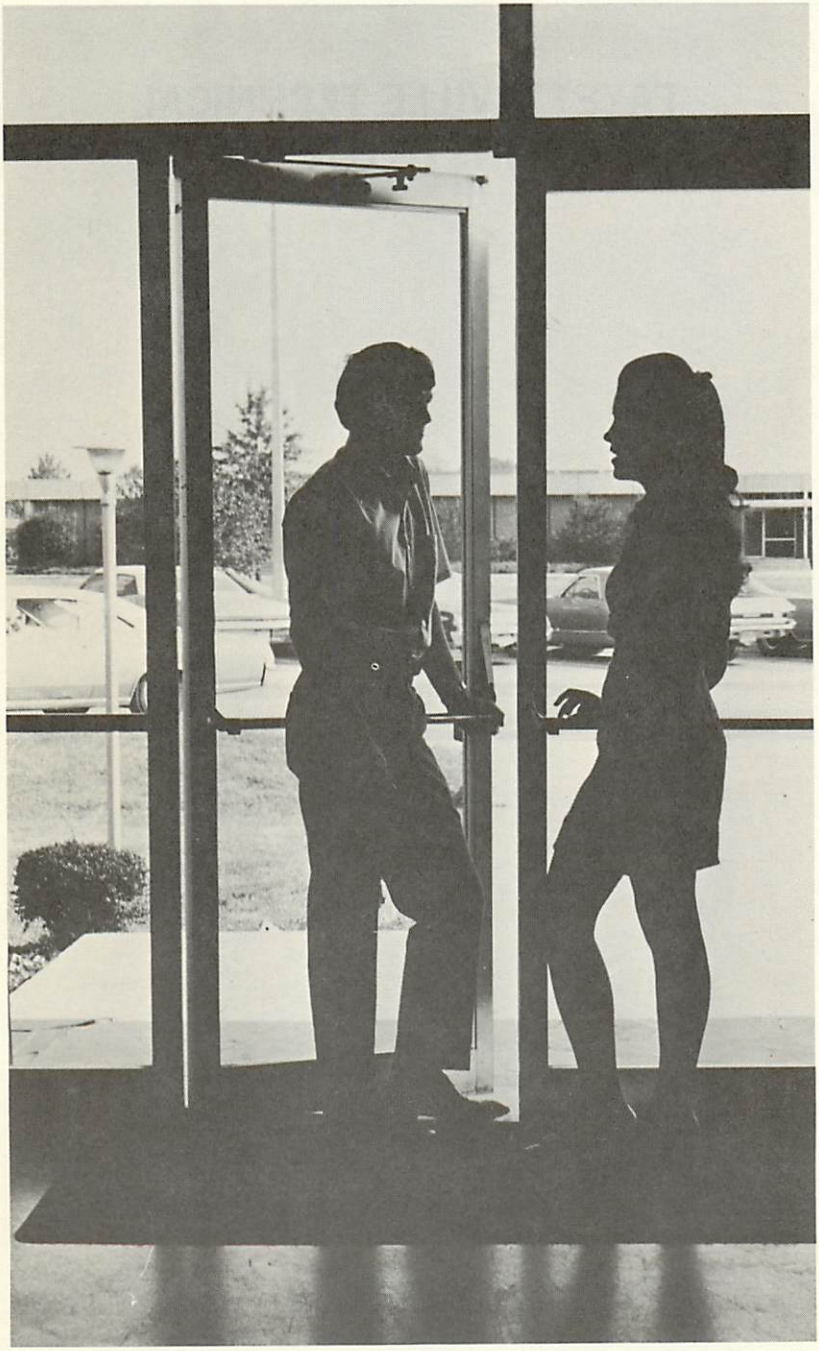
FAYETTEVILLE TECHNICAL INSTITUTE

1970 - 1972

CATALOG

VOLUME III

P. O. BOX 5236, FAYETTEVILLE, NORTH CAROLINA
PHONE 484-4121



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ACADEMIC CALENDAR 1970-71

Fall Quarter

Orientation for beginning and freshmen students	September 8
Registration for second-year students	September 8
Registration for beginning and freshmen students	September 9
Classes begin for all students	September 10
Late Registration ends	September 16
Last day to drop-add course	September 23
Last day of fall quarter	November 25
Thanksgiving Holidays—November 26-29	
Last day of classes—Wednesday, November 25	
Faculty returns to work—November 30	

Winter Quarter

Registration	December 2
Classes begin	December 3
Late Registration ends	December 9
Last day to drop-add course	December 16
Last day of winter quarter	March 3
Christmas Holidays—December 19-January 3	
Last day of classes—Friday, December 18	
School resumes—Monday, January 4	

Spring Quarter

Registration	March 5
Classes begin	March 8
Late Registration ends	March 12
Last day to drop-add course	March 19
Last day of spring quarter	May 25
Graduation Exercises	May 27
Easter Holidays—April 9-12	
Last day of classes—Thursday, April 8	
School resumes—Tuesday, April 13	

Summer Quarter (2 sessions)

Registration for new students	June 3-4
Classes begin (1st session)	June 7
Late Registration ends	June 7
Last day of classes	July 9
July 4th Holidays—July 3-5	
Last day of classes—Friday, July 2	
School resumes—Tuesday, July 6	
Classes begin (2nd session)	July 26
Late Registration ends	July 26
Last day of classes	August 27

Faculty Vacations—July 12-23
Last day of classes prior to vacation—July 9
School resumes—Monday, July 26
Labor Day Holiday—September 3-6
Last work day—Thursday, September 2
Return to work—Tuesday, September 7

ACADEMIC CALENDAR 1971-72

Fall Quarter

Orientation for beginning and freshmen students	September 7
Registration for second-year students	September 7
Registration for beginning and freshmen students	September 8
Classes begin for all students	September 9
Late Registration ends	September 15
Last day to drop-add course	September 22
Last day of fall quarter	November 24

Thanksgiving Holidays—November 25-28
Last day of classes—Wednesday, November 24
Faculty returns to work—November 29

Winter Quarter

Registration	November 30
Classes begin	December 1
Late Registration ends	December 7
Last day to drop-add course	December 14
Last day of winter quarter	February 29

Christmas Holidays—December 18-January 2
Last day of classes—Friday, December 17
School resumes—Monday, January 3

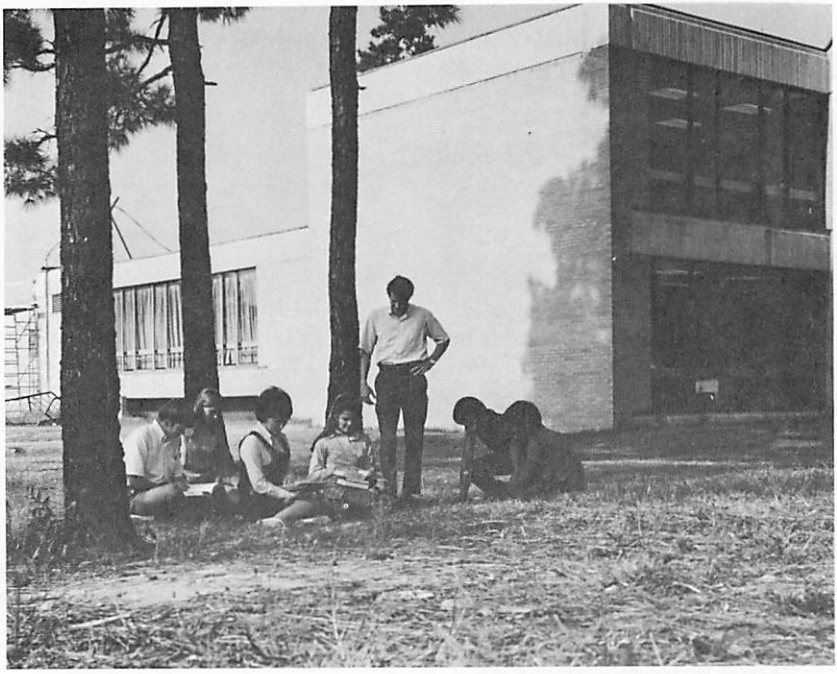
Spring Quarter

Registration	March 2
Classes begin	March 3
Late Registration ends	March 9
Last day to drop-add course	March 16
Last day of spring quarter	May 22
Graduation Exercises	May 25

Easter Holidays—March 31-April 3
Last day of classes—Thursday, March 30
School resumes—Tuesday, April 4

Summer Quarter (2 sessions)

Registration for new students	June 5-6
Classes begin (1st session)	June 7
Late registration ends	June 7
Last day of classes	July 13
July 4th Holidays—July 3-4	
Last day of classes—Friday, June 30	
School resumes—Wednesday, July 5	
Classes begin (2nd session)	July 31
Late Registration ends	July 31
Last day of classes	August 31
Faculty Vacations—July 15-30	
Last day of classes prior to vacation—July 14	
School resumes—Monday, July 31	
Labor Day Holiday—September 1-4	
Last work day—Thursday, August 31	
Return to work—Tuesday, September 5	



ADMINISTRATION

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Mr. Howard L. Hall, Secretary

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B.S., M.Ed., Colorado State University

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B.S., M.Ed., Virginia Polytechnic Institute

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B.S., M.Ed., University of Florida

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Maj. (ASA) Ret.

William P. Standley ..... Business Manager
CWO (AGC) Ret., San Francisco State

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B.S., M.Ed., North Carolina State University

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B.S., M.Ed., North Carolina State University

Eli Anderson, Jr. ..... Director of General Adult Education
B.S., M.Ed., North Carolina College at Durham

Thomas R. Koballa ..... Adult Education Supervisor
B.A., North Carolina State University

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Charles E. Hybl ..... Chairman, Counseling Services
B.A., M.Ed., University of Florida

Charles E. Koonce ..... Registrar
B.S., Campbell College

A. Norman Sturdivant ..... Counselor
A.B., M.Ed., Lynchburg College

John T. Fernald ..... Counselor
A.B., M.Ed., North Carolina State University

Mrs. Helen C. Winstead ..... Counselor
B.S., M.Ed., North Carolina State University

FACULTY

Business Education

Sammy A. Brown ..... Department Chairman, Business Administration
B.S., M.A., East Carolina University

Robert L. Carter ..... Division Chairman, Accounting
B.S., M.B.A., University of North Carolina

James R. Christie ..... Department Chairman, Computer Programming
B.S., North Carolina State University

Walter McD. Croom ..... Department Chairman, Agricultural Business
B.S., M.Ag., North Carolina State University

George W. Cutler, III ..... Accounting
B.S., M.B.A., East Carolina University

Thomas J. Hall ..... Business Administration
B.S., M.A., University of North Carolina

William T. Hall ..... Business Administration
B.S., M.B.A., East Carolina University

Richard C. Jarvies ..... Department Chairman, Accounting
B.S., Fordham University School of Business, Certified Public Accountant

Mrs. Dickey V. Jones ..... Secretarial Science
B.S.S.A., M.Ed., University of North Carolina

Miss Linda Rose Lee ..... Department Chairman, Secretarial Science
A.B., M.Ed., Appalachian State University

Jimmy B. Simpson ..... Business Administration
B.S., University of Tennessee, graduate study—University of Tennessee

James A. Sinclair ..... Business Administration
A.B., M.B.A., University of North Carolina

Mrs. Ada W. Watson ..... Secretarial Science
B.S., East Carolina University

Mrs. Hilda C. Wilson ..... Business Administration
B.A., M.S., University of North Carolina

Engineering Technology

Clarence A. Balch, Jr. ..... Division Chairman, Mechanical Engineering
B.S., California State Polytechnic College

Granville C. Byrd, Jr. ..... Electronics Engineering
B.S., North Carolina State University

Robert M. Carn ..... Department Chairman, Civil Engineering
B.S.C.E., Pennsylvania State University

Bethel H. Davis ..... Civil Engineering
Registered Surveyor, B.S.C.E., North Carolina State University

Gordon L. Dwiggins ..... Department Chairman, Environmental Engineering
P.E., B.S., M.S.S.E., University of North Carolina

Robert S. Gordon ..... Electronics Engineering
North Carolina State University

William E. Hancock ..... Department Chairman, Drafting
B.B.E., B.S., M.A., East Tennessee State University

Joseph C. Hunt ..... Department Chairman, Mechanical Engineering
P.E., B.S., Pennsylvania State University

John S. Jamison, Jr. ..... Department Chairman, Electronics Engineering
B.S.E.E., M.S., University of Pittsburgh

Dean E. Painter ..... Environmental Engineering
B.S., M.S., Trinity University of Texas

Troxel I. Poland ..... Mechanical Engineering
B.S., Colorado State University

Paul B. Sharpe, Jr. ..... Department Chairman
Air Conditioning & Refrigeration
A.A.S., Danville Technical Institute, undergraduate study—North Carolina State University

General Education

Don R. Averitte ..... Chemistry-Biology
B.S., M.A., University of North Carolina

Dewey N. Bass ..... Department Chairman, Science-Physics
B.A., M.A., University of North Carolina

Clarence H. Cannady ..... Mathematics
B.S., M.M., University of South Carolina

Arthur T. Cavano ..... Department Chairman, Developmental Studies
B.A., M.A., University of North Carolina

Franklin T. Edwards ..... Biology-Chemistry
B.S., M.A., Middle Tennessee State College

Joseph H. Foerch, Jr. ..... Social Science
B.S., North Carolina State University, graduate study—North Carolina State University

John G. Hatch ..... Mathematics
B.S., East Carolina University, graduate study—East Carolina University

George R. Hicks, Jr. ..... Department Chairman, Social Science
B.S., M.A., University of North Carolina

Wallace L. Jernigan ..... Mathematics
A.B., M.A., University of North Carolina

Larry T. Jones ..... Mathematics
B.S., M.A., East Carolina University

W. Paul Lewis ..... Division Chairman, Physics
B.S., M.A., East Carolina University

Graves H. McDowall ..... English
A.B., Millsap College, advanced study—North Carolina State University

Grady McKeithan ..... Music Appreciation
B.A., Wake Forest University

Thomas A. Moore ..... Art Appreciation
New York University; Art Students League; Sorbonne, Paris, France; Chabas Studio, Paris, France

Mrs. Zoe W. Murphy ..... Abnormal Psychology
B.A., M.Div., Duke University Divinity School

Larry B. Norris ..... English
B.A., M.A., University of Arkansas

Frederick C. Salter ..... English
B.S., M.A., East Carolina University

Eugene H. Shannon ..... Physics
B.S., M.S.P.H., University of North Carolina

Mrs. Judith A. Simmons ..... English
B.S., M.Ed., University of North Carolina

Lonnie G. Smith ..... Department Chairman, English
B.S., M.A., Appalachian State Teachers College

Abram C. Stephenson ..... Department Chairman, Mathematics
A.B., Elon College, graduate study—Duke University

Jesse B. Waters ..... Physics
A.B., East Carolina University, graduate study—William and Mary

Eugene Wood ..... English
B.S., M.A., A & T College of North Carolina

Health Occupations

Mrs. Geraldine I. Arnold, R.N. ..... Associate Degree Nursing
A.B., Olivet Nazarene College—graduate study, Wayne University & Northwestern Medical School

Miss Caludie Ann Dancy, R.N. ..... Practical Nurse Education
R.N., Highsmith Memorial Hospital School of Nursing undergraduate study—Limestone College

Julian W. Habercam, D.D.S. ..... Department Chairman, Dental Hygiene
University of Maryland

Mrs. June L. Hanley, R.N. ..... Associate Degree Nursing
B.S., New York University, graduate study—North Carolina State University

Mrs. Susan R. Helvie, R.N. ..... Practical Nurse Education
R.N., St. Vincent's School of Nursing

Mrs. Mary G. James, R.N. ..... Associate Degree Nursing
B.S., Florida A & M. University, graduate study—North Carolina State University

Mrs. Marie N. Kelley, R.N. ..... Associate Degree Nursing
B.S., Northwestern State College, graduate study—North Carolina State University

Mrs. Helen B. Landgon, R.N. ..... Associate Degree Nursing
B.S., M.S., Yale University School of Nursing, graduate study—North Carolina State University

Mrs. Ada M. Leonard, R.N. ..... Department Chairman
Practical Nurse Education
B.S., Limestone College

Mrs. Mercedes R. O'Hale, R.N. ..... Division Chairman
Department Chairman,
Associate Degree Nursing
B.S., M.S., University of Chicago

Trade Education

Charles A. Bell ..... Architectural Drafting
North Carolina State College

James H. Christie ..... Department Chairman, Welding
B.S., North Carolina State University

Philip M. Deese ..... Drafting
North Carolina State University

Herman W. Dunn ..... Air Conditioning & Refrigeration
A.A.S., Fayetteville Technical Institute, Refrigeration & Air Conditioning Licensed Contractor, undergraduate study—North Carolina State University

William L. Laslett ..... Architectural Drafting
B.S., Colgate; B. Arch., Yale University

Franklin M. McDonald ..... Department Chairman, Automotive Mechanics
Master Mechanic, undergraduate study—North Carolina State University

Edmund E. Nute ..... Division Chairman, Automotive Mechanics
Master Mechanic, undergraduate study—North Carolina State University

Ervin D. Oakes, Jr. ..... Air Conditioning & Refrigeration
Refrigeration Licensed Contractor, undergraduate study—North Carolina State University

James T. Paden, Sr. ..... Automotive Mechanics
A.A.S., Presbyterian Junior College, undergraduate study—North Carolina State University

James B. Pittman ..... Department Chairman, Machinist
Master Machinist, undergraduate study—North Carolina State University

Charles A. Stone, Jr. ..... Machinist
Master Machinist, undergraduate study—North Carolina State University

Lorimer P. Thomas ..... Department Chairman, Tool & Die
Master Machinist, undergraduate study—North Carolina State University

Learning Laboratory

Mrs. Patricia H. Nunalee ..... Coordinator
B.S., East Carolina University

Library Services

Miss Betty J. Williamson ..... Division Chairman, Head Librarian
B.S., M.A., East Carolina University

Mrs. Gail S. Duesbury ..... Librarian
B.A., M.L.S., University of Pittsburgh

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Mrs. Joann L. MacMillan ..... Director
B.S., M.Ed., North Carolina State University

OFFICE AND GENERAL STAFF

Miss Karon L. Altman ..... Secretary to the Adult Education Supervisor
Mrs. Jane Barefoot ..... Secretary to the Chairman of Guidance-Counseling Services
Mrs. Lynn Bledsoe ..... Secretary to the Business Manager
Miss Susan Gravley ..... Switchboard Operator
Mrs. Louise Griffin ..... Bookkeeper
Mrs. Annette Herndon ..... Secretary to the Director of Extension
Mrs. Peggy Holt ..... Secretary in the Business Office
Mrs. Sheila Locklear ..... Secretary to the Registrar
Mrs. Mildred McGhee .. Secretary to the Director of General Adult Education
Mrs. Kathy Miller ..... Secretary to the President
Mrs. Shirley Moore ..... Secretary to the Dean of Instruction
Mrs. Peggy Shaler ..... Secretary to the Dean of Student Affairs
Mrs. Annette Smith ..... Secretary in the Business Office
Mrs. Elizabeth Smith ..... Cashier
Mrs. Merrilyn Thagard ..... Secretary to the Director of Technical-Vocational Education
W. Preston Dunn ..... Maintenance Manager
William Robinson ..... Supervisor—Janitorial
Mrs. Linda Williams ..... Bookstore Manager

HISTORY

Fayetteville Technical Institute originated in 1961 as the Fayetteville Area Industrial Education Center under the auspices of the City Board of Education. In 1963, the North Carolina General Assembly created the Department of Community Colleges for the expressed purpose of providing for the establishment, organization, and administration of a system of educational institutions throughout the State offering courses of instruction in one or more of the general areas of two-year college parallel, technical, vocational, and adult education programs. The authority for this newly created department was vested in the North Carolina State Board of Education. The Center became a part of this system at this time.

The Center's progress in quality of educational programs offered resulted in the Board of Trustees requesting that the status of "Technical Institute" be given to the Center. This request was granted by the State Board of Education in September of 1963 and the current name Fayetteville Technical Institute was adopted. With the status of "Technical Institute", the Board of Trustees was granted the authority to award the Associate Degree of Applied Science.

The original building consisted of approximately 38,000 square feet of classroom and laboratory areas and the campus consisted of 10 acres. In 1965, the Board of Trustees acquired an additional 43 acres adjoining this property. It was at this time that a master plan was developed for the utilization of the 53 acre campus.

Since that time, three major additions have been added to the physical facilities of the plant. The original building was enlarged, a new Engineering Technology Building was started, and to be completed in 1971, will be an addition to the Engineering Technology Building and the construction of a new library-student union center. When completed, Fayetteville Technical Institute will have a capacity to handle between 1,200 and 1,500 students.

PURPOSE

The purpose of the Fayetteville Technical Institute is to provide specialized occupational education to fill the manpower needs in our society and to provide for the fullest possible development of the potential of each student so that he may attain effective citizenship in his society.

To attain this purpose, offerings and programs are designed to meet the various interests and aptitudes of all prospective students. Curricula programs are designed to produce highly-skilled, technical and semi-professional personnel to meet the needs of the expanding advances in industry, business, and health occupations. These programs also provide the base upon which to pursue future educational training, formal or informal, and to strengthen the general educational base of our society.

The following major areas of specialized occupational education are provided:

A. **Engineering Technician Education**—Highly specialized training for effective entrance into specialized areas of business and industry. Elements of training common to all technician occupations are included such as basic science, mathematics, oral and written communications, engineering and industrial terminology, engineering and industrial drafting, and similar technical skills.

B. **Business Education**—Specialized training for entry into positions such as (a) management and sales, (b) accounting, and (c) secretarial in the technical and executive fields. Elements of training common to all business occupations such as communicative skills, economics, and business law are included plus such specialized business subjects as accounting, business management, business finance, and data processing.

C. **Vocational Education**—Specialized training to provide depth in manipulative skills and diagnostic abilities in a selected

range of activities and to develop a strong basic background in such related areas as mathematics, social and physical science, and communicative skills.

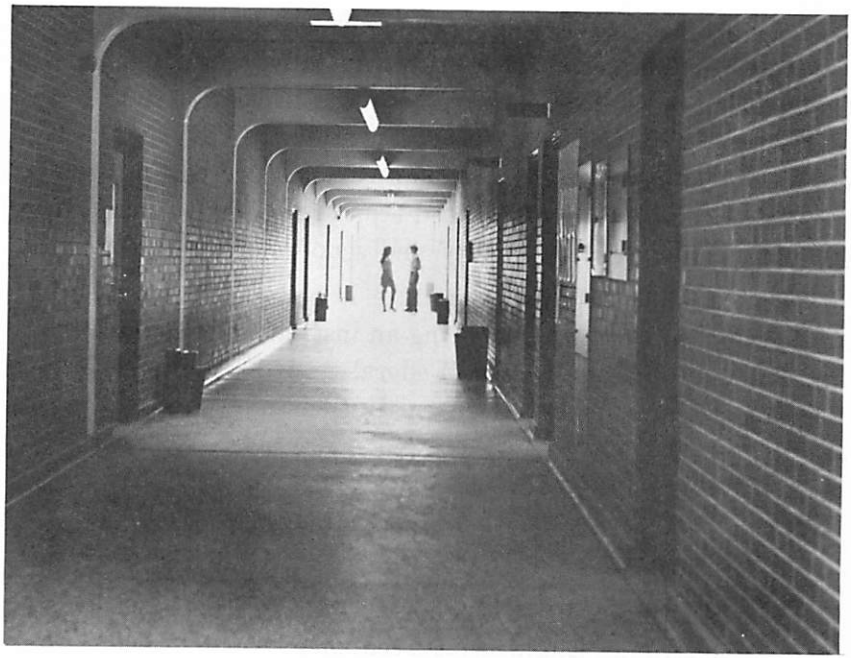
D. **Health Occupations Education**—Specialized training for both technical and vocational occupations. The various curricula provide the special technical knowledge and skills plus elements of training common to all occupations for which state licensing is required. Dexterous manipulative skills and a strong basic background in the social and physical sciences, mathematics, and communicative skills are emphasized in the training for those health occupations where such skills are paramount.

E. **Developmental Studies Program**—An integrated, student-centered program of instruction designed to increase the likelihood of success for students who enter this Institute with academic deficiencies. The goal of this Program is to develop the academic ability of every entering student to the extent that he has a high likelihood of success in one of the several curricular areas that he might select for continuing study.

F. **Non-Curricular Education**—Provides training in the following major areas:
   1. Adult Basic Education provides people with training in primary and secondary education from pre-literacy through Grade 12, including high school equivalency programs.
   2. **Extension Education** provides for the upgrading and retraining of employees in the skills of trade and industrial occupations.
   3. **General Adult Education** provides the adult population with courses promoting their recreational, avocational and cultural interests.
   4. **New and Expanding Industry Education** provides training programs for a new or expanding industry tailor-made to meet the immediate trained manpower need when the plant, new or expanding, is ready to go into production.

G. **Federally Sponsored Non-Curricular Education**

1. **MDTA Education** provides training in the skills of vocational or trade occupations under the Manpower Development Training Act for the purpose of entering employment.
2. **Project Transition** provides training to develop skills of vocational or trade occupations for personnel completing their military service. The aim is to provide an effective transition from military to civilian life.



ACCREDITATION & PROFESSIONAL ORGANIZATIONS

Department of Community Colleges

The Fayetteville Technical Institute is accredited by the North Carolina State Department of Community Colleges under the State Board of Education, as specified in Chapter 115 A of the General Statutes of North Carolina.

The Department of Community Colleges and the State Board of Education has granted the Institute's Board of Trustees the authority to award the Associate of Applied Science Degree for the completion of the two-year engineering technology curricula, the two-year business curricula and the two year health occupations curricula; and the awarding of the Diploma for all vocational curricula.

Southern Association of Colleges and Schools

Fayetteville Technical Institute is fully accredited by the Commission on Colleges of the Southern Association of Colleges and Schools as a special purpose institution. The Southern Association of Colleges and Schools is a regional accrediting agency for the purpose of identifying and accrediting institutions which meet the standards for quality and scope of higher education.

Fayetteville Technical Institute is recognized by the U.S. Department of Education as being an institution of higher learning and qualified to receive Federal assistance in all of the Federal programs designed for institutions of higher education.

Engineers' Council for Professional Development

Each of the following curricula is accredited by the Engineers' Council for Professional Development as an Engineering Technology curriculum.

1. Civil Engineering Technology
2. Electronics Engineering Technology
3. Environmental Engineering Technology
4. Mechanical Engineering Technology

The Engineering Technology Committee, a standing committee of the Engineers' Council for Professional Development, operates the accrediting program for engineering technology

curricula. The purpose of the accrediting committee is to identify those curricula which qualify for recognition as engineering technology curricula and to identify the institutions which offer them.

National League for Nursing

The Associate Degree Nursing Program of Fayetteville Technical Institute is fully accredited by the National League for Nursing. This type of approval is national in scope and voluntary rather than required by law. The standards set by the accrediting body are uniform throughout the United States. The recognized agency for the accreditation of programs in nursing is the National League for Nursing. The achievement of NLN accreditation by a program signifies that it has met the national standards of excellence for programs in nursing of its type.

North Carolina Board of Nursing

The Associate Degree Nursing Program and the Practical Nursing Education Program are fully accredited by the North Carolina Board of Nursing. Completion of the programs qualifies graduates to write their respective licensing examinations. Successful attainment leads to licensure as a Registered Nurse for graduates of the Associate Degree Nursing Program and Licensed Practical Nurse for the graduates of the Practical Nursing Program.

PROFESSIONAL ORGANIZATIONS

The Institute has membership in several educational associations that carry on a variety of programs and services which provide the institution with informational services, research, consultants, and workshops pertinent to the varied problems and issues in which we are engaged in technical and trade education on a national and state level.

1. American Association of Junior Colleges
2. Southern Association of Junior Colleges
3. North Carolina Association of Junior Colleges
4. American Society of Engineering Education
5. American Technical Education Association
6. National League for Nursing

GENERAL INFORMATION

ADMISSION REQUIREMENTS

Statement of Policy

Fayetteville Technical Institute as a technical, state-supported institution, adheres to an "Open-Door" admissions policy. High school graduates, persons holding a high school equivalency certificate (GED) and adults who show potential for post high school education may be admitted to credit courses which are appropriate to their educational potential. Successful implementation of an "Open-Door" admissions policy requires an emphasis on admissions counseling services. These services are provided to ascertain reasonable potential for success in the particular program pursued by the student. As part of the admissions counseling process, Fayetteville Technical Institute utilizes an initial aptitude and achievement test battery, a personal interview and an evaluation of the applicant's prior school record.

Steps in Admission Procedures

Application and Activity Fee

The applicant must submit a formal application accompanied by a $20 activity fee. This fee is refundable ONLY when the applicant IS NOT approved by the institution to enter a regular curriculum. NO refund of fees will be made without a written request submitted no later than the Fall registration date.

Transcripts—Beginning Students

Applicants who have not previously attended a post-secondary institution must request their high school to forward to the Director of Admissions a transcript of all courses taken.

Transcripts—Transfer Students

An applicant who has previously attended or enrolled in any other institute or college is considered a transfer student. Transfer students should request official transcripts of all work at-

tempted from each of the institutes or colleges previously attended. Such transcripts must be sent directly to the Director of Admissions.

Entrance Test Battery

Each applicant must complete the Entrance Test Battery which is administered at Fayetteville Technical Institute. Applicants will be scheduled for specific test dates. There is no charge involved in taking the test.

Admissions Interview

Each applicant must come for an individual interview to discuss with trained personnel his educational plans. High school records and results of the Entrance Test Battery will be used in conjunction with the student's personal aspirations to help him plan a workable educational goal.

Health Status

All applicants will be required to submit a medical record. Applicants should be in reasonably good health with no physical defect that would interfere with his progress in his chosen field of work.

General Entrance Requirements for All Curricula

1. Applicants must provide a transcript of their high school and post-high school education which should include test scores on any standardized tests taken while in high school or later.
2. Applicants must make acceptable scores on the initial general aptitude and achievement test battery which is administered by Fayetteville Technical Institute.
3. Acceptable physical and mental health as determined by a medical record submitted by each student.
4. A personal interview with a designated member of the Student Personnel Staff.

Specific Entrance Requirements (Associate Degree Curricula)

The minimum entrance requirements for admission to the two-year Associate of Applied Science Degree curricula are as follows:

1. High school graduate or
2. Eighteen years of age and state-approved equivalent education.
3. Math and Science
   a. A minimum of two units of algebra for all engineering technology and Electronic Data Processing.
   b. A minimum of one unit of algebra, one unit of biology, and one unit of chemistry for Associate Degree Nursing and Dental Hygienist.
4. In addition to the above, the necessary units of English, social science and electives as required for high school graduation.

Specific Entrance Requirements (Diploma Curricula)

1. High school graduate of eighteen years of age and approved equivalent education which indicates that the student has the ability to do post-high school training.
2. No specific math requirements are necessary for entrance into the trade curricula.

Deficiencies

Students who have deficiencies in mathematics and sciences may enroll in the requisite courses during summer school prior to entering a curriculum in the fall, or enroll in the Developmental Studies Program during the regular academic year.

Admission with Advanced Standing

Students may be admitted with advance standing by transfer from other technical institutes, colleges, or universities. All credits to be transferred must be equated with the curricular offerings at Fayetteville Technical Institute and be of "C" grade quality or better.

An official transcript of the student's previous college work must be submitted prior to registration.

In some instances, students may be required to take proficiency exams to indicate depth in subjects already taken.

EXPENSES & FEES

	Per Quarter	Per Year	Totals
Activity Fee		$20 (Payable with application)	$ 20.00
Tuition	$32	$96	$ 96.00
Sub Total			$116.00
Books (Estimated)	$50	$150	150.00
Total			$266.00

Other Fees

For students in Practical Nurse Education and Associate Degree Nursing curricula, an additional fee of $9.70 is required to cover a Malpractice Insurance cost which is required by the hospital.

Late Registration Fee

A late registration fee of $5 will be charged to all students without exception who register after the regular registration dates on the school calendar.

Out-of-State Student Fees

Any student whose legal residence is outside of North Carolina, or in case of students who are under 21 years of age and who are boarding or living with relatives in the state but whose parents or guardians live outside the state, will pay tuition fees, 2½ times the in-state rate except where State or Federal Law prohibits.

Hand Tools and Instruments

Students are required to purchase hand tools or instruments each quarter until he has assembled basic tools and instruments which he will need upon accepted employment. This requirement applies only to those curricula which require the use of such tools. The average cost is approximately $50 per quarter.

ACADEMIC STANDING

Credits

A. Full-time students will receive quarter-hours credit for courses in the curriculum in which they are enrolled.

B. The Fayetteville Technical Institute has been authorized by the North Carolina State Board of Education to award the Associate of Applied Science Degree to those students who successfully complete one of the Technology or Business curricula.

C. A Diploma is awarded by the Board of Trustees to those students who successfully complete vocational curricula.

D. It is a policy of this institution to permit students to enroll in additional subjects and laboratory work beyond those shown in the catalog. The instructional hours shown in the curricula are minimal. When in any quarter the total weekly instructional hours listed are fewer than thirty hours, a student may enroll on request for additional instructional hours, deemed by the institution to be consistent with the program and appropriate to the student, not to exceed thirty hours per week.

E. Students with academic deficiencies who require remedial work as background material may enroll for a maximum of 30 instructional hours per week in courses designed to meet entrance requirements of a specific curriculum. These deficiency courses carry credit hours toward entrance requirements but are not counted as credit hours toward graduation in any of the curricula. Students enrolled in deficiency courses who carry the number of instructional hours required for full-time student classification are classified as full-time institutional students.

Requirements for Graduation

To be eligible for graduation the student must:

1. Successfully complete his course of study as outlined in his specific curriculum.

2. Have sufficient quality points to average 2.0 in his total program.
3. Have no failing grade in any major subject area course (courses failed must be repeated).
4. Must have taken care of ALL financial obligations owed to Fayetteville Technical Institute.

Grading Procedures

Each grade is assigned a "grade point equivalent" in quality points for each quarter credit hour scheduled. The scholastic point average is determined by dividing the total quality points earned by the number of quarter hours scheduled.

Numerical Grade	Grade	Grade Point Equivalent
93-100	A - Excellent	4 quality points for each quarter hour
85- 92	B - Good	3 quality points for each quarter hour
77- 84	C - Average	2 quality points for each quarter hour
70- 76	D - Below Average	1 quality point for each quarter hour

1. Inc. - Incomplete: Given at the discretion of the instructor when all course requirements have not been satisfied.
2. WD - No grade: A student may withdraw from a course anytime within the first 10 school days with no grade penalty.
3. W-P or W-F: Students who drop a course after the first 10 school days of the quarter must have the instructor's consent if he is to be withdrawn passing; otherwise, he will receive a failing grade. No credit is given for withdrawn passing.

All final course grades will be a letter grade in accordance with the adopted grading system. Student's grade reports will be mailed at the end of each quarter. Grade reports will also reflect student attitude toward scholastic work as measured by the instructor.

All students must have at least a 2.0 quality point average to be eligible for graduation. Students who fail a course will be required to repeat the course. Both grades will be used in the determination of the total quality point average.

Withdrawals

Students who transfer or withdraw from the Institute during the school year must consult with the Dean of Student Affairs

and his faculty advisor.

Requests to withdraw must be in writing. Written requests are necessary in order to protect the student's school record, his right to re-enroll, and the right to transfer to another institution. No student's record will be released until his financial record is cleared.

Re-admittance

When a student withdraws from school due to hardship or illness, he may be permitted to re-enter at the beginning of the quarter in which those courses will be taught again.

A student dismissed from school by the Administration may re-enter at the beginning of the quarter in which those courses will be taught again, or at the beginning of the next scheduled quarter, if so approved by the Administration.

Refunds

Tuition refunds for students shall not be made unless the student is, in the judgment of the institution, compelled to withdraw for unavoidable reasons. In such cases, two-thirds (⅔) of the student's tuition may be refunded if the student withdraws within ten calendar days after the first day of classes as published in the school catalog; otherwise, tuition refunds will not be considered unless a course or curriculum fails to materialize.

Veterans. The following refund policy will be applicable to veterans under Public Law 550, 82nd Congress: "The institution has and maintains the following policy for refund of the unused portion of tuition, fees, and other charges in the event the veteran fails to enter the course or withdraws or is discontinued therefrom at any time prior to completion.

The amount charged the veteran for tuition, fees, and other charges for a portion of the course will not exceed the approximate pro rata portion of the tuition, fees and other charges that the length of the completed portion of the course bears to its total length."

Academic Deficiency

A student whose quality point average for any given quarter's work falls below the minimum as stated in the Student Handbook will be placed on Academic Probation: If his subsequent quarter's work should also fail to meet this minimum, he may be requested to withdraw from school, drop certain courses and/or take remedial work.

Associate Degree Nursing students must maintain a minimum of C in Nursing Courses, I - VIII. Probation will be considered only on the first quarter's work.

Hospital laboratory assignments are graded on a pass-fail system. A student who fails as a safe nurse in the clinical area will receive a total grade of F in a nursing course.

Attendance

Due to the nature and purpose of the institution and the necessity for sequential scheduling of course work, attendance is an incumbent factor upon the student. Guidelines, used as a regulatory process, have been set up to govern absenteeism as follows:

1. A student may be absent from a class, for emergency reasons, an equal number of hours as credit hours given for that particular course. He will be responsible for making up any class assignment missed due to absences.
2. A student who accumulates more class absences than credit quarter hours given for a course will be automatically dropped and must request consideration for reinstatement. Reinstatement cases are appraised by the Faculty Reinstatement Committee for the following emergency reasons.
   a. Illness or injury to the student.
   b. Illness or death in the immediate family.
   c. Inclement weather (hurricane, ice, etc.)
3. A student who has been absent excessively will be subject to failure and/or dismissal from school without credit.

Honors

Any student who has earned a quality point average of 3.5 during his work at Fayetteville Technical Institute will be granted a degree with honors.

Scholastic Award—One-Year Vocational Curriculum. This award is to the student in a one-year vocational curriculum who has obtained the highest grade average in all class work taken at Fayetteville Technical Institute leading to a diploma.

Scholastic Award—Two-Year Vocational Curriculum. This award is given to the student in a two-year vocational curriculum who has obtained the highest grade average in all class work taken at Fayetteville Technical Institute.

Scholastic Award—Two-Year Degree Curriculum. This award is given to the student who has obtained the highest grade average in a two-year degree curriculum leading to the Associate of Applied Science Degree.

Outstanding Student Award

The criteria used by the faculty in the selection of the Outstanding Student Award includes the following:

1. Respects faculty, administrators, and fellow students.
2. Demonstrates definite leadership ability.
3. Completes assigned tasks with thoroughness.
4. Exhibits good sportsmanship and respects public property.
5. Conforms to general rules and regulations of the college.
6. Exhibits a high degree of integrity and general loyalty to the school.

Citizenship Award

The criteria used by the faculty in the selection of the Citizenship Award includes the following:

1. Shows respect for faculty, administrators and fellow students.
2. Shows willingness to follow others leadership.

3. Exhibits good sportsmanship and respects public property.
4. Conforms to general rules and regulations of the college.
5. Exhibits a high degree of integrity and general loyalty to the school.
6. Does a thorough job of assigned tasks and elected responsibility and supports all college activities.

Intercollegiate Awards

Members of the varsity athletic team are awarded letters as are the members of the cheerleading team. Outstanding performers during the basketball season are recognized as "Most Valuable Player" and "Most Improved" on the team.

STUDENT PERSONNEL SERVICES

Counseling Services

The Student Personnel Services include counseling services provided by trained personnel. These services are available to every curriculum student from pre-admission through graduation including transfer or placement. There is no cost for these services.

Every student is assigned a faculty advisor who serves to assist the student with specific course planning and registration.

Students may come to the counselor's office at any time when a personal problem arises which could affect his progress in school. Faculty members are asked to encourage students to use this service if needed. Appointments are set up to discuss the student's educational course of study and school progress at intervals throughout the year.

Testing

Each applicant will be given a series of aptitude and achievement tests which constitute both an entrance requirement and a counseling tool for placement. There is no cost for these tests and each applicant will be notified of the date he is to be tested. These tests are given to all applicants enrolling for the first time at Fayetteville Technical Institute as curriculum students.

Orientation

All new full-time students are required to participate in the orientation program. The purpose of the program is to acquaint the student with the administrative personnel, faculty and student leaders. The rules, policies, and privileges of the college are discussed as contained in the Student Handbook. Informal, social activities with fellow students and faculty members are included in the program of orientation.

Student Housing

The Student Affairs Office assists the student in finding housing when it is necessary or desirable on the part of the student to reside in Fayetteville. Financial arrangements for rooms or apartments are on an individual basis between the student and landlord.

Placement of Students

The Student Affairs Office provides a job placement service for all curricular students who successfully complete a program of study at the institute. The Admissions and Placement Office maintains an active file of prospective employers and provides these employers with personal data sheets on students from the curriculum meeting the job demands. Employers from all geographical areas of North Carolina and from a number of other states come to the campus each spring to interview prospective graduates.

Although the placement office cannot guarantee anyone a job, the placement record is extremely high in percentage of effectiveness. There is no cost for this service.

Draft Deferment

Fayetteville Technical Institute holds the same draft deferment status accorded other college students throughout the state. The student's local selective service board is notified at the time of registration of the student's enrollment. The present draft law, as amended, effective for the 1970-71 school year states that a student must request deferment in writing. Forms for this request may be obtained from the Student Affairs Office.

Financial Assistance

Students who need financial aid can receive assistance through one of the following sources: (1) scholarships, (2) local loans, (3) College Work Study, (4) Educational Opportunity

Grants, (5) National Defense Student Loan, (6) College Foundation, Inc. (federal insured loan program), F.T.I. deferred payment plan, (7) and Federal Nursing Loans.

Requests should be made during the admissions interview or as soon as possible after being approved to attend school. Application should be in no later than July 1 preceding the Fall quarter.

Scholarships

Local and area scholarships which are currently available are:

1. The Cumberland County Better Health Fund offers a $250 scholarship for a student in the Associate Degree Nursing curriculum.
2. Black & Decker offers a $300 scholarship for a son or daughter of one of their employees.
3. The Department of Water and Air Resources offers four $250 scholarships to students entering the Environmental Engineering curriculum.
4. The Henry Rankin, Jr. Scholarship of $250 is offered to a student in Electronics Engineering Technology.
5. The American Business Women, Fayetteville Chapter, offers a $300 scholarship to a female student in any curriculum of the Business Division.
6. The National Licensed Practical Nurses' Educational Foundation, Inc. provides scholarships in the amount of $250 each for approved applicants in the Practical Nurse Education curriculum.
7. Nursing scholarships are available in varied amounts according to need for both the Associate Degree Nursing and the Practical Nursing education.
8. Fayetteville Technical Institute offers a full one-year scholarship in conjunction with the Cumberland County Trade Fair. Application for this scholarship is made at the time of the Trade Fair usually held March each year.
9. Other scholarships are available from anonymous sources to needy students and are available from time to time.

Loans

A. The Fayetteville Technical Institute offers an Emergency Loan Fund which is administered by the Student Financial Aid Committee. Application may be made at any time during a student's full-time enrollment in a curriculum program. Maximum loans from this fund are $300 per year and, as a general rule, these loans are interest-free. The following businesses, firms or groups have contributed to the local loan fund:

1. Bass Air Conditioning Company, Inc. contributes $250 annually for students enrolled in Air Conditioning and Refrigeration.
2. Cape Fear Engineer's Society contributes $500 each year for students entering an engineering curriculum. (Limited to students from Bladen, Columbus, Cumberland, Harnett, Robeson, and Sampson counties.)

B. The National Defense Education Act provides for student loans to a maximum of $1500 based on financial need. Loans are repaid after graduation over an extended repayment period.

C. College Foundation, Inc. serves as the N. C. agency to administer the Federal Insured Loan program. A maximum of $1500 may be borrowed each year and repayment periods are the same as the NDEA plan.

Other Financial Aids

1. College Work-Study permits a needy student to earn money for work at the college or other non-profit organization. Assistance is given for some job placements by PACE, Inc.
2. Educational Opportunity Grants are awarded on basis of financial need as prescribed by the federal agency governing this fund and are considered as grants not to be repaid.
3. Deferment of payment is a plan arranged by F.T.I. to assist a student to start to school and complete payment

of fees during each quarter. Special arrangements must be made in advance with the Financial Aid Officer.

4. Federal loans are available in varied amounts for the Associate Degree Nursing Program.
5. Funds are available to students in Electronic Engineering Technology curriculum who have completed their freshman work in amounts not to exceed $300. These funds are made available by a gift from the Cumberland County C. B. Club and are administered by the Financial Aids Officer.

STUDENT ACTIVITIES

Student activities are an integral part of total development of students at Fayetteville Technical Institute. These activities provide the student the opportunity to receive practical experience in the responsibilities of citizenship. Students are encouraged to join and participate in all student activities. All student activities are coordinated through the Student Affairs Office.

Student Government Association

The Student Government Association was organized in 1961 under a Student Government Constitution. The purpose of this organization is to promote the welfare of the student and the school in all matters and to provide for a close working relationship between all school personnel. A copy of the Student Government Constitution is contained in the Student Handbook and will be given to each new student by the Student Affairs Office. Through the Student Government, each student has voice in school affairs.

The structure of the S.G.A. includes the president, vice-president, and treasurer. There is a first and second-year representative from each curriculum. The faculty sponsor coordinates the activities of the S.G.A. through the Student Activity Officer in the Student Affairs Office.

Student Publications

Faculty sponsors coordinate the work of the members of the Technikos and Technician staff. The sponsors work with the school administration in producing these publications.

Technikos is the year book of Fayetteville Technical Institute. It is designed to give a pictorial view of students in the various curricula offered here at the Institute as well as extra-curricular activities that the student body has participated in.

Technician is the student newspaper which is published quarterly by the student body. Its main purpose is to inform the student body of the activities that students are involved in as well as their accomplishments.

Intramural Sports

Each curriculum may enter a team or teams in a scheduled program of various sports for intramural participation. No faculty team will be allowed to participate in competition with student teams for intramural standings or team trophies.

Clubs

Clubs may be organized within the student body and/or curriculum divisions when an appropriate faculty sponsor is named. Club goals and constitutions must be presented to the S.G.A. for review and approval before recognition will be given.

Area Activities

Students may join the local Y.M.C.A., adjacent to the campus, for special student rates which permits the student the use of the facilities.

Fayetteville provides opportunities for many cultural and recreational activities which are available to the student body. These activities include golfing facilities, bowling centers, movie theatres, arts and craft groups, concert series, music and choral groups, and little theatre presentations. In most cases F.T.I. students get special rates.

Intercollegiate Sports

Fayetteville Technical Institute is a member of the North Carolina Community College Athletic Conference. F.T.I. participates with other schools in the community college system in basketball, cross country track and golf. Any student who might be interested in participating is encouraged to try out for these sports.

SPECIAL SERVICES

Library

A technical library is maintained for use of the students and faculty. The library has a carefully selected collection of catalogued books and pamphlets, and receives many periodicals in the technical field. Students are encouraged to use the library for reference and study. The librarians will be happy to assist the student in locating any research materials.

The student schedule requires 25 to 30 hours per week of classroom and laboratory work. On the average, 18 to 20 hours per week must be devoted to outside study. A student should plan an overall time commitment of approximately 45 hours per week to his studies.

The library will be open from 8:00 AM to 9:00 PM.

Book Store

The Book and Supply Store is operated by the Institute for the service of students and instructors. All textbooks, tools, instruments and other supplies required by students attending the institute are available and are sold through the book store below list price. Other distinctive school items usually found in a college bookstore are available. The store operates under the direction of the Business Manager and hours of operation are posted at the book store entrance.

Snack Bar

A snack bar is provided for the use of all students. It is operated by the institute and is open for business between the hours of 7:00 AM and 9:00 PM during the Fall, Winter and Spring quarters. It also operates on a reduced time schedule during the summer quarter. Good food at a nominal cost may be obtained at the snack bar.

Student Lounge

The Fayetteville Technical Institute provides a student lounge for the comfort and relaxation of its student body. The lounge is equipped with lounging chairs, tables, and a T.V. It is open all day for the students' convenience and the students may relax in a "home away-from-home" atmosphere.

GENERAL STUDENT REGULATIONS

The total educational program of the college is designed to assist the student to reach the highest level of potential possible in his personal development. Each curriculum is designed as a vital part of that development and successful completion of all course work will assure good job placement. Each out-of-class activity is designed to provide the best opportunity for social development as a part of overall training.

In order to accomplish inter-social training, certain rules and regulations must be followed to allow for an orderly transition into the program of the college.

Student Conduct

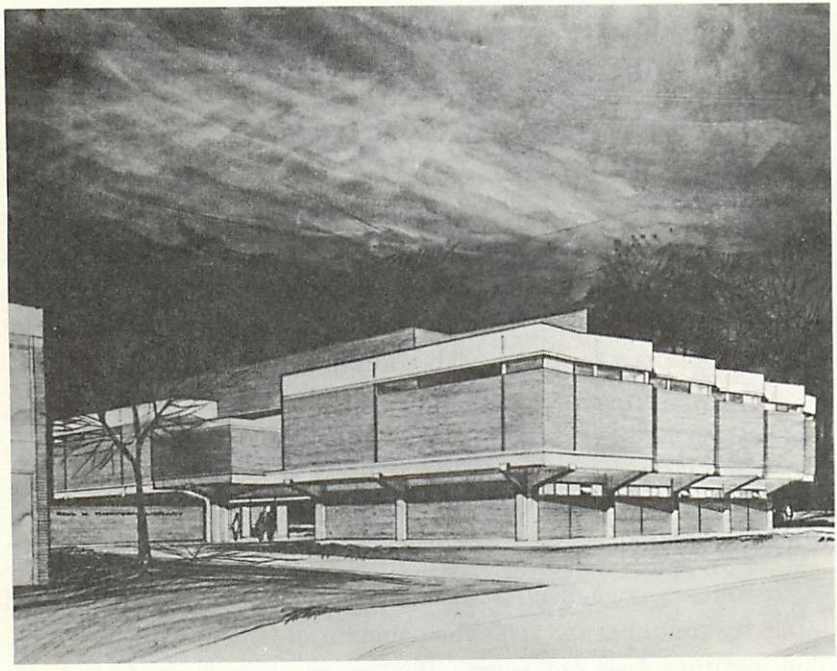
Students are expected to display the qualities of courtesy and integrity that characterizes the behavior of ladies and gentlemen. The institute does not permit the use or possession of alcoholic beverages or drugs on the campus or at social functions sponsored by the institute.

Dress

Fayetteville Technical Institute continually has prospective employers visiting the school, also, many companies who are looking for places to open new industry will have their representatives visit the institute. With this in mind, Fayetteville Technical Institute students dress informally; however, in all cases, neatness of dress is encouraged. Neatness in personal appearance is a strong characteristic of FTI students. Beards and long hair are not considered as being neat in appearance.

Dismissal

The Fayetteville Technical Institute reserves the right to suspend or dismiss any student when it believes such action is in the best interest of the institute or the student.



THE ASSOCIATE DEGREE

History

The first Associate Degree conferred in the United States was granted in 1900, by the University of Chicago. At that time, President William Rainey Harper, the man most instrumental in its initiation, listed among his reasons for this action: (1) that many students would not be able to continue beyond the sophomore year because of personal or financial difficulties and (2) that two years of college would appeal to students whose interest would wane in a four-year program. These reasons are still of significance today, but perhaps not so important as easing a manpower gap created by the mushrooming technology of the past half century.

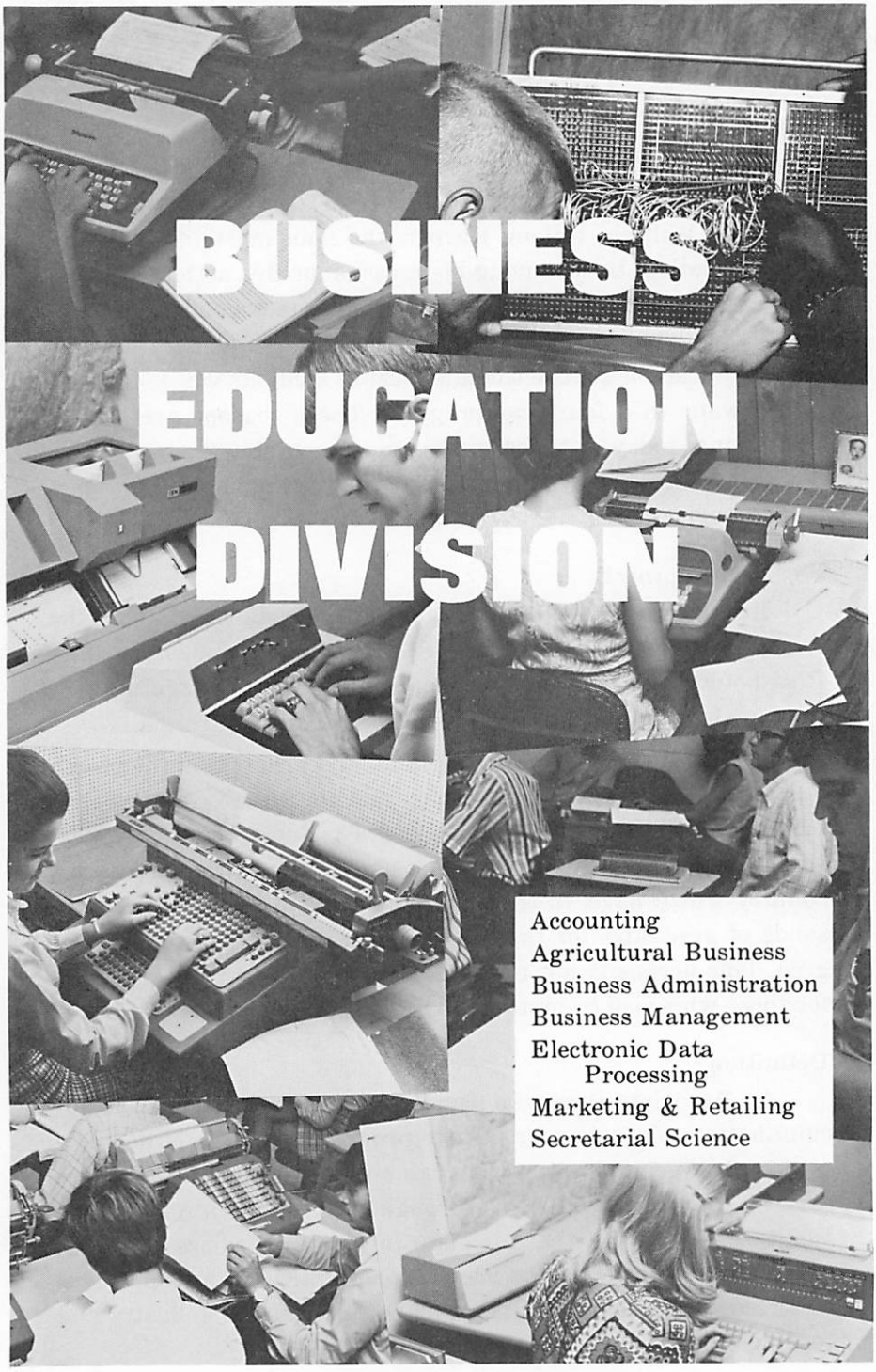
The New Approach

Recognizing the critical nature of the problem and that the Associate Degree was one answer to it, the North Carolina State Board of Education authorized a number of two-year training programs which helped answer the needs of North Carolina.

Approval to offer these programs was granted by the North Carolina State Board of Education and the North Carolina Department of Community Colleges in 1963. Fayetteville Technical Institute is one of the many colleges and universities across the country which have, in the past decade, prepared literally thousands of graduates for the labor market with the Associate Degree. This degree is not terminal but carries full transfer credit for those who wish to continue their education.

Definition

An Associate Degree is usually granted after the successful culmination of a two-year college program which is either of a technical or general nature. Though a variety of degree titles are used by granting institutions throughout, Fayetteville Technical Institute will award the Associate in Applied Science. This degree represents the major areas of concentration and provides focalized instruction in the critical areas of business, industry and technical fields.


BUSINESS
EDUCATION
DIVISION
Accounting
Agricultural Business
Business Administration
Business Management
Electronic Data Processing
Marketing & Retailing
Secretarial Science

PURPOSE

Tremendous business and industrial expansion has created an increasing need for trained people in accounting, administration and management, agricultural business, sales and marketing, computer programming, and secretarial science. Skills in these areas are obtained through specialized curricula such as Accounting, Agricultural Business, Business Administration, Marketing and Retailing, Industrial Management, Data Processing (Business), and Secretarial Science.

Each curriculum is designed primarily to prepare the student for employment in his chosen area of the business field. A student is therefore required to master the specific skills and knowledges of his selected curriculum. Practical learning experiences are emphasized but are not allowed to eliminate the development of a basic theoretical background. In order to broaden his education the business student is required to take related courses in economics, communicative skills, and human relations. These courses enable him to better adapt to the greater demands of the environment as well as make worthwhile contributions toward its improvement. The Business Education Division student is also provided a sufficient background in course content to further his education at higher institutions.

Four-year colleges and universities are now providing the opportunity for technical institute graduates to enter programs of study leading to a Bachelor degree. One of those programs which has been developed within the system of the University of North Carolina is solely for graduates of Business Education Associate Degree curriculums. Still other institutions allow transfer credit for individual courses taken within business education curriculums. Thus the Business Education Division student develops skills and knowledges enabling him to be gainfully employed or to continue his education at other institutions of higher learning.

ACCOUNTING

Purpose of Curriculum

Accounting is one of the fastest growing employment fields in America today, and the job outlook for good accountants seems bright for many years to come. These opportunities result from the tremendous business and industrial expansion in all parts of the country. Because of this emphasis, there is a growing need for trained people in the area of accounting to advise management in the financial aspect of a firm's operation. The Accounting Curriculum is designed to fill this need by offering students the necessary accounting theories and skills for entry into the accounting profession.

The specific objectives of the Accounting Curriculum are to develop the following competencies: (1) Understanding of the principles of organization and management in business operations; (2) Understanding of the principles of accounting and analysis of financial statements, including the importance of auditing standards as they apply to the ethics of the profession; (3) Understanding and skill in effective communications for business; (4) Understanding of course content to the extent that he may succeed as a transfer student to a four-year institution; and (5) After two years' professional experience following graduation, an associate degree accountant is eligible to sit for the Certified Public Accountant Examination in North Carolina.

Job Description

The graduates of the Accounting Curriculum may qualify for any of the following accounting positions: accounting clerk, payroll clerk, accounting machine operator, auditor, and cost accountant. This training plus further experience should prepare them to become office managers, accounting supervisors, and to fill other responsible positions in a business firm.

They may also qualify for various positions in federal, state and local governmental units, including revenue departments, state banking and insurance and auditor offices, and defense department finance and accounting offices.

ACCOUNTING CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours
			Class	Lab.	Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
BUS	120	Accounting	5	3	6
ECO	102	Economics	2	2	3
MAT	104	Commercial Algebra	5	0	5
BUS	102	Typewriting*	2	3	3
			17	8	20
		SECOND QUARTER			
ENG	102	Composition	3	0	3
BUS	121	Accounting	5	3	6
ECO	104	Economics	2	2	3
BUS	115	Business Law	2	2	3
BUS	123	Business Finance	2	2	3
			14	9	18
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	124	Business Finance	2	2	3
BUS	110	Office Machines	2	3	3
BUS	222	Accounting	5	3	6
BUS	116	Business Law	2	2	3
			14	10	18
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
EDP	104	Introduction to Data Processing	3	2	4
BUS	223	Accounting	5	3	6
BUS	219	Credit Procedures & Problems	2	2	3
BUS	234	Personnel & Business Management	5	0	5
			18	7	21
		FIFTH QUARTER			
ENG	206	Business Communications	3	0	3
SSC	205	American Institutions	2	2	3
BUS	224	Advanced Accounting	5	3	6
BUS	229	Taxes	3	4	5
BUS	247	Business Insurance I	3	0	3
			16	9	20
		SIXTH QUARTER			
BUS	257	Business Insurance II	3	0	3
PSY	206	Applied Psychology	3	0	3
BUS	225	Cost Accounting	3	4	5
BUS	269	Auditing	3	2	4
EDP	109	Complier Language	2	4	4
			14	10	19

*Proficiency test will be given.

AGRICULTURAL BUSINESS

Purpose of Curriculum

Rapid technological changes in farming and related agricultural businesses have given rise to the need for more technically trained people. A variety of agricultural businesses and industries employ persons to assist in marketing, processing, and distributing of farm products and providing services to the farmer. Many responsible positions in agricultural businesses and industries require technical training not available in high schools or in four-year colleges.

The Agricultural Business Curriculum is designed to help students acquire the knowledge, understanding, and ability in the broad field of agricultural business, including agricultural production. It combines knowledge of agriculture with business training to prepare the graduate for many of the varied employment opportunities in agriculture.

Job Description

As agricultural business and industry firms expand in size and number, they are experiencing rapid changes in technologies of production, sales, and management, in an increasingly competitive environment. Future employees of such firms must be prepared to understand these changes and adapt themselves accordingly. Successful completion of this curriculum should enable a person to assume responsibilities in an agricultural firm and should enable him to advance within such a business.

Upon graduation from this curriculum, an individual shoula qualify for various jobs in agricultural business and industry such as salesman for store manager in farm supply stores; agricultural field serviceman, salesman, demonstrator or plant manager of feed and food companies; farm products inspector; salesman, or office managers of farm products marketing firms.

The trend towards larger farming operations with increased non-farm control of production means there will be greater employment opportunities for well-trained individuals who can efficiently and profitably supervise the production and marketing of agricultural products.

AGRICULTURAL BUSINESS TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
CHM	101	Chemistry	4	2	5
MAT	110	Business Mathematics	5	0	5
AGR	125	Animal Science	5	2	6
			17	4	19
		SECOND QUARTER			
ENG	102	Composition	3	0	3
BUS	101	Introduction to Business	5	0	5
BUS	120	Accounting	5	3	6
AGR	170	Plant Science	5	2	6
			18	5	20
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	121	Accounting	5	3	6
AGR	185	Soil Science & Fertilizers	5	2	6
AGR	104	Introduction to Agriculture Economics	3	2	4
			16	7	19
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
BUS	123	Business Finance	2	2	3
AGR	204	Farm Business Management	4	4	6
AGR	218	Agricultural Mechanization	3	2	4
AGR	228	Livestock Diseases & Parasites	3	2	4
			15	10	20
		FIFTH QUARTER			
BUS	232	Sales Development	3	0	3
AGR	205	Agricultural Marketing	5	0	5
AGR	201	Agricultural Chemicals	4	2	5
SSC	205	American Institutions	2	2	3
BUS	115	Business Law	2	2	3
BUS	110	Office Machines	2	3	3
			18	9	22
		SIXTH QUARTER			
AGR	256	Crop Production	4	2	5
AGR	257	Animal Production	4	2	5
PSY	206	Applied Psychology	3	0	3
BUS	272	Supervision	3	0	3
BUS	229	Taxes	3	4	5
			17	8	21

BUSINESS ADMINISTRATION

Purpose of Curriculum

In North Carolina, the opportunities in business are increasing. With the increasing population and industrial development in this State, business has become more competitive and automated. Better opportunities in business will be filled by students with specialized education beyond the high school level. The Business Administration Curriculum is designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in many phases of administrative work that might be encountered in the average business.

The specific objectives of the Business Administration Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding our economy through study and analysis of the role of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.
4. Understanding and skill in effective communication for business.
5. Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

Job Description

The graduate of the Business Administration Curriculum may enter a variety of career opportunities from beginning sales person or office clerk to manager trainee. The duties and responsibilities of this graduate vary in different firms. These encompassments might include: making up and filing reports, tabulating and posting data in various books, sending out bills, checking calculations, adjusting complaints, operating various office machines, and assisting managers in supervising. Positions are available in businesses such as advertising, banking, credit, finance, retailing, wholesaling, hotel, tourist and travel industry, insurance, transportation, and communications.

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BUSINESS ADMINISTRATION CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
MAT	110	Business Mathematics	5	0	5
BUS	185	Business Organization	3	0	3
BUS	102	Typewriting*	2	3	3
ECO	102	Economics	2	2	3
SSC	205	American Institutions	2	2	3
			17	7	20
		SECOND QUARTER			
ENG	102	Composition	3	0	3
ECO	104	Economics	2	2	3
BUS	115	Business Law	2	2	3
PSY	206	Applied Psychology	3	0	3
BUS	234	Personnel & Business Management	5	0	5
BUS	110	Office Machines	2	3	3
			17	7	20
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	116	Business Law	2	2	3
BUS	272	Principles of Supervision	3	0	3
EDP	104	Introduction to Data Processing	3	2	4
BUS	239	Marketing	5	0	5
BUS	260	Gov't & Business	2	2	3
			18	6	21
		FOURTH QUARTER			
BUS	120	Accounting	5	3	6
ENG	204	Oral Communications	3	0	3
BUS	259	Business Law	2	2	3
BUS	219	Credit Procedures & Problems	2	2	3
BUS	123	Business Finance	2	2	3
			14	9	18
		FIFTH QUARTER			
ENG	206	Business Communications	3	0	3
BUS	247	Business Insurance I	3	0	3
BUS	121	Accounting	5	3	6
BUS	285	Salesmanship	5	0	5
BUS	124	Business Finance	2	2	3
			18	5	20
		SIXTH QUARTER			
BUS	229	Income Taxes	3	4	5
BUS	243	Advertising	5	0	5
BUS	257	Business Insurance II	3	0	3
BUS	258	Machine Accounting	3	2	4
BUS	286	Real Estate	3	2	4
			17	8	21

*Proficiency test will be given.

ELECTRONIC DATA PROCESSING

Purpose of Curriculum

In both industry and business, the use of computers for electronic data processing in both the field of business application and the field of scientific research is growing rapidly. The Electronic Data Processing Curriculum is designed to prepare a student to enter either the scientific field, the business field, or both. In the scientific field the graduate could do either research or industrial programming, and in the business field the graduate could do any of many business programming required such as: accounting reports, sales reports, or production reports.

The curriculum is developed on three general levels of depth. The first level is introductory including courses in Computer Logic, Punched-Card Data Processing, and An Introduction to Data Processing. The second level is languages and their applications including courses in Cobol, PL 1, Fortran, and Basic Assembly. The third level is systems including courses in Computer Systems, Linear Programming, and Statistics. Analysis and solution decision-making are taught to the student to create a programmer-analyst to solve business and industry problems from inception to completion.

Job Description

As a programmer-analyst, either in business or industry, the graduate will be capable of handling problems at the system level rather than simply program-coding the solution. Analysis of the entire problem logical determination of the proper solution, coding of the programs to solve the problem in the appropriate computer language, testing the completed system for accuracy, and working with all levels of management are some of the tasks that the graduate of the Electronic Data Processing Curriculum should encounter on the job.

ELECTRONIC DATA PROCESSING CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
EDP	103	Elements of Computer Logic	2	2	3
EDP	104	Introduction to Data Processing	3	2	4
ENG	101	English Grammar	3	0	3
MAT	106	Electronic Data Processing Math I	5	0	5
ECO	102	Economics	2	2	3
			15	6	18
		SECOND QUARTER			
EDP	101	Functional Wiring Principles	3	0	3
EDP	107	Compiler Language I (FORTRAN)	2	4	4
BUS	120	Accounting I	5	3	6
MAT	107	Electronic Data Processing Math II	5	0	5
ENG	102	English Composition	3	0	3
			18	7	21
		THIRD QUARTER			
EDP	109	Compiler Language II (COBOL)	2	4	4
EDP	110	Data Processing Application—Compiler Language I (FORTRAN)	2	4	4
BUS	115	Business Law I	2	2	3
BUS	121	Accounting II	5	3	6
ENG	103	Report Writing	3	0	3
			14	13	20
		FOURTH QUARTER			
EDP	201	D. P. Application—Compiler Language II (COBOL)	2	4	4
EDP	203	Compiler Language III (PL-1)	2	4	4
BUS	116	Business Law II	2	2	3
BUS	122	Accounting III	5	3	6
ENG	204	English—Oral Communications	3	0	3
			14	13	20
		FIFTH QUARTER			
EDP	204	D. P. Application—Compiler Language III (PL-1)	2	4	4
EDP	211	Computer Systems I	2	2	3
EDP	207	Basic Assembly Language	2	4	4
BUS	282	Business Statistics	3	2	4
SSC	205	American Institutions	2	2	3
			11	14	18
		SIXTH QUARTER			
EDP	216	Data Processing Project	2	8	5
EDP	205	Linear Processing and C.P.M.	3	2	4
EDP	223	Computer Systems II	2	2	3
BUS	263	Payroll Taxes	3	2	4
PSY	206	Applied Psychology	3	0	3
			13	14	19

INDUSTRIAL MANAGEMENT CURRICULUM

Purpose of Curriculum

Industry's needs in positions of supervision and mid-management have grown extensively with the development of new methods of manufacturing and with the increase in the national economy. This need has added emphasis to the necessity for well-trained individuals that can understand new methods and keep abreast of trends in the economy. The supervisor and persons in mid-management must be concerned daily with human behavior and the psychological factors which affect personnel working their direction. They must also be conscious of the responsibilities of their position toward the total economic well being of the industry.

These requirements have set forth the objectives in developing this program to prepare people for supervisory and mid-management responsibilities in industry.

The program is prepared to develop the individual's abilities in the art of communicating with his fellow worker by providing him with training in business and industrial management, psychology, production methods, and the general and social education that broadens one's perspective. This training should provide one with the opportunity to enter into an industrial occupation and, with experience, assume the responsibilities that go with supervisory and mid-management positions in industry.

Job Description

The supervisor or foreman coordinates the activities of workers in one or more occupations. His duties may encompass the interpreting of company policies to workers, involvement in planning of production schedules and estimating of man hour requirements for job completion, establishment or adjustment of work procedures, analyzes and resolves work problems, and initiates or suggests plans to motivate workers to achieve work goals.

INDUSTRIAL MANAGEMENT CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
BUS	185	Business Organization	3	0	3
ENG	101	Grammar	3	0	3
MAT	110	Business Mathematics	5	0	5
ECO	102	Economics	2	2	3
SSC	205	American Institutions	2	2	3
BUS	102	Typewriting*	2	3	3
			17	7	20
		SECOND QUARTER			
ENG	102	Composition	3	0	3
ECO	104	Economics	2	2	3
BUS	115	Business Law	2	2	3
PSY	206	Applied Psychology	3	0	3
BUS	234	Personnel & Bus. Management	5	0	5
BUS	110	Office Machines	2	3	3
			17	7	20
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	116	Business Law	2	2	3
BUS	272	Principles of Supervision	3	0	3
EDP	104	Introduction to Data Processing	3	2	4
ISC	120	Principles of Industrial Management	3	2	4
BUS	260	Government & Business	2	2	3
			16	8	20
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
ISC	210	Job Analysis & Evaluation	3	2	4
SOC	101	Introduction to Sociology	3	0	3
ISC	231	Manufacturing Cycles	5	0	5
BUS	123	Business Finance	2	2	3
			16	4	18
		FIFTH QUARTER			
ENG	206	Business Communications	3	0	3
BUS	247	Business Insurance I	3	0	3
ISC	211	Work Measurement	3	2	4
ECO	201	Labor Econ. & Labor Relations	3	2	4
ISC	102	Industrial Safety	3	0	3
BUS	124	Business Finance	2	2	3
			17	6	20
		SIXTH QUARTER			
ISC	235	Industrial Management Seminar	3	2	4
MEC	213	Production Planning	3	0	3
ISC	202	Quality Control	3	2	4
ISC	209	Plant Layout	3	2	4
ISC	220	Management Problems	3	0	3
ISC	204	Value Analysis	3	0	3
			18	6	21

*Proficiency test will be given.

MARKETING AND RETAILING

Purpose of Curriculum

Marketing and retailing technology is a program of instruction in distributive education which teaches students the techniques of marketing, management, and distribution which are used in many businesses. The program is designed to give the student a chance to learn the theoretical, as well as practical aspects of distributive occupations at the mid-management level. Distributive occupations are those followed by workers engaged in marketing or merchandising activities or in contact with buyers and sellers when (1) distributing to consumers, retailers, jobbers, wholesalers, and others the products of farm and industry or selling services or (2) managing, operating, or conducting retail, wholesale, or service businesses. Distribution pertains to business and industrial goods as well as to consumer goods, and to business and consumer services. Distributive occupations are many and diverse, ranging from stock clerk to the head of a giant distribution-oriented corporation. Thus there are hundreds of entry occupations in this field. Ideally the student would start into his profession as a management trainee. After having served as an apprentice in his second year, the student would be well prepared in his chosen area of marketing and retailing and should move directly into the establishment for which he has served his apprentice. The student is also given academic credit for his apprenticeship.

Job Description

The graduate of the Marketing and Retailing Technology curriculum may enter a variety of career opportunities from beginning sales person to a manager trainee. Opportunities are available in the following type institutions: retailing, wholesaling, manufacturing, and others such as Hotel, Motel, Transportation, Finance, Insurance, Real Estate and other institutions that are performing the market functions such as buying, management, and marketing (export, industrial, credit operations, and sales promotion).

MARKETING & RETAILING CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
BUS	185	Business Organization	3	0	3
ENG	101	Grammar	3	0	3
MAT	110	Business Mathematics	5	0	5
ECO	102	Economics	2	2	3
SSC	205	American Institutions	2	2	3
BUS	102	Typewriting*	2	3	3
			17	7	20
		SECOND QUARTER			
ENG	102	Composition	3	0	3
ECO	104	Economics	2	2	3
BUS	115	Business Law	2	2	3
PSY	206	Applied Psychology	3	0	3
BUS	234	Personnel & Business Management	5	0	5
BUS	110	Office Machines	2	3	3
			17	7	20
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	116	Business Law	2	2	3
BUS	272	Principles of Supervision	3	0	3
EDP	104	Introduction to Data Processing	3	2	4
BUS	239	Marketing	5	0	5
BUS	260	Gov't & Business	2	2	3
			18	6	21
		FOURTH QUARTER			
BUS	120	Accounting	5	3	6
ENG	204	Oral Communications	3	0	3
BUS	219	Credit Procedures & Problems	2	2	3
BUS	249	Buying & Merchandising	2	2	3
BUS	123	Finance	2	2	3
			14	9	18
		FIFTH QUARTER			
ENG	206	Business Communications	3	0	3
BUS	247	Business Insurance I	3	0	3
BUS	121	Accounting	5	3	6
BUS	124	Business Finance	2	2	3
BUS	285	Salesmanship	5	0	5
			18	5	20
		SIXTH QUARTER			
BUS	257	Business Insurance II	3	0	3
BUS	243	Advertising	5	0	5
BUS	268	Marketing & Retailing Internship	3	9	6
BUS	287	Commercial Display & Design I	2	4	3
BUS	288	Fashion in Retailing	2	2	3
			15	15	20

*Proficiency test will be given.

SECRETARIAL SCIENCE

(Medical, Executive, Legal and Technical)

Purpose

The need for better qualified secretaries in our ever-expanding business world is becoming more acute. The constant increase in job opportunities for the two-year graduate reflects this demand.

The secretarial curriculum is designed to offer the students the necessary secretarial skills in typing, office machines, dictation, transcription, and terminology for employment. The special training in secretarial subjects is supplemented by related courses in mathematics, English, accounting, business law, and personality development to provide training in the accepted procedures required by the business world and to enable a person to become proficient soon after accepting employment in the business office. With today's office so profoundly influenced by the computer's impact, the students are acquainted with automated equipment and procedures which affect their secretarial duties. In addition to skill development, special emphasis is placed on grooming habits and proper attitudes for the office situation.

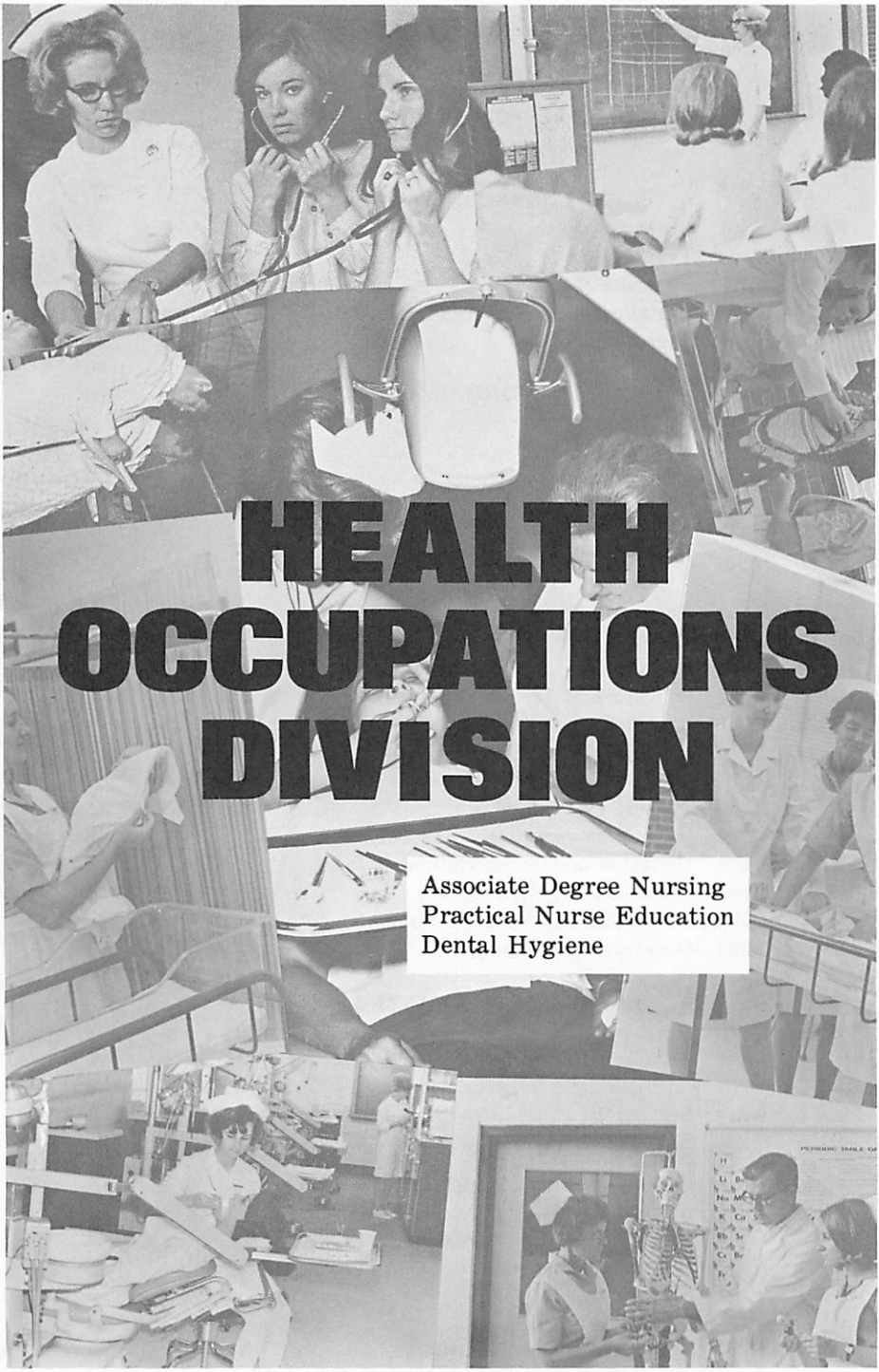
Job Description

The graduate of the secretarial curriculum should have a knowledge of business terminology, skill in dictation and accurate transcription of business letters and reports from shorthand notes and from voice-writing equipment. The graduate may be employed as a stenographer or a secretary in a variety of offices in businesses such as insurance companies, banks, marketing institutions, financial firms, doctors' offices, medical and health institutions, federal and state government agencies, and law offices.

The curriculum is designed so each student will elect an option in Medical, Legal, Executive or Technical fields. A minimum of twelve hours credit must be taken in one of these option areas to get the requirements of the curriculum.

SECRETARIAL SCIENCE
(Executive, Legal, Medical, Technical)

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
BUS	102	Typewriting	2	3*	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand	3	2	4
			18	5	20
		SECOND QUARTER			
BUS	110	Office Machines	2	3	3
ENG	102	Composition	3	0	3
BUS	103	Typewriting	2	3*	3
BUS	107	Shorthand	3	2	4
BUS	120	Accounting	5	3	6
			15	11	19
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	104	Typewriting	2	3*	3
BUS	108	Shorthand	3	2	4
BUS	211	Office Machines	2	2	3
BUS	121	Accounting	5	3	6
			15	10	19
		FOURTH QUARTER			
ECO	205	Applied Economics	3	0	3
ENG	204	Oral Communication	3	0	3
BUS	206	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3*	3
EDP	104	Introduction to Data Processing	3	2	4
BUS	256	General Office Practice	2	3	3
			16	10	20
		FIFTH QUARTER			
BUS	115	Business Law	2	2	3
ENG	206	Business Communication	3	0	3
BUS	207	Dictation and Transcription	3	2	4
BUS	214	Secretarial Procedures	3	2	4
BUS	262	Machine Transcription	1	4	3
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
BUS	208	Dictation and Transcription	3	2	4
BUS	271	Office Management	2	2	3
BUS	112	Filing	3	0	3
BUS	263	Payroll Taxes	3	2	4
BUS	184	Terminology and Vocabulary	3	2	4
			17	8	21



HEALTH OCCUPATIONS DIVISION

Associate Degree Nursing
Practical Nurse Education
Dental Hygiene

HEALTH OCCUPATIONS DIVISION

PURPOSE

Health occupations education prepares individuals to function in a close working relationship with professionals in providing services to persons with health problems. The semi-professional nature of these occupations dictates certain personal attributes required for successful performance, such as favorable appearance, a pleasant manner, social skills sufficient to communicate effectively and establish rapport with many types of people, and a genuine interest in helping others. Health occupation curricula are designed to provide a general education in addition to specific occupational preparation. Graduates must be prepared to fulfill a definite role in various aspects of preservation of health and treatment of disease at an intermediate level on the health team.

Curricula are designed to lead to both the associate of applied science degree and diploma programs depending upon the type of health occupation. The nursing programs in this division include the Licensed Practical Nursing Program and the Associate Degree Nursing Program. The majority of the graduates of these programs will work in hospitals. However, there are numerous job opportunities in nursing homes, doctors' offices, school nursing, public health clinics, private duty and many other areas. The expanding health needs of society continue to increase career opportunities for nurses at all levels.

The Dental Hygienist Curriculum is designed to meet a critical need in dentists' offices. The graduates will assist in dental examination, taking oral x-rays, cleaning teeth and other duties as directed by the dentist.

Other curricula will be introduced in the Health Occupations Division as the needs of the community dictate and as student interest becomes apparent.

ASSOCIATE DEGREE NURSING PROGRAM

Accredited by the National League for Nursing

One of the great needs of this community in the field of health is the same found in communities across the nation, that being for registered nurses who are prepared to function at the bedside. It is the purpose of the Associate Degree Nursing Program of the Fayetteville Technical Institute to prepare nurses to help meet this need through a well balanced curriculum of general education and nursing education.

The formal classroom teaching is conducted at Fayetteville Technical Institute. Clinical laboratory experience is obtained in the hospitals and health agencies in the Fayetteville area where learning experiences are selected to meet the objectives of the curriculum. Graduates of the program are granted an associate degree and are eligible to write the State Board Examination for licensure.

An associate degree program will meet your needs if:

1) You would like to give direct nursing care to the sick.
2) Your goal is to become a registered nurse.
3) You want both a nursing education and some college-level general education.
4) You want to complete your education in a relatively short time.
5) You would like to have an associate degree in applied science.
6) You would like to obtain your nursing education in a school in your own community.

The unique features of associate degree education for nursing also means that the programs are attractive to married women and others whose family responsibilities require them to live at home, to men who wish to pursue nursing careers, and to older students.

Although the associate degree program in nursing is complete for the purpose described, some of the college credits earned in the program can be applied toward a baccalaureate degree in nursing should a graduate decide later to pursue education for professional nursing. The amount of credit granted will depend on the policies of the senior college or university that offers the particular baccalaureate degree program.

ASSOCIATE DEGREE NURSING PROGRAM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
NUR	101	Nursing I (Introduction to Nursing) ...	6	6	8
ENG	101	Grammar	3	0	3
BIO	106	Integrated Science I	4	3	5
PSY	101	Introduction to Psychology I	3	0	3
			16	9	19
		SECOND QUARTER			
NUR	102	Nursing II (Nursing of Children and Adults, I)	6	6	8
ENG	102	Composition	3	0	3
BIO	107	Integrated Science II	4	3	5
SOC	101	Introduction to Sociology	3	0	3
			16	9	19
		THIRD QUARTER			
NUR	103	Nursing III (Nursing of Children and Adults, II)	5	9	8
BIO	108	Integrated Science III	4	3	5
SOC	102	Sociology II (Marriage and Family) ...	3	0	3
PSY	202	Psychology (Human Growth & Development)	3	0	3
			15	12	19
		FOURTH QUARTER			
NUR	204	Nursing IV (Nursing of Patients with Behavioral Disorders)	6	12 (5½ weeks)	5
NUR	205	Nursing V (Nursing of Mothers & Infants)	6	12 (5½ weeks)	5
ENG	204	Speech (Oral Communication)	3	0	3
PSY	204	Abnormal Psychology	3	0	3
		Elective—Humanities	3	0	3
			14	12	19
		FIFTH QUARTER			
NUR	206	Nursing VI (Nursing of Children and Adults, III)	5	12	9
ENG	207	Introduction to Literature	3	0	3
HIS	103	World Civilization	3	0	3
		Elective—Humanities	3	0	3
			14	12	18
		SIXTH QUARTER			
NUR	207	Nursing VII (Nursing of Children and Adults, IV)	6	12	10
SSC	205	American Institutions	2	2	3
ECO	102	Economics	3	2	4
NUR	208	Nursing VIII (Professional Development)	1	0	1
			12	16	18

DENTAL HYGIENE

Purpose of Curriculum

The dental hygienist has long been a recognized auxiliary member of the dental profession. Only a relatively small number of hygienists have graduated each year as there were few training programs until recently when the Council on Dental Education encouraged establishment of the curriculum in recognized educational institutions offering college level education and training in technical institutes and community colleges. The number of schools of dental hygiene has grown rapidly in recent years as the dental profession has recognized the contribution that the dental hygienist can make to the extension of services to the public. The demand for graduates far exceeds the present supply and it is anticipated that this will continue into the future.

Subjects in the two year program in dental hygiene may be grouped under three general headings: general education, basic sciences, dental sciences, and clinical practice.

Approximately 20% of the credits earned in a two year program may be earned in general education, 30% in basic sciences, 30% in dental sciences and 20% in clinical practice.

To comply with the policies of the profession and with state dental practice acts, a licensed dentist is available to supervise and direct all clinical phases of dental hygiene training.

Job Description

The role of the dental hygienist is to function as a member of the dental health team, with the primary purposes of providing preventive care and oral hygiene education, under the direction and supervision of a dentist. The dental hygienist is both a clinical practitioner and an oral health educator, using scientific methods of control and prevention of oral diseases, promoting maintenance of optimum health, and using public relations skills in instruction of patients and the public. The dental hygienist is the only member of the dental auxiliary personnel group legally permitted to perform direct preventive procedures within the patient's mouth. The duties and functions assigned to the dental hygienist by the dental profession are viewed as essentially professional in nature.

DENTAL HYGIENE

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
DEN	103	Dental Hygiene I	3	0	3
DEN	101	Dental Anatomy I	2	6*	4
BIO	101	Human Anatomy & Physiology I	4	2	5
DEN	117	Personal & Community Health	3	0	3
			15	8	18
		SECOND QUARTER			
ENG	102	Composition	3	0	3
DEN	105	Dental Hygiene II	1	9*	4
DEN	102	Dental Anatomy II	3	0	3
BIO	102	Human Anatomy & Physiology II	4	2	5
CHM	102	Chemistry for Dental Hygienists	4	2	5
			15	13	20
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
DEN	110	Dental Hygiene III	1	9*	4
DEN	112	Community Dentistry I	2	0	2
BIO	112	Bacteriology for Dental Hygienists	3	4	5
DEN	114	Oral Histology & Embryology	3	0	3
			12	13	17
		FOURTH QUARTER			
ENG	204	Oral Communication	3	0	3
DEN	202	Dental Hygiene IV	1	15*	6
DEN	206	Community Dentistry II	3	0	3
DEN	203	General and Oral Pathology	5	0	5
NUT	101	Nutrition	2	0	2
			14	15	19
		FIFTH QUARTER			
		Social Science Elective	3	0	3
DEN	215	Community Dentistry III	2	0	2
DEN	208	Dental Hygiene V	1	15*	6
DEN	210	Dental Materials in Dental Hygiene Practice	2	4*	4
DEN	216	Dental Pharmacology	2	0	2
			10	19	17
		SIXTH QUARTER			
		Social Science Elective	3	0	3
DEN	217	Dental Hygiene VI	1	15*	6
DEN	218	Community Dentistry IV	2	0	2
		Elective			
			6	15	17

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

PRACTICAL NURSE EDUCATION

Purpose of Curriculum

The accelerated growth of population in North Carolina and rapid advancement in medical technology demanded an increased number of well-trained personnel for health services. Realizing this need, the Fayetteville Technical Institute, in conjunction with local hospitals, public health service, nursing homes, and kindergartens, administers a program of Practical Nurse Education.

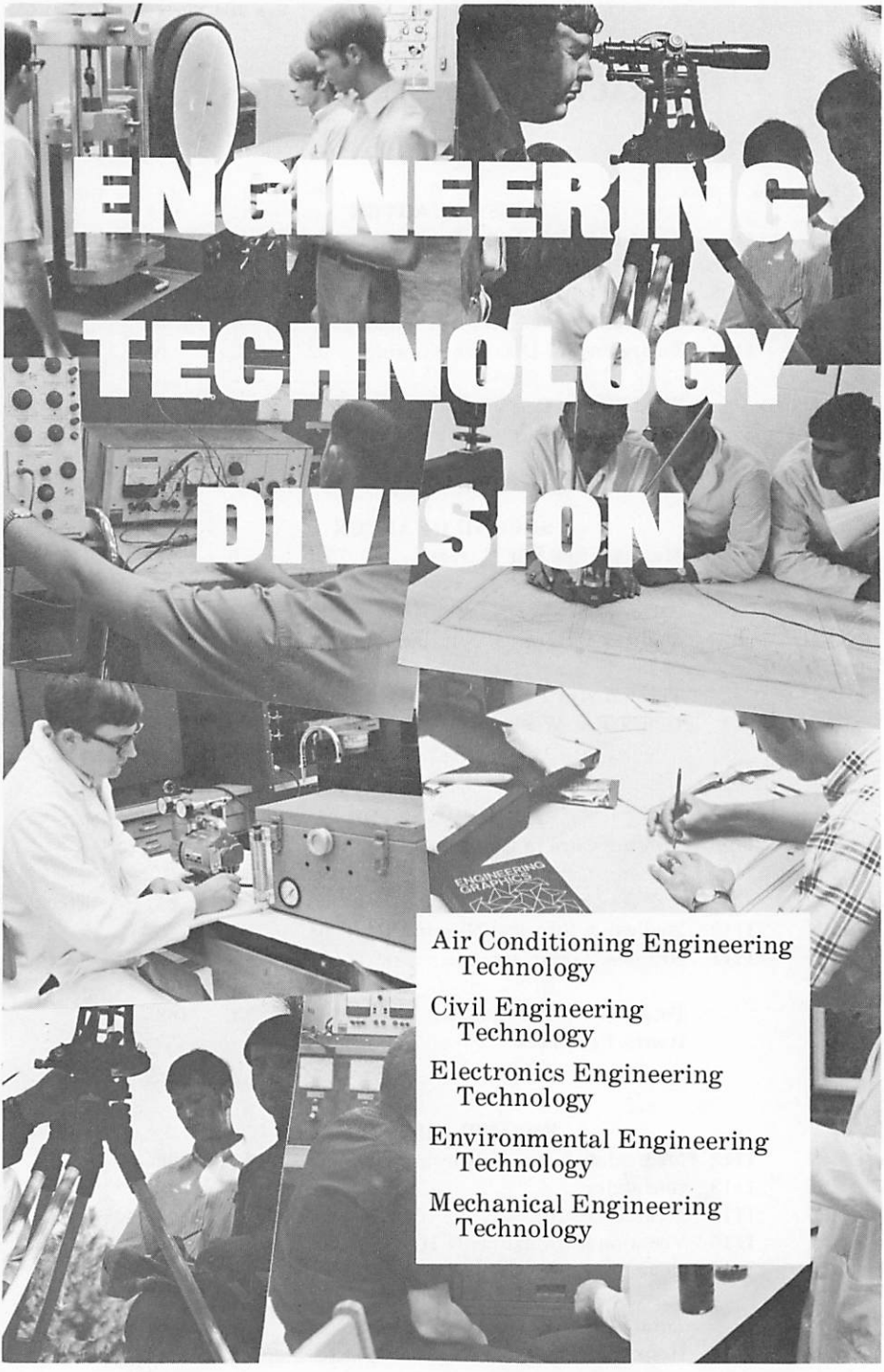
The Practical Nurse is a vital and integral segment of the health team; she bridges the gap between that which the individual can provide for himself and that which requires the complexity of skills given by professional members of the health team; that her place is at the patients' bedside fulfilling needs requiring moderate nursing skills and assisting with activities dependent upon more complex skills always under the guidance of the professional leader.

Throughout the one-year program, the student is expected to grow continuously in acquisition of knowledge and understanding related to nursing, biological sciences, the social sciences and in skills related to nursing practice, communications, interpersonal relationship and use of good judgment. She must maintain a C average in all major courses to be eligible upon graduation of an accredited program to take the licensing examination given by the North Carolina Board of Nursing. Her learning is from the simple to the complex to an assisting role in more complex nursing.

After passing the State Board, the Practical Nurse is entitled to receive a license and to use a legal title "Licensed Practical Nurse." Her license must be renewed biannually. She may apply for licensing in other states on the basis of a satisfactory examination score, without repeating the examination.

PRACTICAL NURSE EDUCATION

Course No. & Title				C	L	CI	CH
		FIRST QUARTER					
PN	1101	Vocational Adjustments I		30	0	0	2
PN	1102	Body Structure & Functions ...		60	6	0	6
PN	1103	Nursing Skills I		65	60	60	9
ENG	1101	Communicative Skills: Grammar		33	0	0	3
PN	1104	Emergency & Disaster Nursing		22	2	0	1
		Total Hours Per Quarter	338	210	68	60	21
		Hours Per Week	33				
		SECOND QUARTER					
MA	1105	Mathematics For Nurses		30	0	0	3
PN	1105	Nutrition & Diet Therapy		36	12	0	4
PN	1106	Nursing Skills II		32	24	0	3
PN	1107	Medical & Surgical Nursing I ..		66	0	160	8
		Total Hours Per Quarter	360	164	36	160	18
		Hours Per Week	33				
		THIRD QUARTER					
PN	1108	Nursing Care of Children		40	0	84	5
PN	1109	Nursing Care of Mother & Newborn		40	0	84	5
PN	1110	Medical & Surgical Nursing II .		55	0	0	5
PN	1111	Drugs & Administration		30	3	0	3
		Total Hours Per Quarter	336	165	3	168	18
		Hours Per Week	33				
		FOURTH QUARTER					
PN	1112	*Medical & Surgical Nursing III		0	0	208	7
PN	1113	Geriatrics		32	0	48	4
PN	1115	Mental Health		24	0	0	3
PN	1116	Vocational Adjustments II		16	0	0	2
PN	1117	Communicable Diseases		25	0	0	2
		Total Hours Per Quarter	353	97	0	256	18
		Hours Per Week	33				



Air Conditioning Engineering Technology

Civil Engineering Technology

Electronics Engineering Technology

Environmental Engineering Technology

Mechanical Engineering Technology

ENGINEERING TECHNOLOGY DIVISION

Purpose

Technician training is highly specialized training for effective entrance into specialized areas of occupations. However, there is a core of knowledge and skills which all persons need who work at the level of technician occupations, irrespective of the specific occupational fields in which these persons are employed. Important elements which are common to all technician occupations include basic science, mathematics, industrial terminology, industrial drafting and similar technical skills. Thus, the technician needs a broad post secondary education with emphasis of applied technology which will prepare him to assist engineers, scientists or other professionals in his field.

Our curricula are designed to build in the first year that degree of competency within the student which will enable him to effectively communicate orally and in writing and which will broaden his outlook and make him a more effective and productive member of society. By adding to this core of fundamentals, in the first year, certain basic skill courses in the major area, the student is given a thorough foundation on which to build his second year of intensive training. The second year is spent in a major subject area of highly specialized technician training needed to produce a qualified technician in his chosen specialization.

Upon receiving his Associate Degree in Applied Science, the technician may elect to take his place in industry, working side by side with engineers, scientists and other technicians. He also has expanding opportunities to continue his education in a Bachelor of Science in Engineering Technology, offered at many colleges and universities across the country. This door to further education is open to qualified graduates even if they elect to go to work upon graduation. Various full-time, evening and cooperative work-study curricula are available in many industrial areas.

AIR CONDITIONING ENGINEERING TECHNOLOGY

Purpose of Curriculum

The current years are called by some—the "age of automation," the "atomic era", the "space age". Wonder drugs, jet propulsion, manmade satellites, electronic brains and walks upon the moon, are all truly a part of our age—and yet, none would have been possible without the modern miracle of mechanical refrigeration and air conditioning.

Few industries in America play a more vital role in protecting our nation's health and security than the air conditioning and refrigeration industry—and few effect the lives of so many. The growth of the industry, and its integration with the very fiber of our industrial, economic, and family life almost defies comprehension.

The curriculum is designed to prepare the graduate to be self sustaining at the earliest possible time. The required technical knowledge is obtained and the related skills are developed which will enable him to function efficiently with engineers or craftsmen.

Job Description

The air conditioning engineering technician is prepared to pursue many gratifying positions within the industry. He may choose to do application engineering and design whole systems for various buildings. He may become the all important estimator for a large mechanical contractor. Both the responsibility of and the return from this work are considerable. If his preference is research and testing he may go into the laboratory of a major equipment manufacturer as a research technician. Should his talents and desires measure up he may acquire the very lucrative position of sales engineer. Any one of these provides for a very attractive income with a bright and fruitful future.

AIR CONDITIONING ENGINEERING TECHNOLOGY

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
MAT	101	Technical Mathematics	5	0	5
PHY	101	Physics: Properties of Matter	3	2	4
DFT	101	Technical Drafting	0	6*	2
AHR	101	Fundamentals of Refrigeration I	4	3*	5
			15	11	19
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	102	Physics: Work, Energy, Power	3	2	4
DFT	102	Technical Drafting	0	6*	2
AHR	103	Commercial Refrigeration Systems	3	6*	5
			14	14	19
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
ELC	205	Applied Electricity	2	4	4
AHR	104	Warm Air Systems	3	6*	5
			14	8	17
		FOURTH QUARTER			
ENG	204	Oral Communication	3	0	3
DFT	204	Descriptive Geometry	2	4	4
PHY	231	Fluid Mechanics	3	2	4
AHR	210	Hydronic Systems	3	4	5
AHR	216	Circuits & Controls I	3	3*	4
			14	13	20
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
AHR	203	Air Conditioning Principles	5	6*	7
DFT	226	Air Conditioning Systems Drawing	0	9*	3
AHR	217	Circuits & Controls II	3	3	4
			11	18	17
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
AHR	209	Air Conditioning Systems Design	5	6*	7
AHR	227	Estimating & Contracts	3	3*	4
AHR	256	Installation & Servicing Problems	2	4	3
			13	13	17

*"Manipulative Laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

CIVIL ENGINEERING TECHNOLOGY
An ECPD Accredited Engineering Technology Curriculum

Purpose of Curriculum

Construction technicians perform many of the planning and supervisory tasks necessary in the construction of highways, bridges, power plants, dams, missile sites, airfields, water and sewer treatment plants, industrial buildings and utilities. In the planning stages of construction, they may be engaged in estimating costs, ordering materials, interpreting specifications, computing earthwork cuts and fills and storm drainage requirements, surveying or drafting. Once the actual construction work has begun, many technicians perform supervisory functions. Some may be responsible for seeing that construction activities are performed in proper sequence, and for inspecting the work as it progresses for conformance with blueprints and specifications.

The expanding construction industry needs up-to-date technically trained personnel. The objective of the Civil Engineering Technology program is to train technicians who will work with skilled craftsmen and engineers in performing the various functions included in the broad field of construction. The curriculum provides the necessary basic background and related theory with specific skills supplemented by courses in Communicative Skills, Economics, Industrial Organization and Management, and Human Relations.

Job Description

The large and varied construction industry provides excellent opportunities for the individual with ability and training. Depending on the organization and the size of the construction project, the technician may work directly with an engineer or with skilled craftsmen or he may function as a liaison between them.

An individual, upon graduating from this program, should qualify for various jobs such as Instrument Man, Party Chief, Quantity Survey Man, Expediter, Field Clerk, Materials Man, Salesman, and Field Draftsman. Upon gaining sufficient construction experience, the technician has the opportunity of advancing into positions such as Contractor, Engineering Aide, Surveyor, Estimator, Inspector, and Building Inspector.

CIVIL ENGINEERING TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
MAT	101	Technical Mathematics	5	0	5
PHY	101	Physics: Properties of Matter	3	2	4
DFT	101	Technical Drafting	0	6*	2
CIV	101	Surveying	2	6*	4
			13	14	18
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	102	Physics: Work, Energy, Power	3	2	4
DFT	102	Technical Drafting	0	6*	2
CIV	102	Surveying	2	6	4
			13	14	18
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
ELC	205	Applied Electricity	2	4	4
CIV	114	Statics	5	0	5
CIV	217	Construction Methods & Equipment	3	2	4
			18	6	21
		FOURTH QUARTER			
ENG	204	Oral Communication	3	0	3
CIV	219	Strength of Mat. Prop. of Eng. Mat.	5	2	6
CIV	103	Surveying	2	6*	4
CIV	218	Plain Concrete	3	3*	4
EDP	107	Compiler Language I (FORTRAN IV)	2	4	4
			15	15	21
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
CIV	220	Construction Planning	2	3*	3
CIV	202	Properties of Soils	2	3	3
CIV	223	Codes, Contracts & Specifications	2	0	2
CIV	228	Highway & Structural Drafting	0	6	2
CIV	221	Reinforced Concrete	3	2	4
			12	14	17
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
CIV	225	Construction Estimates and Costs	3	6*	5
CIV	227	Construction of Roads & Pavements	3	2	4
CIV	204	Surveying IV	0	6	2
CIV	229	Municipal Engineering	3	3	4
			12	17	18

*"Manipulative Laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

PURPOSE OF CIVIL ENGINEERING TECHNOLOGY CO-OP PROGRAM

The purpose of the Civil Engineering Technology co-operative program is to integrate theory and practice, motivate the student, develop a sense of responsibility and aid in funds for education. Through these controlled and structured experiences, the students bring enrichment to the classroom which enhances their total development.

All decisions with respect to work assignments must be made in the light of their effect on the student, employers, and Fayetteville Technical Institute's long range plans.

Participation in the co-op program is a privilege that is extended to those whose initial academic work, ability and desire to profit from the program are evident.

CIVIL ENGINEERING TECHNOLOGY

(Co-op program)

EIGHT QUARTERS

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER (Fall)			
ENG	101	Grammar	3	0	3
MAT	101	Technical Mathematics	5	0	5
PHY	101	Physics: Properties of Matter	3	2	4
DFT	101	Technical Drafting	0	6*	2
CIV	101	Surveying	2	6*	4
			13	14	18
		SECOND QUARTER (Winter)			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	102	Physics: Work, Energy, Power	3	2	4
DFT	102	Technical Drafting	0	6*	2
CIV	102	Surveying	2	6*	4
			13	14	18

Continued CIVIL ENGINEERING TECHNOLOGY

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		COOP QUARTER I (Spring)			
CIV	298	Cooperative Training	0	15	5
EGR	298	Special Problems	0	6	2
			0	21	7
		THIRD QUARTER (Summer)			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
ELC	205	Applied Electricity	2	4	4
CIV	114	Statics	5	0	5
CIV	217	Construction Methods & Eq.	3	2	4
			18	6	21
		COOP QUARTER II (Fall)			
CIV	299	Cooperative Training	0	15	5
EGR	299	Special Problems	0	6	2
			0	21	7
		FOURTH QUARTER (Winter)			
ENG	204	Oral Communication	3	0	3
CIV	201	Strength of Mat. & Prop. of Eng. Mat.	5	2	6
CIV	103	Surveying	2	6*	4
CIV	218	Plain Concrete	3	3*	4
EDP	107	Compiler Language I, FORTRAN IV	2	4	4
			15	15	21
		FIFTH QUARTER (Spring)			
ECO	205	Applied Economics	3	0	3
CIV	220	Construction Planning	2	3*	3
CIV	202	Properties of Soils	2	3	3
CIV	223	Codes, Contracts & Spec.	2	0	2
CIV	228	Highway & Structural Drafting	0	6	2
CIV	221	Reinforced Concrete	3	2	4
			12	14	17
		SIXTH QUARTER (Summer)			
PSY	206	Applied Psychology	3	0	3
CIV	225	Construction Est. & Costs	3	6*	5
CIV	227	Construction of Roads & Pave.	3	2	4
CIV	204	Surveying IV	0	6	2
CIV	229	Municipal Engineering	3	3	4
			12	17	18

*Manipulative Laboratory involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

ELECTRONICS ENGINEERING TECHNOLOGY

An ECPD Accredited Engineering Technology Curriculum

Purpose of Curriculum

The field of electronics has developed at a rapid pace since the turn of the century. For many years, the major concern of electronics was in the area of communications. Developments during World War II and in the period since have revolutionized production techniques. New industries have been established to supplement the need and demand for electronics equipment.

The field of electronics is still changing rapidly. The trend is toward micro-miniaturization. The time is approaching when the discrete component circuit is rapidly being replaced by the newer integrated circuit with its sophisticated design and fabrication requirements. The second major direction will be the interconnection of various integrated circuit blocks that create a complete electronic system. These developments are creating a technological explosion in numbers and kinds of electronic equipment that will be available on the market.

Many opportunities exist for men and women with a technical education in electronics. This curriculum provides a basic background in electronic related theory with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may take their place as an assistant to an engineer, or as a liaison between the engineer and the skilled craftsman in the various divisions of the field.

Job Description

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance, or sales. He may be an assistant to an engineer, an engineering aide, laboratory technician supervisor or equipment specialist. His training is similar to that of an engineer, but in less depth and more practical in application. He can function as a liaison between an engineer and the skilled craftsman.

ELECTRONICS ENGINEERING TECHNOLOGY

Course No. and Title		FIRST QUARTER	Hours Per Week Class	Lab	Quarter Hours Credit
ENG	101	Grammar	3	0	3
MAT	101	Technical Mathematics	5	0	5
PHY	101	Physics: Properties of Matter	3	2	4
DFT	101	Technical Drafting	0	6*	2
ELC	101	Fundamentals of Electricity	4	6*	6
			15	14	20
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	102	Physics: Work, Energy, Power	3	2	4
DFT	102	Technical Drafting	0	6*	2
ELC	102	Fundamentals of Electricity	4	6	6
			15	14	20
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
ELN	101	Electronic Instruments and Measurements	1	4	3
ELN	105	Control Devices	5	6	7
CHM	185	Chemistry	3	0	3
			17	10	21
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
MAT	286	Technical Mathematics	3	0	3
PHY	104	Physics: Light and Sound	3	2	4
ELN	205	Application of Vacuum Tubes & Transistors	5	8	8
			14	10	18
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
ELN	210	Semiconductor Circuit Analysis	5	5	7
ELN	214	Wave Shaping and Pulse Circuits I	2	4	4
ELN	235	Industrial Mechanisms and Instrumentation	4	4	6
			14	13	20
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
ELN	215	Wave Shaping and Pulse Circuits II	2	3	3
ELN	220	Electronic Systems	5	6	7
ELN	240	Digital Computers	3	2	4
ELN	245	Electronic Design Project	0	4	2
			13	15	19

*"Manipulative Laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

ENVIRONMENTAL ENGINEERING TECHNOLOGY
An ECPD Accredited Engineering Technology Curriculum

Purpose of Curriculum

Our ever-increasing population and industrial expansion carries with it the demand for many services, one of the most vital of these services is the production and safeguarding of our water supply. The production and protection of our water supply represents an economic investment in which North Carolina alone is spending over 20 million dollars per year for the construction and reconstruction of water and waste treatment facilities. Our industries use tremendous amounts of water daily in industrial processes and are spending thousands of dollars each year in research on treatment of liquid waste before it is returned to the streams and rivers. Also, with the rapid increase in automotive vehicles usage is beginning to increase air pollution problems.

These activities will require many technically trained personnel to perform the many specialized tasks involved.

These technicians are also being utilized for inspection and safe operation of milk production and processing, meat packing, food processing and service, together with housing and allied health problems, and the control of diseases.

This curriculum was designed to train technicians to work in areas related to Environmental Engineering and Public Health. The student will receive related courses in mathematics, science, drawing and surveying in addition to specialized technical courses such as water and waste treatment, sanitation and control systems, air pollution sampling and air resources management.

Job Description

The graduate of this curriculum will have a knowledge of laboratory procedures and skill in performing many types of tests on liquid and solid wastes, foods, water and air to determine physical, chemical and bacteriological characteristics. He will be qualified for entry into a variety of positions such as public health engineering aide, sanitarian aide, treatment plant operators, stream sanitation technician positions with federal, state, and local governments and municipalities.

ENVIRONMENTAL ENGINEERING TECHNOLOGY

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
MAT	101	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
DFT	101	Technical Drafting	0	6	2
ENV	101	Environmental Sanitation	3	3	4
			14	11	18
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	102	Work, Energy, Power	3	2	4
ENV	102	Applied Microbiology	2	3	3
ENV	112	Air Resources Management	2	3	3
			15	8	18
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
ENV	104	Environmental Biology	2	3	3
CIV	108	Basic Hydraulics: Principles of Flow	2	4	4
CIV	101	Surveying	2	6	4
			14	13	19
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
ENV	204	San Chem & Biology	2	6	5
EDP	107	Compiler Language (FORTRAN IV)	2	4	4
ENV	216	Water Purification	3	2	4
ELC	205	Applied Electricity	2	4	4
			12	16	20
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
ENV	205	San Chem & Biology	2	6	5
ENV	217	Liquid Waste Treatment	3	2	4
MEC	237	Control Systems	2	4	4
ENV	285	Drafting	0	6	2
			10	18	18
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
ENV	206	San Chem & Biology	2	6	5
ENV	218	Liquid Waste Treatment	3	2	4
ENV	236	Codes, Contracts, Specifications, and Estimates	2	3	3
ENV	226	Atmosphere Air Sampling & Analysis	2	3	3
			12	14	18

MECHANICAL ENGINEERING TECHNOLOGY

An ECPD Accredited Engineering Technology Curriculum

Purpose of Curriculum

This curriculum has been organized to produce a graduate who can make, and pursue to completion, meaningful technical decisions within the area of responsibility normally assigned to a Mechanical Engineering Technician.

First an academic base is given to the student in mathematics, physics, and chemistry. Then the technical specialities are added in a sequence of courses, each of which builds on previously mastered material. In order to promote self-assurance and good communications with a wide variety of industrial personnel, a sequence of courses in English, speech, economics, human relations, and industrial organization and management has been included. Every effort is made to give the student the necessary practical knowledge he needs, after he has mastered the fundamental principles.

Job Description

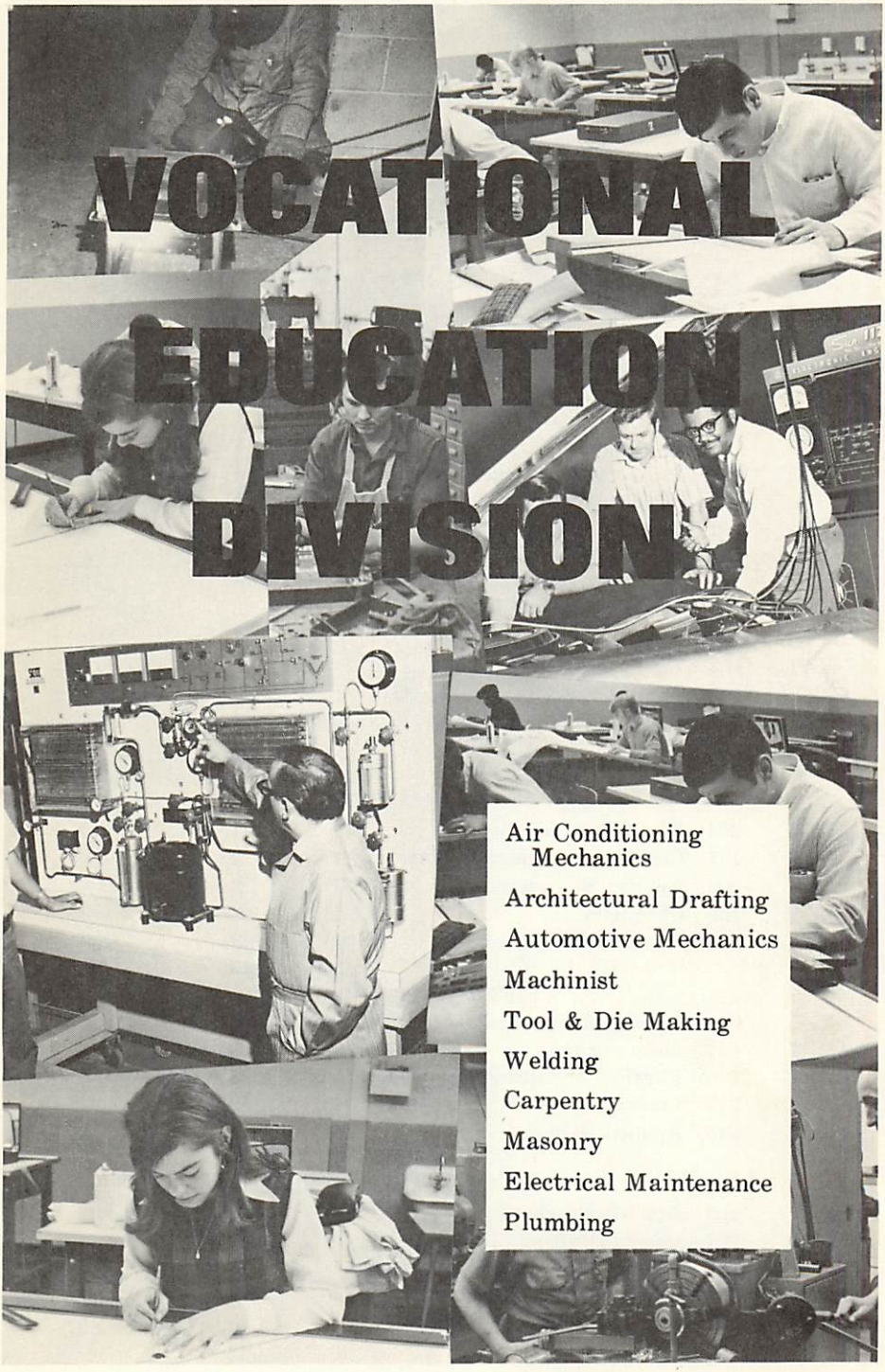
The Technician usually works under the direct supervisor of an engineer who has the overall technical responsibility for the work being done.

The Mechanical Engineering Technician works primarily with mechanical components of equipment. The technician is called upon to decide and to implement the best size and shape of a part, the type of material to use, the type of operating mechanism, the best production method, and the type of testing procedure and analysis. He is called upon to select the best available industrial product for a given application, and to decide the best methods of maintaining equipment.

This work may be done within any of the major operations of modern industry, including but not limited to research, product design, development, production, quality control, testing, maintenance, technical sales, and customer relations.

MECHANICAL ENGINEERING TECHNOLOGY

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
MAT	101	Technical Mathematics	5	0	5
PHY	101	Physics: Properties of Matter	3	2	4
DFT	101	Technical Drafting	0	6	2
MEC	103	Introduction to MET	3	0	3
			14	8	17
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	102	Physics: Work, Energy, Power	3	2	4
DFT	102	Technical Drafting	0	6	2
MEC	104	Applied Mechanics	5	0	5
			16	8	19
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
DFT	104	Applied Descriptive Geometry	2	4	4
MEC	109	Applied Thermodynamics	3	2	4
MEC	205	Strength of Materials	3	2	4
			16	8	20
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
EDP	107	Compiler Language I (Fortran IV)	2	4	4
ELC	205	Applied Electricity	2	4	4
CHM	185	Chemistry	3	0	3
MEC	201	Manufacturing Processes	3	2	4
			13	10	18
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
DFT	211	Mechanisms	3	2	4
MEC	210	Physical Metallurgy	3	3	4
MEC	237	Control Systems	2	4	4
MEC	245	Applied Hydraulics	3	3	4
			14	12	19
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
DFT	207	Design Drafting	2	6	4
MEC	211	Physical Metallurgy	3	3	4
MEC	202	Production Methods	3	0	3
DFT	212	Jigs and Fixture Design	2	6	4
			13	15	18


VOCATIONAL
EDUCATION
DIVISION
Air Conditioning Mechanics
Architectural Drafting
Automotive Mechanics
Machinist
Tool & Die Making
Welding
Carpentry
Masonry
Electrical Maintenance
Plumbing

VOCATIONAL EDUCATION DIVISION

Purpose

The rapid expansion of industry with its technological advancement has created a demand for skilled workers who can enter an occupation with a competent knowledge of the manipulative skills required and the capacity to perform these skills. Knowledgeable people from industry continually emphasize the urgent need for skilled craftsmen to replenish the dwindling manpower shortage being felt in many areas where manipulative skills are paramount. These occupations require some knowledge of mathematics, the sciences and communicative skills, but to a greater degree a depth in manipulative skills in a more selected range of activities is desireable.

The craftsman works closely with the technician, thus he needs a workable background of the related subjects materials in order to communicate intelligently with every member of the work team.

Our trade curricula are designed to give the tradesman, in the first year, a strong basic background of related subjects especially geared to his capabilities. Added to this are certain courses which place emphasis on an understanding of the American economic system and develop interest in the betterment of our society. The degree of competency which a skilled worker must have to effectively enter a trade occupation is gained through depth courses in specific skills in the second year. These courses are taught in laboratory and shop situations with maximum industrial equipment.

In all trade curricula, either one or two years, much emphasis is placed on job opportunities. Indeed, the degree of competency which the students acquire ultimately determine the many job opportunities that will be open to them in industry.

AIR CONDITIONING AND REFRIGERATION MECHANICS

Today there is a greater demand for qualified mechanics in all areas of the field of Air Conditioning and Refrigeration. This curriculum is designed to help equip young men who plan for a vocation in this broad sphere of activity.

A comprehensive study of theory and fundamentals of refrigeration, heating and air conditioning is completed and the student is enabled to understand rather than merely accept the functions of the mechanical equipment involved. Great emphasis is placed on manipulative skills, installation and service procedures, exercise and training in practical thinking. The related subject phase of the program provides for a better rounded individual through work in the areas of Math, English, and Social Studies.

Job Description

An abundance of job opportunities exist in the many memechanical contracting organizations in business today. Graduates may pursue one of the many lines of work that make up this great industry. They may remain entirely in the refrigeration branch following the trade of installation or service mechanic or both. Some of the larger contractors indulge in all phases and provide a vast assortment of jobs including pipe work, metal work, insulation work, control and service work. Background afforded the student often enables him to elevate himself to foreman and supervisory positions. Plant maintenance in industry and government provide attractive possibilities.

AIR CONDITIONING AND REFRIGERATION MECHANICS

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
MAT	1101	Vocational Mathematics I	5	0	5
ENG	1101	Grammar	3	0	3
PHY	1101	Properties of Matter	3	2	4
AHR	1121	Fundamentals of Refrigeration I	5	6	7
DFT	1180	Trade Drafting I	2	4	3
		*Electives	—	—	—
			18	12	22
		SECOND QUARTER			
MAT	1102	Vocational Mathematics II	5	0	5
PHY	1102	Applied Physics: Electricity	3	2	4
AHR	1122	Fundamentals of Refrigeration II	2	7	5
ENG	1102	Industrial Communications	3	0	3
AHR	1135	Sheet Metal Layout & Fabrication I	2	4	4
		*Electives	—	—	—
			15	13	21
		THIRD QUARTER			
PHY	1103	Work, Energy, Power	3	2	4
ENG	1103	Report Writing	3	0	3
AHR	1123	Commercial Refrigeration	3	12	7
AHR	1136	Sheet Metal Layout & Fabrication II	2	4	4
		*Electives	—	—	—
			11	18	18
		FOURTH QUARTER			
AHR	1124	Winter Air Conditioning I	4	6	4
AHR	1125	Principles of Air Conditioning	5	0	5
AHR	1128	Control Systems	2	3	3
ECO	1105	Applied Economics	3	0	3
		*Electives	—	—	—
			14	9	15
		FIFTH QUARTER			
WLD	1180	Basic Welding	2	4	3
AHR	1127	Winter Air Conditioning II	4	6	6
AHR	1129	Air Conditioning Shop Practice I	3	6	5
PSY	1106	Applied Psychology	3	0	3
		*Electives	—	—	—
			12	16	17
		SIXTH QUARTER			
AHR	1130	Heat Pumps	3	3	4
AHR	1131	Absorption Systems	3	3	4
AHR	1132	Chilled Water Systems	3	3	4
AHR	1133	Air Conditioning Shop Practice II	3	6	5
		*Electives	—	—	—
			12	15	17

*Electives may be selected but not to exceed a total of 30 instructional hours.

ARCHITECTURAL DRAFTING
BUILDING TRADES

Purpose of Curriculum

Today there is a great demand in building trades industry and the architects' office for an individual that has a highly developed manipulative skill in architectural drafting, and a broad knowledge of architectural construction.

This curriculum is designed to provide these manipulative drafting skills and a basic knowledge of architectural construction. Because the architectural draftsman associates with many levels of personnel—administrative, architects, engineers, skilled workman, and must be able to communicate effectively with them; the course is arranged in a sequence that will provide an orderly method of accomplishment not only in drafting skills and construction knowledge but also in mathematics, science, communications, human relations, economics, and industrial organization. This will provide for the student confidence in his relations with other persons and the ability to advance rapidly in proficiency upon entering the field of work.

The function of this two year training program is to provide the licensed architect or engineer with an efficient and productive technical assistant with the skills and knowledge required for a successful career in the field of drafting.

Job Description

The architectural draftsman prepares artistic presentation drawings, clear complete and accurate working drawings, performs specification; contract, estimating and reproduction tasks from given rough or detailed sketches or notes of architectural, structural and mechanical features of any class of buildings and like structures.

ARCHITECTURAL DRAFTING
BUILDING TRADES

First Quarter			C-L-CH
DFT	1231	Introduction to Architectural Drafting I	2—6—4
DFT	1226	Technical Drafting I	1—3—2
DFT	1241	Descriptive Drawing I	1—3—2
DFT	1230	History of Architecture	2—0—2
MAT	1103	Vocational Mathematics III	3—0—3
ENG	1101	Grammar	3—0—3
PHY	1101	Applied Science	3—2—4
		*Electives	15 - 14 - 20

Second Quarter			
DFT	1232	Architectural Drafting II	2—6—4
DFT	1227	Technical Drafting II	1—3—2
DFT	1242	Descriptive Drawing II	1—3—2
MAT	1102	Vocational Mathematics II	5—0—5
ENG	1102	Industrial Communications	3—0—3
PHY	1102	Applied Science	3—2—4
		*Electives	15 - 14 - 20

Third Quarter			
DFT	1233	Architectural Drafting III	3—9—6
DFT	1243	Descriptive Drawing III	1—3—2
DFT	1144	Building Materials & Methods I	3—0—3
MAT	1104	Vocational Mathematics IV	3—0—3
DFT	1125	Descriptive Geometry	2—3—3
ENG	1103	Report Writing	3—0—3
		*Electives	15 - 15 - 20

Fourth Quarter			C-L-CH
DFT	1234	Architectural Drafting IV	1—9—4
DFT	1244	Descriptive Drawing IV	1—3—2
DFT	1228	Steel & Timber Drafting	1—6—3
DFT	1248	Building Materials & Methods II	3—0—3
DFT	1145	Specifications & Contracts	3—0—3
PSY	1105	Applied Psychology	3—0—3
		*Electives	12 - 18 - 18

Fifth Quarter			
DFT	1235	Architectural Drafting V	2—3—3
DFT	1245	Descriptive Drawing V	1—3—2
DFT	1129	Concrete Construction Drafting	2—5—4
DFT	1250	Surveying & Topographical Drafting	3—5—5
DFT	1238	Building Mechanical Equipment Drafting I	3—3—3
		*Electives	11 - 19 - 18

Sixth Quarter			
DFT	1236	Architectural Drafting VI	1-12—6
DFT	1246	Descriptive Drawing VI	1—3—2
DFT	1239	Building Mechanical Equipment Drafting II	3—3—4
DFT	1112	Estimating	3—0—3
ECO	1105	Economics	3—0—3
		*Electives	12 - 18 - 18

*Electives may be selected but not to exceed a total of 30 instructional hours.

AUTOMOTIVE

Purpose of Curriculum

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, and shop practice.

Complexity in automotive vehicles increases each year because of scientific discovery and new engineering. These changes are reflected not only in passenger vehicles, but also in trucks, buses, and a variety of gasoline-powered equipment. This curriculum provides a basis for the student to compare and adapt to new techniques for servicing and repair as vehicles are changed year by year.

Job Description

Automobile mechanics maintain and repair mechanical, electrical, and body parts of passenger cars, trucks, and buses. In some communities and rural areas they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition. They use shop manuals and other technical publications.

Automotive mechanics in smaller shops usually are general mechanics qualified to perform a variety of repair jobs. A large number of automobile mechanics specialize in particular types of repair work. For example, some may specialize in repairing only power steering and power brakes, or automatic transmissions. Usually such specialists have an all round knowledge of automotive repair and may occasionally be called upon to do other types of work.

AUTOMOTIVE MECHANICS TRADE CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
MAT	1101	Vocational Mathematics I	5	0	5
ENG	1101	Communication Skills: Grammar	3	0	3
PHY	1101	Applied Physics I: Properties of Matter	3	2	4
PME	1101	Automotive: Engines	3	12	7
		*Electives	—	—	—
			14	14	19
		SECOND QUARTER			
MAT	1102	Vocational Mathematics II	5	0	5
PHY	1102	Applied Physics II: Electricity	3	2	4
ENG	1102	Industrial Communications	3	0	3
PME	1102	Electrical & Fuel Systems	3	12	7
		*Electives	—	—	—
			14	14	19
		THIRD QUARTER			
DFT	1180	Trade Drafting I	2	4	3
ENG	1103	Report Writing	3	0	3
PHY	1103	Applied Physics III: Work, Energy, Power	3	2	4
PME	1124	Power Train Systems	3	9	6
PME	1180	Automotive Electronics	1	3	2
		*Electives	—	—	—
			12	18	18
		FOURTH QUARTER			
ECO	1105	Economics	3	0	3
WLD	1180	Welding: Basic	2	4	3
PME	1123	Chasis & Suspension	6	9	9
PME	1181	Automotive: Tune Up	2	4	3
		*Electives	—	—	—
			13	17	18
		FIFTH QUARTER			
MEC	1198	Automotive Machine Shop	2	6	4
PME	1182	Automatic Transmission	6	6	8
PME	1183	Power Accessories	5	4	6
		*Electives	—	—	—
			13	16	18
		SIXTH QUARTER			
PME	1135	Air Conditioning: Automotive	3	3	4
PME	1125	Automotive: Servicing	3	9	6
PME	1170	Power Plant Trouble Shooting	3	6	5
PSY	1106	Applied Psychology	3	0	3
		*Electives	—	—	—
			12	18	18

*Electives may be selected but not to exceed a total of 30 instructional hours.

CARPENTRY

Purpose of Curriculum

Carpentry is one of the basic trades in the construction field. Carpenters construct, erect, install, and repair structures of wood, plywood, and wallboard, using hand and powertools. The work must conform to local building codes for both residential and commercial structures.

This curriculum in carpentry is designed to train the individual to enter the trade with a background in both shop skills and related information. He must have a knowledge of mathematics, blueprint reading, methods of construction and a thorough knowledge of building materials.

The modern carpenter will work on new construction, maintenance, and repair of many types of structures, both residential and commercial. He should have an understanding of building materials, concrete form construction, rough framing, roof and stair construction, the application of interior and exterior trim, and the installation of cabinets and fixtures.

Most carpenters are employed by contractors in the building construction fields. When specializing in a particular phase of carpentry, the job is designated according to the specialty as layout carpenter, framing carpenter, concrete form carpenter, scaffolding carpenter, accoustical and insulating carpenter, and finish carpenter.

Job Description

The carpenter constructs, erects, installs and repairs structures and fixtures of wood, plywood, wall board and other materials, using carpenters handtools and powertools to conform to local building codes. He is required to use blueprints, sketches or building plans for information pertaining to type of material, dimensions, layout and design of structure, and method of construction.

CARPENTRY

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	1100	Reading Improvement	2	0	2
MAT	1101	Vocational Mathematics I	5	0	5
DFT	1110	Blueprint Reading: Building Trades	0	3	1
CAR	1101	Carpentry	3	18	9
		*Electives			
			10	21	17
		SECOND QUARTER			
ENG	1102	Industrial Communications	3	0	3
MAT	1112	Building Trades Mathematics	3	0	3
DFT	1111	Blueprint Reading & Sketching	0	3	1
CAR	1102	Carpentry: Millwork & Cabinetmaking	3	18	9
		*Electives			
			9	21	16
		THIRD QUARTER			
PSY	1101	Human Relations	3	0	3
CAR	1113	Carpentry: Estimating	3	3	4
CAR	1103	Carpentry: Framing	3	18	9
		*Electives			
			9	21	16
		FOURTH QUARTER			
CAR	1114	Building Codes	3	0	3
BUS	1103	Small Business Operations	3	0	3
CAR	1104	Carpentry: Finishing	5	18	11
		*Electives			
			11	18	17

*Electives may be selected but not to exceed a total of 30 instructional hours.

ELECTRICAL

INSTALLATION AND MAINTENANCE

Purpose of Curriculum

The rapid expansion of the national economy and the increasing development of new electrical products is providing a growing need for qualified people to install and maintain electrical equipment. By mid-1960 more than 350,000 were employed as either construction electricians or maintenance electricians. Between 5,000 and 10,000 additional tradesmen are required each year to replace those leaving the industry. It is expected that the total requirements for electrical tradesmen will reach 500,000 by 1966 and 700,000 by 1970. The majority of the electrical tradesmen today are trained through apprenticeship or on-the-job training programs.

This curriculum guide will provide a training program in the basic knowledge, fundamentals, and practices involved in the electrical trades. A large portion of the program is devoted to laboratory and shop instruction which is designed to give the student practical knowledge and application experience in the fundamentals taught in class.

Job Description

The graduate of the electrical trades program will be qualified to enter an electrical trade as an on-the-job trainee or apprentice, where he will assist in the planning, layout, installation, check out, and maintenance of systems in residential, commercial, or industrial plants. He will have an understanding of the fundamentals of the National Electrical Code regulations as related to wiring installations, electrical circuits, and the measurements of voltage, current, power, and power factor of single and polyphase alternating circuits. He will have a basic knowledge of motor and motor control systems: industrial electronic control systems; business procedures, organization, and practices; communicative skills; and the necessary background to be able to advance through experience and additional training through upgrading courses offered in the center.

ELECTRICAL INSTALLATION AND MAINTENANCE

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ELC	1112	Direct and Alternating Current	5	15	10
ENG	1100	Reading Improvement	2	0	2
MAT	1115	Electrical Math	5	0	5
DFT	1110	Blueprint Reading: Building Trades	0	3	1
		*Electives			
			12	18	18
		SECOND QUARTER			
ELC	1113	Alternating Current and Direct Current Machines and Controls	5	15	10
DFT	1113	Blueprint Reading: Electrical	0	3	1
ENG	1102	Industrial Communications	3	0	3
PHY	1102	Applied Science	3	2	4
		*Electives			
			11	20	18
		THIRD QUARTER			
ELC	1124	Residential Wiring	5	9	8
ELN	1118	Industrial Electronics	3	6	5
PSY	1101	Human Relations	3	0	3
BUS	1103	Small Business Operations	3	0	3
		*Electives			
			14	15	19
		FOURTH QUARTER			
ELC	1125	Commercial and Industrial Wiring	5	10	8
ELN	1119	Industrial Electronics	3	6	5
BMS	1133	Building Codes and Laws	2	5	4
		*Electives			
			10	21	17

*Electives may be selected but not to exceed a total of 30 instructional hours.

MACHINIST

Purpose of Curriculum

This curriculum was prepared to meet a definite need for training of machinist. Surveys recently completed in North Carolina show that many of the existing industries lack time and facilities for training enough machinists to meet present and planned needs. Expanding industries already located in our State and new industries under development invariably express the need for skilled craftsman who have the background knowledge and potential to advance.

This guide is designed to give learners the opportunity to acquire basic skills and the related technical information necessary to gain employment and build a profitable career in the machine shop industry in the State. It is comprised of the joint views of committees responsible for its development.

Job Description

The machinist is a skilled metal worker who shapes metal parts by using machine tools and hand tools. His training and experience in turning out a machined product and to switch readily from one kind of product to another. A machinist is able to select the proper tools and material required for each job and to plan the cutting and finishing operations in their proper order so that he can complete the finished work according to blueprint or written specifications. He makes standard shop computations relating to dimensions of work, tooling, feeds, and speeds of machining. He uses precision measuring instruments such as micrometers and gauges to measure the accuracy of his work to thousandths of an inch.

The skilled worker must be able to set up and operate most types of machine tools. The machinist also must know the composition of metals so that he can heat and quench cutting tools and parts to improve machinability. His wide knowledge enables him to turn a block of metal into an intricate, precise part.

MACHINIST CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	1101	Grammar	3	0	3
MAT	1101	Vocational Mathematics I	5	0	5
PHY	1101	Applied Physics I: Properties of Matter	3	2	4
MEC	1101	Theory and Practice I	3	12	7
		*Electives	—	—	—
			14	14	19
		SECOND QUARTER			
MAT	1102	Vocational Mathematics II	5	0	5
PHY	1102	Applied Physics II: Electricity	3	2	4
ENG	1102	Industrial Communications	3	0	3
DFT	1180	Trade Drafting I	2	4	3
MEC	1102	Theory and Practice II	3	8	6
		*Electives	—	—	—
			16	14	21
		THIRD QUARTER			
MAT	1123	Mathematics: Machinist I	5	0	5
DFT	1181	Trade Drafting II	2	3	3
ECO	1105	Economics	3	0	3
PHY	1103	Applied Physics III	3	2	4
MEC	1103	Theory and Practice III	3	8	6
		*Electives	—	—	—
			16	13	21
		FOURTH QUARTER			
MAT	1180	Mathematics: Machinist II	5	0	5
MEC	1180	Industrial Specifications	3	0	3
MEC	1104	Structure of Metals	3	2	4
MEC	1105	Theory and Practice IV	3	9	6
PSY	1106	Applied Psychology	3	0	3
		*Electives	—	—	—
			17	11	21
		FIFTH QUARTER			
WLD	1180	Welding: Basic	2	4	3
DFT	1182	Blueprint & Shop Sketching	3	0	3
MEC	1106	Heat Treating Practices	2	4	3
MEC	1181	Precision Machines	3	9	6
		*Electives	—	—	—
			10	17	15
		SIXTH QUARTER			
MEC	1182	Jig and Fixture Making	3	9	6
MEC	1183	Machine Repair	2	4	3
MEC	1184	Advanced Machine Processes	3	6	5
ENG	1103	Report Writing	3	0	3
		*Electives	—	—	—
			11	19	17

*Electives may be selected but not to exceed a total of 30 instructional hours.

MASONRY

Purpose of Curriculum

Masons are the craftsmen in the building trades that work with artificial stone, brick, concrete masonry units, stone and the like. During the past decade there has been a steady increase in the demand for these craftsmen. As building construction continues to increase the demand for bricklayers, cement masons, and stonemasons will also increase.

This curriculum in Masonry is designed to train the individual to enter the trade with the knowledge and basic skills that will enable him to perform effectively. He must have a knowledge of basic mathematics, blueprint reading and masonry technology. He must know the methods used in laying out a masonry job with specific reference to rigid insulation, refractories, and masonry units specified for residential, commercial and industrial construction.

Most employment opportunities for masons may be found with contractors in new building construction. However, a substantial proportion of masons are self-employed or work with contractors doing repair, alteration, or modernization work.

Job Description

Most masons are employed by contractors in the building construction fields to lay brick, and blocks made of tile, concrete, glass, gypsum or terra cotta. Also, he constructs or repairs walls, partitions, arches, sewers, furnaces and other masonry structures.

After gaining experience in the various types of the masonry trade along with leadership training, it is possible for the tradesman to become a foreman, inspector and eventually a contractor.

MASONRY

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
MAS	1101	Bricklaying	5	15	10
MAT	1101	Vocational Mathematics I	5	0	5
DFT	1110	Blueprint Reading: Building Trades	0	3	1
ENG	1100	Reading Improvement	2	0	2
		*Electives			
			12	18	18
		SECOND QUARTER			
MAS	1102	Bricklaying	5	15	10
MAT	1112	Building Trades Mathematics	3	0	3
DFT	1111	Blueprint Reading & Sketching	0	3	1
ENG	1102	Industrial Communications	3	0	3
		*Electives			
			11	18	17
		THIRD QUARTER			
MAS	1103	General Masonry I	5	15	10
MAS	1113	Masonry Estimating	3	3	4
DFT	1114	Blueprint Reading & Sketching	0	3	1
		*Electives			
			8	21	15
		FOURTH QUARTER			
BUS	1103	Small Business Operations	3	0	3
PSY	1101	Human Relations	3	0	3
MAS	1104	General Masonry II	3	18	9
		*Electives			
			9	18	15

*Electives may be selected but not to exceed a total of 30 instructional hours.

PLUMBING

Purpose of Curriculum

Plumbers are the craftsmen who install pipe systems which carry water, steam, air, or other liquids or gases needed for sanitation, heating, industrial production and various other uses. During the past decade there has been a steady increase in the demand for these draftsmen.

This curriculum in plumbing and heating is designed to train the individual to enter this occupation with the knowledge and basic skills that will enable him to perform effectively. Courses in plumbing practices and heating are included to provide practical experience as well as the theoretical information that one must know to advance and keep up-to-date with new innovations. Other courses in communication skills, physics, human relations and business operations are provided to assist the individual in occupational growth.

Opportunities for plumbers and pipefitters may be found with plumbing and pipefitting contractors in new building construction. A substantial proportion of plumbers are self-employed or work for plumbing contractors doing repair, alteration, or modernization work. Some plumbers install and maintain pipe systems for government agencies and public utilities, and some work on the construction of ships and aircraft.

Job Description

Most plumbers are employed by contractors in the building construction fields to install pipe systems which carry water, steam, air or other liquids or gases for sanitation, heating, industrial production and various other uses. They also alter and repair existing pipe systems and install plumbing fixtures, appliances, and heating and refrigeration units.

Journeymen in this field can specialize in either one. Water, gas, and waste disposal systems are installed by plumbers. Pipefitters install both high and low pressure pipes that carry hot water, steam, and other liquids and gases, especially those in industrial and commercial buildings and defense establishments, such as missile launching and testing sites.

PLUMBING

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	1100	Reading Improvement	2	0	2
DFT	1110	Blueprint Reading: Building Trades	0	3	1
MAT	1101	Vocational Mathematics I	5	0	5
PLU	1110	Plumbing Pipework	5	15	10
		*Electives			
			12	18	18
		SECOND QUARTER			
ENG	1102	Industrial Communications	3	0	3
WLD	1101	Basic Gas Welding	2	4	3
DFT	1115	Blueprint Reading: Plumbing Trades	0	3	1
PLU	1111	Domestic Water Systems	2	9	5
PLU	1120	Low Pressure Steam Systems	2	6	4
		*Electives			
			9	22	16
		THIRD QUARTER			
PSY	1101	Human Relations	3	0	3
PLU	1121	High Pressure Steam Systems	3	9	6
BUS	1103	Small Business Operations	3	0	3
PLU	1112	Installation of Plumbing Fixtures	3	9	6
		*Electives			
			12	18	18
		FOURTH QUARTER			
BMS	1133	Building Codes and Laws	2	5	4
PLU	1126	Hydraulic Systems Plumbing	2	3	3
PLU	1125	Industrial Piping	3	6	5
PLU	1123	Hot Water and Panel Heating	3	6	5
		*Electives			
			10	20	17

*Electives may be selected but not to exceed a total of 30 instructional hours.

TOOL & DIE MAKING

Purpose of Curriculum

Year by year, the machines tools industry is faced with an increasing shortage of tool and die makers. This shortage has been brought about by the rapid expansion of industry and the retirement of the older craftsmen in this field. The purpose of this curriculum is to provide a training program that will give the student the necessary background in theory and practice to enable him to become a capable tool and die maker in far less time than would be required to obtain these skills and knowledge without formal instruction.

Complexity of new tools in industry increases each year due to new engineering, scientific discovery, and the space age need for closer tolerances. This complexity is reflected first in the tools, dies, gauges, and molds that must be built by the tool and die men. This curriculum provides a basis from which the student may equip himself with the knowledge, techniques, and skills to meet this great challenge and critical need.

Job Description

Tool and die makers are responsible for the accuracy of thousands of parts because the jigs, fixtures, dies, molds and gauges which are the basic tools of mass production, are built by the tool and die men. They must be able to proficiently operate all the basic shop equipment, be able to read precision measuring instruments and interpret complicated engineering drawings, and have the know-how to reproduce these drawings in the form of finished metal parts.

Tool and die making is a term used to describe the overall job of the mechanic in this phase of industry. The journeyman tool and die maker usually has the knowledge and skill required to perform all phases of this type of work, although some may specialize in a particular phase of the trade such as progressive dies, jigs and fixtures and gauge making.

TOOL AND DIE MAKING

FIRST YEAR

Fall Quarter		C-L-CH
ENG 1101	Grammar	3—0—3
MAT 1101	Mathematics: Fundamentals	5—0—5
PHY 1101	Applied Physics: Properties of Matter	3—2—4
MEC 1101	Theory and Practice I	3-12—7
	*Electives	14 - 14 - 19

Winter Quarter		C-L-CH
MAT 1102	Mathematics: Algebra	5—0—5
PHY 1102	Applied Physics I: Electricity	3—2—4
ENG 1102	Industrial Communications	3—0—3
DFT 1180	Drafting: Trade I	0—6—3
MEC 1102	Theory and Practice II	3—8—6
	*Electives	16 - 13 - 21

Spring Quarter		C-L-CH
MAT 1120	Mathematics: Machinist I	5—0—5
DFT 1181	Drafting: Trade II	2—3—3
ECO 1105	Economics	3—0—3
PHY 1103	Applied Physics III: Work, Energy, Power	3—2—4
MEC 1103	Theory and Practice III	3—8—6
	*Electives	16 - 13 - 21

SECOND YEAR

Fall Quarter		C-L-CH
MAT 1180	Mathematics: Machinist II	5—0—5
MEC 1180	Industrial Specifications	3—0—3
MEC 1104	Structure of Metals	3—2—4
MEC 1105	Theory and Practice IV	3—9—6
PSY 1106	Applied Psychology	3—0—3
	*Electives	17 - 11 - 21

Winter Quarter		C-L-CH
WLD 1180	Welding: Basic	2—4—3
DFT 1181	Blueprint & Shop Sketching	3—0—3
MEC 1106	Heating Treating Practices	2—4—3
MEC 1181	Precision Machines	3—9—6
	*Electives	10 - 17 - 15

Spring Quarter		C-L-CH
MEC 1182	Jig & Fixture Making	3—9—6
MEC 1183	Machine Repair	2—4—3
MEC 1184	Advanced Machine Processes	3—6—5
ENG 1103	Report Writing	3—0—3
	*Electives	11 - 19 - 17

THIRD YEAR

Fall Quarter		C-L-CH
MEC 1151	Tool Making: Jigs & Fixtures	2—0—5
MEC 1154	Die Making I	2—6—4
MAT 1151	Mathematics: Trigonometry	3—0—3
MEC 1152	Tool Making: Gages & Special Tools	1—6—3
	*Electives	8 - 21 - 15

Winter Quarter		C-L-CH
MEC 1155	Die Making II	2—9—5
MEC 1158	Introduction to Plastics Molding	2—9—4
MEC 1159	Blue Print Reading & Inspection	2—2—3
MAT 1152	Mathematics: Trigonometry	3—0—3
	*Electives	9 - 20 - 15

Spring Quarter		C-L-CH
MEC 1153	Advanced Tool Making	4—7—6
MEC 1160	Special Problems	2—6—4
MEC 1156	Die Making III	2—9—5
	*Electives	8 - 22 - 15

*Electives may be selected but not to exceed a total of 30 instructional hours.

WELDING

Purpose of Curriculum

The curriculum prepares the students for a place in one of the newest and most progressive industries in our industrial economy—the welding industry. It has made tremendous progress in a short period of time. Furthermore, it has made a major contribution toward raising the standard of living of the American people.

The development of the curriculum was to fill the tremendous need for welders in North Carolina. The recently completed Manpower Survey shows quite clearly that many welders will be needed annually to fill present and projected vacancies in the State.

The content of this curriculum was designed to give students sound understanding in the principles, methods, techniques and skills essential for successful employment in the welding field and metals industry.

The field of welding offers a person prestige, security, and a future of continuous employment with steady advancement. It offers employment in practically any industry: Shipbuilding automotive, aircraft, guided missiles, railroad, construction, pipe fitting and welding, production shop, job shop, and many others.

Job Description

Welders join metals by applying intense heat, and sometimes pressure, to melt the edges to form a permanent bond. Closely related to welding is "oxygen cutting." Of the more than 35 different ways of welding metals, arc, gas, and resistance welding are the three most important.

The principle duty of the welder using manual techniques is to control the melting by directing the heat from either an electric arc or gas welding torch, and to add filler metal where necessary to complete the joint. He should possess a great deal of manipulative skill with a knowledge of jigs, welding symbols, mathematics, basic metallurgy, and blueprint reading.

WELDING CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
WLD	1120	Oxyacetylene Welding & Cutting	3	9	6
MAT	1101	Vocational Mathematics I	5	0	5
DFT	1104	Blueprint Reading: Mechanical	0	3	1
MEC	1104	Structure of Metals	3	2	4
ENG	1100	Reading Improvement	2	2	3
ECO	1105	Applied Economics	3	0	3
		*Electives			
			16	16	22
		SECOND QUARTER			
WLD	1121	Arc Welding	3	12	7
MAT	1103	Vocational Mathematics III	3	0	3
DFT	1117	Blueprint Reading: Welding	0	3	1
ELC	1180	Basic Electricity	3	0	3
ENG	1102	Industrial Communications	3	0	3
		*Electives			
			12	15	17
		THIRD QUARTER			
WLD	1124	Pipe Welding	4	14	8
WLD	1123	Inert Gas Welding	1	3	2
DFT	1118	Pattern Development & Sketching	3	0	3
PSY	1106	Applied Psychology	3	0	3
		*Electives			
			11	17	16
		FOURTH QUARTER			
WLD	1112	Mechanical Testing and Inspection	1	3	2
WLD	1122	Commercial & Industrial Practice	3	9	6
WLD	1125	Certification Practices	3	6	5
MEC	1112	Machine Shop Processes	1	6	2
		*Electives			
			8	24	15

*Electives may be selected but not to exceed a total of 30 instructional hours.

DEVELOPMENTAL STUDIES PROGRAM

The Developmental Studies Program is an integrated, student-centered program of instruction designed to increase the likelihood of success for students who enter this institute with academic deficiencies. The goal of this program is to develop the academic ability of every entering student to the extent that he has an average likelihood of success in one of the several regular curricula areas.

Students are initially assigned to courses appropriate to their desires, to their tested abilities, and as deemed proper by their counselors. As each student progresses, he is permitted to develop at his own speed, in classes which are within his level of competence.

As the individual student displays sufficient competence in an area of study he is guided to the next higher level of study, that is, into a study which holds challenge for the student and which will contribute to his academic, technical, or vocational development.

Each student is encouraged to progress to his utmost capability, and upon completion of the program, is permitted to select a curriculum consistent with his proved performance.

The Developmental Studies courses combine academic courses and laboratory/shop instruction to provide students with integrated theory-procedures and practical applicatory understanding of the subject matter requisite to regular curricular success.

Students may spend from one quarter to three quarters, or more, in the Developmental Studies Program. However, normally, the student will stay in the program for three quarters (one academic year). All academic regulations are applicable to this phase of college study. Courses are provided at two or more levels in English (reading, grammar, composition, and speech), mathematics, physical science, social science and curricular related shops and laboratories.

DEVELOPMENTAL STUDIES

Course No. and Title	FIRST QUARTER	Hours Per Week Class	Lab	Quarter Hours Credit
*				
**				
***				
****ENG 91	Vocabulary and Reading I	3	2	4
*				
****BIO 92	Fundamental Biology	2	2	3
*				
**MAT 91	Mathematics I, Level I	5	0	5
***				
****MAT 94	Mathematics I, Level II	5	0	5
*				
**PHY 91	Physical Science I, Level I	3	2	4
***PHY 94	Physical Science I, Level II	3	2	4
*WLD 95	Shop Practice (Welding)	2	4	4
*AHR 95	Shop Practice (Air Conditioning)	2	4	4
*MEC 96	Shop Practice (Machine Shop)	2	4	4
***DFT 90	Mechanical Drawing I	2	2	3
**BUS 94	Bookkeeping I	3	2	4
**BUS 91	Business Machines I	3	2	4
	Electives			5
	Suggested Normal Load			
	15 - 18 Credit Hours			
	SECOND QUARTER			
*				
**				
***				
****ENG 92	Vocabulary and Reading I	3	2	4
*				
****BIO 93	Fundamental Biology	2	2	3
*				
**MAT 92	Mathematics II, Level I	5	0	5
***				
****MAT 95	Mathematics II, Level II	5	0	5
*				
**PHY 92	Physical Science II, Level I	3	2	4
***CHM 93	Chemistry, Physical Science II, Level II	3	2	4
***DFT 92	Mechanical Drawing II	2	2	3
*WLD 95	Shop Practice (Welding)	2	4	4
*MEC 96	Shop Practice (Machines)	2	4	4
*AHR 95	Shop Practice (Air Conditioning)	2	4	4
**BUS 95	General Business I	3	2	4
**BUS 97	Economics I	5	0	5
	Electives			5
	Suggested Normal Load			
	15 - 18 Credit Hours			

Continued - Developmental Studies

THIRD QUARTER

*				
**				
***				
****ENG 93	Composition and Grammar	2	3	4
*BIO 94	Fundamental Biology	2	2	3
****CHM 96	Chemistry, Physical Science III, Level II	3	2	4
*				
**MAT 93	Mathematics III, Level I	5	0	5
***MAT 96	Mathematics III, Level II	5	0	5
*PHY 93	Physical Science III, Level I	3	2	4
***PHY 95	Physical Science III, Level II	3	2	4
*DFT 93	Elementary Drawing	3	3	4
**BUS 93	Business Office Procedures	3	2	4
**BUS 96	Shorthand	3	2	4
**BUS 99	Economics II	5	0	5
*WLD 95	Shop Practices (Welding)	2	4	4
*MEC 96	Shop Practices (Machine)	2	4	4
*AHR 95	Shop Practices (Air Conditioning)	2	4	4
***CIV 93	Introduction to Technology	2	2	3
	Electives			5
	Suggested Normal Load 15 - 18 Credit Hours			

*For Students with vocational orientations only, except as selected as an elective course with the instructor's approval.

**For Students with business orientations only, except as selected as an elective course with the instructor's approval.

***For Students with technical orientations only, except as selected as an elective course with the instructor's approval.

****For Students with health sciences orientation only, except as selected as an elective course with the instructor's approval.

DEVELOPMENTAL STUDIES

Course Descriptions

English—Instruction is designed to provide functional ability in the successful use of the language and includes:

a. Reading—designed to promote interest in reading while enhancing the students' vocabulary, and dictionary and research skills.

b. Composition and grammar—review the rules related to meaningful English usage and provide the students with the opportunity to apply those rules, while focusing on the writing of good sentences and paragraphs.

c. Speech—the oral use of English as a communicative tool, improves the student's enunciation, pronunciation, and language usage. Speech instruction and application is integrated in all English instruction.

Mathematics—Designed to teach knowledge and skills needed in everyday life and advanced instruction.

a. Level I, introduces basic operations of the numbers system, kinds of numbers, addition, subtraction, division and multiplication to develop accuracy and speed through drill and problem solving. Success in Level I Mathematics increases the students' likelihood of success in Vocational and Business Curricula.

b. Level II, introduces the student to algebra and geometry and builds the concepts needed in dealing with equations and geometrical problems. Level II also deals with more advanced algebraic and geometrical problems necessary to succeed in Technical curricula. Included are the application of mathematics to problem solving by using: ratio and proportion, direct measurement, (lines, angles, permetrics, areas, volumes), and indirect measurement, (triangles, and polygrams). Emphasis is placed on the application of mathematics and mathematical procedures to the industry of today.

Physical Science—Instruction designed for students who have had little or no laboratory experience at the high school level, but offered also to others who may have had such experience but who lacked sufficient opportunity to understand the scientific method and scientific discipline.

Developmental Physical Science acquaints the student with lab equipment and practices, scientific terminology, and the scientific method, by using instruction and practical experiments.

a. Level I Physical Science includes basic physical phenomena and scientific practices and is appropriate for students who plan to continue in Vocational and/or Business curricula.

b. Level II Physical Science includes a more advanced approach to the subject.

c. Chemistry includes an introduction to chemical elements and chemical phenomena and is appropriate for students who plan to pursue Technical curricula.

d. Biology includes basic and advanced knowledge of and experimentation with living organisms. Biology is appropriately studied by students who plan to major in any of the health sciences, such as Nursing.

Levels of biology instruction appropriate to students planning to enter the ADN and LPN curricula are offered.

Social Science Instruction—Man in his social environment is integrated in the instruction primarily designated English and Physical Science. Social Science instruction fosters the understanding that each of us is dependent upon and supportive of the society of which we are a part, and is presented by examples drawn from history, sociology, psychology, and the humanities as part of other scheduled instruction.

Social Science instruction in the Developmental Studies Program is intended to facilitate the development of individual values and value systems in each student appropriate to his own life circumstance, style, and his environment.

Shops and Laboratories—Instruction and practical experiences stress the use and the application of theory to practice with emphasis on the student's personal physical involvement with "doing" as well as with "knowing."

DEPARTMENT OF ADULT EDUCATION

General Information

Fayetteville Technical Institute provides educational opportunities for adults interested in upgrading their ability, developing new skills, completing high school, or participating in special interest classes. Adult education courses are generally non-credit and short in duration when compared to curricula programs, but are very helpful in providing adults with better employment opportunities or job advancements.

Due to the increased number of students and a variety of programs, Fayetteville Technical Institute entered into an agreement with the Cumberland County Board of Education and the Fayetteville City Board of Education to cooperatively sponsor Adult Education Courses in the public schools of both systems. These schools have been designated as Adult Education Centers and are an integral part of the total Adult Education program of Fayetteville Technical Institute.

Purposes

The general purposes of the Department of Adult Education are:

1. To administer and supervise a broad program of adult education and to include instruction which prepares adults for better family living, more job opportunities, promotion in present jobs and civic and community leadership;
2. To provide educational opportunities for adults interested in upgrading their ability, developing new skills, and expanding their cultural and avocational interest;
3. To be in contact with local industry, to study and determine educational needs of industrial employees; and
4. To plan and supervise educational programs and conduct in-service training programs for instructors of adult education.

Admission

Any adult who is eighteen years of age or older is eligible to attend adult classes offered by Fayetteville Technical Institute either on-campus or at any of the several Adult Education Centers in the city or county.

Fees

A nominal instructional and supply fee is charged for the majority of adult education classes. All fees must be paid before the first class session and may be refunded only in the event the class is cancelled. Books and supplies are available through the Fayetteville Technical Institute Book Store. The Book Store facilities are also available for students enrolled in the Adult Education Centers.

Adult Basic Education

Adult Basic Education is a program designed to move the uneducated or undereducated adult from grade 0 - 8. Classes meet two nights weekly in the local centers where there is a sufficient number of interested adults.

There is no registration fee required and materials are provided by Fayetteville Technical Institute. All materials used have been especially prepared for adults with emphasis on individual needs and interests.

There are two levels in Adult Basic Education. Level 1 (grades 0 - 4) and Level II (grades 5 - 8). After a student has mastered all the requirements in one level, he is then eligible to move to the next level.

The High School Diploma Program

The Adult High School Diploma Program provides adults eighteen years of age and older the opportunity to receive the Adult High School Diploma. A student may enter the program by presenting a transcript of previous work or by taking an achievement test battery given by Fayetteville Technical Institute and being placed on his educational level indicated by his score made on the test battery.

To be eligible to recieve the Adult Diploma, one must attend class at least two quarters and score twelfth grade on a complete test battery.

The Adult High School Diploma Program will be offered at the following city and county schools: Massey Hill High School, Cape Fear High School, and C. Reid Ross High School.

Certificates and Diplomas

Fayetteville Technical Institute issues a certificate of participation to each student completing a course and attending 80 per cent of the class hours required for completion. Adult High School diplomas are awarded the adults who meet the requirements in the High School Diploma Program.

EXTENSION DIVISION

The Extension Division sponsors courses in many occupational areas providing adults an opportunity to upgrade and improve their abilities and to learn new skills. Extension courses are available as a major part of the evening school program at Fayetteville Technical Institute and selected courses are available in the local adult education centers. Special courses are organized for business and industry to meet the immediate educational needs of working adults.

The evening school at Fayetteville Technical Institute offers a fall and winter session and special classes are scheduled for summer school quarters. The fall session begins in September and ends in December. The winter session begins in January and ends in May.

Course offerings of the Extension Division include business education, health, supervisory development and apprenticeship training. A wide variety of courses are scheduled in the areas of trade and industry. Special training programs are afforded law enforcement officers and fire service personnel.

Fayetteville Technical Institute awards a certificate of participation to those adults who complete an extension course.

Through the course offerings of the Extension Division, Fayetteville Technical Institute functions as a comprehensive post-high school institute serving many adults who are unable to participate in curricula or full-time day programs.

From management to the skilled tradesman, extension course offerings in occupational education provide adults the opportunity to continue their education.

GENERAL ADULT EDUCATION

Many adults are interested in courses designed to meet cultural and avocational interests. Courses of this nature are generally offered as self-supporting and are planned to meet special interests of adults. Examples include: Great Decisions, Discussion Groups, art, and cake decorating.

The Fundamentals Learning Laboratory

The purpose of the Learning Laboratory is to make available to the community and the student body of Fayetteville Technical Institute an opportunity to learn new subjects, strengthen weak areas of learning, or to study and qualify for a high school equivalency diploma. It serves as a remedial clinic for aspiring students and a programmed classroom for adults who desire new or specialized training.

The Learning Laboratory enables a person, at any educational level, to further his knowledge in any of forty subjects. This is a new approach to education with the use of programmed materials and teaching machines.

There are no regularly scheduled classes. The prospective student may come into the laboratory at any time his daily schedule will permit. The laboratory is open from 8:00 a.m. to 3:00 p.m. Monday through Friday and from 7:00 p.m. to 9:00 p.m. Monday through Thursday. This approach to learning may be pursued by anyone over 18 years of age who is motivated and desires self-improvement, regardless of educational background.

Subjects available in programmed instruction include: English, social studies, mathematics, foreign languages, reading skills, and science.

Manpower Development Training

The purpose of MDTA is to establish an effective program to alleviate conditions of substantial and persistent unemployment and under-employment in economically distressed areas in the United States.

Students enrolled in MDTA programs are selected by the North Carolina Employment Security Commission without regard to ability, aptitude, or physical condition and are referred to the MDTA Division Chairman at Fayetteville Technical Institute. Adults must be at least 18 years of age or older. Fayetteville Technical Institute is responsible for administering and supervising MDTA classes.

New and Expanding Industry Education

The purpose of new and expanding industry education is that of cooperating with industry in an effort to provide an adequate training labor force to meet the needs of a rapidly expanding industrial development in North Carolina. Individuals learn basic skills required by a particular job in a company, equipping North Carolina with a labor force possessing saleable skills which should lead to more gainful employment.

New Industry Training is accomplished by using On-the-Job Training, Pre-employment training, or a combination of both.

This training program is set up to train only that number of individuals for which the participating industry can assure jobs successful completion of their training.

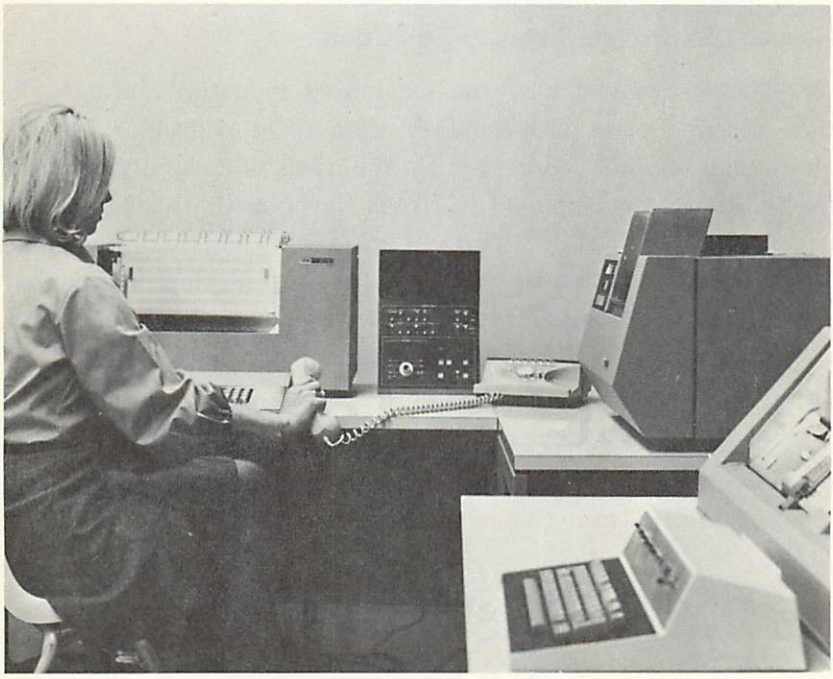
PROPOSED CURRICULA

Fayetteville Technical Institute is constantly striving to meet the needs of both industry and the student through the expansion of its curriculum offerings.

Fayetteville Technical Institute has been authorized by the State Board of Education and the Department of Community Colleges to offer the following curricula:

Dental Hygiene*
Carpentry*
Masonry*
Plumbing*
Electrical*
Cosmetology**
Nursing Assistant**
Dental Assistant**

*Approved to start 1971-72
**Approved to start 1972-73



BUSINESS EDUCATION

Course Descriptions

AGR 104 Introduction to Agricultural Economics 3 2 4

An introduction to economics, the functions of the economic system and agriculture's role in the economy. A review of the functions of the manager and an introduction to the principles he uses in making decisions to adjust to changing conditions. Analysis of the main sources of change which affect agricultural firms.

AGR 125 Animal Science 5 2 6

An introductory animal science course covering the fundamental principles of livestock production. A study of the animal body and the basic principles of reproduction, genetics, growth, fattening, digestion, along with the selection, feeding, improvement, processing, and marketing of livestock.

AGR 170 Plant Science 5 2 6

An introductory general botany and a study of fundamental principles in crop production. The application of these principles to the major and minor field crops in North Carolina. The elements of plant identification, crop grading, and judging.

AGR 185 Soil Science and Fertilizers 5 2 6

A course dealing with basic principles of efficient classification, evaluation, and management of soils; care, cultivation, and fertilization of the soil, and conservation of soil fertility.

AGR 201 Agricultural Chemicals 4 2 5

A study of farm chemical pesticides, their ingredients, formulation, and farm application, with emphasis on the effective and safe use of chemicals in agricultural pest control.
Prerequisite: CHEM 101.

AGR 204 Farm Business Management 4 4 6

A review of the functions of the manager of a business firm and the problems he faces. Development of the concept of planning by both partial and complete budgeting. Review of the concepts of costs and the length of run in production. Practice in

preparing enterprise budgets as an aid in choosing what to produce. Use of partial budgeting to find the least cost production procedure. Analysis of production data to select the level of production that yields the most net revenue. Relationship between size, efficiency and income of a farm. Review of procedures for evaluating the efficiency of the manager.
Prerequisite: AGR 104.

AGR 205 Agricultural Marketing 5 0 5

An analysis of the functions of marketing in the economy and a survey of the problems marketing faces. A review of the market structure and the relationship of local, terminal, wholesale, retail and foreign markets. Problems in the operations of marketing firms include buying and selling, processing, standardization and grading, risk taking and storage, financing, efficiency, and cooperation. Discussion of procedures of marketing such commodities as grain, cotton, livestock, and tobacco.
Prerequisite: AGR 104.

AGR 218 Agricultural Mechanization 3 2 4

A study of farm machinery management and labor-saving devices. The economics of selection and operation of farm machinery. Study and evaluation of feed grinders and mixers, storage facilities, materials handling systems and other labor-saving devices.

AGR 228 Livestock Diseases and Parasites 3 2 4

A course dealing with the common diseases and parasites of livestock; sanitation practices and procedures with emphasis on the cause, symptoms, prevention and treatment of parasites and diseases, and management factors relating to disease and parasite prevention and control.

AGR 256 Crop Production 4 2 5

A course dealing with the production of agricultural crops. A study of the characteristics, adaptability and productivity of individual crops and how soil management, fertilization, cultivation and other practices affects yields and profitability of the crop.
Prerequisite: AGR 170.

AGR 257 Animal Production 4 2 5

A course dealing with the feeding, breeding and management of beef and dairy cattle, swine and poultry with specific emphasis on the application of sound principles and practices which make for profitable production in each type of livestock operation.

Prerequisite: AGR 125.

AGR 299 Cooprative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

BUS 91 Business Machines I 3 2 4

A general survey of the business and office machines. Students will receive an introduction to and training in techniques, processes, operation and application of the ten-key adding machines and calculators.

BUS 93 Office Procedures 3 2 4

A course designed to place emphasis on the skills and knowledge that will contribute to the student's success in an office working situation. Certain office procedures and techniques are included, such as, handling the mail, filing, data processing, telephone techniques, copying and duplicating, and reception duties. Personal qualities, good work habits, and proper human relations are stressed.

BUS 94 Bookkeeping I 3 2 4

A study of the basic bookkeeping cycle. Begins with the starting of a bookkeeping system, covers the basic elements, the bookkeeping equation, the journalizing of transactions, the ledger, worksheet, financial statements, and the closing of the ledger.

BUS 95 General Business I 3 2 4

A study to help students become more competent in making economic choices and using business services; to develop desirable economic attitudes: willingness to assume responsibilities, awareness of personal obligations to others and appreciation of the role of the individual in business and government; to sharpen basic business skills, to develop an understanding of business occupations and to provide a basis for further study in business.

BUS 96 Shorthand 3 2 4

An exploratory course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms, and phrases.

BUS 97 Economics I 5 0 5

The study of how man satisfies his wants and needs for material goods and services through the use of his mental and physical efforts.

BUS 99 Economics II 5 0 5

A study of the economic principles involved in the personal and family problems of earning an income; wise management of money and savings, protection from loss through insurance, procurement of a home, and personal expenditures.

BUS 101 Introduction to Business 5 0 5

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management.

BUS 102 Typewriting 2 3 3

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts. Minimum speed of 30 words per minute for five minutes.

BUS 103 Typewriting 2 3 3

Instruction emphasized the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manu-

script, correspondence, and business forms. Speed requirement, 40 words per minute for five minutes.
Prerequisite: BUS 102 or the equivalent.

BUS 104 Typewriting 2 3* 3

Emphasis on production typing problems and speed building. Attention to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms. Speed requirement, 50 words per minute for five minutes.
Prerequisite: BUS 103.

BUS 106 Shorthand 3 2 4

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms, and phrases.

BUS 107 Shorthand 3 2 4

Continued study of theory with greater emphasis on dictation and elementary transcription.
Prerequisite: BUS 106.

BUS 108 Shorthand 3 2 4

Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription.
Prerequisite: BUS 107.

BUS 110 Office Machines 2 3 3

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard, adding machines, and the calculator.

BUS 112 Filing 3 0 3

Fundamentals of indexing and filing, combining theory and practice by the use of miniature letters, filing boxes and guides. Alphabetic, Triple Check, Automatic, Geographic, Subject, Soundex, and Dewey Decimal filing.

BUS 115 Business Law 2 2 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.

BUS 116 Business Law 2 2 3

Includes the study of laws pertaining to bailments, sales, and negotiable instruments.
Prerequisite: BUS 115.

BUS 120 Accounting 5 3 6

Principles, techniques, and tools of accounting, for understanding of the mechanics of accounting, collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned.

BUS 121 Accounting 5 3 6

Accounting for the organization, operation and dissolution of partnerships and corporations. Also the study of accounting systems and controls as they relate to payroll and cash records.
Prerequisite: BUS 120.

BUS 122 Accounting 5 3 6

Accounting for control and decision making purposes including departmental and branch accounting, cost accounting and budgeting. Also includes analysis of financial statements as well as preparation of funds and cash flow statements.
Prerequisite: BUS 121.

BUS 123 Business Finance 2 2 3

Financing of business units, as individuals, partnerships, corporations and trusts. A detailed study is made of short-term and consumer financing.

BUS 124 Business Finance 2 2 3

An advanced course designed to give the student practical knowledge of the different kinds of stocks and bonds, mortgages, working capital, sinking funds, capitalization sales of securities, surplus and dividends.

BUS 183 Terminology and Vocabulary 3 2 4

A course designed to develop an understanding of the terminology and vocabulary related to business and professional offices. It develops the skill of taking dictation and transcribing materials appropriate to the course of study.
Prerequisite: BUS 108.

BUS 184 Terminology and Vocabulary 3 2 4

A course designed to develop an understanding of terminology and vocabulary related to business and professional offices. It develops the skill of taking dictation and transcribing materials appropriate to the course of study—Legal, Medical, Technical, or Executive.
Prerequisite: BUS 183.

BUS 185 Business Organization 3 0 3

An introductory course giving a survey of the types, functions, and practices of modern business and providing a foundation for work in specialized areas of business administration.

BUS 205 Advanced Typewriting 2 3* 3

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. The projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal document.
Prerequisite: BUS 104.

BUS 206 Dictation and Transcription 3 2 4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed. Minimum dictation rate of 100 words per minute required for five minutes on new material.
Prerequisite: BUS 108.

BUS 207 Dictation & Transcription 3 2 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices. Minimum dictation rate of 110 words per minute required for five minutes on new material.
Prerequisite: BUS 206.

BUS 208 Dictation and Transcription 3 2 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. Minimum dictation rate of 120 words per minute required for five minutes of new material.
Prerequisite: BUS 207.

BUS 211 Office Machines 2 2 3

Instructions in the operation of the bookkeeping-accounting machines, duplicating equipment, and the dictating and transcribing machines.
Prerequisite: BUS 110.

BUS 214 Secretarial Procedures 3 2 4

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims.

BUS 219 Credit Procedures and Problems 2 2 3

Principles and practices in the extension of credit; collection procedures; laws pertaining to credit extension and collection are included.

BUS 222 Accounting 5 3 6

Thorough treatment of the field of general accounting, providing the necessary foundation for specialized studies that follow. The course includes, among other aspects, the balance sheet, income and surplus statements, fundamental processes of recording cash and temporary investments, and analysis of working capital.
Prerequisite: BUS 121.

BUS 223 Accounting 5 3 6

Additional study of intermediate accounting with emphasis on investment, plant and equipment, intangible assets and deferred charges, long-term liabilities, paid-in capital, retained earning, and special analytical processes.
Prerequisite: BUS 222.

BUS 229 Income Taxes 3 4 5

Application of federal and state taxes to individuals, businesses and business conditions. A study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise, and inheritance.
Prerequisite: BUS 121.

BUS 224 Advanced Accounting 5 3 6

Advanced accounting theory and principles as applied to special accounting problems, bankruptcy proceedings, estates and trusts, consolidation of statements, parent, and subsidiary accounting.
Prerequisite: BUS 223.

BUS 225 Cost Accounting 3 4 5

Nature and purposes of cost accounting; accounting for direct labor, materials, and factory burden; job cost, and standard cost principles and procedures; selling and distribution cost; budgets and executive use of cost figures.
Prerequisite: BUS 222.

BUS 232 Sales Development 3 0 3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.

BUS 234 Personnel & Business Management 5 0 5

Principles of personnel and business management includes an overview of major functions of management, such as planning, staffing, controlling, directing, and financing. Clarification of the decision making function versus the operating function. Role of management in business—qualifications and requirements. In

addition, it puts emphasis on human relationships, selection of personnel, training, management development and supervision of the work force. Finally it takes a look at the manager of the future.

BUS 239 Marketing 5 0 5

A study of the marketing structure within the framework of the U. S. economic system. It includes the study of the movement of good from producer to consumer through various channels of distribution, the functions of marketing, the social and economic implications.

BUS 243 Advertising 5 0 5

The role of advertising in a free economy and its place in the media of mass communications. A study of advertising appeals; product and market research; selection of media; means of testing effectiveness of advertising. Theory and practice of writing advertising copy for various media.

BUS 247 Business Insurance I 3 0 3

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included.

BUS 249 Buying & Merchandising 2 2 3

Analyze the organization for buying; what and how much to buy. Topics included are the psychology of dealing with people, vender relations, planning merchandise assortment, inventory and stock control, pricing.

BUS 256 General Office Practices 2 3 3

Designed to aid in the development of proper attitudes, personality, work habits, and good office procedures.

BUS 257 Business Insurance II 3 0 3

A presentation of the basic principles of life, death and accident insurance and their application. Also included are the principle topics on which state examinations as life and/or death and accident agents will be based.
Prerequisite: BUS 247.

BUS 258 Machine Accounting 3 2 4

Designed to provide a reasonable skill in the use of each of the office machines. Each student shall develop a fair degree of efficiency in the basic operations of each machine through the application of procedures learned to actual problem solving in the accounting field.

BUS 259 Business Law 2 2 3

Includes the study of laws relating to creation, operation and termination of an agency; the employer-employee relationship; and labor legislation. Also covers formation, operation and dissolution of partnerships and corporations as well as the nature and transfer of property.

Prerequisite: BUS 116.

BUS 260 Government and Business 2 2 3

A discussion of the extent to which government regulates business and the economy along with the implications and problems with which students, as citizens and voters, must be familiar. Covered are such regulations as Interstate Commerce Act, Sherman Act, Clayton Act, Pure Food and Drug Act, The Federal Fair Labor Standards Act, and the National Labor Relations Act.

BUS 262 Machine Transcription 1 4 3

Develops the skill of direct transcription from oral dictation to mailable typewritten form, which involves correct punctuation, spelling and typing styles.

BUS 263 Payroll Taxes 3 2 4

Designed to (1) acquaint students with the various phases of the Social Security Act and other laws relating to the payment of wages and salaries, (2) show students the basic payroll systems and accounting methods used in computing wages and the time-keeping systems that are often used to record time worked, (3) develop payroll records that provide information required by laws (4) provide practice in all payroll operations and (5) introduce various types of automatic equipment that eliminate many of repetitive operations that are common in payroll taxes and the accounting therefore.

BUS 268 Marketing & Retailing Internship 3 9 6

This course contains as a minimum 110 hours of approved on-the-job work experience related to marketing and retailing jobs. Individual arrangements may be made on a different time basis as approved by the advisor. The employer and the type of work experience must be approved by the advisor. Each student will conduct and make a written report on a practical project related to his internship.
Prerequisite: BUS 239.

BUS 269 Auditing 3 2 4

Principles of conducting audits and investigations; setting up accounts based upon audits; collecting data on working papers; arranging and systemizing the audit; and writing the audit report. Emphasis placed on detailed audits, internal auditing, and internal control. Prerequisite: BUS 223.

BUS 271 Office Management 2 2 3

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and solving office problems.

BUS 272 Principles of Supervision 3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed.

BUS 282 Business Statistics 3 2 4

An introductory course to general statistical principles which will be found useful to all individuals regardless of their fields of specialization; however, the emphasis will be oriented to business and industrial concepts. The course presents clear statements or pertinent definitions, theorems and principles, followed by problems drawn from actual business statistical situations.

BUS 285 Salesmanship 5 0 5

A study of the significance of sales in the economy; principles and methods of salesmanship and the management of sales and sales forces.

BUS 286 Real Estate 3 2 4

A survey course designed to provide both the beginner and the real estate practitioner with a basic knowledge of real estate. It includes the principles involved in real estate, finance, brokerage, appraising, real property law, and mechanics of closing.

BUS 287 Commercial Display & Design I 2 4 3

An introduction to basic layout and design of commercial displays. Source studies and related texts discuss design as needed by retail stores, banks, restaurants, motels, and various offices, specifying equipment and fixtures required.

BUS 288 Fashion in Retailing 2 2 3

This course acquaints the student with the relationship between fashion and style. Areas of study include characteristics of styles, fashion trends, coordination; application of color and design analysis.

BUS 299 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

BUS 1103 Small Business Operations 3 0 3

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations.

EDP 101 Functional Wiring Principles 3 0 3

A study of unit record procedures and operating practices. Student laboratory work emphasized concepts of punched-card data processing equipment.

EDP 103 Elements of Computer Logic 2 2 3

An introductory course in logic for the student who plans to pursue the degree in Electronic Data Processing. Flow charting and decision tables are taught for a logical approach to computer programming.

EDP 104 Introduction to Data Processing 3 2 4

An introductory course in computers for the student who plans to pursue the degree in data processing as well as the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required.

EDP 107 Compiler Language I (Fortran) 2 4 4

A fundamental course in FORTRAN programming. The FORTRAN language structure, statements, and programming methods and techniques are studied. The student will develop program logic and write FORTRAN programs for solving sample problems.
Prerequisite: EDP 104.

EDP 109 Compiler Language II (COBOL) 2 4 4

A fundamental course in COBOL programming. The COBOL language fundamentals, programming methods and techniques, are studied. The student will develop program logic and write COBOL programs solving sample problems.
Prerequisite: EDP 104.

EDP 110 D. P. Application—Compiler Language I (FORTRAN) 2 4 4

An extension of EDP 107, the student develops additional programming skills in writing FORTRAN programs on more complex scientific problems.
Prerequisite: EDP 107.

EDP 201 D. P. Application—Compiler Language II (COBOL) 2 4 4

An extension of EDP 109, the student develops additional programming skills in writing COBOL programs on more complex business problems.
Prerequisite: EDP 109.

EDP 203 Compiler Language III (PL-1) 2 4 4

A fundamental course in PL-1 programming. The PL-1 language fundamentals, programming methods and techniques are studied. The student will develop program logic and write PL-1 programs solving sample problems.
Prerequisite: EDP 104.

EDP 204 D. P. Application—Compiler Language III (PL-1) 2 4 4

An extension of EDP 203, the student develops additional programming skills in writing PL-1 programs on more complex business and scientific problems.
Prerequisite: EDP 203.

EDP 205 Linear Programming and C.P.M. 3 2 4

Mathematical models effective in management planning, scheduling and control are studied. The student investigates problems applicable to linear programming models, critical path, simulation, and queing theory. The computer will be used for problems solution using available library programs.
Prerequisites: EDP 107, EDP 109 or EDP 203.

EDP 207 Basic Assembly Language 2 4 4

The study of symbolic computer languages with emphasis on a particular example of such a language. The student will develop program logic and write programs using assembly language to solve appropriate assigned problems.

EDP 211 Computer Systems I 2 2 3

A study of computer systems involving such concepts of architecture and/or programming as channels, interrupts, multiprogramming, job scheduling, file devices, and file organizations.
Prerequisite: EDP 203.

EDP 216 Data Processing Project 2 8 5

During the last quarter, the student will develop a simulated field project using materials from texts, supplemented by actual industrial problems. Students will interview local firms, construct proposed systems and progress through the actual proposal with samples of work to be done.
Prerequisite: 6th quarter standing.

EDP 223 Computer Systems II 2 2 3

A study of computer systems involving such concepts of architecture and/or programming for operating systems, job control language, resident packs, teleprocessing, and system utilities.
Prerequisite: EDP 211.

EDP 299 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

ENGINEERING TECHNOLOGY EDUCATION

Course Descriptions

AHR 101 Fundamentals of Refrigeration I 4 3* 5

Terminology, laws or refrigeration, absolute temperature and pressures, energy conversion units, heat and its measurement, ton of refrigeration, pressure temperature relationships, heat transfer, elementary refrigeration system, refrigerant controls. Equipment, materials and procedures applicable to refrigeration.

AHR 103 Commercial Refrigeration Systems 3 6* 5*

Refrigeration load calculation; types of commercial systems; temperature and humidity conditions for various products, system balance and component capacity; pipe sizing tables; equipment selection from data and specification sheets; system controls.

Prerequisite: AHR 101.

AHR 104 Warm Air Systems 3 6* 5

Theory and fundamentals of warm air heating systems, furnaces, controls air handlers, ducts; heat loss calculation and system layout.

Prerequisite: AHR 103.

AHR 203 Air Conditioning Principles 5 6* 7

Properties of air; the psychrometric chart; heat content and humidity problems; air mixing problems; air washers.

Prerequisites: AHR 210, PHY 231.

AHR 209 Air Conditioning Systems Design 5 6* 7

Application of many earlier courses—A design problem is assigned to each student. The problem includes such steps as studying the architectural plans of a building; calculating the heat loss and gain; selecting equipment, type of system and controls; making preliminary sketches of initial layout; making finished drawings of the completed mechanical system.

Prerequisites: DFT 226, AHR 203.

AHR 210 Hydronic Systems 3 4 5

Fundamentals of hydronic systems; types of systems (method of piping); boilers, converters, chillers and auxiliaries; piping design and sizing; pumps, expansion tanks and controls.

Prerequisite: AHR 104.

AHR 216 Circuits & Controls I 3 3* 4

Electric, electronic and pneumatic controls as related to ventilation, refrigeration, heating, and cooling. Symbols and system layouts; control adjustments.

Prerequisite: ELC 205.

AHR 217 Circuits & Controls II 3 3 4

Selection, installation and trouble shooting of control systems. Class and laboratory work includes control of residential and commercial systems with central fans, unit heaters and ventilators.

Prerequisites: AHR 216, AHR 210.

AHR 227 Estimating & Contracting 3 3* 4

Plans and specifications; equipment, materials and labor take off; sub contractors; overhead; cost estimating; job price; bid and contract procedures.

Prerequisites: DFT 226, AHR 217.

AHR 256 Installation and Servicing Problems 0 4 2

Instruments, capacity calculations, air mix conditions, component location, refrigerant requirement, pipe and accessories.

Prerequisites: AHR 203, AHR 217.

AHR 299 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

CIV 93 Introduction to Technology 2 2 3

A course designed to acquaint the student with various technologies. This survey course will help the student to understand the role of the technician in the fields of engineering. The instruction time will be divided with class and lab time spent in the major subject areas of: Air Conditioning and Refrigeration Technology, Civil Engineering Technology, Electronics Engineering Technology, Mechanical Engineering Technology, and Environmental Engineering Technology.

CIV 101 Surveying 2 6* 4

Theory and practice of plane surveying including taping, differential and profile leveling, cross sections, care and use of surveying instruments, transit, stadia and transit-tape surveys.
Corequisites: MAT 101, DFT 101.

CIV 102 Surveying 2 6* 4

Triangulation of ordinary precision; use of plane table; calculation of areas of land; land surveying; topographic surveys and mapping.
Prerequisite: CIV 101.
Corequisites: MAT 102, DFT 102.

CIV 103 Surveying 2 6* 4

Route surveys by ground and aerial methods; simple, compound, reverse, parabolic and spiral curves; geometric design of highway; highway surveys and plans, including mass diagrams.
Corequisite: MAT 103.
Prerequisite: CIV 102.

CIV 108 Basic Hydraulics: Principles of Flow 2 4 4

A basic study of closed conduit and open channel flow, including stream flow, subterranean flow, runoff, pump head and wave action.
Prerequisites: MAT 102, PHY 102.

CIV 114 Statics 5 0 5

Forces, resultants, and types of force systems; moments, equilibrium of coplanar forces by analytical and graphic methods; stresses and reactions in simple structures, equilibrium of forces in space; static and kinetic friction; center of gravity, centroids, and moment of inertia.
Corequisite: MAT 102.
Prerequisite: PHY 102.

CIV 202 Properties of Soils 2 3 3

Study of soil types and their physical properties; mechanical analysis and tests of soils; techniques of subsurface investigation; earth pressure theories; bearing capacity; stability of

slopes; hydrostatics of ground water; methods of compaction and consolidation.
Prerequisite: CIV 219.

CIV 204 Surveying IV 0 6 2

Aerial photogrammetry; applications of aerial surveys; building and road construction, surveying; lines and grades for foundation layout, building construction, bridge layout, sewer and pipe line surveys; solar and stellar observations; and electronic distant measuring devices.
Prerequisite: CIV 103.

CIV 217 Construction Methods and Equipment 3 2 4

Excavating methods and equipment used in building and highway construction; pile driving; construction techniques and equipment used in reinforced concrete buildings, bridges, lift-slabs, thinshells and folded plates, erection methods and equipment of structural steel buildings and bridges; carpentry in house and heavy timber construction; construction safety. Field inspection trips.
Prerequisites: DFT 102, CIV 102.

CIV 218 Plain Concrete 3 3* 4

Study and testing of the composition and properties of concrete including cementing agents, aggregates, admixtures, and air-entrainment; design and proportioning of concrete mixes to obtain pre-determined strengths and properties; methods of placing and curing concrete; standard control tests of concrete.
Prerequisite: CIV 114.
Corequisite: CIV 219.

CIV 219 Strength of Materials & Properties of Eng. Materials 5 2 6

Fundamental stress and strain relationships, torsion; shear and bending moments; flexural unit stresses in beams; connections-welded joints, riveted and bolted joints; shear and bending moment diagrams; beam design and selection of commercial available beams; beam deflection, introduction to statically indeterminate beams; columns and combined stresses. Testing of the properties of ferrous and nonferrous metals, timber, stone

and clay products; load and strain measurements; behavior of materials under load; nondestructive tests.
Prerequisites: PHY 102, CIV 114.

CIV 220 Construction Planning 2 3* 3

Analysis of construction plant layout requirements and contractor's organization for building and highway projects. Construction scheduling; project control and supervision; co-ordinating trades on building construction. Operations, charts, and practical application of Critical Path Method (CPM) for construction planning, scheduling, and "timecost" determination.
Prerequisite: CIV 219.
Corequisite: CIV 223.

CIV 221 Reinforced Concrete 3 2 4

Analysis and design of reinforced concrete beams, floor systems, and columns by the working stress method. Use of CRSI Design Handbook and ACI Building Code. Principles of precast concrete.
Prerequisite: CIV 218.

CIV 223 Codes, Contracts and Specifications 2 0 2

Basic principles and methods most significant in contract relationships; appreciation of the legal considerations in construction work, study of the North Carolina Building Code and local building codes; interpreting and outlining specification.

CIV 225 Construction Estimates and Costs 3 6* 5

Interpretation of working drawings of timber, structural steel, and reinforced concrete structures and highways; preparation of material and labor quantity surveys from plans and specifications; approximate and detailed estimates of costs, bidding procedures and preparation of bids.
Prerequisite: CIV 220.
Corequisite: CIV 227.

CIV 227 Construction of Roads and Pavements 3 2 4

Construction practices for various types of road building, including soil properties, grading, subgrading, base courses, drainage, embankments, compaction, and formwork. Design, con-

struction, and testing of rigid Portland-cement concrete and flexible bituminous pavements. Field inspection trips.
Prerequisites: CIV 217, CIV 103, CIV 202.

CIV 228 Highway and Structural Drafting 0 6 2

Interpretation of field notes into formal drawings. Comprehensive study of state mapping laws, basic site planning, working plans for highways and airports, reinforced concrete structural details, structural steel detailing.
Prerequisites: DFT 102, CIV 219, CIV 103.

CIV 229 Municipal Engineering 3 3 4

The application of basic hydraulics principles to engineering problems in the collection, distribution and disposal of water wastes, flood control and water supply. An introduction into organization of municipal services, and air pollution standards and control.
Prerequisites: CIV 103, CIV 228.

CIV 298, CIV 299 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.
Prerequisite: Completion of 1st and 2nd quarter academics.

DFT 90 Mechanical Drawing I 2 2 3

Fundamental principles of orthographic projection, working drawings and sections, with emphasis on visualizing. This course includes study in orthographic projection, dimensioning, and various other phases of working drawings. Also included is an introduction to isometric drawings, oblique projection, and blueprinting.

DFT 92 Mechanical Drawing II 2 2 3

This course includes further study in orthographic projection, sectioning, and various other phases of working drawings. Also included is an introduction to isometric drawings, oblique projection, and blueprinting.
Prerequisite: DFT 90.

DFT 93 Elementary Drawing 3 3 4

This is an introductory course in drawing and sketching for students needing a knowledge of drawing principles for reading blueprints, schematic and describing objects in the graphic language.

DFT 101 Technical Drafting 0 6 2

The field of drafting is introduced as the student begins study of drawing principles and practices of print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principle views, and standards and practices of dimensioning. The principle of isometric, oblique, and perspective are introduced.

DFT 102 Technical Drafting 0 6 2

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphical analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and developments of various types of geometrical objects.
Prerequisite: DFT 101.

DFT 104 Applied Descriptive Geometry 2 4 4

Intersection and developments and their practical solutions are presented along with model solutions where applicable. Visualization is stressed on every problem. An advanced study of isometric and oblique drawing is also included.
Prerequisite: DFT 102.

DFT 204 Descriptive Geometry 2 4 4

Graphic analysis of space problems involving points, lines, planes, connectors, and a combination of these. Practical design problems will be stressed with analytical verification where applicable. Visualization shall be stressed on every problem.
Prerequisites: DFT 102, MAT 102.

DFT 207 Design Drafting 2 6 6

Principles of design sketching, design drawing, layout drafting, detailing from layouts, productions drawing and simplified drafting practices constitute areas of study. Types and methods of specifying materials and workmanship are an integral part of the course. Research to solve a problem in design by consulting various manuals, periodicals, and through laboratory experiments. A written technical report, preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem.
Prerequisites: DFT 104, MAT 102, PHY 102, ELC 205, MEC 201.

DFT 211 Mechanisms 3 3 4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkages, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains.
Prerequisites: DFT 103, MEC 104.

DFT 212 Jig & Fixture Design 2 6 4

Commercial standards, principles, practices and tools of Jig and Fixture design. Individual project and design work to acquaint students with the types of jigs and fixtures and their design.
Prerequisites: MEC 201, DFT 211.

DFT 226 Air Conditioning Systems Drawing 0 9 3

Drawing of air conditioning systems and study of related architectural and structural elements. Sheet metal intersections and development and types of duct installations. Air conditioning and refrigeration layouts, diagrams, and schematics.
Prerequisites: DFT 102, AHR 216.

EGR 298, EGR 299 Special Problems 0 6 2

This course is designed to broaden the person's background. Problems will be selected to meet the interest of the individual as well as develop skills and competencies in a given area. Special projects, reports and study will be developed by the individual.

ELC 101 Fundamentals of Electricity 4 6 6

Elementary principles of electricity including: basic electrical units and measuring instruments; Ohm's Law and Kirchoff's Laws using loop and nodal methods; network theorems; reaction or resistive circuits to various wave forms such as step, rectangular, ramp and sinusoidal applied singly and in combination; analysis of two, three and four terminal passive networks with methods based on resistive, conductive and hybrid parameters; nonlinear resistors, inductors and capactors.

ELC 102 Fundamentals of Electricity 4 6 6

Elementary principles of electricity including: the impedance concept using phasors and complex algebra; coupled circuits and transformer action; series and parallel resonant effects; three-phase systems; the physics of conduction in vacuum tubes and semiconductor devices; rectification and filtering.
Prerequisite: ELC 101.

ELC 205 Applied Electricity 2 4 4

Electrical code, interpretations of nameplate data, motor characteristics and selections, motor controls and protection devices, single-phase and three-phase current applications wire size calculations, "Wye" connections and "Delta Connections."
Prerequisites: PHY 102, MAT 102.

ELN 101 Electronic Instruments and Measurements 1 4 3

A study of basic electronic instruments, their theory of operation, function, tolerances, and calibration. Both service and

laboratory instruments will be studied. Laboratory experience will provide application of each type instrument studied.
Prerequisite: ELC 102.

ELN 105 Control Devices 5 6 7

A study in depth of the electrical characteristics of vacuum tubes and transistors. Basic parameters and applications of each type device to the three configurations of a three terminal two port system will be included.
Prerequisite: ELC 102.

ELN 205 Application of Vacuum Tubes and Transistors 5 8 8

Practical applications of vacuum tubes and transistors to basic audio amplifiers, radio frequency amplifiers, detectors, modulators and oscillators.
Prerequisite: ELN 105.

ELN 214 Wave Shaping and Pulse Circuits I 2 4 4

Broadband amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, chopper amplifiers, clipper and clamper circuits.
Prerequisites: ELN 105, MAT 103.

ELN 215 Wave Shaping and Pulse Circuits II 2 3 3

Pulse techniques, diode switches, gates, step-counters, restorers and other specific circuits which function as switches.
Prerequisite: ELN 214.

ELN 210 Semiconductor Circuit Analysis 5 5 7

A study in some depth of the analysis and design of transistor circuits. Network theorems and equivalent circuits are used extensively in evaluating total circuit performance. Device peculiarities and limitation pertinent to reliable operations are considered. H. Y. Z. and T. parameters are employed as well as signal-flow graphs.
Prerequisite: ELN 105.

ELN 220 Electronic Systems 5 6 7

A block diagram course investigating numerous electronic systems. Modules or blocks of various circuits already studied are arranged in various manners to produce complex electronic

systems. Systems will be explained and reduced to functions and then to block diagrams. AM, FM, and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated systems, computers, telemetry, navigational systems, sonar and radar will be considered.
Prerequisite: ELN 215.

ELN 235 Industrial Mechanism and Instrumentation 4 4 6

An introduction to industrial control devices and principles covering the transfer of electrical signals to and from mechanical, thermal, optical, acoustical, magnetic, and chemical systems. The involved transducers are studied. The characteristics of open and feedback control systems are studied. Synchros and servomechanisms are introduced.

ELN 240 Digital Computers 3 2 4

An exploration into the methodology of counting and computing. Various computer techniques will be investigated including: non-sinusodial waveforms, binary and decade counters, industrial counters, readout devices, logic circuits, arithmetic circuits, storage devices, input—output devices, computer control, analog and digital converters.
Prerequisite: ELN 214.

ELN 245 Electronic Design Project 0 4 2

Students are required to design and construct a project approved by the instructor. Includes selection of project, design, construction, and testing of completed project. Projects may include: AM or FM transmitters or receivers, amplifiers, test equipment, control devices, simple counters, lasers, masers, etc.
Prerequisite: ELN 205.

ELN 299 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE,

and gives realism and motivation to his academic and technical program of studies.

ENV 101 Environmental Sanitation 3 3 4

Methods of disease transmission, hygienic excreta disposal, municipal and industrial liquid waste disposal methods, characteristics of water, water treatment, protection of ground water, insect and rodent control, solid waste collection and disposal, milk and food sanitation, swimming pool sanitation and industrial hygiene, air pollution.

ENV 102 Applied Microbiology 2 3 3

Scope and history of microbiology, classification of microorganisms, protozoa, fungi, viruses, microscopy, bacterial physiology, saprophytic bacteria, culture media and methods, sterilization and disinfection, germicides, sources of infection, microbes and disease, skin infections. The study of several pathogenic bacteria associated with water and food, natural and acquired resistance to bacteria, and respiratory disease-producing microbes.

ENV 104 Environmental Biology 2 3 3

A basic course in biology with emphasis on microorganisms and laboratory procedures for the identification and differentiation of organisms peculiar to the water and liquid waste treatment processes and stream sanitation, air borne infections of man.

Prerequisite: ENV 102.

ENV 112 Air Resources Management 2 3 3

A course presenting the blending of all approaches designed for prevention and control of air pollution including abatement of smoke, control of auto exhausts and handling complaints as well as other technical and administrative facets of air resources management.

ENV 204 Sanitary Chemistry & Biology 2 6 5

Theory and laboratory technique for all control tests of water purification including: bacteriology, color, turbidity, pH, alkalinity, hardness, coagulation, chlorides, fluorides, iron, manganese,

detergents, bactericides, and nitrates, Basic inplant studies at nearby plants.
Prerequisite: ENV 104.

ENV 205 Sanitary Chemistry & Biology 2 6 5

Theory and laboratory technique for the determination of solids, dissolved oxygen, oxygen consumed, relative stability, water and sewage bacteria.
Prerequisite: ENV 204.

ENV 206 Sanitary Chemistry and Biology 2 6 5

Theory and laboratory technique on biochemical oxygen demand, organic nitrogen, volatile acids, toxic metals, stream studies, in-plant studies at nearby plants.
Prerequisite: ENV 205.

ENV 216 Water Purification 3 2 4

Basic principles of water purification including: aeration, sedimentation, rapid sand filtration, chlorination, treatment chemicals, taste and odor control, bacteriological control, mineral control, design criteria and operational problems. New processes and recent development. Rules, regulations, forms and records.
Prerequisite: CIV 108.

ENV 217 Liquid Waste Treatment 3 2 4

Composition of sewage, nitrogen cycle, carbon cycle, sulphur cycle, aerobic and anerobic decomposition, dilution, screening, degritting, measuring, sedimentation, aeration, digestion, filtration, air drying, biological purification, grease and oil removal, disinfection, chemical precipitation, sand filters, filter filies, field studies, in-plant studies, industrial waste.
Prerequisites: ENV 204, CIV 108.

ENV 218 Liquid Waste Treatment 3 2 4

Methods of treatment, detailed study of at least two types of plants, basic design parameters of all units, quantity expected from population, application of package plants and application of septic tanks. Rules, regulations, forms and records.
Prerequisite: ENV 217.

ENV 226 Atmosphere Air Sampling & Analysis 2 3 3

A basic course defining the air pollution problem with emphasis on training technicians in the methods of determining pollutants of common interest.

ENV 236 Codes, Contracts, Specifications, and Estimates 2 3 3

Basic principles and methods most significant in contract relationships; appreciation of the legal considerations in construction work; study of the National Building Code and local building codes, interpreting and outlining specifications.

ENV 285 Drafting 0 6 2

Interpretation of field notes, comprehensive study of state mapping laws, basic site construction layout, working plans for highways and airports, reinforced concrete structure details, structural steel detailing.

Prerequisite: DFT 101.

ENV 299 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

ISC 102 Industrial Safety 3 0 3

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment; state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance carrier and the Insurance Rating Bureau; and advertising and promoting a good safety and fire prevention program.

ISC 120 Principles of Industrial Management 3 2 4

The basic managerial decisions; organizational structure including plant location, building requirements, and internal factory organization; problems of factory operation and control, planning, scheduling, routing factory production, stores control, labor control, purchasing, cost control. Plant problems are utilized as lab experiments.

ISC 202 Quality Control 3 2 4

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance.

ISC 204 Value Analysis 3 0 3

The modern concept in the control of manufacturing production. This course will provide the students an opportunity to study a production system with the specific purpose of identifying unnecessary costs. The objective of the concepts and techniques of value analysis is to make possible a degree of effectiveness in identifying and removing unnecessary cost by the use of sound decisions through a common sense approach.

ISC 209 Plant Layout 3 2 4

A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and materials in a manufacturing operation.

ISC 210 Job Analysis and Evaluation 3 2 4

This study is based on product studies as well as personnel and wage program. The course utilizes the study of product design, value analysis, materials and processes as an intricate part of productive procedures.

ISC 211 Work Measurement 3 2 4

Principles of work simplification including administration of job methods improvement, motion study fundamentals and time-study techniques. Use of flow and process charts, multiple activity charts, operation charts, flow diagrams and methods evaluation.

Prerequisite: ISC 210.

ISC 220 Management Problems 3 0 3

A study of personnel and production problems from the standpoint of the executive. Includes selection and development of products, control problems and techniques, development of standards, employee-employer relations, developing the executive staff. Case studies are utilized.

ISC 231 Manufacturing Cycles 5 0 5

Purchasing and distribution costs; consumption patterns, channels of distribution; marketing of consumer goods, shopping, speciality, agricultural and industrial goods; service marketing; functional middlement; speculation and hedging; wholesaling; shipping and warehousing; exporting and trade movements; standardization and grading; pricing, government regulation of competition; sales promotional activities; merchandising practices.

ISC 235 Industrial Management Seminar 3 2 4

A study of the problems facing local industry with plant visitations and interviews. The student will summarize his findings in written reports to include both problem areas and proposed solutions.

MEC 103 Introduction to Mechanical Engineering Technology 3 0 3

An overview of the field of mechanical engineering technology, with a discussion of the work of the technician, and his role in the engineering and industrial organizations. Practice in engineering methodology will be stressed, including development of carefulness and orderliness, use of curves and tables, engineering calculations, experimental laboratory procedures, etc. Field trips give the student opportunity to see the mechanical

technician in action. Permanent placement and summer work opportunities will be discussed.

MEC 104 Applied Mechanics 5 0 5

Concepts and principles of statics and dynamics. Parallel concurrent and nonconcurrent force systems in coplanar and noncoplanar situations. Concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and motion.

Corequisite: PHY 102.

MEC 109 Applied Thermodynamics 3 2 4

Principles of heat transfer and 1st and 2nd Laws of Thermodynamics as applied to heating and air conditioning of buildings and to heating and cooling of industrial processes.

Prerequisites: MAT 102, PHY 102.

MEC 201 Manufacturing Processes 3 2 4

Study of manufacturing processes including machine shop, welding, sheet metal work, foundry, rolling mill, molding and extrusion production techniques. Laboratory periods to be used in various shops and labs for projects related to lecture material. Extensive use of films and field trips will provide understanding of how machine parts are made.

Prerequisites: DFT 104, MEC 104.

MEC 202 Production Methods 3 0 3

The preparation for production, planning, operations, sheets, routing, scheduling, control forms and reports, including an introduction to time and motion study, industrial safety, and quality control.

Prerequisite: MEC 201, DFT 102.

MEC 205 Strength of Materials 3 2 4

Study of principles and analysis of stresses which occur within machine and structure elements subjected to various types of loads such as static, impact, varying and dynamic. Analysis of these stresses are made as applied to thin-walled cylinders and spheres, riveted and welded joints, beams, columns and machine components.

Prerequisites: MEC 104, MAT 102.

MEC 210 Physical Metallurgy 3 3 4

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) structures, methods of designating crystal planes; liquid and vapor phases; phase diagrams; and alloy systems.
Prerequisites: PHY 101, CHM 185.

MEC 211 Physical Metallurgy 3 3 4

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization; recrystallization and grain growth; age hardening, nitriding, internal oxidation; heat treatment of steel; laboratory experiments and demonstrations.
Prerequisite: MEC 210.

MEC 213 Production Planning 3 0 3

Day-to-day plant direction; forecasting, product planning and control, scheduling, dispatching, routing, and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. Actual layouts are utilized for planning and control.

MEC 237 Control Systems 2 4 4

Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance, accuracy, applications and their utilization in industrial processes.
Prerequisite: ELC 205.
Prerequisite or Corequisite: MEC 245.

MEC 245 Applied Hydraulics 3 3 4

The basic theories of hydraulic systems. Designs and applications of fluid systems, including pumps, piping, valving, hydraulic motors, controls, accumulators and reservoirs.
Prerequisite: PHY 102.

MEC 246 Mechanisms 3 2 4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkages, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains.

Prerequisites: DFT 104, MAT 103, MEC 104.

MEC 299 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

HEALTH OCCUPATIONS EDUCATION

Course Descriptions

DEN 101 Dental Anatomy I 2 6* 4

Study of the structure of the mouth, the teeth and supporting tissues. Laboratory experience consist of scale drawings and wax carvings of surfaces of the right maxillary and mandibular permanent teeth.

DEN 102 Dental Anatomy II 3 0 3

Study of head and neck anatomy, with emphasis on applications to dental hygiene practice.

Prerequisite: DEN 101.

DEN 103 Dental Hygiene I 3 0 3

Designed to introduce the student to the scope, role, and responsibilities of dental hygiene practice. Lectures and discussion focus on historical developments, areas of service, career opportunities, professional organizations, roles and relationships on the dental health team, and legal and ethical aspects of dental hygiene practice.

DEN 105 Dental Hygiene II 1 9* 4

Comprehensive study of soft deposits, dental calculus, and stains with emphasis on the techniques of dental prophylaxis, sterilization and other preventive procedures associated with dental hygiene practice. Laboratory sessions will be utilized for orientation to the instruments, equipment and materials used in dental prophylaxis procedures and for practice in performing these procedures on manikins prior to actual work on patients.
Prerequisite: DEN 103.

DEN 110 Dental Hygiene III 1 9* 4

Study of the care and maintenance of dental instruments, equipment and supplies; medical and dental emergencies; patient management; and dental records, including personal and medical histories. Methods and materials used in individual patient education will be emphasized. Clinical practice will include opportunities to develop skill in the performance of the dental prophylaxis, application of preventive agents, oral inspections and individual dental health instruction.
Prerequisite: DEN 105.

DEN 112 Community Dentistry I 2 0 2

Study of public health, including epidemiology, purposes and functions of public health agencies, and relationships of dental health to total health in the community.
Prerequisite: DEN 117.

DEN 114 Oral Histology & Embryology 3 0 3

Study of the embryonic development of the face and oral cavity, of structure and functions of the primary tissues, of morphology of body systems, and of the structure of teeth. Emphasis is given throughout to clinical considerations as related to dental hygiene practice.
Prerequisite: DEN 102.

DEN 117 Personal & Community Health 3 0 3

Study of personal, family and community health, with emphasis on health practices and resources for promotion of optimal health.

DEN 202 Dental Hygiene IV 1 15* 6

Study of the theory and principles of exposing, processing and mounting dental radiographs. Clinical experience will include dental prophylaxis, application of preventive agents, charting, dental radiographs, and chairside dental health instruction.
Prerequisite: DEN 110.

DEN 203 General and Oral Pathology 5 0 5

Study of pathological processes, physical manifestations of selected disease, and common pathological conditions of the teeth and oral cavity. Emphasis is given to the role of the dental hygienist in recognizing pathological manifestations and in determining appropriate action.
Prerequisite: DEN 114.

DEN 206 Community Dentistry II 3 0 3

Study of dental health as a community problem; emphasis on roles of public health agencies and the dental team in promoting dental health on community, state, and national levels.
Prerequisite: DEN 112.

DEN 208 Dental Hygiene V 1 15* 6

Lectures will include the study of the economics, ethics, and jurisprudence of dental and dental hygiene practice and an overview of the various specialities in dentistry. Clinical experience in applied dental hygiene will be continued, with observation and assisting experience in the dental specialities.
Prerequisite: DEN 202.

DEN 210 Dental Materials in Dental Hygiene Practice 2 4* 4

Study of dental materials commonly used in the dental office and laboratory. Practice in manipulation of selected materials and in performance of selected procedures of the dental office laboratory.
Prerequisite: CHM 102.

DEN 215 Community Dentistry III 2 0 2

Further study of the theory and practice of preventive dentistry; introduction to the methodology and resources for teach-

ing dental health in schools, institutional clinics, industry, and private general and specialized dental practice.
Prerequisite: DEN 206.

DEN 216 Dental Pharmacology 2 0 2

Study of basic information related to field of pharmacology, followed by survey of classes of drugs commonly prescribed in modern dentistry and medicine. Emphasis on use by the hygienist of knowledge of drugs in overall understanding of patient histories and health status. Role of the hygienist in drug administration is carefully delineated.
Prerequisite: CHM 102.

DEN 217 Dental Hygiene VI 1 15* 6

Seminars to discuss clinical problems relative to the management of patients with special problems and to study the motivation and education of dental patients. Clinical experience will be continued in the areas of applied dental hygiene, dental radiographs, dental specialties, and total patient care.
Prerequisite: DEN 208.

DEN 218 Community Dentistry IV 2 0 2

Study of dental health education problems and practices; student participation in planning and implementing a dental health education program in cooperation with a community agency.
Prerequisite: DEN 215.

NUR 101 Nursing I (Introduction to Nursing) 6 6 8

Nursing I (Introduction to Nursing) is an introduction to the role of the nurse in meeting the needs common to all patients. Opportunity is given to the student to acquire basic knowledges, skills, and attitudes necessary to the practitioner of nursing, based on physical, biological and behavorial science principles. Basic concepts of nutrition, growth and development from infancy to old age, mental health, and communication skills are included.

NUR 102 Nursing II (Nursing of Children and Adults I) **6 6 8**

Nursing II (Nursing of Children and Adults I) introduces the student to the basic concept of pharmacology and provides general background in mental and physical health which will enable the student to develop increased knowledge and nursing skills to provide nursing care to meet the individual needs of patients. The student will be given the opportunity to begin studying some of the major health problems encountered in the hospital setting. The study is designed to help the student integrate knowledge and formulate appropriate nursing problems.
Prerequisites: NUR 101, PSY 101, BIO 106.

NUR 103 Nursing II (Nursing of Children and Adults II) **5 9 8**

Nursing III (Nursing of Children and Adults, II) continues to give the nursing student the opportunity to study some of the major health problems encountered in the hospital setting. It provides a broad background of information to help the student integrate this knowledge so as to formulate appropriate nursing action to meet specific nursing needs and problems of illness. Emphasis of study will be placed on the major health problems of patients requiring surgical intervention, experiencing nutritional problems, and problems of fluid and electrolyte imbalance. Consideration will be given to studying the nature, scope, clinical manifestations and therapeutics of the involved condition as well as emphasizing the patient as a person and the effect of his illness on his personality, his family and the community. Comparison of and experiences in the care of the adult and child will be given. Independent study will be encouraged through the use of related study guide questions.
Prerequisites: NUR 102, SOC 101, BIO 107.

NUR 204 Nursing IV (Nursing of Patients With Behavioral Disorders) **6 12 5 (5½ weeks)**

Nursing IV introduces the student to the basic concept of mental illness as a community health problem and gives the student the opportunity to develop skills in planning nursing

care for patients with behavioral disorders. Selected clinical experiences will be provided with mentally ill patients in the hospital setting and with those persons experiencing behavioral disorders who are being treated on an out-patient level in the community mental health center. The focus of the course is on those mental health problems which interfere with the individual's ability to function in harmony with the society in which he lives.
Prerequisites: NUR 103, PSY 202, BIO 108, SOC 102.

NUR 205 Nursing V (Nursing of Mothers & Infants) 6 12 5
(5½ weeks)

Nursing V (Nursing of Mothers & Infants) emphasizes the physiological, psychological, social and spiritual factors involved in maternal and infant care and health promotion. Family-centered approach is used, and the family unit serves as the framework for the nursing care of mothers during the maternity cycle and of their newborn infants. Normal aspects of maternal-infant care are stressed. Adaptations are made to include common complications occurring during the maternity cycle and in the neo-natal period.
Prerequisites: NUR 103, PSY 202, BIO 108, SOC 102.

NUR 206 Nursing VI (Nursing of Children and Adults III) 5 12 9

Nursing VI (Nursing of Children and Adults III) gives the student the opportunity to increase his/her skill in planning nursing care which focuses on the changing needs presented by patients. The student will continue to evaluate the care he/she has given and utilize the information gained in revising the plan of care for each patient. Opportunities will be provided for the student to initiate teaching plans which will assist the patient and his family in adjusting to the changes brought about by the illness. The focus of the course is on those health problems which involve neurologic and orthopedic continuity, difficulty in chemical regulation, and problems of supply and removal of gases.
Prerequisites: NUR 204, NUR 205, PSY 204.

NUR 207 Nursing VII (Nursing of Children and Adults IV) **6 12 10**

Nursing VII (Nursing of Children and Adults IV) is designed to assist the nursing student in caring for patients of all age groups with health problems that require more complex technical skills and more comprehensively planned nursing care. It also includes principles of team nursing and application of these principles through guided experiences in the clinical area. The student continues to integrate principles and concepts from all previous courses. There is a deeper study of the knowledges, understandings and skills necessary to identify needs, formulate nursing care plans and to implement these plans in the care of patients with complex nursing problems. It will give the student further opportunity for discussion and intelligent decision making in clarifying the nurse's role and the role of others including the family and community in the care of patients. Focus of the course will be on patients with health problems involving the maintenance of oxygen and nutrition to the cells, nursing in emergency and disaster, and team nursing.

Prerequisite: NUR 206.

NUR 208 Nursing VIII (Professional Development) **1 0 1**

Nursing VIII is a brief study of the organizational structure of nursing. It is concerned with the origins of nursing, recent trends, legal aspects, and career opportunities for the technical nurse.

Prerequisite: NUR 206.

PN 1101 Vocational Adjustments I **30 0 2**

A study of the principles of good personal and vocational behavior of the Practical Nurse Student to enable her to work and communicate with ease and intelligence with the doctor, professional nurse, patient, and allied hospital employees. It is also designed to stimulate the interest of the student in public relations acceptable to the health of the community.

PN 1102 Body Structure & Functions **60 6 6**

The course consists of a study of the skeletal structure, muscular construction, and location, basic neural paths, func-

tional body organs, glands, and the cooperate functions of the total human body. This course also includes a study of micro-organisms and their relationship to diseases.

PN 1103 Nursing Skills I 65 120 8

This course is designed to teach the Practical Nurse Student the principles involved in giving good nursing care. It is felt that if principles are understood, they can be adopted to many situations. In so far as possible, clinical nursing will coincide with classroom activity at the affiliating hospital in medical and surgical areas.

PN 1104 Emergency & Disaster Nursing 22 2 1

This course is designed to acquaint the Practical Nurse student with measures of first aid and emergencies so she will be able to function efficiently until she has completed the course in Medical-Surgical Nursing.

PN 1105 Nutrition & Diet Therapy 36 12 4

This course is designed to give the practical nurse student an understanding of good nutritive and some knowledge of diet therapy. It is hoped that she will be able to apply this understanding to the dietary treatment of the more common diseases.

PN 1106 Nursing Skills II 32 24 3

This course is designed as a continuation of Nursing Skills I in which the student has more practice with the skills and principles in the techniques needed in the nursing care of the patient. Prerequisite: PN 1103.

PN 1107 Medical & Surgical Nursing I 66 160 8

A course of study to help the practical nurse acquire a basic knowledge of medical and surgical nursing. This course deals with the cause of disease, treatment and prevention of disease, with the major emphasis on nursing care. The clinical period deals with nursing care given at the affiliating hospital in the Medical and Surgical area with continued department training. Prerequisites: PN 1102, PN 1104.

PN 1108 Nursing Care of Children 40 84 5

The purpose of this course is to consider the patterns of normal growth and development. In so far as possible, the classroom activity will center around discussions of normal growth and development and certain deviations. This course will parallel guided experience in the care of the pediatric patient. This course is designed to help the student recognize the nursing needs of the sick child.

Prerequisite: PN 1102.

PN 1109 Nursing Care of Mother & Newborn 40 84 5

A study of the child bearing woman, dealing with conception, pregnancy, labor, and the puerperium, and the care of the newborn child, with nursing care experience in the obstetrical and nursery areas of the affiliation clinical areas.

Prerequisite: PN 1102.

PN 1110 Medical & Surgical Nursing II 55 0 5

This course is designed to help the practical nurse student to acquire knowledge for safely caring for the medical and surgical patient. This course deals with diseases of the skeletal, muscle, endocrine, genito-urinary, reproductive, nervous systems, conditions of the eye, ear, skin, and female breast conditions.

Prerequisite: PN 1107.

PN 1111 Drugs and Administration 30 3 3

This course is designed to give the practical nurse student a knowledge of drugs, the dangers involved in handling, laws regarding the use of drugs, side effects and skills in administering drugs intelligently and safely.

Prerequisite: MAT 1105.

PN 1112 Medical & Surgical Nursing III 0 208 7

This part of the training period deals with actual nursing care of communicable diseases, nursing care of the aged, and to emphasize Vocational Adjustments. It is also designed to develop further skills in recognizing and meeting the needs of selected patients within the role of the practical nurse.

Prerequisite: PN 1107, PN 1110.

PN 1113 Geriatrics 32 48 4

This course is designed to give the Practical Nurse student a general background of information upon which she may build with her experiences. This information may be adapted for use in the home, the hospital, or other agencies.

PN 1115 Mental Health 24 0 3

This course is designed to teach the practical nurse student to understand her emotional needs in order to better understand and assist in the care of patients with psychosomatic illness.

PN 1116 Vocational Adjustment II 16 0 2

This course is designed to help the practical nurse student to acquire the knowledge of ethics that are appropriate to the Practical Nurse in obtaining and holding a position and to give her an added insight into the moral and legal aspects associated with her nursing activities.

PN 1117 Communicable Diseases 25 0 2

This course is designed to acquaint the practical nurse student with common diseases which may be transmitted from one person to another and to teach her asepsis, isolation technique, and prevention of communicable diseases.
Prerequisite: PN 1101.

VOCATIONAL EDUCATION

Course Descriptions

AHR 95 Shop Practices (Air Conditioning) 2 4 4

A practical course including the elemental refrigerator cycle, copper tubing tools and processes, fans and air flow and basic electricity. Instruction emphasizes an introduction to metal shop and metal equipment.

AHR 1121 Fundamentals of Refrigeration I 5 6 7

Terminology used in the trade, principles of refrigeration; identification of basic system components; introduction to and practice with tools and shop equipment found in the field today. Standard procedures and safety measures are included.

AHR 1122 Fundamentals of Refrigeration II 2 7 5

A follow-up in basic refrigeration utilizing theory, procedures, tools and equipment studied in first quarter's work. Strong emphasis is placed upon domestic refrigerators, freezers and window air conditioning units. Machines with mechanical difficulties are brought in and repaired by the student. Manufacturers' service manuals are used in conjunction with text.
Prerequisite: AHR 1121.

AHR 1123 Commercial Refrigeration 3 12 7

Installation of common types of commercial refrigeration; problems and solutions prevalent in the commercial field, medium and low temperature units, use of manufacturers' catalogs in sizing and matching system components.
Prerequisites: AHR 1122, PHY 1102.

AHR 1124 Winter Air Conditioning I 4 6 4

Introduction to heating systems; furnaces, boilers, steam and hot water piping; humidifiers, air movement and noise; heat loss and new terminology. Hot air and hot water systems will be installed, operated, checked and adjusted.
Prerequisite: AHR 1123.

AHR 1125 Principles of Air Conditioning 5 0 5

Review of refrigerant cycle and characteristics of mechanical cooling equipment. Sensible and latent heat loads; air mixtures and dehumidification; system capacity and air distribution; pipe schematics and component symbols.
Prerequisite: AHR 1124.

AHR 1127 Winter Air Conditioning II 4 6 6

Emphasis is placed upon the burner mechanism of the boiler or furnace. Piping and wiring; burner components and system controls both electrical and mechanical; operational problems involving diagnosis procedure and service technique; oil and gas burner capacity and efficiency tests; code and safety.
Prerequisite: AHR 1124.

AHR 1128 Control Systems 4 3 3

Review of basic electricity and simple circuitry for controls. System components for special applications. Electronic and pneumatic operations. Motor controllers and starters. Thermostats, solenoid valves, pressure switches, oil failure controls. Motorized dampers and valves. Installation and service practice.
Prerequisite: PHY 1102.

AHR 1129 Air Conditioning Shop Practice I 3 6 5

A continuation of practice on all shop procedures encountered by the student to this point; work on air conditioning compressors, central installations and trouble shooting; sheet metal duct fabrication and installation; also duct insulation materials and procedures.
Prerequisites: AHR 1124, AHR 1125, AHR 1128, AHR 1136.

AHR 1130 Heat Pumps 3 3 3

Basic principles, coefficient of performance; reversing valves, unit controls, defrosting, heat capacity limits, supplementary strips, balance points and comparative cost of operation.
Prerequisites: AHR 1125, AHR 1127.

AHR 1131 Absorption Systems 3 3 4

Basic absorption cycle, strong solution circuit, refrigerant circuit, system components, system controls, direct and indirect fired; advantages, disadvantages and applications.
Prerequisite: AHR 1125.

AHR 1132 Chilled Water Systems 3 3 4

Characteristics of water, principles of water chilling, the refrigerant circuit and pumps, basic motor controls, domestic and commercial applications; prevention of freezing; connections to hot water heating system; flexibility of equipment.
Prerequisites: AHR 1125, AHR 1127.

AHR 1133 Air Conditioning Shop Practice II 3 6 5

Emphasis on pipe work and water circuits with boilers and chillers; emphasis on control work with heat pumps, chillers and direct expansion air conditioning systems; fabrication and installation of motorized dampers automatically operated;

strengthen all manipulative skills through practice.
Prerequisite: AHR 1129.

AHR 1135 Sheet Metal Layout & Fabrication I 2 4 4

Work is divided between drafting room and metal shop. Layout procedures for elementary fittings are learned as patterns are developed on paper. Good shop practice is taught and applied as these same fittings are fabricated from metal.

AHR 1136 Sheet Metal Layout & Fabrication II 2 4 4

A continuation of AHR 1135. Layout skills are more fully developed with more complicated projects. Greater experience and confidence are gained in the shop also. All shop equipment is utilized as advanced work is completed.
Prerequisite: AHR 1135.

AHR 1199 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

BMS 1133 Building Codes and Laws 2 5 4

Building code requirements pertaining to residential and commercial structures. General study of heating, air conditioning, plumbing and electrical equipment, materials and symbols. Reading and interpretation of local, state and national codes.

CAR 1101 Carpentry 3 18 9

A brief history of carpentry and present trends of the construction industry. The course will involve operation care and safe use of carpenters handtools and powertools in cutting, shaping and joining construction materials used by the carpenter. Major topics of study will include theoretical and practical applications involving: materials and methods of construction, building construction, building layout, preparation of site, footings and foundation wall construction including form construction and erection.

CAR 1102 Carpentry: Millwork and Cabinetmaking 3 18 9

Cabinet making and millwork as performed by the general carpenter for building construction. Use of shop tools and equipment will be emphasized in learning methods of construction of millwork and cabinetry. Practical applications will include measuring layout and construction of: base and wall cabinets, built in desk, door and window frames, stairs, and interior and exterior cornice and trim. Materials and finishes will also be studied.
Prerequisites: CAR 1101, DFT 1110.

CAR 1103 Carpentry: Framing 3 18 9

Instruction is given in the principles and practices of frame construction beginning with the foundation sills and including: floor joist, subfloor, wall studs, ceiling joist, rafters, bridging, bracing, sheathing and interior wall partition. Roof construction included the layout and construction methods of common types of roofs using standard rafter construction, truss construction, and post and beam construction. Application and selection of sheathing and roofing is included. Consideration is given to the coordination of carpentry work with installation of the mechanical equipment such as: electrical, air conditioning, heating, and plumbing.
Prerequisites: CAR 1101, DFT 1111.

CAR 1104 Carpentry: Finishing 3 18 9

Exterior and interior trim and finish carpentry will complete the general carpentry program. Included will be materials and methods used in finishing carpentry such as: exterior cornice, door and window trim; interior flooring, door and window facing, moldings, and cornice construction; installation of hardware; and installation of built-in equipment and cabinets.
Prerequisites: CAR 1103, DFT 1111.

CAR 1113 Carpentry: Estimating 3 3 4

This is a practical course in quantity "take off" from prints of jobs performed by the carpenter. Figuring the quantities of materials needed and costs of building various components and structures.
Prerequisites: DFT 1111, MAT 1112.

CAR 1114 Building Codes 3 0 3

A study is made of building codes and the minimum requirement for local, county, and state construction regulations. This involves safety, sanitation, mechanical equipment and materials. Also, a review will be made of the minimum property requirements of the Federal Housing Administration and the North Carolina State Code.
Prerequisite: CAR 1103.
Corequisite: CAR 1104.

DFT 1104 Blueprint Reading: Mechanical 0 3 1

Interpretation and reading of blueprints. Information of the basic principles of the blueprint; lines, views, dimensioning procedures and notes.

DFT 1110 Blueprint Reading: Building Trades 0 3 1

Principles of interpreting blueprints and specifications common to the building trades. Development of proficiency in making three view and pictorial sketches.

DFT 1111 Blueprint Reading & Sketching 0 3 1

Principles of interpreting blueprints and specifications common to the building trades. Practice in reading details for grades, foundations, floor plans, elevations, walls, doors and windows and roofs of buildings. Development of proficiency in making three view and pictorial sketches.
Prerequisite: DFT 1110.

DFT 1112 Estimating 3 0 3

The study of estimating tasks involved in construction projects including quantity surveys and approximate and detailed estimates of cost. The student will study materials take-off, labor take-off, sub-contractors, estimates, overhead costs, and bid and contract procedures.

DFT 1113 Blueprint Reading: Electrical 0 3 1

Interpretation of schematics, diagrams and blueprints applicable to electrical installations with emphasis on electrical plans for domestic and commercial buildings. Sketching schematics, diagrams, and electrical plans for electrical installations using

appropriate symbols and notes according to the applicable codes will be a part of this course.
Prerequisite: DFT 1110.

DFT 1114 Blueprint Reading & Sketching 0 3 1

Designed to develop abilities in reading complex drawings in the masonry field. Blueprints of residential and commercial buildings will be studied with emphasis on the plot plan, floor plan, basement and/or foundation plan, walls and various detailed drawings of masonry work.
Prerequisite: DFT 1111.

DFT 1115 Blueprint Reading: Plumbing Trades 0 3 1

Sketching diagrams and schematics, and interpretation of blueprints applicable to the plumbing trades. Emphasis will be on plumbing plans for domestic and commercial buildings. Piping symbols, schematics, diagrams and notes will be studied in detail. Applicable building and plumbing codes will be used for reference.
Prerequisite: DFT 1110.

DFT 1117 Blueprint Reading: Welding 0 3 1

A thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications.
Prerequisite: DFT 1104.

DFT 1118 Pattern Development Sketching 3 0 3

Continued study of welding symbols; methods used in layout of sheet steel; sketching of projects, jigs and holding devices involved in welding. Special emphasis is placed on developing pipe and angle layouts by the use of patterns and templates.
Prerequisite: DFT 1117.

DFT 1125 Descriptive Geometry 2 3 3

Graphical analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Included are problems dealing with solid geometry theorems. Where applicable, each graphical solution shall be accompanied by the analytical solution.
Prerequisite: DFT 1227.

DFT 1129 Concrete Construction Drafting 2 5 4

Study in theory as well as practice in preparation of drawings of various types of reinforced concrete structures. A study of floor systems, placing drawings for reinforcing bars and shop drawings is included.

Prerequisite: DFT 1234.

DFT 1144 Building Materials & Methods I 3 0 3

Materials used in architectural construction will be studied. Their limitations as affected by the nature of the material, economic values, and codes will be stressed. Field trips to manufacturing concerns for the study of manufacturer's specifications will be taken at the appropriate time.

DFT 1145 Specifications & Contracts 3 0 3

A study of building codes and their effect in relation to specifications and drawings. The purpose and writing of specifications will be studied along with their legal and practical application to working drawings. Contract documents will be analyzed and studied for the purpose of client-architect-contractor responsibilities, duties, and mutual protection.

DFT 1180 Trade Drafting I 2 4 3

Fundamental drafting principles with instruction and practice in lettering, orthographic projection, working drawings. Introduction to the principles of dimensioning, use of drawing instruments and the solution of geometrical problems are covered. This is an introductory course in drafting for students needing a knowledge of drawing principles for reading and describing objects in the graphic language.

DFT 1181 Trade Drafting II 2 3 3

Continuation of the study of projection theory with assembly drawings, sections, auxiliaries, and screw threads introduced. The major portion of the student's time is spent in the preparation of working drawings for use in the shop. Included are working drawings of: gears, cams, pulleys, sprockets and other machine elements. Commercial standards are introduced as well as the drawing of elementary jigs, fixtures, and other tool design drawings.

Prerequisite: DFT 1180.

DFT 1182 Blueprint Reading and Shop Sketching 3 0 3

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations, introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes.

Prerequisites: DFT 1180, DFT 1181.

DFT 1199 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

DFT 1226 Technical Drafting I 1 3 2

An introduction to drafting and the study of drafting practices and reproduction equipment. Instruction is given in the selection, use and care of instruments, singlestroke lettering, applied geometry and orthographic projection.

DFT 1227 Technical Drafting II 1 3 2

A continuation of technical drafting with further study of drafting practices and reproduction equipment. Pictorial drawings axonemetric, oblique, and elementary perspective will be studied.

Prerequisite: DFT 1226.

DFT 1228 Steel & Timber Drafting 1 6 3

Theory and practice in the drawing of steel and timber structures. Students are given a design drawing of a structure and are required to prepare the plans, elevations and details necessary for construction.

Prerequisite: DFT 1233.

DFT 1230 History of Architecture 2 0 2

The study of the progress of architecture. The course covers the history of architecture from prehistoric times to the present. Emphasis is placed on the role played by the historical past in present day architectural styles.

DFT 1231 Introduction to Architectural Drafting I 2 6 4

An introductory study in the reading of architectural plans. This subject also teaches architectural terms which aid in speaking the language of all phases of construction.

DFT 1232 Architectural Drafting II 2 6 4

An elementary study of architectural drafting. The development of techniques in lettering, dimensioning, the use of appropriate material symbols and conventions and instrument drafting of architectural working drawings will be studied.
Prerequisite: DFT 1231.

DFT 1233 Architectural Drafting III 3 9 6

Basic residential planning will be studied with each student preparing a set of preliminary sketches of a residence. Complete architectural working drawings will be prepared from these preliminary sketches by each student. See Descriptive Drawing III.

DFT 1234 Architectural Drafting IV 1 9 4

An in-depth study of architectural drafting techniques including lettering, dimensioning and instrument drafting. Drawings of commercial construction details using appropriate material symbols and conventions will be prepared from preliminary sketches.
Prerequisite: DFT 1233.

DFT 1235 Architectural Drafting V 2 3 3

Further study of architectural drafting techniques. Drawings of plans, elevations, interior elevations, finish details, and schedules of commercial construction will be prepared from preliminary sketches.
Prerequisite: DFT 1234.

DFT 1236 Architectural Drafting VI 1 12 6

Each student will prepare a full set of architectural working drawings including site plans and details from a given preliminary design sketch of a small commercial building. Final assembly of the complete document for construction purposes will be made. See Building Mechanical Equipment Drafting VI and Descriptive Drawing VI.
Prerequisite: DFT 1235.

DFT 1238 Building Mechanical Equipment Drafting I 3 3 4

General study of heating, air conditioning, plumbing, electrical equipment, and code requirements of residential and commercial structures. The student will prepare working drawings from given design sketches using the proper notations and symbols.

DFT 1239 Building Mechanical Equipment Drafting II 3 3 4

A continuation of Building Mechanical Equipment Drafting I with each student preparing working drawings for their architectural drafting VI project. See Architectural Drafting VI.
Prerequisite: DFT 1238.

DFT 1241 Descriptive Drawing I 1 3 2

An introductory course in free hand drawing. Instruction will be given in the basic types and in mono-techniques including rules of composition and the study of light.

DFT 1242 Descriptive Drawing II 1 3 2

A continuation of descriptive drawing I. The student in this course will develop further the techniques studied in the first course.
Prerequisite: DFT 1241.

DFT 1243 Descriptive Drawing III 1 3 2

An elementary course in architectural presentation drawing. Students will prepare elevation and plan presentation drawings of a residence. See Architectural Drafting III.
Prerequisite: DFT 1242.

DFT 1244 Descriptive Drawing IV 1 3 2

A study of color fact and theory and an introduction to color technique.

Prerequisite: DFT 1243.

DFT 1245 Descriptive Drawing V 1 3 2

Continuation of descriptive drawing IV with advanced study of perspective.

Prerequisite: DFT 1244.

DFT 1246 Descriptive Drawing VI 1 3 2

Further study of architectural presentation drawings with each student preparing presentation drawings of their architectural drafting VI project.

Prerequisite: DFT 1245.

DFT 1248 Building Materials & Methods II 3 0 3

A continuation of Building Materials & Methods I with emphasis placed on the construction methods of the material and studied in the previous course. Field trips to construction sites will be taken for on the job inspection of these methods.

DFT 1250 Surveying & Topographical Drafting 3 5 5

Basic instrumentation and topography will be studied together with field trips and drafting room application of site surveying.

ELC 1112 Direct and Alternating Current 5 15 10

A study of the electrical structure of matter and electron theory, the relationship between voltage, current, and resistance in series, parallel, and series-parallel circuits. An analysis of direct current circuits by Ohm's Law and Kirchoff's Law. A study of the sources of direct current voltage potentials. Fundamental concepts of alternating current flow, reactance, impedance, phase angle, power, and resonance. Analysis of alternating current circuits.

ELC 1113 Alternating Current and Direct Current Machines and Controls 5 15 10

Provides fundamental concepts in single and polyphase alternating current circuits, voltages, currents, power measurements,

transformers, and motors. Instruction in the use of electrical test instruments in circuit analysis. The basic concepts of AC and DC machines and simple system controls. An introduction to the type control used in small appliances such as: thermostats, times, or sequencing switches.
Prerequisites: ELC 1112, MAT 1115.

ELC 1124 Residential Wiring 5 9 8

Provides instruction and application in the fundamentals of blueprint reading, planning, layout, and installation of wiring in residential applications such as: services, switchboards, lighting, fusing, wire sizes, branch circuits, conduits, National Electrical Code regulations in actual building mock-ups.
Prerequisites: ELC 1113, DFT 1110.

ELC 1125 Commercial and Industrial Wiring 5 10 8

Layout, planning, and installation of wiring systems in commercial and industrial complexes, with emphasis upon blueprint reading and symbols, the related National Electrical Codes, and the application of the fundamentals to practical experience in wiring, conduit preparation, and installation of simple systems.
Prerequisites: ELN 1118, ELC 1124.

ELC 1180 Basic Electricity 3 0 3

This course includes the following topics: electron theory, production of electricity by chemical action, friction and magnetism, induction, voltage, amperage, horsepower and wattage, transformers, wiring and resistance. Some emphasis placed on connecting up arc welders and electric motors.

ELN 1118 Industrial Electronics 3 6 5

Basic theory, operating characteristics, and application of vacuum tubes such as: diodes, triodes, tetrodes, pentodes, and gaseous control tubes. An introduction to amplifiers using triodes, power supplies using diodes, and other basic applications.
Prerequisite: ELC 1113.

ELN 1119 Industrial Electronics 3 6 5

Basic industrial electronic systems such as: motor controls, alarm systems, heating systems and controls, magnetic amplifier

controls, welding control systems using thyratr on tubes, and other basic types of systems commonly found in most industries.
Prerequisite: ELN 1118.

MAS 1101 Bricklaying 5 15 10

The history of the bricklaying industry. Clay and shell brick, mortar, laying foundations, laying brick to a line, bonding, and tools and their uses. Laboratory work will provide training in the basic manipulative skills.

MAS 1102 Bricklaying 5 15 10

Designed to give the student practice in selecting the proper mortars, layout, and construction of various building elements such as foundations, walls, chimneys, arches and cavity walls. The proper use of bonds, expansion strips, wall ties and caulking methods are stressed.
Prerequisite: MAS 1101.

MAS 1103 General Masonry I 5 15 10

Layout and erection of reinforced grouted brick masonry lintels, fireplaces, glazed tile, panels, decorative stone, granite, marble, adhesive terra cotta and modular masonry construction theory and techniques.
Prerequisite: MAS 1102.

MAS 1104 General Masonry II 3 18 9

This is a practical course designed to tie together all the facts and techniques that are used in various types of general masonry work. The student will be involved in building some major structure with residential or commercial.
Prerequisite: MAS 1103.

MAS 1113 Masonry Estimating 3 3 4

This is a practical course in quantity "take-off" from prints of the more common type jobs for bricklayers and masons. Figuring the quantities of materials needed and costs of building various components and structures.
Prerequisite: MAS 1103.

MEC 96 Shop Practice (Machine) 2 4 4

Brief overview of machines that are used in the machine shop. Deals primarily with their identification, nomaclature of machine, elementary operation of the lathe, drill press, grinder, and milling machine. Simple project will be procedures using this equipment.

MEC 1101 Theory and Practice I 3 12 7

An introduction to the machinist trade and the potential it holds for the craftsman. Deals primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice.

MEC 1102 Theory and Practice II 3 8 6

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine and shaper. The student will be introduced to the basic operations on the cylindrical grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course.
Prerequisite: MEC 1101.

MEC 1103 Theory and Practice III 3 8 6

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing terminology with additional processes on calculating, cutting, and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gauges, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder.
Prerequisite: MEC 1102.

MEC 1104 Structure of Metals 3 2 4

Elementary and practical approach to metals, their structure, markings, classifications and uses. Interpretation of properties and specifications of steels by use of manuals, catalogs, charts, etc.

Prerequisite: PHY 1101.

MEC 1105 Theory and Practice IV 3 9 6

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Following procedures faithfully and establishing of good work habits and attitudes acceptable to the industry.

Prerequisite: MEC 1103.

MEC 1106 Heat Treating Practices 2 4 3

Working knowledge of the methods of treating ferrous and nonferrous metals. The effects of hardening, tempering, and annealing upon the structure and physical properties of metals. Trainees will be given the opportunity to acquaint themselves with the equipment and processes of heat treating.

Prerequisite: MEC 1104.

MEC 1112 Machine Shop Processes 0 6 2

To acquaint the student with the procedures of layout work and the correct use of hand and machine tools. Experiences in the basic fundamentals of drill press and lathe operation; hand grinding of drill bits and lathe tools; set-up work applied to the trade.

MEC 1151 Tool Making: Jigs and Fixtures 2 9 5

This course is designed to help the student become more proficient in working to very close tolerances. The student will learn the best methods of fastening parts together, clamping, and locating methods and the application of jigs and fixtures to production machining. Emphasis is stressed throughout on the quality of workmanship and precision tolerances.

MEC 1152 Tool Making: Gauges and Special Tools 1 6 3

A study of precision gauges will be made. Special tools and their application to production studied. The student will have practice in making plug gauges, ring gauges, snap gauges, etc. The student will also have product work in the making of special slide tools, form tools, and fly cutters.

MEC 1153 Advanced Tool Making 4 7 6

A continuation of tool making practices. Project work consisting of complicated jigs and fixtures, including pneumatic operated fixtures and power clamping methods. Further instruction given in form grinding and form dressing procedures, surface finishes, precision tolerances, and general tool making practices.

MEC 1154 Die Making I 2 6 4

This course is designed to introduce the student to the principles of Dies and Die Making. Simple piercing and blanking dies will be studied and the student acquainted with terminology common to the trade. Accuracy, surface finish, importance of clearances, radiuses and the press cycle will be studied. Student will build and set up for production a simple die, working from blueprints and maintaining specified accuracy.

MEC 1155 Die Making II 2 9 5

A continuation of the study of dies, the dangers of insufficient and excessive cutting clearances, and methods of providing angular clearances. Factors affecting stripping force will be discussed along with bending stresses, deformation due to bending and the bend allowance curve. Student will build a form and bending die. Development of correct working habits and close tolerance machining is stressed.

MEC 1156 Die Making III 2 9 5

The theory and design of progressive dies will be studied. The student will be given instruction in the location of pilots, the progressive cam stages, grinding operations, and blank development. The student will machine, assemble, and set up a conventional progressive die involving three or more stages. Further theory and practice is given in plastic molds.

MEC 1158 Introduction to Plastic Molding 2 9 5

Due to the expanding use of pastics, the need for mold making has greatly increased. This course is designed to acquaint the student with the design and construction of simple molds, differences between molds and dies, surface finishes, closures, gates and runners, and ejection methods. Methods of cooling will also be discussed and the student will build a simple mold to prescribed accuracy and finish.

MEC 1159 Blueprint Reading and Inspection 2 2 3

This course is to enable the tool and die student to correctly interpret the more complicated parts that will be discussed and lab practice for inspection of die tolerances that will be held.

MEC 1160 Special Problems 2 6 4

This course consists of projects that present problems as to matching methods and cost. Special projects will be presented in jig boring and duplicator work, short life jigs and welding fixtures and special angle radius and circular problems; field trips, to acquaint the student more fully with needs for production tooling, will be a part of this course.

MEC 1180 Industrial Specifications 3 0 3

Organizing and studying machine tool and hand tool specifications, job sheets and procedure sheets. Catalogs, specification sheets, and manufacturer's handbooks serve as reference sources.

MEC 1181 Precision Machines 3 9 6

To develop skills and understanding of machining precision parts by use of cylindrical grinder, use of magnetic sine table in conjunction with surface grinder use of optical measuring equipment and precision end rods on machines so equipped, and methods and procedures of checking and inspecting precision parts, maintaining good housekeeping and safe working habits in all phases.

Prerequisite: MEC 1105.

MEC 1182 Jig & Fixture Making 3 9 6

Develop understanding of principle and work of jigs and fixtures. Fabricate simple jigs and fixtures to be used on course

projects. Stimulate thinking concerning simplicity and safety features of the job and/or fixture while emphasizing accuracy of parts produced. Develop self confidence and pride in doing highly skilled work.
Prerequisite: MEC 1181.

MEC 1183 Machine Repair 2 4 3

To acquaint the student with the basic fundamentals of repairing machine tools, emphasis being placed on the machine maintaining its original accuracy. Primary phases of this course will consist of hand scraping, of ways and use of precision straight edge, adjustment and tolerances of headstack bearing fitting and adjustment of gibs, methods of checking for squareness and correct center line distances. Good work habits and workmanship maintained throughout.
Prerequisite: MEC 1181.

MEC 1184 Advanced Machine Processes 3 6 5

To further acquaint the student with advanced set-ups and operation of machines for mass production. Instruction will be given on the turret lathe, milling machine, cylindrical grinder and other production machines. To motivate the student to apply himself to find ways and means of improving methods of production and manufacturing processes.
Prerequisite: MEC 1181.

MEC 1198 Automotive Machine Shop 2 6 4

Review of the proper use of the basic machines taught in the first year; boring bar, honing machine, valve grinder, hydraulic press, etc. Application to the automotive trade. Basic instruction on lathe operation, drill-press work, use of the micrometer and other measuring devices peculiar to machine work.

MEC 1199 Cooperative Training 0 15 .5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employer while the student is receiving training. This course offers valuable experience and training which is incorporated into the student's educa-

tion from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

PLU 1110 Plumbing Pipework 5 15 10

This course will introduce students to the tools, fittings, and small equipment used by plumbers. Most of the time will be spent in the shop, where the student can learn how to handle these materials correctly. The student will perform operations such as threading, cutting, caulking, and sweating of the various kinds of pipe and tubing used in the trade.

PLU 1111 Domestic Water Systems 2 9 5

The installation of water distribution systems beginning with the source of supply and including the location of pipes, valves, and pumps in both single-story and multi-story buildings will be studied. Plumbing installations will be made to provide practical applications. Heating devices, and the storage and circulation of hot water will be studied. Private and public sewage and drainage systems, including their ventilation is a part of this course. Field trips will be taken to study various types of installations.
Prerequisite: PLU 1110.

PLU 1112 Installation of Plumbing Fixtures 3 9 6

The differences in material and styles of lavatories, bathtubs and sinks, and the many ways that these fixtures can be installed will form the basis of this course. The proper use of traps is included. The student will get actual practice by making installations.
Prerequisite: PLU 1111.

PLU 1120 Low Pressure Steam Systems 2 6 4

The student will become acquainted with types of low pressure steam boilers, and the principles of boiler operation. Boiler accessories such as connectors, fittings, and insulation are to be included. Low pressure steam systems, their layout, and component parts will be studied and installed. Equipment used in heat transmission, such as radiators, coils, and connectors will be included.
Prerequisite: PLU 1110.

PLU 1121 High Pressure Steam Systems 3 9 6

Applications of low pressure steam equipment will be continued. Principles involved in industrial applications of both low-pressure and high-pressure steam equipment. Commercial and industrial blueprints will be studied utilizing low and high pressure equipment. High pressure boilers and installations of high pressure systems will be emphasized.

Prerequisite: PLU 1120.

PLU 1123 Hot Water and Panel Heating 3 6 5

The piping and accessory equipment needed to transfer hot water to radiators, heaters, and coils, and the advantages and disadvantages of each of these units will be studied, including apparatus for radiant heating and panel heating. Methods of "sizing" equipment for various installations will be included. Practical application will be provided in installing this equipment.

Prerequisites: PLU 1120, PLU 1111.

PLU 1125 Industrial Piping 3 6 5

Piping systems of boilers, turbines, and steam engines especially as they are used in steam power plants, and process piping such as is used in the chemical industries will be the major emphasis of this course.

Prerequisites: PLU 1112, WLD 1101.

PLU 1126 Hydraulic Systems Plumbing 2 3 3

Plumbing applications in hydraulic systems. Hydraulic principles, circuits, control valves, actuators, pumps, fluids and various accessories that complete hydraulic systems will be studied. Installation and servicing methods of these systems will be undertaken.

Prerequisite: PLU 1110.

PME 1101 Automotive: Engines 3 9 6

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in automotive repair work. Study of the construction and operation of components of automotive engines. Testing of engine performance, servicing and maintenance of pistons,

valves, cams and camshafts, fuel and exhaust systems, cooling systems, proper lubrication; and methods of testing diagnosing and repairing.

PME 1102 Electrical & Fuel Systems 3 12 7

A thorough study of the electrical and fuel systems of the automobile. Battery cranking mechanism, generator, ignition, and wiring; fuel pumps, carburetors, and fuel injectors. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel and electrical system.

Prerequisite: PME 1101.

PME 1123 Chasis & Suspension 6 9 9

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, steering and braking systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, front end, types and servicing of brakes.

Prerequisite: PME 1102.

PME 1124 Power Train Systems 3 9 6

Principles and functions of automotive power train systems: clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair.

Prerequisites: PHY 1102, PHY 1103, PME 1123.

PME 1125 Automotive: Servicing 3 9 6

Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the various component systems of the automobile. Trouble shooting of automotive systems, providing a full range of testing, adjusting, repairing, and replacing experiences.

Prerequisite: PME 1123.

PME 1135 Air Conditioning: Automotive 3 3 4

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system.

Prerequisite: PHY 1102.

PME 1170 Power Plant Trouble Shooting 3 6 5

This course is designed to tie together all the facts and techniques involved in performing trouble-shooting and diagnosing procedures on the total automotive powerplant. These procedures are built around all phases of the powerplant operation; fuel systems, ignition systems, starting and charging systems; cooling and lubrication systems and mechanical troubles that may occur.

PME 1180 Automotive Electronics 1 3 2

To supplement the engine electrical course for first-year students and help them develop a knowledge of transistor circuits and their application to conventional electrical components and circuitry.

PME 1181 Automotive: Tune Up 2 4 3

This practical course, coming at the beginning of the second year, should help the student to increase his work experience with the more technical aspects of engine tune-ups and should develop his knowledge of the waveforms of the oscilloscope and other test units on the Tune-Up Tester. The student should be able to put to practical use, the basic theory of electricity, storage batteries, ignition systems, cranking motors, charging circuits and engine principles which he has already learned.
Prerequisite: PME 1123.

PME 1182 Automatic Transmission 6 6 8

In order to round out the Automotive curriculum, a special course is incorporated here to give greater depth in the understanding of Automatic transmissions. With the event of this type of transmission in the automotive field, a whole new area of service and repair has been opened up to the Auto Mechanic. This course acquaints the student with the basic principles of all automatic transmissions and attempts to develop the student's skill in servicing and repairing most of the popular types of automatic transmissions.
Prerequisite: PME 1124.

PME 1183 Power Accessories 5 4 6

This course is designated to acquaint the student with the operation, service and repair of power operated seats, windows, tops, windshield wipers, radio antennas; etc. It should insure the development of the student's ability to understand and trace out the circuits of the electrical accessories, to enhance his skill in diagnosing troubles and repairing damaged circuits. He will apply his knowledge in drawing and reading schematic diagrams of electrical circuits.

PME 1199 Cooperative Training 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences will be held with each student and employers while the student is receiving training. The course offers valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives realism and motivation to his academic and technical program of studies.

WLD 95 Shop Practice 2 4 4

A practical course in sheet metal and welding, to give the student an overview of how all craftsmen need a basic knowledge of processes used in these areas. Lectures, demonstration and practice covering oxy-acetylene, arc-welding and soldering; proper layout procedures and fabrication of sheet metal in the shop.

WLD 1101 Basic Gas Welding 2 4 3

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding; bronze welding, silver soldering, and flame-cutting methods applicable to mechanical repair work.

WLD 1112 Mechanical Testing and Inspection 1 3 2

The standard methods for mechanical testing of welds. The student is introduced to the various types of tests and testing procedures and performs the details of the test which will give adequate information as to the quality of the weld. Types of tests to be covered are: Destructive—guided freebend, notched-bend,

tee-bend, nick-tear, tension and impact; Non-destructive—visual, red dye penetrant, etching, hydraulic, pneumatic, hydrostatic, boroscopic, radiograph, gamma ray, post-heating, magnetic particle, halide, halogen, cladding and magnaflux.
Prerequisites: WLD 1120, WLD 1121.

WLD 1120 Oxy-acetylene Welding & Cutting 3 9 6

Introduction to the history of oxy-acetylene welding, the principles of welding and cutting, nomenclature of the equipment, assembly of units. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butt welding in the flat, vertical and overhead position, brazing, hard and soft soldering. Safety procedures are stressed throughout the program of instruction in the use of tools and equipment. Students perform mechanical testing and inspection to determine quality of the welds.

WLD 1121 Arc Welding 3 12 7

The operation of AC transformers and DC motor generator arc welding sets. Studies are made of welding heats, polarities, and electrodes for use in joining various beads, butt and fillet welds in all positions are made and tested in order that the student may detect his weaknesses in welding. Safety procedures are emphasized throughout the course in the use of tools and equipment.

WLD 1122 Commercial and Industrial Practice 3 9 6

Designed to build skills through practices in stimulated industrial processes and techniques; sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and non-destructive tests and inspection.
Prerequisite: WLD 1121.

WLD 1123 Inert Gas Welding 1 3 2

Introduction and practical operations in the use of inert-gas-shield arc welding. A study will be made of the equipment, operation, safety and practice in the various positions. A thorough

study of such topics as: principles of operation, shielding gases, filler rods, process variations and applications, manual and automatic welding.

WLD 1124 Pipe Welding 4 14 8

Designed to provide practice in the welding pressure piping in the horizontal, fixed position using shielded metal arc welding processes according to Sections VIII and IX of the ASME code. Prerequisite: WLD 1121.

WLD 1125 Certification Practices 3 6 5

This course involves practice in welding the various materials to meet certification standards. The student uses various tests including the guided bend and the tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds.
Prerequisites: WLD 1120; WLD 1112; WLD 1123; WLD 1124.

WLD 1180 Basic Welding 2 4 3

A short course in welding, both oxy-acetylene and electric, designed as a helping course for Automotive Mechanics, Air Conditioning and Refrigeration Trade, Drafting, Sheet Metal and Machine Shop. This course covers a minimum of technical facts, and designed to teach the student to weld in the flat position only with electric arc and oxy-acetylene.

GENERAL EDUCATION

Course Descriptions

ART

ART 101 Art Appreciation 3 0 3

A study of the fundamentals and essence of art; the corelationship of the arts and their effect on the development of cultures and of the individual. Field trips to museums, concerts and theatrical productions will be when possible.

ART 102 Drawing and Composition I 3 0 3

Beginning drawing and the problems of composing a picture. Various techniques including pencil and charcoal will be used. Still life and nature will be the subjects.

ART 103 Drawing and Oil Painting I 3 0 3

A continuation of ART 101. Introduction to drawing the human head. The color wheel and introduction to oil painting.

BIOLOGY

BIO 92 Fundamental Biology 2 2 3

A basic course in biology with emphasis on the identification and association of the organism and its parts as associated with nursing.

BIO 93 Fundamental Biology 2 2 3

A basic course in biology with emphasis on the identification and association of the organism and its parts associated with nursing.

BIO 94 Fundamental Biology 2 2 3

A basic course in biology with emphasis on the identification and association of the organism and its parts as associated with nursing.

BIO 101 Human Anatomy and Physiology I 4 2 5

A study of the organizational plan of the human body and of the body systems concerned with motor activities, control and integration of functions, and reproduction. Laboratory experiences provide opportunities to see animal specimens illustrative of systems being studied.

BIO 106 Integrated Science II 4 3 5

A study of the various systems of the human body. Emphasis is given to regional anatomy including: the head and neck, the thorax, the abdomen, the pelvis, the upper limb, the lower limb.

BIO 107 Integrated Science III 4 3 5

Fundamental principles of physiological processes with particular reference to the human including: the internal environment, organs regulating and distributing the internal environment, the effectors and receptors, reproduction.

BIO 108 Integrated Science I 4 3 5

A study of bacteriological forms with emphasis upon the bacteriological problems of sterilization, infection, and immunization.

BIO 110 Applied Biology 3 2 4

A basic course in biology with emphasis on micro-organisms and laboratory procedures for the identification and differentiations of organisms peculiar to the water and liquid waste treatment processes and stream sanitation.

BIO 111 Basic Microbiology 3 2 4

Scope and history of microbiology, classification of micro-organisms, protozoa, fungi, viruses, microscopy, bacterial physiology, saprophytic bacteria, culture media and methods, sterilization and disinfection, germicides, sources of infection, microbes and disease, skin infections. The study of several pathogenic bacteria associated with water and food, natural and acquired resistance to bacteria, and respiratory disease-producing microbes.

Prerequisite: BIO 110.

BIO 112 Bacteriology for Dental Hygienists 3 4 5

Study of micro-organisms, including classification, morphology, culture methods and media, identification, role of pathogenic species in disease, modes of transmission, and methods of control. Emphasis is given to applications in dental hygiene practice. Laboratory experiences provide opportunities for microscopic study of slides, for preparing slides and cultures, and for identifying colonies of selected pathogenic organisms.

CHEMISTRY

CHM 93 Chemistry, Physical Science II, Level II 3 2 4

An introductory course for beginning students covering topics such as: scientific methods, metric system, states of matter, elements, mixtures, compounds, physical and chemical properties of matter atomic theory with special emphasis on electronic configuration, periodic table, stoichometry, formula writing, balancing chemical reactions by trial and error, and oxidation-

reduction equations, general gas laws, study of acids, bases and salts. Laboratory experiments selected to meet the needs of the subject matter and students.

CHM 96 Chemistry, Physical Science III, Level II 3 2 4

A continuation of Chemistry 93 with special emphasis placed upon solutions, concentrations of solutions, influence of concentrations on the freezing-point depression and the boiling point elevation, ionization, strong and weak electrolytes, hydrolysis of salts, calculations involving the PH of acids, bases and salts, buffer solutions, titrations, ionization constants, solubility of weak acids, colloidal suspensions and absorption. A brief introduction to the types of organic compounds and the nomenclature of the important compounds. Laboratory experiments selected will correspond to the material covered during this course. Prerequisite: CHM 93.

CHEM 101 Chemistry 4 2 5

Study of the physical and chemical properties of substances, chemical changes; elements, compounds, gases, chemical combinations; weights and measurements; theory of metals, acids, bases, salts, solvents, solutions, and emulsions. In addition, study of carbohydrates; electrochemistry, electrolytes, and electrolysis in their application of chemistry to industry.

CHEM 102 Chemistry 4 2 5

General course in organic chemistry. Properties of acids, salts, bases, and solutions. Chemical and physical properties of selected inorganic elements are studied in detail. Laboratory work will consist of various inorganic tests and experiments.

CHEM 103 Chemistry 4 2 5

General principles and theories of organic chemistry. Preparations, formulas, and properties of the most important organic compounds, with a brief description of synthetic compounds of commercial value in addition to the main vitamins, antibiotics, and hormones.

CHM 185 Chemistry 3 0 3

Introduction of the physical and chemical properties of substances, chemical changes, elements, compounds, gases, atomic structure, electrochemistry and nomenclature; theory of metals; acids, bases, salts, solvents, solutions and emulsions. Emphasis is placed on application to the electronics industry.

ECONOMICS

ECO 102 Economics 2 2 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Of particular significance is the role of business in the circular flow of money and in relation to the resources markets.

ECO 104 Economics 2 2 3

Greater depth in principles of economics, including a penetration into the composition and pricing of national output, distribution of income, international trade and finance, and current economic problems.

Prerequisite: ECO 102.

ECO 201 Labor Economics and Labor Relations 3 2 4

Emphasis is placed on the history of the labor movement in the United States, the development of methods and strategies by labor organizations and by management, the shift in the means of public control; and the factors of income and economic security.

Prerequisite: ECO 104.

ECO 205 Applied Economics 3 0 3

A practical course in applied economics as it relates to man and his efforts to make a living. These economic endeavors will include forms of money, kinds of wages, uses of purchasing power, basic types of insurance, the importance of the effects of the business cycle, and the relationship of value to price based on the laws of supply and demand. The role of governmental controls over such agencies as banking and credit institutions, and the

justification of government spending will be undertaken. Free enterprise and its place among world economic systems will also be examined.

ECO 1105 Applied Economics 3 2 4

Designed to help the student understand present-day economic problems. Topics include: production, consumption, exchange and distribution, money and credit, business fluctuations, labor and management relations, and challenges to our system of free enterprise.

PROGRAMMED INSTRUCTION

EDU 298 Special Problems 0 6 2

This course is designed to broaden the person's background. Problems will be selected to meet the interest of the individual as well as develop skills and competencies in a given area. Programmed laboratory procedures will be used whereby special projects, reports and study will be developed by the individual.

EDU 1298 Special Problems 0 6 2

This course is designed to broaden the person's background. Problems will be selected to meet the interest of the individual as well as develop skills and competencies in a given area. Programmed laboratory procedures will be used whereby special projects, reports and study will be developed by the individual.

ENGLISH

ENG 91 Vocabulary and Reading I 3 2 4

This course is a remedial reading and vocabulary development course which is devoted primarily to developing good reading skills and habits. It includes dictionary skills, word attacks, reading speed and comprehension all directed toward reading ability.

ENG 92 Practical English 3 2 4

Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life. Emphasis is placed on grammar, sentence structure, punctuation and spelling. Proper use of the library for reference work will be stressed.

ENG 93 Vocabulary and Reading II 3 2 4

This course is a continuation of reading and vocabulary development by carefully combining theory and practice. These skills will transfer into a language program providing opportunity to transfer reading skills into writing areas.

ENG 101 Grammar 3 0 3

Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.

ENG 102 Composition 3 0 3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence paragraph and whole composition.
Prerequisite: ENG 101.

ENG 103 Report Writing 3 0 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the student. Practical application in the preparation for a full-length report is required of each student before the end of the term. This report must be related to the student's curriculum.
Prerequisite: ENG 102.

ENG 203 Creative Writing 3 0 3

Creative writing with emphasis on imaginative writing with special emphasis on essays, short stories, and poetry.

ENG 204 Oral Communications 3 0 3

A study of basic concepts and principles of oral communications which enables the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Attention is given to vocal physiology and the meaningful manipulation of communicative symbols.

ENG 206 Business Communication 3 0 3

Develops skills in techniques in writing business communications. Emphasis is placed on writing action—getting sales letters and prospectuses. Business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, orders, acknowledgements, remittances, and inquiry. Prerequisite: ENG 102.

ENG 207 Survey of American Literature 3 0 3

A survey of American Literature from colonial times to the present, with attention to various forms of literature, including the short story, the poem, and the essay. Emphasis is placed on the relationship between the literature and the prevailing social conditions of the period which produced the literature.

ENG 208 Survey of English Literature 3 0 3

A survey of the literature of England beginning with the fifteenth century and continuing through the modern age. This course emphasizes the various techniques of poetic interpretation, analyzes the essay and short story, and is intended to stimulate students to become acquainted with the drama of the various periods of English literature.

ENG 1100 Reading Improvement 2 2 3

Designed to improve the student's ability to read rapidly and accurately. Special machines are used for class drill to broaden the span of recognition, to increase eye coordination and word group recognition and to train for comprehension in larger units.

ENG 1101 Grammar 3 0 3

This course is designed to aid the student in the improvement of self-expression in business and technical composition. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. It is intended to stimulate students in the application of the basic principles of English grammar in their day-to-day situations in industry and social life.

ENG 1102 Industrial Communications 3 0 3

This course stresses the development of one's ability to com-

municate effectively with other individuals through the medium of good language usage in speaking and writing, to think more clearly, and to reason more forcefully in work problems pertaining to his job.
Prerequisite: ENG 1101.

ENG 1103 Report Writing 3 0 3

This course includes a brief review of English grammar, spelling, and punctuation followed by a concentrated effort in the application of the fundamentals of good writing: sentence structure, proper development of descriptive reporting, and the mechanics of report construction. Practice in writing letters and various report forms will be given and some time is devoted to oral speech and note taking.
Prerequisite: ENG 1102.

HISTORY

HIS 101 World Civilization 3 0 3

A survey of the cultural beginnings of Eastern and Western civilizations, dealing with migrations, cultural diffusion, and the development of governmental and ethical structures through the fall of the Roman Empire.

HIS 102 World Civilization 3 0 3

A continuation of HIS 101 from the Middle Ages, through the Renaissance, the Voyages of Discovery, Colonization, the Reformation, and the Age of Enlightenment.

HIS 103 World Civilization 3 0 3

A survey of the Industrial Revolution, the impact of industrial imperialism, the American and French Revolutions, the rise of political democracy and modern nationalism to the present.

MATHEMATICS

MAT 91 Mathematics I, Level I 5 0 5

The meaning of number and numerals. Reading numerals—operations with whole numbers: addition, subtraction, multiplication, division, basic operations with sets and subsets—prime and composite numbers, factors and multiples of numbers, common fractions, decimal fractions. Practical problems illustrating each operation.

MAT 92 Mathematics II, Level I 5 0 5

The meaning of per cent. Relationship between per cent, fractions, and decimals. Computing percentages, principal amounts and rates, squares and square roots, numbers of various bases—expanded notation. Basic geometry of lines, measurements and scales, planes and space, right triangles, indirect measurement, numerical trigonometry of right triangles.

MAT 93 Mathematics III, Level I 5 0 5

The meaning and measurements of angles. Reading and drawing angles, application of angles, application of angles to navigation, measurement of areas, volumes, weight, time and speed. Metric system.

MAT 94 Mathematics I, Level II 5 0 5

A review of arithmetic, the number system, numbers in various bases, operations with integers, addition, subtraction, multiplication, division, common fractions, decimal fractions, percentage, powers and roots, metric system, geometry of plane figures, perimeters and areas, the right triangle, other triangles, the circle, rectangular solids, cylinders, pyramids, cones, spheres.

MAT 95 Mathematics II, Level II 5 0 5

Basic concepts and operations of algebra, algebraic symbols, signed numbers, equations of the first degree, special products and factoring, operations with fractions, fractional and literal equations, problem solving.

MAT 96 Mathematics III, Level II 5 0 5

A continuation of MAT 95. Systems of first-degree equations in two and three variables; graphing equations in the rectangular coordinate system; exponents and radicals; quadratic equations; complex numbers; elementary theory of equations, problem solving.

MAT 101 Technical Mathematics 5 0 5

The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts

and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: Satisfactory evidence that admission requirements have been met.

MAT 102 Technical Mathematics 5 0 5

A continuation of MAT 101. Advanced algebraic and trigonometric topics including: quadratics, logarithms, determinants, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions are studied in depth.
Prerequisite: MAT 101.

MAT 103 Technical Mathematics 5 0 5

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Applications of these concepts to practical situations are stressed.
Prerequisite: MAT 102.

MAT 104 Commercial Algebra 5 0 5

The real number system developed. The idea of sets is introduced. The fundamental operations of algebra, linear equations, ratio and proportion, exponents and radicals, quadratic equations, series, the binomial theorem, logarithms and graphs are studied. The application of these principles to commercial problems is stressed.
Prerequisite: One year high school algebra.

MAT 106 Electronic Data Processing Mathematics I 5 0 5

The real number system is developed. Characteristics of decimal numbers and numbers in other bases are examined. Binary arithmetic is studied. The fundamental operations of algebra, linear and non-linear equations, linear and non-linear functions, linear inequalities, and common logarithms are studied. Emphasis throughout the course is placed on the orderly procedures in problem solving.

MAT 107 Mathematics for Data Processing II 5 0 5

A study of topics such as: linear and non-linear functions, inequalities, systems of linear equations and inequalities, determinants, matrices, sequences, series, linear programming, Boolean algebra, logic, truth tables and flowcharts. Emphasis throughout the course is placed on the orderly procedures in problem solving.

Prerequisite: MAT 106.

MAT 110 Business Mathematics 5 0 5

This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business.

MAT 120 Modern Mathematics 5 0 5

An introduction to mathematical concepts necessary for effective citizenship. The course includes sets, the development of number systems, an introduction to probability, algebra and statistics.

MAT 121 Introduction to Logic 5 0 5

Emphasis on both inductive and deductive logic with particular attention to the bases of scientific evidence, probability theory, hypothetical and categorical syllogisms, causation and common fallacies.

MAT 285 Applied Mathematics 3 0 3

The theory of logarithms is reviewed and extensive computations are made using common logarithms. Solutions of triangles are studied in depth, using definitions of the trigonometric functions, the sine law, the cosine law, the tangent law, tangent formulas for half angles, and area formulas with emphasis on logarithmic computations. The forms for differentiation are reviewed. The integral and basic integration forms are studied and applied to areas and volumes. Various techniques of integration are investigated along with their application to physical problems.

Prerequisite: MAT 103.

MAT 286 Technical Mathematics 3 0 3

A continuation of MAT 103 to include graphs and derivatives of the trigonometric functions, exponential and logarithmic differentiation and integration, polar and parametric equations and mathematical series. Emphasis is placed on electronic problem solving.
Prerequisite: MAT 103.

MAT 1101 Vocational Mathematics I 5 0 5

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Practice in depth.

MAT 1102 Vocational Mathematics II 5 0 5

Basic concepts and operations of algebra; historical background of our base-10 number system; algebraic operations: additions, subtraction, multiplication and division; fractions letter representation, grouping, factoring, ratio and proportions, variation; graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction, substitution, graphing; exponents, quadratic equations, and application to shop problems.

MAT 1103 Vocational Mathematics III 3 2 4

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations of plane figures, volumes of solids. Geometric principles are applied to shop operations.

MAT 1104 Vocational Mathematics IV 3 2 4

Trigonometric ratios; solving problems with right triangles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric

functions; inverse functions trigonometric equations. All topics are applied to practical problems.
Prerequisite: MAT 1103.

MAT 1105 Mathematics for Nurses 3 0 3

Basic arithmetic procedures: addition, subtraction, multiplication, division, common fractions; decimal fractions; percentages; ratio and proportion; Roman numerals; metric and apothecaries systems of weights and measures; fahrenheit and centigrade scales; solutions and dosages.

MAT 1112 Building Trades Mathematics 3 0 3

Practical problems dealing with volumes, weights, ratios; mensuration; and basic estimating practices for building materials.
Prerequisite: MAT 1101.

MAT 1115 Electrical Math 5 0 5

A study of fundamental concepts of algebra; basic operations of addition, subtraction, multiplication, and division; solution of first order equations, use of letters and signs, grouping, factoring, exponents, ratios, and proportions; solution of equations, algebraically and graphically; a study of logarithms and use of tables; an introduction to trigonometric functions and their application to right angles; and a study of vectors for use in alternating current.

MAT 1123 Mathematics: Machinist I 5 0 5

Fundamental geometric concepts and construction of plane and solid figures, surface and volume measurements, and related problems, introduction to trigonometry of the right triangle. Introduces gear ratio, lead screw and indexing problems with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems concludes with an introduction to compound angle problems.
Prerequisite: MAT 1101.

MAT 1151 Mathematics: Trigonometry 3 0 3

A review of trigonometric functions and tables and solution of problems involving right triangles. Problem solving by resolving figures into right triangles and relationships between trigonometric functions. Solutions of oblique triangles, the sine and cosine laws, the tangent and cotangent laws. Problems involving tapers, the sine bar, precision dies, taper-plus gauges, angles, and circular arcs.

MAT 1152 Mathematics: Trigonometry 3 0 3

This course consists basically of the fundamentals of solid geometry and trigonometry of compound angles, problem solving from pictorial drawings of compound angular holes, tilting angles and angles of rotation, and problems having tool and die application.

MAT 1180 Mathematics: Machinist II 5 0 5

Fundamental concepts of plane trigonometry. Functions of the acute angle. Functions of any angle. Relationships between the functions. Trigonometric tables. Interpolation. Solution of right triangles. Law of sines, law of cosines, solution of oblique triangles.

Prerequisite: MAT 1123.

MUSIC

MUS 101 Music Appreciation 3 0 3

This course is designed to provide students an opportunity to become familiar with several musical compositions. A study of the history of music is included in the instructions. Also included is a study of biographical information on composers. It is designed to enhance the students' understanding of and appreciation for music, thereby helping him to become a more intelligent listener.

MUS 102 Music Theory 3 0 3

A study of the basic fundamentals of music that will not only be profitable to the student now in helping him learn and appreciate music, but will enrich his appreciation for music for the future. Musical elements such as rhythm, harmony, tone, color,

and form are analyzed and discussed. A study of the basic fundamentals of music with a survey of forms, styles and composers. This will be an introduction to all phases of music and fundamentals thus helping to develop an understanding of and appreciation of music.

MUS 103 Music Theory II 3 0 3

A continuation of the study of the basic fundamentals of music that will not only be profitable to the student now in helping him learn and appreciate music, but will enrich his appreciation for music for the future. Musical elements such as rhythm, harmony, tone, color, and form are analyzed and discussed. A study of the basic fundamentals of music with a survey of forms, styles and composers. This will be an introduction to all phases of music and fundamentals thus helping to develop an understanding of and appreciation of music.

MUS 107, 108, 109 Concert Chorus 2 0 2

A choral singing group of mixed voices (male & female) which will learn the art of choral singing and perform a variety of outstanding music. This chorus is designed for all students who love to sing. Basic fundamentals of music will be studies and incorporated into the choral program. Time in class will be spent learning good vocal techniques and skills of singing, etc. This group will give public performances for the institute and community. A concert tour is also planned. Students registering for this choir are expected to remain in membership for the entire year. This course is offered to all students.

PHILOSOPHY

PHI 202 Introduction to Philosophy 3 0 3

An introduction to philosophic world frames emphasizing cosmology, ontology, epistemology, and axiology.
Corequisite with ENG 202.

PHI 203 Contemporary Issues 3 0 3

A culminating interdisciplinary course dealing with the basic economic, social, scientific and moral issues confronting human society.

PHYSICAL EDUCATION

PED 101 Personal Hygiene 2 0 2

Designed to present basic personal health knowledge and to develop proper health habits and attitudes in the individual. Mental health will also be covered.

PED 102 Personal and Community Health 5 0 5

This course includes information and principles for protection and promotion of individual and public health. Emphasis is given to mental health, parenthood, nutrition, disease prevention, and community organization for maintaining and improving health in society. This is a nonactivity, professional course for all.

A. Individual Sports

PED 103 Bowling (Co-Educational) 0 3 1

The fundamentals of ball selection, grips, stance, and delivery are taught along with rules, history, and scoring, with special emphasis on spot bowling.

PED 104 Golf (Men-Women) 0 2 1

A course designed for teaching beginners the grip, stance, swing, and use of various clubs, along with history and etiquette of play.

PED 105 Social Dance (Co-educational) 0 2 1

This course includes demonstration and practice in the basic social dances of American, the Foxtrot, Waltz, and popular Latin America dances such as the Rumba, Cha-Cha, Tango, and Samba. It will also include the Bop and other current fast dances.

B. Team Sports

PED 106 Basketball (Men-Women) 0 2 1

A course designed to teach the history, rules, and strategy, as well as the fundamental skills of beginning basketball.

PED 107 Flag Tag Football (Men) 0 2 1

A course designed to include the fundamental skills, history, rules, and strategy of flag tag football.

PED 108 Softball (Men-Women) 0 2 1

A course designed to teach the fundamental skills, history, rules, and strategy, with emphasis on defensive play by positions.

PED 109 Volleyball (Men-Women) 0 2 1

A course designed to include the fundamental skills, history, rules, and strategy of the game, with special emphasis on set-ups and spiking.

PED 110 Track and Field (Men-Women) 0 2 1

A course designed to develop knowledge, skills, and interest in track and field events.

PHYSICS

PHY 91 Physical Science I, Level I 3 2 4

To introduce the student to the fundamental concepts that are directly related to our physical world; to acquaint the student with the scientific facts upon which the major concept, and theories of science depend. A practical approach to science through laboratory exercises and demonstration is maintained.

PHY 92 Physical Science II, Level I 3 2 4

Designed to make an analysis and general study of the various fields of work, energy, power and properties of matter, heat, light, and sound and applied electricity. Emphasis will be placed on acquiring the basic concepts and the application of these concepts to our physical environment and work.

PHY 93 Physical Science III, Level I 3 2 4

An introductory course to learn scientific skills in basic physics that are directly used in industry. Demonstration and audio-visual media are used extensively to give added support to the course.

PHY 94 Physical Science I, Level II 3 2 4

Introductory physics and its application in fundamental concepts, fluids, simple and compound machine, work, energy, power, heat. Selected experiments are performed by students in the laboratory.

PHY 95 Physical Science III, Level II 3 2 4

A study of sound, light, color, magnetism, static electricity, ELEC current and circuits, electromagnetism and alternating current. Demonstration and lab selected experiments will be conducted by the student.

PHY 101 Physics: Properties of Matter 3 2 4

A fundamental course covering several basic principles of physics. The division included are solids and their characteristics, liquids at rest and in motion, gas laws, temperature and heat, heat transfer and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course.

PHY 102 Physics: Work, Energy, Power 3 2 4

Major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity, and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematics formulas.

Prerequisite: MAT 101, PHY 101.

PHY 103 Physics: Electricity 3 2 4

Basic theories of electricity, types of electricity, methods of production, and transmission and transforming of electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magentism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course.

Prerequisite: PHY 101, MAT 101.

PHY 104 Physics: Light & Sound 3 2 4

A survey of the concepts involving wave motion leads to a study of sound, its generation, transmission and detection. The principles of wave motion also serve as an introduction to a study of light, illumination and the principles involved in optical instruments. Application is stressed throughout.

Prerequisites: MAT 101, PHY 101.

PHY 231 Fluid Mechanics 3 2 4

Fundamental laws of fluid flow and application of these laws to the sizing of hot and cold water piping, steam piping, refrigerant piping, air ducts, pumps, and fans. Particular emphasis will be directed to calculations of capacity, horsepower, and head requirements of pumps and fans; to comparison of the several methods of piping and air duct sizing; and to methods of fluid flow measurement.
Prerequisites: MAT 103, PHY 102.

PHY 1101 Properties of Matter 3 2 4

Introductory physics and its applications. Systems of measurement, theory of matter, properties of solids, liquids and gases.

PHY 1102 Applied Physics: Electricity 3 2 4

Basic principles of electricity, types of electricity, and its production, transmission, and transformation. Such factors as the electron theory, electrical measurement, magnetism, electromagnetism, and the magnetic effects of electricity constitute major areas of study.
Prerequisite: PHY 1101.

PHY 1103 Work, Energy, Power 3 2 4

Physical principles of force, energy, work, and power; equilibrium and the laws of motion; principles of machines, mechanical advantage, and transmission of power in practical applications and the use of vectors and graphical presentations.
Prerequisites: PHY 1101, MAT 1101.

PSYCHOLOGY

PSY 101 Introduction to Psychology I 3 0 3

Introductory survey of the field of psychology wherein the student becomes better acquainted with a human as a biological-social organism. Topics covered include history of psychology development, the scientific methods in psychology, theory of statistical concepts, intelligence, motivation, emotions and learning.

PSY 112 Personality Development 3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis on grooming and methods of personality improvement.

PSY 202 Psychology (Human Growth & Development) 3 0 3

Physical and psychological growth and development from infancy to adulthood with consideration of the social, biological, and cultural influences upon growth.

Prerequisite: PSY 101.

PSY 203 Psychology of Personality and Adjustment 3 0 3

A study of the tatality of the characteristics of people including emotional trends and behavioral tendencies of individuals. Focus will be on man's conflicts within himself and others and an understanding of various mechanisms used to cope with these conflicts.

Prerequisite: PSY 101.

PSY 204 Abnormal Psychology 3 0 3

The principles abnormal phases of behavior, and the ways by means of which the individual develops abnormal habits of thinking and acting. A survey of the signs of beginning maladjustment and procedures which may be followed to correct these tendencies. Special attention is given to the prevention and treatment of mental disease.

Prerequisite: PSY 101.

PSY 206 Applied Psychology 3 0 3

A study of psychology as it relates to the individual and his work will be undertaken. Emphasis will be placed on the adaptability of an individual to his working and social environment. The transition from school to work, factors affecting job selection, job satisfaction, and personality adjustment will be considered in an effort to familiarize the individual with the basic problems that he must face in society. Identification with social groups will be studied in order to gain a better understanding of the whole self and how it is affected by motivation, frustration and psychological interrelationships.

PSY 1101 Human Relations 3 0 3

A study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships within the work situation.

PSY 1105 Applied Psychology 3 0 3

This course studies the procedures of building an efficient, enthusiastic business team and deals with the nature of the problems which arise in business organizations. The individual and his behavior are discussed, as well as the problems of influence and authority.

PSY 1106 Applied Psychology 3 0 3

This course studies the procedures of building an efficient, enthusiastic business team and deals with the nature of the problems which arise in business organizations. The individual; and his behavior are discussed, as well as the problems of influence and authority.

SOCIOLOGY

SOC 101 Introduction to Sociology 3 0 3

A study of the fundamental principles and concepts of sociology, with emphasis on contemporary American Institutions in relations to technological change, ethnic groups, population trends and social control.

SOC 102 Sociology II (Marriage and the Family) 3 0 3

A study of the family as a social institution—its origins and development, its forms and functions, its interrelation with other social institutions, and its role in contemporary civilization. In connection therewith a study is made of sex development differentiations, social relationships between sexes, and factors contributing to or mitigation against successful, stable marriages. Prerequisite: SOC 101.

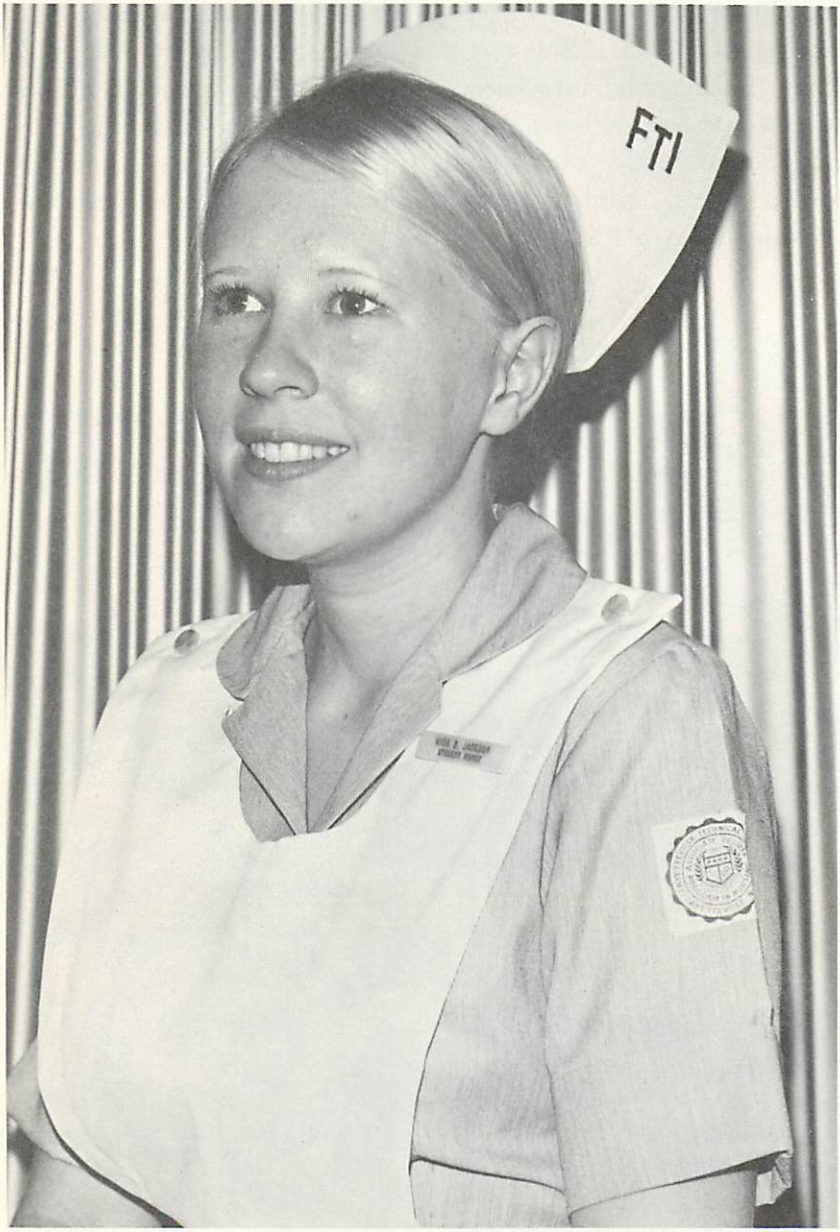
SOCIAL SCIENCES

SSC 205 American Institutions 2 2 3

A study of the individual as a citizen in a democratic society and his relationship to the major American social, economic, and

political institutions will be undertaken. The development of the individual's role in each of these major areas will be studied in respect to how he affects and how he is affected by these institutions. Background into social, economic and political concepts will be stressed with regard to current local, national and international problems, thus enabling the individual to see how his ideas, beliefs, opinions, and customs have developed into the American way of life.

DENTAL HYGIENE CLINIC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