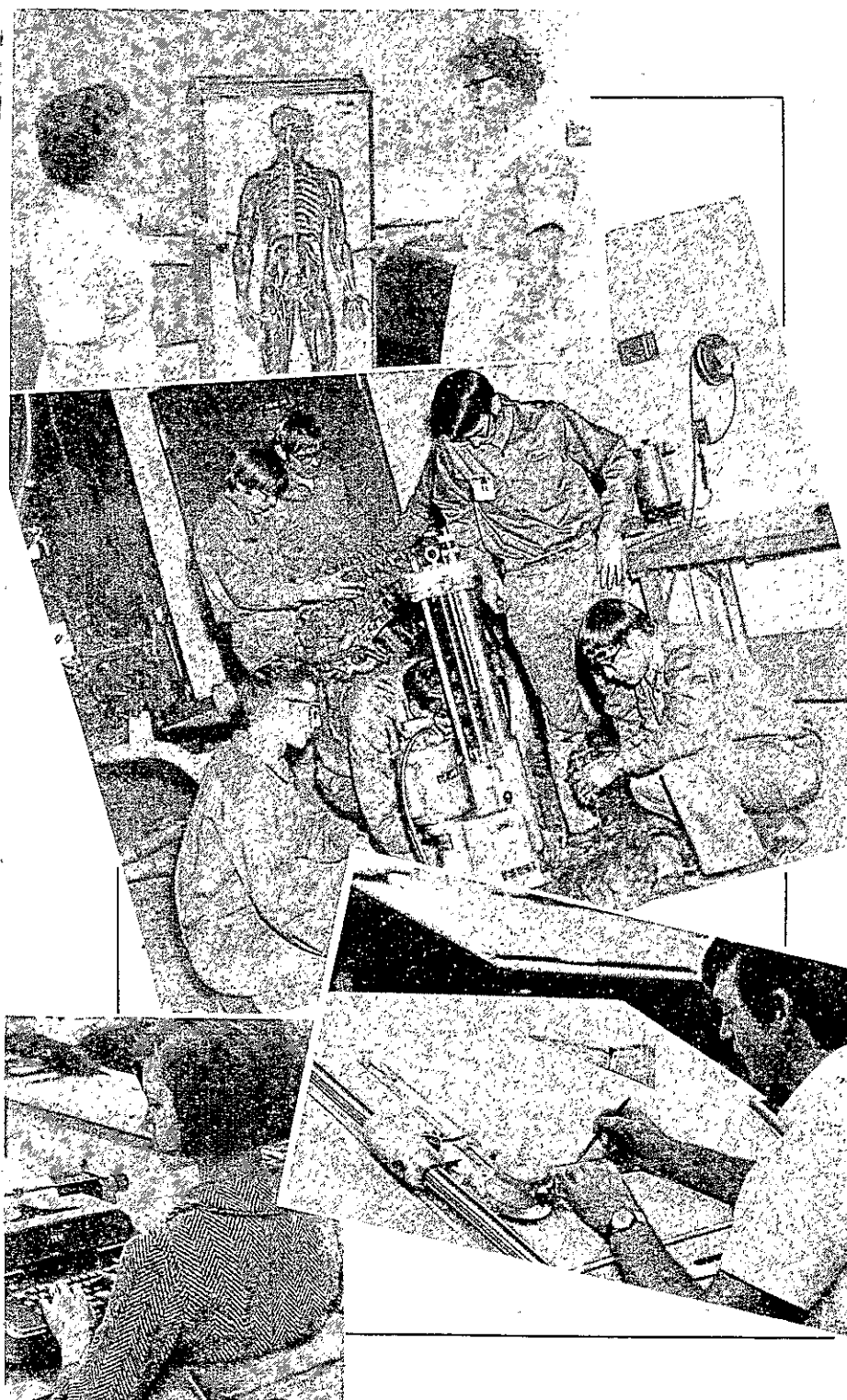
Non-Resident Students

1. Single students 21 years of age or over and married students who have not resided within the boundaries of Montcalm Community College District for at least six months prior to the first day of classes.
2. Students under 21 years of age whose parents or legal guardians do not reside within the boundaries of Montcalm Community College District.

Michigan Residence Defined

In determining the Michigan residence status the college will apply the following rules:

1. The residence of a student who is a minor follows that of his parents or legal guardians, except that a minor student who comes to this institution from another state or country cannot be



registered as a resident of this state on the basis of having a resident of this state as guardian except on permission of the board of the institution in each individual case. Six months after the parents of a minor leave the state, the minor becomes a non-resident student.

2. A person who is at least 21 years of age at the time of registration in the institution and who has resided in this state six months next preceding the date of registration without being registered at a state-supported college or university during that period is deemed a resident of this state for the purpose of such registration.
3. The residence of a wife follows that of her husband, except that a woman student who is a resident under paragraphs 1 or 2 may continue to register as a resident of this state although subsequently marrying a non-resident student or other non-resident.
4. No person is deemed to have gained a residence in this state while a student at any institution in this state.
5. A person in the service of the United States, and his wife or minor children, who have met the six-month residence requirement in paragraph 2, may register as residents of this state.
6. An alien lawfully admitted for permanent residence in the United States and who has obtained his permanent visa, and his wife or minor children, who have met the other requirements herein for residence, may register as residents of this state.
7. A full-time member of the "teaching staff", and a member of the teaching staff whose appointments require at least three contact hours of teaching each week in regularly assigned formal classes, and their dependents, may register as residents of this state.
8. Discretion to adjust individual cases within the spirit of these regulations is vested in an officer appointed by the Board of this institution.

PAYMENT OF TUITION AND FEES

Tuition and fees are due and payable in full on the day of registration.

Students unable to pay the tuition and fees should consult with the Coordinator, Student Financial Aids no less than three weeks prior to the enrollment date concerning a loan.

No other credit arrangements can be made through the college.

FEES

Application-Registration Fee \$5.00
This fee is not refundable and must be paid prior to registration each semester. Registration materials will not be issued until this fee is paid. This fee applies only to the ensuing semester.

Matriculation Fee \$10.00
Payable once only at the time of initial registration at Montcalm Community College. Students taking less than eight credit hours of work during their initial semester need not pay the Matriculation Fee. However, this must be paid by the time twelve credits of study have been completed.

Student Activity Fee (per semester) \$10.00
Payable by students carrying seven credits or more during a given semester, but not applicable to summer term.

Laboratory Fees

13 hours or more	\$10.00
10-12 hours	7.50
7-9 hours	5.00
4-6 hours	2.50
0-3 hours	1.00

REFUND POLICY

Tuition refunds will be granted when the request is approved by the Dean of Students. Withdrawal without the permission of the Dean is not subject to refund. No refunds will be made to students dropped for disciplinary reasons. No student may apply for a withdrawal refund while disciplinary action is pending.

TUITION REFUNDS

Withdrawals on or before Friday of—

First week of classes	100%
Second week of classes	75%
Third week of classes	50%
After third week of classes	none

Fees are not refundable except in cases where the class has been cancelled.

Refunds will be made only by check as follows:

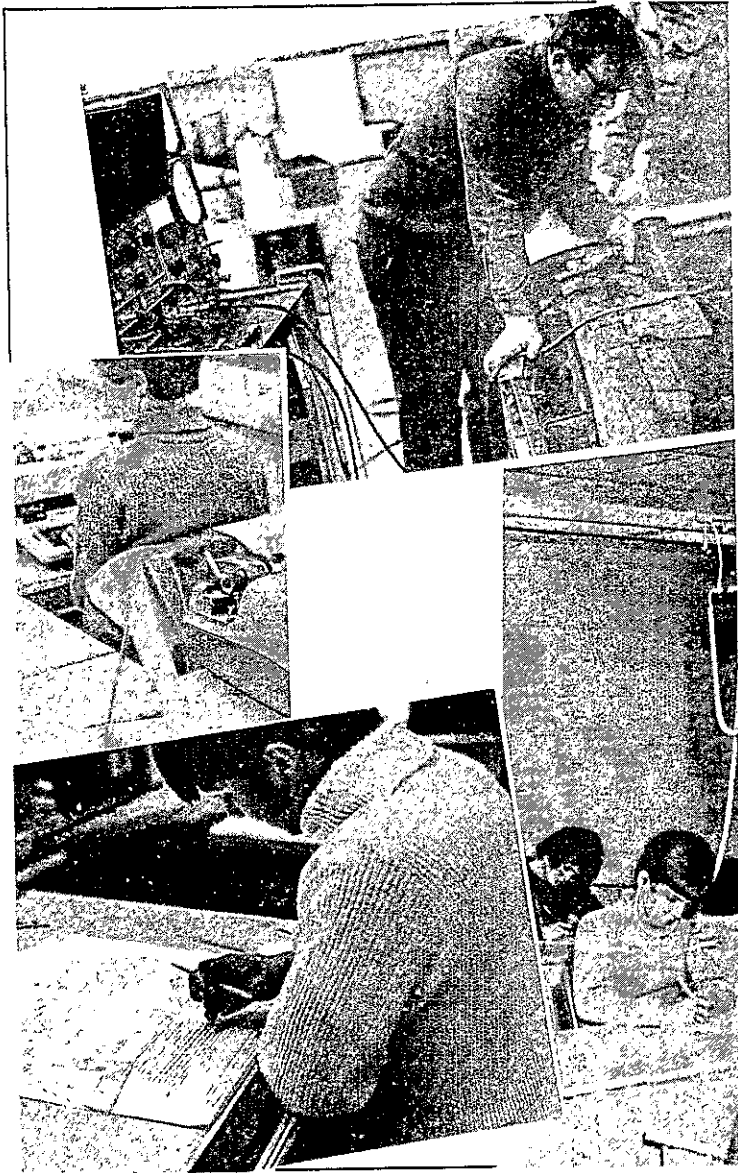
- (a) Refunds for students over 21 years of age will be made payable to the student and mailed to the address given by him except in paragraph (b) below.
- (b) Students under special scholarship and/or loan programs administered by Montcalm Community College will receive no refund; the refund will be returned to the donor. Those scholarships given directly to the student and not administered by the college will be refunded as in paragraph (a) above.

Tuition charges for college credit apprenticeship programs shall be made in accordance with the residency requirements for all other students. The schedule of laboratory fees shall be applied. The student activity fee charge shall not be in effect for apprenticeship students nor for any shared time high school students who may be enrolled.

Non-credit course fees shall be established and assessed.

REVIEWING OR AUDITING COURSES

Students may request permission to enroll in courses in which they do not desire credit. They will be charged the same tuition as regularly enrolled students.



PROGRAMS OF STUDY

The programs of study offered at Montcalm Community College are described below under the general headings: Academic, Vocational/Technical and Basic Studies. These three headings are used here because it is possible for a student to earn an Associate Degree within each grouping. The prospective student will note that this section of the catalog contains only groups of courses leading to certificates or degrees. A detailed description of each course follows in the next section of the Catalog.

MCC, as a Recognized Candidate, is currently involved in a self-study in preparation for qualifying for full North Central Accreditation. This self-study may result in some changes in degree requirements and courses offered. Supplementary announcements will be issued if changes do occur.

PLEASE NOTE: All courses listed in the three Programs of Study are identified by a departmental code (examples: LA, DD, etc.) and a course number. Course descriptions appear in the next section of this catalog with departmental codes as follows:

Academic

Humanities	HU
Language Arts	LA
Mathematics	MA
Natural Science	NS
Physical Education	PE
Social Science	SS

Vocational/Technical

Apprenticeship Training	AP
Automotive Mechanics	AM
Business Education	BE
Drafting and Design Technology	DD
Industrial Technology	IT
Practical Nursing	PN
Residential Construction	RC
Welding Practices	WE
Vocational Education	VE

ACADEMIC

The academic program at Montcalm Community College is centered around a core of General Education which will be required of all students electing to study in the Academic Division. Deviations from the General Education core will depend upon the long range educational plans of students and also upon their demonstration of unusually high proficiency in certain areas of study.

Courses in the General Education program are inter-disciplinary in nature and are designed to provide for the student a broad base of understanding in the areas of Communication, Natural Science, Social Science, and Humanities. It is the policy of Montcalm Community College that all graduates from the academic program shall have achieved proficiency in these four areas.

It is the goal of Montcalm Community College to equip the academic student to conduct himself as an intelligent citizen in a complex world. Equally important, it is expected that the General Education curriculum will create a desire for graduates to continue learning even though their formal education ceases with graduation from Montcalm Community College. Also, it is anticipated that the General Education program will provide an equally useful preparation for advanced study at transfer institutions.

GENERAL EDUCATION PROGRAM

The following courses are required for all students pursuing the Degree of Associate in Arts and Sciences:

Course Title	Course No.	Semesters	Credits
Man's Communication	LA 100-101	2	6
Man's Physical World (Freshman Year)	NS 100-101	2	8
Man's Social World	SS 100-101	2	8
Man's Creative World	HU 200-201	2	8
Seminars—Today's Critical Issues	SS 200-201	2	4
Total General Education Credits			34

ELECTIVE AND OPTIONAL COURSES

A candidate for the Associate of Arts and Sciences Degree who successfully completes the above series of General Education courses must complete the requirements by electing and completing an additional 26 credit hours. Under a recent change in degree regulations, any course regularly taught at the collegiate level at Montcalm Community College may be included as elective credit, whether it is taught under the Academic, Vocational/Technical or Continuing Education Division.

PRE-PROFESSIONAL COURSES

Students presenting evidence of high proficiency in one or more of the academic areas covered under the General Education program may substitute more traditional courses designed to prepare them for professional competence in those fields. Determination of the eligibility of a student for participation in the pre-professional courses will be based upon such evidence as centile rankings on the American College Test and high school grades. It is anticipated that the permission for such study will be granted during the admissions counseling interview held before the student's initial semester at Montcalm Community College, but outstanding achievement in a General Education course may also lead to pre-professional study in the Sophomore year.

GENERAL EDUCATION FOR

VOCATIONAL/TECHNICAL STUDENTS

All vocational/technical students desiring to complete the requirements for an Applied Arts and Sciences Degree must complete a year of study in Man's Communication, Man's Social World or two semesters of another General Education required sequence (see page 29).

VOCATIONAL/TECHNICAL

Montcalm Community College has come into being during a dynamic era marked by exploration, research, and the rapid discovery of new knowledge. The information itself as well as the techniques for finding it have both been applied to increase the power of our society to produce and do work. These methods have become so refined and complicated that they have developed into a vast system of learnings, much of which must be completed in a classroom rather than on the job.

This College has a major responsibility in occupational education, both in preparing future workers and re-educating those already employed who must meet the challenge of new techniques or completely new jobs. Fully recognizing the need of young men and women to develop these skills, Montcalm Community College began its first full-time teaching during 1966-67 in several vocational/technical fields. Each program of study organized was backed by an advisory committee made up of those actually performing the work or serving in a direct supervisory capacity over those workers. Each committee made suggestions as to what should be learned and assisted in discovering the best methods for teaching it, and each will assume a continuing role in evaluating the success of the program. Every program is designed to meet the skilled employment needs of both Montcalm County and the larger industrial and business society.

Definitions:

Occupational education programs at Montcalm Community College are organized under two general headings—Vocational and Technical. These terms are defined as follows:

Vocational. Courses which place their major emphasis upon skilled job performance with only sufficient theory to improve that performance. Designed to prepare the student for work as soon as possible, the vocational courses are often less than two years in length and require General Education courses which apply directly to the vocational skills being taught.

Technical. Courses which equip the student to work closely with professional workers—architects, engineers, physicians, etc. These programs of study emphasize the theory of the work as well as the job skill, stress ideas along with performance. Technical programs are usually of at least two years' duration and include a General Education requirement if they lead to an Associate Degree. There is also other academic study which is directly related to job performance.

Students should bear in mind that the programs of study listed below are designed to prepare them for employment, and courses have been selected to accomplish that task. No attention has been given to whether any program or course might be transferable to a four-year institution (with the exception of the General Education). Senior colleges and universities will be furnished with complete details, but the matter of transfer will be between the individual student and the receiving institution.

Brochures are available from the Office of the Dean of Vocational/Technical Studies or the Admissions Office which describe these programs of study in greater detail.

APPRENTICE TRAINING

Instructional Staff 1969-70

Heinz Radtke	Coordinator
Sydney Swanton	Head Instructor, MA Western Michigan University
Gordon Burns	Vocational Certificate
Richard Diehl	BA Michigan State University
John Dargitz	BS Ferris State College
Allen Delamater	Assoc. Degree MCC Vocational Certificate
Eric Guenther	Vocational Certificate
Darwin Jensen	Vocational Certificate
Roy Merrett	Vocational Certificate
Ray Povolo	MA Michigan State University
John Twork	BS Michigan State University

Instructors in this program are mainly full-time employees at other institutions or in industry.

The purpose of an Apprenticeship Program is to train young men in certain branches of skilled trades, such as:

TOOL AND DIE MAKING
MACHINE REPAIR
JIG AND FIXTURE BUILDING
PLUMBING
ELECTRICAL MAINTENANCE
OTHERS

The usual entry age for the apprentice trainees is between 18 and 20 years of age, inclusive. Normally the training runs over a four-year period.

The minimum requirements are a "C" average in:

Two semesters of Algebra
Two semesters of Geometry
Two semesters of Mechanical Drawing
Two semesters of Shop Courses

Prior educational experience will be evaluated by a series of comprehensive competency examinations for all areas of related instruction.

TYPICAL RELATED INSTRUCTION SCHEDULE FOR TOOL AND DIE APPRENTICES MACHINE REPAIR APPRENTICES

Courses	Required Hours
Machine Tool Operations Theory AP/100	42
Blueprint Reading AP/105	72
Shop Mathematics AP/110	138
Strength of Materials and Hydraulics AP/115	42
Shop Drawing AP/120	36
Welding Theory and Practices AP/125	48
Metallurgy and Heat Treatment AP/130	36
Tool and Die Design AP/135, or	168
Tool and Die Design-Plastic Mold Design AP/140	168
Use of Machinists Hand Book AP/145	42
Social Economics AP/150	30
Safety and First Aid AP/155	18
Total	672 Hours

These courses are conducted by the Community College, usually on Saturday morning. The trainee usually takes two courses—two hours each—running 21 weeks per semester.

First Semester: September-February
Second Semester: February-June

The apprenticeship agreement is instituted by the employer in cooperation with the U.S. Bureau of Apprenticeship and Training. The work schedules and the required related instruction courses are worked out by the employer and a representative of the Bureau to meet the requirements of the trade. The college acts only as the coordinator and provides the related instruction.

AUTOMOTIVE MECHANICS

Instructional Staff:
Richard Fox
Lawrence LeGree
Gordon Peltier

BS Ferris State College
BS Ferris State College
Vocational Certificate

This curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair or adjust automotive vehicles. Manual skills are developed in practical shop work. Thorough understanding of the operating principles involved in the modern automobile comes in class assignments, discussion, demonstration, field trips, and shop practice.

FIRST SEMESTER **SEMESTER CREDITS**

Vocational Communication Skills VE 100/LA 100	3
Drawing and Blueprint Reading AM 110	3
Automotive Math and Shop Reports AM 120	2
Automotive Mechanics I (Theory) AM 130	3
Automotive Laboratory I AM 130	6
Automotive Engines	
Ignition Fundamentals	

SECOND SEMESTER

Vocational Communication Skills II VE 101/LA 101	3
Welding Fundamentals & Practice WE 100	3
Automotive Mechanics II AM 131	3
Automotive Laboratory II AM 131	6
Ignition - Diagnostic	
Carburetion	
Transmission	
Auto Maintenance	

SUMMER SCHEDULE

Work Experience BE 291 or equal

THIRD SEMESTER

Vocational Psychology VE 135	3
Man's Social World or elective	3 or 4
Automotive Mechanics III AM 230	3
Automotive Laboratory III AM 230	6
Suspension	
Steering	
Alignment and Balance	
Brake Systems	

FOURTH SEMESTER

Man's Social World or elective	3 or 4
Technical Writing and Speaking VE 102	2
Automotive Mechanics IV AM 231	3
Automotive Laboratory IV AM 231	8
Automotive Tune-up	
Diagnosing Equipment	
Emergency Servicing	
Trouble Shooting	
Air Conditioning	

A Certificate or an Associate Degree will be awarded upon successful completion of the General Academic requirements.

BUSINESS EDUCATION

Students enrolling in Business Education may elect to study either Clerical Office Practice or Executive Secretary.

Clerical Office Practice**Instructional Staff:**

Helen Brehm	MA Michigan State University
Herb Hood	MBA Central Michigan University
Peter Moutsatson	MA Central Michigan University
Kathleen O'Connell	BA Michigan State University

The demand for skilled and better qualified office personnel is rapidly expanding. The purpose of the Clerical Office Practice curriculum is to prepare people of all ages for the world of work in the office occupations. It does not include training in shorthand, but does give extensive practice in voice transcription and in the use of office machines.

FIRST SEMESTER **SEMESTER CREDITS**

Vocational Communications VE 100/LA 100	3
Beginning Typing BE 100	4
Professional Filing BE 110	2
Business Math BE 120	3
Man's Social World SS 100 or elective	3 or 4

SECOND SEMESTER

Vocational Communications VE 101/LA 101	3
Intermediate Typing BE 101	4
Business Correspondence BE 130	3
General Psychology SS 220	3
Man's Social World SS 101 or elective	3 or 4

THIRD SEMESTER

Typing and Office Practice BE 230	3
Accounting I BE 115	3
Voice Transcription BE 220	4
Business Law BE 200	3
Co-op or elective BE 290	3

FOURTH SEMESTER

Business Machines BE 240	4
Accounting II BE 116	3
Personnel Relations BE 250	3
Office Management BE 260	2
Co-op or elective BE 291	3

A certificate or an Associate Degree will be awarded upon successful completion of the above program.

Executive Secretary**Instructional Staff:**

Helen Brehm	MA Michigan State University
Herb Hood	MBA Central Michigan University
Peter Moutsatson	MA Central Michigan University
Kathleen O'Connell	BA Michigan State University

The graduate of the Executive Secretarial Science curriculum will have (1) a knowledge of business technology; (2) a skill in dictation and accurate transcription of business letters and reports.

The graduate is prepared to be employed as a stenographer or a secretary. Stenographers are primarily responsible for taking dictation and transcribing letters, memoranda, or reports. The secretary, in addition to taking dictation and transcribing, is given the responsibility for meeting office callers, screening telephone calls, and being an assistant to an executive. An Associate Degree will be awarded upon completion of this program.

FIRST SEMESTER	SEMESTER CREDITS
Man's Communication LA 100	3
Intermediate Typing BE 101	4
Intermediate Shorthand BE 104	4
Business Math BE 120	3
Man's Social World SS 100 or elective	4
SECOND SEMESTER	
Man's Communication LA 101	3
Advanced Typing BE 202	4
Advanced Shorthand BE 203	4
General Psychology SS 220	3
Man's Social World SS 101	4
THIRD SEMESTER	
Typing and Office Practice BE 230	3
Accounting I BE 115	3
Dictation and Transcription BE 204	4
Business Law BE 200	3
Co-op BE 290 or elective	3
FOURTH SEMESTER	
Business Machines BE 240	4
Accounting II BE 116	3
Personnel Relations BE 250	3
Office Management BE 260	2
Co-op BE 291 or elective	3

DRAFTING AND DESIGN TECHNOLOGY

Students enrolling may elect to study either Architectural or Technical Drafting or Residential Construction.

Architectural Drafting

Instructional Staff:

Frederick Hop MA Colorado State University

Architectural drafting technicians are trained to think, read and speak about the problems and ideas of the client, architect, designer, engineer, fabricator and contractor, and translate these ideas into working drawings which will give the builder a clear and concise concept of the project.

FIRST SEMESTER	SEMESTER CREDITS
Architectural Drawing DD 130 (I)	7
Construction Methods & Materials RC 110	2
Technical Math I VE 112	3
Vocational Communications VE 100/LA 100	3
SECOND SEMESTER	
Residential Drafting DD 140 (II)	7
Construction Methods & Materials RC 111	2
Architectural Math DD 150	3
Vocational Communications VE 101/LA 101	3
THIRD SEMESTER	
Advanced Architectural Drafting DD 200 (III)	7
Business Machines BE 240	4
Man's Social World SS 100 or elective	3 or 4
Co-op BE 290 or elective	3
FOURTH SEMESTER	
Architectural Drafting DD 201 (IV)	7
Man's Social World SS 101 or elective	3 or 4
Co-op BE 291 or elective	3
Special Problems DD 202 (prerequisite: DD 140)	5

A Certificate or an Associate Degree will be awarded upon successful completion of the General Academic requirements.

Technical Drafting (Mechanical)

Instructional Staff:

John Dargitz BS Ferris State College

Technical drafting technicians perform many aspects of the design field such as the developing of the design of a section subassembly or major component. They are also concerned with the preparation of drawings for design proposals, for experimental models, and items for production use.

FIRST SEMESTER	SEMESTER CREDITS
Technical Drafting I DD 110	7
Machine Shop Practices DD 120	2
Technical Math I VE 112	3
Vocational Communications I VE 100/LA 100	3
SECOND SEMESTER	
Technical Drafting II DD 111	7
Welding Fundamentals WE 100	2
Technical Math II VE 113	3
Vocational Communications II VE 101/LA 101	3

THIRD SEMESTER

Jig & Fixture Layout and Design DD 210	7
Metallurgy IT 150	3
Technical Math III VE 114	3
Man's Social World SS 100 or elective	3 or 4

FOURTH SEMESTER

Die Layout and Design DD 240	7
Production Problems IT 260	3
Hydraulics & Fluid Mechanics IT 253	3
Man's Social World SS 101 or elective	3 or 4

A Certificate or an Associate Degree will be awarded upon successful completion of the General Academic requirements.

Residential Construction**Instructional Staff:**

Frederick Hop MA Colorado State University

The demand for skilled construction workers and carpenters far exceeds the available supply. Many of the real skilled craftsmen in this occupation are approaching retirement age. The present apprentice program for training men has not been able to keep up with the demand. This program is designed to give the trainee a good background in Basic Architectural Drafting, knowledge about materials used in construction and actual work experience with the occupation.

FIRST SEMESTER	SEMESTER CREDITS
Architectural Drawing DD 130 (I)	7
Construction Methods & Materials RC 110	2
Technical Math I VE 112	3
Vocational Communications VE 100	3
SECOND SEMESTER	
Residential Drafting DD 140 (II)	7
Construction Methods & Materials RC 111	2
Architectural Math DD 150	3
Vocational Communications VE 101	3
THIRD SEMESTER	
Work Experience or Construction Lab RC 220	9
Business Law BE 200	3
Management BE 235	3
FOURTH SEMESTER	
Work Experience or Construction Lab II RC 221	9
Landscape Planning or elective RC 253	3
Surveying or elective RC 273	3

A Certificate will be awarded upon successful completion of this program.

INDUSTRIAL TECHNOLOGY**Instructional Staff:**

Allen Delamater Associate Arts Degree, Vocational Certificate
Montcalm Community College, 1969

This curriculum provides the basic background of laboratory and related theory courses to acquaint the student with the technical needs of industry. Students are given training in machine tool operations and physical and metallurgical testing equipment. Mechanical courses are accompanied by courses in technical mathematics, drafting, physics, electronics, hydraulics, production problems and materials of industry.

Manufacture, sale and operation of mechanical equipment, machines and machine tools is a large and diversified industry with excellent opportunities for those with the proper aptitude and ability. A thorough technical training course accompanied by a good background of industrial experience is a real stepping stone to advancement. This is a two-year program with an Associate Degree awarded upon successful completion.

FIRST SEMESTER	SEMESTER CREDITS
Machine Operations I IT 110	9
Blueprint Reading AP 105	3
Shop Math I VE 110	3
Man's Communication LA 100	3
SECOND SEMESTER	
Machine Operations II IT 111	9
Shop Drawing AP 120	3
Shop Math II VE 111	3
Welding Fundamentals WE 100	3
Man's Communication LA 101	3
THIRD SEMESTER	
Technical Math III VE 114	3
Physics VE 120	3
Metallurgy IT 150	3
Mechanics and Strength of Materials IT 230	3
Man's Social World SS 100 or elective	3 or 4
FOURTH SEMESTER	
Technical Mathematics IV (Algebra) VE 115	3
Electricity & Electronics IT 250	3
Production Problems IT 260	3
Hydraulics & Fluid Mech. IT 253	3
Man's Social World SS 101 or elective	3 or 4

MACHINE TOOL PRACTICES**Instructional Staff:**

Allen Delamater Associate Arts Degree, Vocational Certificate
Montcalm Community College, 1969

This curriculum was prepared to meet a definite need for training of machine operators and machinists. Many industries lack time and facilities for training enough operators or machinists for present or foreseeable future needs. Expanding industries and new industries under development express the need for skilled craftsmen who have the background of knowledge and skills necessary for entry and advancement with their company. A certificate will be awarded upon successful completion of this program.

FIRST SEMESTER	SEMESTER CREDITS
Machine Operations I IT 110	9
Blueprint Reading AP 105	3
Shop Math I VE 110	3
Vocational Psychology VE 135	3
Vocational Communication Skills I VE 100	3

SECOND SEMESTER	SEMESTER CREDITS
Machine Operations II IT 111	9
Shop Drawing AP 120	3
Shop Math II VE 111	3
Welding Fundamentals WE 100	3
Vocational Communication Skills II VE 101	3

PRACTICAL NURSING

Instructional Staff:

JoAnn Regis, Director	BS, Michigan State University, R.N.
Ruth Rose	R.N., Sparrow Hospital, Lansing
Lavonna Decker	BS, Central Michigan University, R.N., Sparrow Hospital, Lansing
Edna Dyer	R.N., St. Mary's Hospital, Saginaw

After completion of this forty-eight week program students are qualified to take the Michigan Board of Nursing Examinations to become licensed to practice. This program is conducted with the approval of the Michigan Board of Nursing.

Montcalm Community College is affiliated with three area hospitals. They are United Memorial Hospital in Greenville, Carson City Hospital in Carson City, and Kelsey Memorial Hospital in Lakeview. Each student will spend time at each hospital for specific clinical experience.

The student will also be exposed to public health nursing in cooperation with the Mid-Michigan District Health Department.

Requirements for Admission:

1. Men and women applicants must be 17 years old. The usual maximum age is 55. All applicants will be considered individually.
2. All applicants must be high school graduates, or the equivalent. Applicants without high school diplomas must pass the G.E.D. test, equivalent to the 12th grade level.

3. All applicants are required to be in good physical and mental health, within normal weight for height and age. Physical, dental and x-ray examinations are to be done by own physician and dentist.
4. All applicants must take P.A.C.E. (Pre-Admission Classification Examination).
5. All applicants must schedule a personal interview with the Director of Nursing or a member of the nursing staff.

FIRST SEMESTER - Pre-Clinical	SEMESTER CREDITS
Nursing Foundations PN 100	8
Food in Health and Disease PN 110	2
Personal and Environmental Health PN 120	2
The Living Body PN 130	7
Pediatrics PN 140	2

Clinical practice takes place the first semester. However, the main emphasis is on classroom studies.

SECOND SEMESTER	SEMESTER CREDITS
Maternal and Child Health PN 200	3
Rehabilitation Nursing PN 210	3
Nursing and Patient in Health and Disease PN 220	7

The student will have more clinical experience and fewer formal classes.

SUMMER:

Introduction to Medicines PN 230	4
Nursing of Adults and Children PN 240	4

The student will have full time clinical experiences with a review of the total program during the last week.

WELDING PRACTICES

Instructional Staff:

Heinz Radtke	Vocational Certificate
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FIRST SEMESTER	SEMESTER CREDITS
Welding Fundamentals and Practice WE 100	9
Blueprint Reading AP 105	3
Shop Math I VE 110	3
Vocational Communication Skills I VE 100	3
Vocational Psychology VE 135	3

SECOND SEMESTER	SEMESTER CREDITS
Welding II WE 101	9
Shop Drawing AP 120	3
Shop Math II VE 111	3
Vocational Communications II VE 101	3

A certificate will be awarded upon successful completion of the above program. A student could continue with third and fourth semester in Industrial Technology and qualify for an Associate Degree, providing he completes General Education requirements (LA 100-101, SS 100-101 or General Education elective).

BASIC STUDIES

The Basic Studies program provides for certain students, who because of specific occupational or educational experiences or future goals require an individually structured course of study which is not yet offered in either the vocational/technical or academic programs of the College, to earn an Associate Degree. This curriculum must be approved by the Dean of Students Office.

Degree Requirements include the following:

Minimum General Academic Courses Required	Credit Hours
Man's Communication	LA 100 & LA 101 6

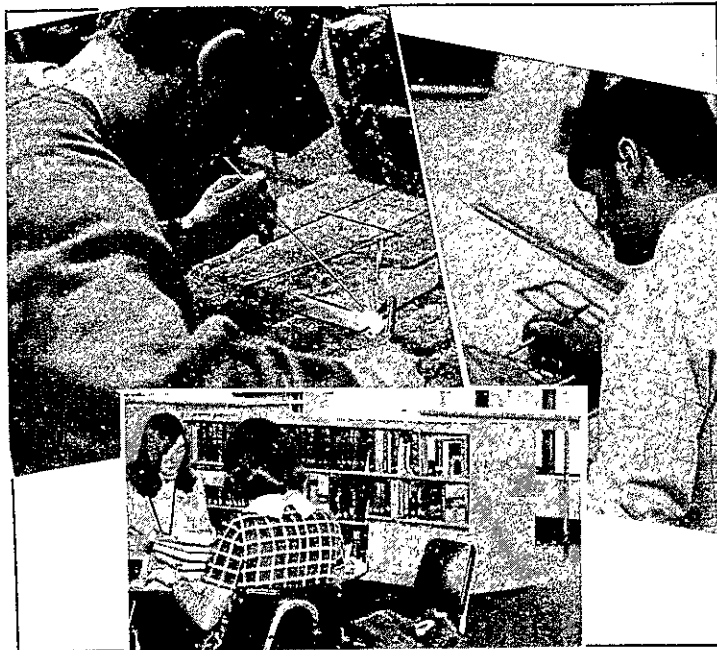
At least one of the following General Education Requirements:

Man's Social World	SS 100 & SS 101	8
or Man's Physical World	NS 100 & NS 101	8
or Man's Creative World	HU 100 & HU 101	8

General Academic electives to total four to six additional academic semester credit hours.

Optional Electives:

1. The remaining 40 to 42 semester hours must be selected from the vocational/technical courses offered by the college, or—
2. An additional General Education Course (as listed above) and four to six academic electives plus additional vocational/technical electives to obtain the necessary sixty semester credit hours required for graduation.



COURSE DESCRIPTIONS

In this section course descriptions will appear under the two headings: ACADEMIC and VOCATIONAL/TECHNICAL. Each course mentioned in the previous section under PROGRAMS OF STUDY will be described only once. It is not necessary to include BASIC STUDIES in this section since all courses in that program are included in the other two divisions.

Numbers in the parentheses () represent the total credits, hours of lecture/demonstration, and hours of laboratory in that order.

ACADEMIC

GENERAL EDUCATION

LA 100 Man's Communication (3, 3, 0)

The purpose of this course is to introduce the student to the nature and function of the English language. The student will attain a basic competency in oral and written communication.

LA 101 Man's Communication (3, 3, 0)

The purpose of this course is to develop the student's ability to analyze the various processes of formal and informal communication and to improve his ability to recognize and utilize effective argumentative and expository prose. Second Semester. Prerequisite: LA 100 or by examination.

SS 100 Man's Social World (4, 4, 0)

This course is designed to introduce the student to the inter-disciplinary approach to the study of the development of human behavior. Emphasis will be placed upon those concepts and theories which have influenced man's thinking about his individual nature and social relationships. (Materials from the following disciplines will be utilized: History, Anthropology, Sociology, Political Science, Psychology and Economics.)

SS 101 Man's Social World (4, 4, 0)

This course is a continuation of SS 100. It is designed to study those patterns of behavior which have led to the creation of forces that have shaped modern society. Emphasis will be given to specific problem areas which confront the contemporary world.

NS 100 Man's Physical World (4, 3, 2) Freshman Year

The purpose of this course is to provide a basic general education in the major science areas (Astronomy, Geology, Physics, and Chemistry) so that the student will be better able to understand and evaluate the results of scientific and technological achievement and their impact upon society. It also provides a basis for the student to evaluate his or her own interest and potential in a physical science. No prerequisites.

NS 101 Man's Physical World (4, 3, 2) Freshman Year

This course is a follow-up to NS 100, Man's Physical World. It provides a basic general education in the major Biological Sciences (Biochemistry, Botany, Ecology, Genetics, and Zoology) and also a basis for the individual to relate to his total environment. Like NS 100, it presents an opportunity for the student to evaluate his or her own interest and potential in a biological science. Prerequisite: NS 100 or permission of instructor.

HU 200 Man's Creative World (4, 4, 0)

The purpose of this course is to develop the student's understanding of the artistic, literary and philosophical nature of man. Viewed historically, selected topics integrate material from the fields of art, literature, music, philosophy and religion.

HU 201 Man's Creative World (4, 4, 0)

Continuation of HU 200. Emphasis on the modern historical development of thought in art, literature, music, philosophy and religion.

SS 200 Seminar on Today's Critical Issues (2, 2, 0)

The purpose of this Seminar is to provide for critical examination, in depth, of modern critical social, economic and scientific issues. The course will be taught cooperatively by the entire staff and will generally follow the format of one hour of formal presentation followed by a second hour of seminar discussion. Students will be assigned appropriate readings.

SS 201 Seminar on Today's Critical Issues (2, 2, 0)

A continuation of SS 200.

ELECTIVES AND OPTIONAL COURSES**Language Arts**

Mr. Vernon Blake	MA University of Michigan
Mrs. Marjorie Highfield	MA University of Michigan
Mr. Dennis Mulder	MA Western Michigan University
Mrs. Sylvia Mustonen	BA Wayne State University
Mr. John Pastoor	AB Calvin College

LA 150 Reading Lab (1, 2, 0)

This course is designed to increase reading speed and comprehension in addition to rectifying various deficiencies of the students. The laboratory exercises will be adapted to the needs of the individual. The course may be repeated as many times as is deemed necessary, but a maximum of two credits will be allowed.

LA 160 Journalism (3, 2, 2)

An introductory course which includes the basic techniques of writing, the principles of effective news writing; a survey of newsroom organization and practical experience provided through laboratory sessions working on the college newspaper.

LA 161 Journalism Lab (1, 0, 2)

Practical experience on the College newspaper, *The Post*.

LA 162 Journalism Lab (1, 0, 2)

Advanced practical experience on the College newspaper, *The Post*, emphasizing editorial and feature writing techniques. A maximum of two credits for LA 161-162 will be allowed.

LA 200 American Thought and Literature (3, 3, 0)

A survey of American literature including complete works by several authors selected to represent major movements, both literary and historical, and many shorter pieces from each literary genre, with emphasis in the 20th Century.

LA 201 American Thought and Literature (3, 3, 0)

A survey of American literature from each literary genre, with emphasis on the literature and thought prior to the 20th Century.

LA 210 Speech (3, 3, 0)

Speech 210 is an introductory course in public speaking, designed mainly to provide practice in speaking with interest and purpose before an audience. Through presenting a series of brief talks, the student will become familiar with the basic principles of speech organization, preparation, and delivery.

LA 220 English Literature from the Beginnings to 1798 (3, 3, 0)

A systematic study of English Literature which stresses the principle authors and their works. Reading and discussion will include representative writings of the period from the beginnings to the end of the eighteenth century, and will also survey current critical approaches.

LA 221 English Literature from 1798 to the present (3, 3, 0)

A systematic study of English literature which emphasizes the principal authors of the nineteenth and twentieth centuries. Reading and discussion will include representative works and will also review current critical attitudes.

LA 240 Modern Fiction (3, 3, 0)

A study of modern fiction, primarily the novel, with a dual intent: through systematic discussion of each novel to increase the rewards one receives from reading it and, through study of the several schools of literary criticism, to better understand how the "more than casual" reader approaches fiction.

Natural Science

Mr. John Scheufler	MS Wayne State University
Mr. Ken Smith	MA University of Michigan
Mrs. Maron Stewart	MS Michigan State University

NS 200 Botany (4, 3, 3) First Semester

A survey of the plant kingdom from the simplest to the more complex. Studies of structure, classification, physiology, and ecological relationships as well as economic values of the plant kingdom, shall be considered. Students will have an opportunity to submit a collection from the local flora and special attention will be given to taxonomic principles and collection procedures along with the use of keys. Prerequisite: Natural Science 100-101 or permission of instructor.

NS 220 General Chemistry (4, 3, 4) First Semester

Fundamental theories, principles, and problems of chemistry will be emphasized. Prerequisite: one year of high school algebra; NS 100 or permission of the instructor.

NS 221 General Chemistry (4, 3, 4)

A continuation of NS 220. Organic and biochemistry will be introduced the last half of the semester. Prerequisite: NS 220.

NS 205 Zoology (4, 4, 3) Second Semester

A general survey of the animal kingdom including comparative studies of the structure, function, and behavior of representatives of animal groups. The anatomy and physiology of the human will be emphasized in the study of mammals. Prerequisite: NS 100 or permission of the instructor.

Social Science

Mr. Gerald Freid MA Eastern Michigan University
 Mr. Ronald Lada MA University of Illinois
 Mr. Dennis Nelson MA Western Michigan University

SS 200 Today's Critical Issues (2, 2, 0)

The purpose of this course is to provide for critical examination, in depth, of modern critical social, economic and scientific issues. The course will generally follow the format of one hour of formal presentation followed by a second hour of seminar discussion.

SS 201 Today's Critical Issues (2, 2, 0)

A continuation of SS 200.

SS 215 Principles of Economics (3, 3, 0)

Macroeconomics - Foundations of economic analysis and policy; national income, employment and fiscal policy; money, banking, and monetary policy; economic stabilization and growth.

SS 216 Principles of Economics (3, 3, 0)

Microeconomics - Markets, the price system, and the allocation of resources; households, businesses and government sectors; current domestic economic problems; international economics and alternative economic systems.

SS 220 General Psychology (3, 3, 0)

An introduction to the field of psychology with special emphasis on such major concepts as motivation, learning, personality, intelligence and others.

SS 221 Child Psychology (3, 3, 0)

A study of children's psychological and physical development from conception to adolescence. Units of study include prenatal development, infancy, the pre-school child, the child from 6-12, exceptional children and the importance of individual differences. Topics covered include fears, peer groups, siblings, discipline, language development, learning, sex education and the role of heredity and environment in the child's development. A case study and child observations are included.

SS 230 Sociology (3, 3, 0)

Introduction to principles, concepts and techniques involved in the sociological study and perspective of human behavior and social structure. An institutional approach is the primary orientation with emphasis on culture, social class, the family and social change.

SS 240 Political Science (3, 3, 0)

An introduction to the institution and functions of the national government. Special emphasis will be placed upon the evolution of the present national governmental system, and also upon the need to probe and define the problems of American government and politics in terms of changing times and conditions. This course is designed to satisfy the political science requirements of all curricula.

SS 241 State & Local Government (3, 3, 0)

A study of the state constitution, legislative, executive, and judicial organization and powers of the state and principal activities of the state. Attention will be given to state-local relations and to county and municipal government. This course is planned as an elective in Political Science and does not meet the minimum requirements of the State Law of a three credit hour course in Political Science.

SS 250 U.S. History to 1865 (3, 3, 0)

A study of the history of the United States from the period of exploration to the close of the Civil War. Special emphasis will be placed upon the rise of our political and social institutions; the influence of the frontier, the conflicts between individualism, sectionalism, and nationalism; and the implications and consequences of disunion in the Civil War.

SS 251 U.S. History from 1865 to the present (3, 3, 0)

This course is a continuation of SS 250. A survey of America's political, economic and diplomatic history from the close of the Civil War to the "Great Society" will be made. Special emphasis will be placed upon the Reconstruction of the South, the industrial transition, the Progressive movement, the world wars, the domestic wars, the emergence of the U.S. into a position of world leadership and the responsibility of this maturity.

Humanities

Mr. Jerry White

MA Central Michigan University

HU 220 Introduction to Philosophy (3, 3, 0)

Designed to acquaint the student with some fundamental questions concerning the nature of man and the way in which these questions have been dealt with by the most profound thinkers of the past and present.

Mathematics

Mr. Frank Fishell

MA Michigan State University

MA 100 Basic Mathematics (3, 3, 0)

This course is designed to give a thorough review of the basic structure of arithmetic, with drill in the fundamental operations. The second half of the semester will be spent studying the Algebra of the Real Number System, with application to every day life.

MA 151 Math for Elementary Teachers (3, 3, 0)

To provide the elementary teacher with the necessary background to teach mathematics in the elementary school. Such subjects as the origin of systems of numeration, sets, system of whole numbers, bases other than ten, systems of integers, rational and real numbers will be discussed.

MA 152 Geometry for Elementary Teachers (3, 3, 0)

This material presents a survey of geometry: formal and informal, metric and non-metric, Euclidean and non-Euclidean. Topics include points, planes, parallels, congruence, measures and an introduction to vectors. Prerequisite: MA 151 or equivalent.

MA 159 College Algebra (3, 3, 0)

Topics covered include the quadratic equation, sequences and series, complex numbers, De Moivre's theorem, synthetic division, Descartes's rule of signs, Cardans and Ferrari's methods, mathematical induction, combinations and permutations. Prerequisite: Trigonometry.

MA 160 Analytic Geometry (3, 3, 0)

The straight line, the circle, conics, algebraic curves, transcendental curves, parametric equations, planes and lines, and quadric surfaces. Prerequisite: MA 159 or equivalent.

MA 190 Elementary Statistics (3, 3, 0)

This course is designed to introduce students to basic statistical techniques. Topics studied include mean, standard deviation, frequency, probability, binomial distribution, the normal curve, sample means, confidence limits, hypotheses testing, chi-square, linear correlation and regression. Each topic is introduced with examples and problems. Practice in the use of appropriate tables will be sufficient to insure confidence in their use.

MA 200 Man's Mathematical Methods (4, 4, 0)

The purpose of this course is to develop the student's understanding of the basic concepts of modern mathematics. The course will cover sets, functions, relations, and mathematical systems—including groups, real number systems, and quadratic equations. Prerequisite: Mathematical maturity equivalent to traditional high school geometry.

MA 250 Calculus I (4, 4, 0)

Functions and continuity, limits, differentiation, applications, integration and the definite integral with applications. Prerequisite: analytic geometry or equivalent.

MA 251 Calculus II (4, 4, 0)

Logarithms and exponentials, arc length, polynomials, partial fractions, Taylor's series. Special methods of integration, centroids, mass, tests for convergence, multiple integration, partial differentiation. Prerequisite: Math 250 or equivalent.

MA 290 Differential Equations (3, 3, 0)

Linear equations, the Bernoulli Equation, existence and uniqueness theorems, applications equations of first order and higher degree. Clairauts equation, solution by power series, an introduction to Laplace transform, Strums theorem. Prerequisite: One year of calculus.

Physical Education

Mr. Larry Petersen

MA Central Michigan University

PE Sports Officiating (2, 2, 0)

This course presents the rules of major sports, officiating techniques, relationship with players and school officials, game administration, major emphasis is to stimulate young men into becoming registered officials with the state association.

PE Foundations of Physical Education (2, 2, 0)

This course presents the history of physical education from ancient to modern times, biological, psychological, sociological foundations of physical education; physical and mental fitness, professional organizations, career opportunities, literature available; and the nature of health, physical education, and recreation and its place in the general education program.

Activity Courses**PE Bowling (1, 0, 2)**

Involves course fee for bowling.

PE Archery (1, 0, 2)

Involves course fee.

PE Folk Dancing (1, 0, 2)**PE Diversified Activities (1, 0, 2)****PE Golf (1, 0, 2)****VOCATIONAL/TECHNICAL****APPRENTICE TRAINING****AP 100 Machine Tool Operation Theory (42 hours)**

A lecture course consisting of the definition, history, operation and application of the various tool room machines. Tool topics covered include lathe, shaper, horizontal and vertical mills and surface and pedestal grinding. Emphasis is also placed on specific and special operations of these machines.

AP 105 Blueprint Reading (72 hours)

This course covers the following: three view projections, line alphabet, location of dimensions, sketching, shop terminology, drafting terminology, tolerance, decimal and angular tolerances, machine operations, sectional drawing, thread representation, finished surfaces representation, auxiliary views, violations of theory of true projection, arrangements of views, scale drawing, phantom outlines, structural steel shapes, mechanical accessories, A.S.A. symbols, systems of drill sizes and gear formulas.

AP 110 Shop Mathematics (138 hours)

This course covers the study of properties of common fractions, analyzing decimals, square root, using formulas, understanding percentages, equations, measuring instruments, applied geometry, geometric construction and applications and logarithms. Also covered in this course are shop trigonometry, taper and taper turning, screw threads, pulley and gear, applied mechanics and strength of materials, speed and feeds, gears, slide rule and milling machine indexing.

AP 115 Strength of Material and Hydraulics (42 hours)

Areas covered by this course are simple stresses, shear, riveted joints, stresses in thin walled cylinders-weld torsion, seam-shear and moment diagrams, stresses in beams, beam deflection, combined axial bending stresses, columns and materials.

AP 120 Shop Drawing (36 hours)

A condensed course covering the basic principles and techniques of shop drafting stressing the essentials as: lettering, instrument usage, technical terms, applied geometry, free hand sketching, orthographic auxiliaries and section drawings, dimensioning practices, detail and assembly drawing, conventions and standard drafting practices. Pictorial drawing and presentation of engineering data through the media of charts and graphs is also included.

AP 125 Welding Theory and Practice (48 hours)

This course is a study of techniques and processes used to fabricate metal products by welding. Laboratory experiences include oxyacetylene welding and cutting, soldering and brazing, shielded metal - arc welding, inert-gas-shielded (mig-tig), and other special welding processes.

AP 130 Metallurgy and Heat Treatment (36 hours)

Studied in this course are properties of metals and tests to determine their use, chemical metallurgy, producing iron and steel, physical metallurgy, shaping and forming of metals, properties of nonferrous alloys, study of properties of steel, surface treatments, power metallurgy, and classification of steels.

AP 135 Tool and Die Design (168 hours)

This course covers instruction on die design standards, solid and spring stripper drop through blanking die, inverted type blanking die, compound blank and pierce die, composite section blanking, solid forming dies, single and multiple pressure pad forming dies, and progressive type dies such as pierce, blank, notch, countersink, cutoff, and form.

AP 140 Tool and Die Design - Plastic Mold Design (168 hours)

This course covers the fundamentals of plastic molding, plastic product design, types of molds, toolmaking processes, equipment and methods, materials for model making and designing and drafting practices. Also studied are compression and transfer molds, injection molds for thermoplastics, cold mold design, extrusion dies for thermoplastics, blow mold construction and design, mold design for expanded polystyrene, and special fixtures.

AP 145 Use of Machinists Handbook (42 hours)

This course includes: tables of squares, cubes, circles, and logarithms, solution of triangles and trig tables, geometry, mechanics, wire and sheet metal gages, uses of iron and steel-heat treat and hardness, helical springs, and keys or keyways.

AP 150 Social Economics (30 hours)

This course studies labor in our economy including labor's obligations to the employer, the employer's obligation to the labor, services for employees, logic behind collective bargaining, the union contract and how labor unions operate. Covered under our economic system are competitive prices in action, capital equipment, wages, profit, and money and banking. Also included in this course are business cycles, circular flow of money, problem of instability, inflation and deflation, the role of the government in the economy, and the study of international trade.

AP 155 Safety and First Aid (18 hours)

This course studies the "why and how of first aid". Subjects covered are wounds, common and special; shock—physical, electrical and heart attack; artificial respiration, injuries to bones, joints, and muscles of the human body and skeletal injuries; burns and ill effects of heat and cold; common emergencies, transportation, causes and industrial types of accident prevention; and first aid kits and supplies.

AUTOMOTIVE MECHANICS**AM 110 Drawing and Blueprint Reading (3, 3, 0)**

This course reviews the basic fundamentals of all projections, lettering, sketching and dimensioning. A thorough study of blueprint reading as it relates to assembly, service parts replacement and service adjustments is covered.

AM 120 Automotive Math and Shop Reports (2, 2, 0)

The instruction in Automotive Math is arranged to meet the ordinary mathematical needs of the automobile mechanic. A study is made of fundamental processes involved in practical calculations. Class time is devoted to the study of the practical problems associated with the students in their automotive lab.

AM 130 Automotive Mechanics I and Automotive Laboratory I (9, 3, 12)

This course covers instruction in theory and laboratory procedures and operations necessary for automotive engine rebuilding. Shop work consists of the overhaul or rebuilding of representative models of all popular automotive engines.

AM 131 Automotive Mechanics II and Automotive Laboratory II (9, 3, 12)

This course is designed to develop the student's abilities so he can serve as a diagnostician or tune-up man. Diagnosis is stressed on actual problems and analysis sheets are filled out for cost estimation and amount of work required for good engine performance. Students receive training on up-to-date test and analyzing equipment.

AM 230 Automotive Mechanics III and Automotive Laboratory III (9, 3, 12)

Students cover terminology, nomenclature, evolution and theory of front end alignment, wheel balancing and brakes. The laboratory experience involves diagnosis and repair on live late model units using latest methods on modern equipment.

AM 231 Automotive Mechanics IV and Automotive Laboratory IV (11, 3, 16)

This section of training is designed to give experience on across-the-board dealership operating including types of service, departmental operations, and automotive record keeping. Some of the laboratory procedures may be conducted on a cooperative basis with the industry.

BUSINESS EDUCATION**BE 100 Beginning Typing (4, 2, 4)**

This is an introduction to the mastery of the typewriting keyboard. Short personal and business letters, elementary tabulation, simple outlines and manuscript writing are included.

BE 101 Intermediate Typing (4, 2, 4)

This course reviews techniques of elementary typewriting with continuation of speed building, introduction to production typewriting, skill in typewriting business letters, skill in typewriting tabulations, letters of application and employment tests. Prerequisite: BE 100 or high school typewriting.

BE 103 Beginning Shorthand (4, 3, 3)

This course is designed to develop skill in the theory of Gregg Shorthand.

BE 104 Intermediate Shorthand (4, 3, 3)

This course emphasizes reading and writing Gregg Shorthand, developing skill in formulating new outlines, and using transcription techniques. Prerequisite: BE 103 or one year of high school shorthand.

BE 110 Professional Filing (2, 1, 2)

This course is designed to give beginning office workers a knowledge of the various filing procedures commonly used in business and industry. Emphasis is placed on filing rules with practice in alphabetic, numerical, subject, and geographic filing.

BE 115 Accounting I (3, 3, 0)

An introduction to accounting and fundamentals; the meaning and purpose of accounting, accounting statements, balance sheets, and profit and loss statements. The theory of debits and credits, accounts payable and receivable, the trial balance, adjusting and closing entries, accounts for sales, purchases, and cash, accounting for notes, interest, unearned and accrued items are examined.

BE 116 Accounting II (3, 3, 0)

The valuation of receivables and merchandise inventory, valuation of fixed assets and depreciation, accounting for taxes, payroll, property, and sales tax are covered. An introduction to corporation accounting is included. Prerequisite: BE 115 or equivalent.

BE 120 Business Mathematics (3, 3, 0)

This course reviews fundamental arithmetical processes and their business applications and included cash and trade discounts, mark-up, depreciation and interest, and payroll deductions.

BE 130 Business Correspondence (3, 3, 0)

A study of effective communication in business. Prerequisite: LA 100 or VE 100.

BE 200 Business Law (3, 3, 0)

Law and society, the Universal Commercial Code are considered with emphasis placed on the law of contracts, agency, sales, and real property. Case studies are used extensively.

BE 202 Advanced Typing (4, 2, 4)

Continued speed building techniques, advanced production typewriting techniques, skill in accounting typewriting, skill in governmental typewriting, skill in medical and technical typewriting are covered. Prerequisite: BE 101.

BE 203 Advanced Shorthand (4, 2, 4)

Development of ability to take new-matter dictation, improvement of transcription techniques with emphasis on speed and accuracy in transcription are covered. Prerequisite: BE 104 or two years of high school shorthand.

BE 204 Dictation and Transcription (4, 2, 4)

This course stresses development of skills in typing, shorthand, and English that are necessary for efficient transcription as well as the development of shorthand vocabulary in medical, accounting, and technical terms. Prerequisite: BE 203.

BE 220 Voice Transcription (4, 2, 4)

Development of voice transcription skill is stressed with the operation of belt-type transcribers. Emphasis is placed on typing skills and technical English skills for efficient transcription. Prerequisite: BE 130.

BE 230 Typing and Office Practice (3, 1, 4)

This course is designed to give office workers the elements of a successful business personality. Secretarial use of written and oral communication, techniques of handling mail, duties of a receptionist, the handling of itineraries, and use of electric typewriters and duplicators is explored. Prerequisite: BE 202.

BE 235 Management (3, 3, 0)

A study of the operation of a small business, involving records, business forms, items of income and expense, simplified bookkeeping, and forms of taxation is made. Personnel relations involving selection, training, discipline problems, morale, wages, fringe benefits, promotions and other related problems are examined.

BE 240 Business Machines (4, 2, 4)

This course trains the student in the fundamental process of key-driven calculators, adding-listing machines, rotary calculators, listing calculators, and ten-key machines.

BE 245 Salesmanship (3, 3, 0)

This course is designed to introduce the student to the role of selling and of salesmanship in the American economy. The selling preparation and the sales process are covered, with emphasis upon case studies. Prerequisite: BE 235.

BE 250 Personnel Relations (3, 3, 0)

This course covers the methods of selecting and training personnel, discipline problems, morale, wages, fringe benefits, promotions, separations and other related areas.

BE 260 Office Management (2, 2, 0)

The organization of office furniture, equipment, office machines, working conditions, and office layout are covered. Management records, personnel training and office manuals are included.

BE 290 Co-op Work Experience or Elective (3, 3, 0 or 200 hours work experience per semester)

This is to be arranged by mutual agreement with the instructor, the student, and a cooperating office or business.

BE 291 Co-op Work Experience or Elective (3, 3, 0 or 200 hours work experience per semester)

This is to be arranged by mutual agreement with the instructor, the student, and cooperating office or business. Prerequisite: BE 290.

DRAFTING AND DESIGN TECHNOLOGY**DD 100 Blueprint Reading (3, 2, 2)**

This course covers the following: three view projections, line alphabet, location of dimensions, sketching, shop terminology, drafting terminology, tolerance decimal and angular tolerances, machine operations, sectional drawings, thread representation, finished surfaces representation, auxiliary views, violations of theory of true projection, arrangements of views, scale drawings, phantom outlines, structural steel shapes, mechanical accessories A.S.A. symbols, systems of drill sizes and gear formulas.

DD 101 Shop Drawing (3, 2, 2)

A condensed course covering the basic principles and techniques of shop drafting stressing the essentials as: lettering, instrument usage, technical terms, applied geometry, free hand sketching, orthographic, auxiliaries and section drawings, dimensioning practices, detail and assembly drawing, conventions and standard drafting practices. Pictorial drawing and presentation of engineering data through the media of charts and graphs is also included.

DD 110 Technical Drafting I (7, 2, 10)

This is a laboratory/lecture course and includes ten hours of drafting practice and two hours of drafting theory directly related to the laboratory work. The course includes the development and manipulative skills needed for the use of drafting instruments, linework, lettering, geometric construction, orthographic projection, sectioning, dimensioning, notes on drawing, title blocks and drawing of different types of fasteners. Models are used to help the student better visualize objects being drawn.

DD 111 Technical Drafting II (7, 2, 10)

This is a laboratory/lecture course and includes ten hours of drafting practice and two hours of drafting theory directly related to the laboratory work. This course is primarily designed to further strengthen and enlarge upon the basic concepts thus far developed in basic drafting with emphasis on advanced projection, true views of surfaces, true lengths of lines, revolution of an object, intersection of planes and solids, and the detailing of previously designed die or fixture.

DD 120 Machine Shop Practices (2, 2, 1)

Practical instruction is given in the operation of lathes, shapers, milling and grinding machines as well as bench tools and special machine shop equipment. The course is designed to familiarize the student with a practical knowledge of machine processes rather than developing machine shop skills.

DD 130 Basic Architectural Drafting I (7, 2, 10)

This basic course which introduces the student to the use of drawing instruments and relates his drawing board exercises directly to the theory and practice of architectural principles. Building materials and construction methods are correlated with this course.

DD 140 Residential Drafting II (7, 2, 10)

A continuing course in architectural and construction principles relating primarily to residential dwellings. This course stresses such elements as modular development, floor planning, detailing, utilities, and design for the draftsman and builder. Prerequisite: DD 130.

DD 150 Architectural Mathematics (3, 3, 0)

This course is specifically designed to relate functionally with the mathematical computations required of the architectural draftsman. Lecture and demonstration of exemplary problems will be used with specific problems which face the draftsman and construction worker. The use of fractions, mixed numbers, decimals, applied square root and proportions, applied volume, board foot measurements, bridging, sheathing and study computation, roof, siding, stair layout will be studied.

DD 200 Advanced Architectural Drafting III (7, 4, 6)

This is an advanced course which includes special problems in design, layout such as multi level framing, creative innovation, and perspective illustration.

DD 201 Architectural Drafting IV (7, 4, 6)

This course is a continuation of DD 200. It includes principles, practice, and material applications of commercial and residential design and rendering.

DD 210 Jig & Fixture Layout & Design (7, 2, 10)

This is a laboratory/lecture course and includes ten hours of drafting practice and two hours of drafting theory directly related to the laboratory work. This course is designed to bring out the fundamentals of tools, jigs, and fixtures and the layout of drills. Standard parts such as clamps, washers, keys, locating pins, etc., are given their proper perspective in relation to tools, jigs, fixtures, and their detailing. Practice is given in incorporating engineering changes in existing tool drawing.

DD 202 Special Problems Seminar (5, 4, 2)

A course for the advanced student who wishes to expand his or her architectural experience in a particular area of concentration. Projects and instruction are largely of an individual or small group nature. Opportunity is provided for independent study of methods and for the rendering of innovative and special design. Prerequisite: DD 140.

DD 240 Die Layout & Design (7, 2, 10)

This is a laboratory/lecture course and includes ten hours of drafting practice and two hours of drafting theory directly related to the laboratory work. This course covers the layout and design of simple blanking, forming, and piercing dies with a progressive die and cam action die. Prerequisite: Basic and Advanced Technical Drafting.

RESIDENTIAL CONSTRUCTION**RC 110 Construction Methods and Materials (2, 2, 1)**

This course relates materials used by the construction industry to the function they perform. The physical properties and applications of masonry, wood, steel and synthetics is related directly to methods of assembly with consideration to local and federal codes.

RC 111 Construction Methods and Materials (2, 1, 2)

A lecture/laboratory experience in foundation work, carpentry and framing, and the use of power tools. The student is exposed to actual materials either under simulated or real working conditions.

RC 220 Construction Lab I (9, 3, 12)

Practical experience through laboratory, co-op or class project in full scale building. Emphasis is placed on developing carpentry skills. Exposure and experience will be given in the related trades of masonry, wiring, plumbing, supervision, and job planning.

RC 221 Construction Lab II (9, 3, 12)

Continuation of RC 220.

RC 253 Landscape Planning (3, 2, 2)

This is a practical course in planning residential public parks, or roadway landscaping with proper emphasis on selection, soil conservation and beautification.

RC 273 Surveying (3, 2, 2)

This course covers the selection, care, and checking of tapes and levels, field observations, note taking and office computations, use of surveying instruments and equipment for land measurement, mapping and contour leveling, building foundation layout, study of legal descriptions and county records.

INDUSTRIAL TECHNOLOGY**IT 110 Machine Operations (9, 3, 12)**

This course is machine shop orientation to familiarize the student with hand tool operations, and basic machine tool processes, care of tools and equipment, and shop safety.

IT 111 Machine Operations II (9, 3, 12)

This course is advanced operation on grinders, shapers, mills, presses and lathes. The student will be trained to perform all operations required from the beginning to completion of the job.

IT 230 Mechanics and Strength of Materials (3, 3, 0)

This course explores fundamental principles and applications of strength of materials and includes such topics as: axial and central loads, design data from experiments, stress from load, columns, fatigue strength, and stress concentration. Prerequisite: Shop Math I and II or equivalent.

IT 150 Metallurgy I (3, 3, 0)

This course is a study of metals and tests to determine their use, production of iron and steel, classification of steels, and physical metallurgy.

IT 250 Electricity and Electronics (3, 2, 2)

This course has been designed for students majoring in mechanical and industrial technology and for students needing electrical theory for its direct relation to their work. This course includes both theory and laboratory experiments.

IT 260 Production Problems (3, 3, 0)

A detailed study is made of various production activities and the problems associated with them. Problems and cases are solved through the use of available data in texts and engineering handbooks. Constant use of blueprints throughout the course strengthens the ability of the student to visualize and interpret them.

IT 253 Hydraulics and Fluid Mechanics (3, 3, 0)

This course includes applied physics, hydraulic principles and formulas, fluid characteristics and basic circuits and theory. In practice the units of the hydraulic system are disassembled, inspected and tested. The piping tubing, hose and common trouble sources in a hydraulic system are also covered.

PRACTICAL NURSING**PN 100 Nursing Foundations (8, 4, 8)**

This course provides the nursing student with the information and skills necessary to build a foundation for efficient bedside nursing. Students not only gain skill in procedures they are to perform, but also increase their ability to deal with patients and members of the health team.

PN 110 Food in Health and Disease (2, 2, 0)

Basic nutrition facts are presented with their relationship to health. The student becomes familiar with food nutrients, good nutrition, malnutrition, and variations of diet therapy.

PN 120 Personal and Environmental Health (2, 2, 0)

The person as a nurse is studied in this course. Who, what, and why she is along with study of herself as a person, a family member and a member of the nursing profession. The student will be introduced to preventive medicine, laws of sanitation, the community health team and each member's role in meeting the total needs of its citizens.

PN 130 The Living Body (7, 6, 2)

This course introduces the student to the study of the human body structure, dynamics and functions, and disease. The concept of the dependence of one system on another and the contributions of each system to the well-being of the body is stressed.

PN 140 Pediatrics (2, 2, 0)

The growth and developmental processes of children are studied so the student nurse can better understand all children. Nursing skills essential to the care of children and study of the more common disease conditions are also presented.

PN 200 Maternal and Child Health (3, 2, 2)

This course teaches the student facts about pregnancy, prenatal care, and the care of the new-born baby and gives an understanding of the common complications and related care and treatment.

PN 210 Rehabilitation Nursing (3, 2, 2)

The principles and practices of rehabilitation nursing aspects including crutch walking, transfer techniques, and bed positioning are taught. Special emphasis is placed on changes which occur during the process of aging, both physiological and mental. Also explored are recreational and diversional activities in relation to the patient's recovery and peace of mind.

PN 220 Nursing the Patient in Health and Disease (7, 3, 8)

Medical-Surgical nursing presents the more common medical and surgical conditions and the nursing techniques and skills involved in providing nursing care. The course is intended to present the concept of meeting the total needs of the patient and a return to normal functioning life.

PN 230 Introduction to Medicines (4, 3, 1)

This course offers beginning instructions in pharmacology and safety factors essential to dosages and drug administration. The practical nurse must take further post graduate study to be a medications nurse.

PN 240 Nursing of Adults and Children (4, 0, 8)

Each student will be working in the clinical area. Each student will be assigned clinical areas to gain in nursing skills essential to the care of each individual patient.

WELDING**WE 100 Welding Fundamentals & Practice (9, 3, 12)**

This course incorporates theory and practical demonstration on types and processes, joint design, welding symbols, inspection and testing in a manner to provide the technical student with an understanding of welding as related to his field of study.

WE 101 Welding II (9, 3, 12)

This phase of the welding program is designed specifically to provide basic skills and fundamental knowledge in oxy-acetylene welding. A major share of the class time is devoted to actual welding practice, including a detailed study of the techniques of making welds in all positions. Some instruction is given in brazing, cast iron welding, pipe welding, silver soldering and flame cutting. Lectures and discussion provide additional background information essential to a qualified welder.

VOCATIONAL EDUCATION**VE 100 Vocational Communication Skills (3, 3, 0)**

A course to develop reading, writing and speaking skills. Emphasis is placed on precision, clarity, and organization of written and oral communication.

VE 101 Vocational Communication Skills (3, 3, 0)

A continuation of VE 100.

VE 102 Technical Writing and Speaking (2, 2, 0)

A study of the nature of concise writing of technical papers, reports, and correspondence demanded of the technician is made providing ample practice assignments in the student's area of study. Topics covered include: effective organization, style, mechanics, tables and figures, contents and techniques of report writing, formal reports, figures, contents and special letters, memos, the letter of application, the bibliography, abbreviations, spelling, and others. This course also emphasizes the value and necessity for effective verbal communication. Persuasive oral presentations is a part of the course.

VE 110 Shop Math I (3, 3, 0)

This course is applied shop mathematics which includes a review of decimals, fractions, simple computations, measurements, and applied shop problems.

VE 111 Shop Math II (3, 3, 0)

This course covers practical algebra, geometrical constructions, work and power, speed ratio of gears and pulleys, and practical problems.

VE 112 Technical Math I (3, 3, 0)

This course is presented in terms of application normally encountered in industry and the laboratory by the technician and consists of simple arithmetic and algebraic notations, the language of algebra, positive and negative numbers, factoring, fractions, exponents, powers, roots, radicals, equations, formulas, and their application to industry.

VE 113 Technical Math II (3, 3, 0)

An informal approach to topics in elementary geometry that have trade related applications. Topics include construction, properties of triangles, circles. Elementary operations on the slide rule will be covered including problems in multiplication, division, combined multiplication and division, square root, cubing and cube root.

VE 114 Technical Math III (3, 3, 0)

This course begins with a review of linear equations and proceeds with quadratic equations, trig functions through fundamental identities, logarithms and the slide rule through trig functions.

VE 115 Technical Math IV - Algebra (3, 3, 0)

This course consists of work with the binomial theorem, arithmetic and geometric progressions, complex numbers, solution of cubic and quartic equations, mathematical induction and law of sines and cosines with applications from industry.

VE 120 Technical Physics (3, 3, 0)

This course gives an introduction to applied science, its history and use and an insight into understanding the properties and control of matter and energy; technical aspects, analysis and use of mechanics; technical aspects of heat effects and energy.

VE 135 Vocational Psychology (3, 3, 0)

The basic theme will be understanding of people, including ourselves, other individuals and groups. Motivations, instincts, habits, attitudes, propaganda, and prejudices will be studied.

**MONTCALM COMMUNITY COLLEGE**