FAYETTEVILLE TECHNICAL INSTITUTE

1973 - 1975

CATALOG

VOLUME IV

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

TABLE OF CONTENTS

TABLE OF CONTENTS—Continued

1972

JANUARY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FEBRUARY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29				

MARCH

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

APRIL

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

MAY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JUNE

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

JULY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

1973

JANUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

MARCH

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

OCTOBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

DECEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

1974

JANUARY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

FEBRUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

MARCH

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

APRIL

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

MAY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JUNE

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

JULY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

OCTOBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

ACADEMIC CALENDAR 1972-73

Faculty Workshop and Orientation	August 28- September 1

Fall Quarter

Orientation	September 5
Registration for second-year students	September 5
Registration for beginning freshmen students	September 6
Registration for evening students	September 5-6
Classes begin for all students	September 7
Late Registration ends	September 13
Last day to drop-add course	September 20
Last day of fall quarter	November 22

Thanksgiving Holidays—November 23-26
Last day of classes—Wednesday, November 22
Faculty returns to work—November 27

Winter Quarter

Registration	November 28
Registration for evening students	November 27-28
Classes begin	November 29
Late Registration ends	December 5
Last day to drop-add course	December 12
Last day of winter quarter	February 28

Christmas Holidays—December 16-January 1
Last day of classes—Friday, December 15
School resumes—Tuesday, January 2

Spring Quarter

Registration	March 2
Registration for evening students	March 1-2
Classes begin	March 5
Late Registration ends	March 9
Last day to drop-add course	March 15
Last day of spring quarter	May 23
Graduation Exercises & President's Reception	May 26

Easter Holidays—April 20-23
Last day of classes—Thursday, April 19
School resumes—Tuesday, April 24

Summer Quarter (2 sessions)

Registration	May 25
Classes begin (1st session)	May 31
Late Registration ends	June 5
Last day of classes	July 5
July 4th Holidays—July 4th	
Last day of classes—Tuesday, July 3	
School resumes—Thursday, July 5	
Registration	July 20
Classes begin (2nd session)	July 23
Late Registration ends	July 25
Last day of classes	August 24
Summer Break—July 9-July 20	
Last day of classes prior to break—Friday, July 6	
School resumes—Monday, July 23	
Labor Day Holiday—August 31-September 3	
Last work day—Thursday, August 30	
Return to work—Tuesday, September 4	

Faculty Working 1st Session	Faculty Working 2nd Session
Summer School	Summer
Last day of work—July 6	Last day of work—May 31
Return to work—August 27	Return to work—July 19

ACADEMIC CALENDAR 1973-74

Faculty Workshop and Orientation	August 27-30

Fall Quarter

Orientation for beginning and freshman students	September 4
Registration for second-year students	September 4
Registration for beginning and freshmen students	September 5
Registration for evening students	September 4-5
Classes begin for all students	September 6
Late Registration ends	September 12
Last day to drop-add course	September 20
Last day of fall quarter	November 21
Thanksgiving Holidays—November 22-25	
Last day of classes—Wednesday, November 21	
Faculty returns to work—November 26	

Winter Quarter

Registration	November 27
Registration for evening students	November 26-27
Classes begin	November 28
Late Registration ends	December 5
Last day to drop-add course	December 12
Last day of winter quarter	February 28

Christmas Holidays—December 17-January 1
Last day of classes—Friday, December 14
School resumes—Wednesday, January 2

Spring Quarter

Registration	March 4
Registration for evening students	March 4
Classes begin	March 5
Late Registration ends	March 11
Last day to drop-add course	March 18
Last day of spring quarter	May 22
Graduation Exercises & President's Reception	May 25

Easter Holidays—April 12-15
Last day of classes—Thursday, April 11
School resumes—Tuesday, April 16

Summer Quarter (2 sessions)

Registration	May 24
Classes begin (1st session)	May 30
Late Registration ends	June 3
Last day of classes	July 3

July 4th Holidays—July 4-7
Last day of classes—Wednesday, July 3
School resumes—Monday, July 8

Registration	July 19
Classes begin (2nd session)	July 22
Late Registration ends	July 23
Last day of classes	August 23

Summer Break—July 8-July 19
Last day of classes prior to break—Wednesday, July 3
School resumes—Monday, July 22
Labor Day Holiday—August 30-September 2
Last work day—Thursday, August 29
Return to work—Tuesday, September 3

Faculty Working 1st Session
Summer School
Last day of work—July 8
Return to work—August 26

Faculty Working 2nd Session
Summer School
Last day of work—May 30
Return to work—July 18

FAYETTEVILLE TECHNICAL INSTITUTE

BOARD OF TRUSTEES

Thornton W. Rose, Chairman
W. J. West, Vice-Chairman
Howard L. Hall, Secretary

APPOINTMENTS

Name	Expiration Date	Appointed by
Roscoe L. Blue	June 30, 1973	Board of County Commissioners
Thornton W. Rose	June 30, 1975	Board of County Commissioners
William C. Beard, Jr.	June 30, 1977	Board of County Commissioners
Mrs. Dan S. Currie, Jr.	June 30, 1979	Board of County Commissioners
John T. Henley	June 30, 1973	City and County School Boards
Howard L. Hall	June 30, 1975	City and County School Boards
Neill A. Currie, Jr.	June 30, 1977	City and County School Boards
W. J. West	June 30, 1979	City and County School Boards
Marion C. George, Jr.	June 30, 1973	Governor
John C. Mitchell	June 30, 1975	Governor
Harry F. Shaw	June 30, 1977	Governor
F. C. Franklin	June 30, 1979	Governor

ATTORNEY

L. Stacy Weaver, Jr.

ADMINISTRATIVE STAFF

Howard E. Boudreau ..... President
B.S., M.Ed., Colorado State University

Samuel Lee Johns ..... Administrative Assistant to the President
Maj. (ASA) Ret.

Charles E. Koonce ..... Administrative Assistant to the President
B.S., Campbell College

William E. Sease ..... Dean of Instruction
B.S., M.Ed., Virginia Polytechnic Institute

William O. Cameron ..... Director of Occupational Education
B.S., M.Ed., North Carolina State University

Arthur T. Cavano ..... Director of General Education
B.A., M.A., University of North Carolina

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

Niles E. Compton ..... Dean of Student Affairs
B.S., M.Ed., University of Florida

William L. Bryant ..... Director of Adult Education
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

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

Raymond E. Parker ..... Assistant Business Manager
B.S., University of North Carolina

STUDENT PERSONNEL SERVICES

John T. Fernald ..... Director of Admissions
A.B., M.Ed., North Carolina State University

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

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

Miss Margaret P. Isaac ..... Counselor
Teachers Certificate, M.A.E., M.S., East Carolina University

*Donald A. McCaskill ..... Counselor
B.S., M.Ed., North Carolina State University

Alvin R. Pierce ..... Student Activities Coordinator
B.S., M.S., A & T University

Mrs. Sheila Locklear ..... Registrar

FACULTY

Business Education Division

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

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

James R. Christie ..... Department Chairman, Electric Data Processing
B.S., North Carolina State University, graduate study—University of Utah

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

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

William T. Hall, Sr. ..... 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 at Greensboro

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

Lionel R. McDonald ..... Business Administration
A.B., M.B.A., East Carolina University

Charles M. Oldham ..... Business Administration
B.S., M.B.A., East Carolina University

Troxel I. Poland ..... Electronic Data Processing
B.S., Colorado State University

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

James A. Sinclair ..... Department Chairman, Banking & Finance
A.B., M.B.A., University of North Carolina

Mrs. Hilda C. Wilson ..... Secretarial Science
B.A., M.S., University of North Carolina

Engineering Technology

Clarence A. Blach, Jr. ..... Department Chairman, Mechanical Engineering
B.S., California State Polytechnic College

Granville C. Byrd, Jr. ..... Division Chairman, Electronics Engineering
B.S., North Carolina State University, graduate study—Rochester Institute of Technology

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

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

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

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

General Education Division

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

*Mrs. Frances Bruggers ..... Choral & Music Appreciation (Part-time)
B.M., M.M., Southern Methodist University

*Kenneth R. Bruggers ..... Musician-in-Residence
A.B., M.M., Southern Methodist University

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

*Mrs. Betty G. Davis ..... English
B.S., M.A., East Carolina University

Franklin T. Edwards ..... Science
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

Mrs. Sandra A. Gillikin ..... English
B.A., M.A., East Carolina University

John R. Guthrie ..... Physics
A.A., B.S., M.A.T., Duke 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

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

Thomas A. Moore ..... Art Appreciation (Part-time)
New York University, Art Students League; Sorbonne, Paris, France; Chabas Studio, Paris, France

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

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

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

Lonnie G. Smith ..... Department Chairman, Developmental Studies
B.S., M.A., Appalachian State University

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 Division

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

Miss Claudia Ann Dancy, R.N. ..... Practical Nurse Education
B.S., Limestone College

David R. Dunham, D.M.D. ..... Department Chairman, Dental Hygiene
B.S., D.M.D., Tufts University Dental School

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

Mrs. Eileen G. Hoehn ..... Dental Hygiene
Certificate of Graduation in Dental Hygiene, The Ohio State University

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

Mrs. Eileen F. Joyner, R.N. ..... Associate Degree Nursing
B.S., East Carolina 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. Alene T. Koonce ..... Dental Hygiene
B.S., University of North Carolina, graduate study—University of North Carolina

Mrs. Helen B. Langdon, R.N. ..... Associate Degree Nursing (Part-time)
B.S., M.N., 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

*Mrs. Linda P. Spruill ..... Dental Hygiene
A.A.S., Wayne Community College

Vocational Education Division

Charles A. Bell ..... Department Chairman, Architectural Drafting
North Carolina State University

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

Phillip 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

Ronald L. Mace ..... Architectural Drafting
B.A., North Carolina State 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. ..... Department Chairman, Electrical Installation & Maintenance
Refrigeration Licensed Contractor, Licensed Electrical 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

Library Services

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

*Mrs. Ingrid P. Gibbons ..... Assistant Librarian
M.A., M.L.S., East Carolina University

James Earl McLendon ..... A-V Aids Coordinator

Learning Laboratory

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

Public Information

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

OFFICE AND GENERAL STAFF

Secretarial

Mrs. Cathy Barefoot ..... Secretary in Student Affairs Office
Mrs. Lynn Bledsoe ..... Secretary to the Business Manager
Mrs. Doris Butler ..... Secretary for Dental Hygiene
Mrs. Shirley Cox ..... Secretary for Associate Degree Nursing
Mrs. Sandi Edwards ..... Secretary to the Occupational Education Director
Mrs. Kathy England ..... Secretary to the President
Mrs. Peggy Holt ..... Cashier/Accounting Clerk
Mrs. Ellen Howard ..... Secretary to the Director of Adult Education
Miss Anne Jackson ..... Secretary for Engineering & Business Divisions
*Mrs. Jolene Maxwell ..... Secretary to the Librarians
Mrs. Mildred McGhee ..... Secretary to the Director of General Adult Education
Mrs. Shirley Moore ..... Secretary to the Dean of Instruction
Mrs. Sarah Moss ..... Secretary for General & Vocational Divisions
Mrs. Laura Patterson ..... Accounting Clerk

Mrs. Annette Smith ..... Property Clerk
Mrs. Elizabeth Smith ..... Cashier/Accounting Clerk
Mrs. Debbie Stewart ..... Secretary to the Evening Supervisor
Mrs. Doris Temple ..... Bookkeeper
Mrs. Dee Thomas ..... Secretary to the Administrative Assistant to the President
*Mrs. Deborah McWilliams ..... Switchboard Operator
Mrs. Debbie Turner ..... Secretary in Student Affairs Office
Mrs. Peggy Workman ..... Secretary to the Dean of Student Affairs

Bookstore

Miss Linda Cline ..... Manager
Mrs. Joyce Rhea ..... Secretary

Custodial

Orville O. Gravely ..... Maintenance Man
*Richard I. Payne ..... Maintenance Man
William T. Robinson ..... Supervisor/Janitorial

* employed during 1972-73 school year

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, now LaFayette Hall, 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 and Cumberland Hall, a new engineering technology building, was completed in 1971. Also, the Paul H. Thompson Library, which houses a new library-student union center has been completed. Fayetteville Technical Institute currently has a capacity to handle between 1200 and 1500 full-time day students and several thousand part-time evening 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. **General Education Division**—The Associate Degree in General Education is essentially a two-year residential program in which a student may complete all work toward an Associate Degree. Courses include those which are usually the entire requirements of the freshman and sophomore program in four-year colleges of arts and sciences (exclusive of foreign language requirements required by some colleges). Courses offered are the same high quality as those offered in four-year colleges.

F. **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.

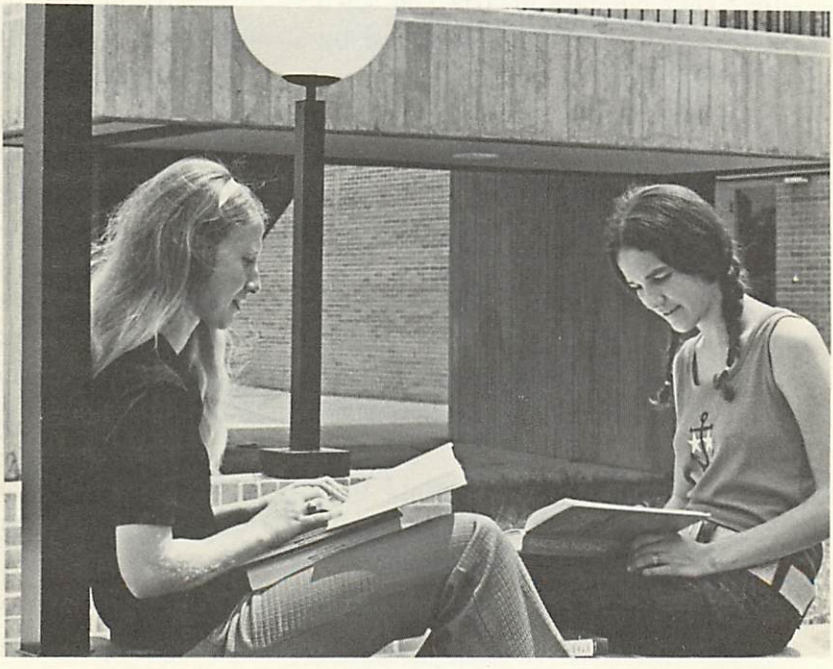
G. **The Evening College**—In the Fall of 1971, Fayetteville Technical Institute offered for the first time evening courses for college credit in the area of General Education.

The success of the evening credit courses and the public demand for college credit for persons in the Vocational, Tech-

nical, Business, and Health Occupational areas prompted Fayetteville Technical Institute to expand its evening offerings for credit to include a wide variety of courses. Now a working adult may be able to complete all requirements for a diploma or an associate degree at Fayetteville Technical Institute by attending classes in the evening. Courses may be taken at all academic levels making possible FTI's goal of serving the educational needs of the widest possible range of adult students in this area.

H. **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 chartered 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 Board of Trustees the authority to award the Associate of Applied Science Degree for the completion of the two-year engineering technology curriculum and the two-year business curricula and the awarding of the Diploma for all vocational curricula.

North Carolina State Board of Education

Fayetteville Technical Institute is fully accredited by the North Carolina State Board of Education in accordance with accreditation procedures set forth by the Board. Reaffirmed January 6, 1972.

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 its higher education programs.

Engineers' Council for Professional Development

The following curricula offered by Fayetteville Technical Institute have been accredited by the Engineers' Council for Professional Development.

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.

Institutions which offer accredited engineering technology curricula must demonstrably maintain a high standard of ethics in its educational program and in all of its dealings with students and prospective students. In its correspondence, published materials and other public announcements, the statements must be frank and factual and must not be misleading. Engineering technology curricula are evaluated on the basis of both qualitative and quantitative criteria which include requirements for maintaining acceptable depth and scope usually found in college level training.

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 signified that it has met the national standards of excellence for programs in nursing of its type.

Council on Dental Education

The American Dental Association is directly concerned with dental and dental auxiliary education. Through this Council, the Association accredits all auxiliary dental programs to insure quality educational training for auxiliary personnel who will provide dental health care to people. Fayetteville Technical Institute has been granted accreditation eligibility status for its program.

PROFESSIONAL ORGANIZATIONS

The Institute has membership in several educational associations that carry on a variety of programs and services that will provide the institution with informational services, research, consultants, and workshops on many of 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

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. When the admissions counseling process indicates that an applicant lacks sufficient academic background to pursue credit courses, he will be directed to the Developmental Studies program prior to entry into a diploma or degree curriculum.

Steps in Admission Procedures

Application

All applicants must submit a completed formal application. Applications may be secured by writing the Director of Admissions at the college address.

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. The applicant should request that previously taken Standardized Test scores be included on the transcript.

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 attempted from each of the institutes or colleges previously attended in addition to their high school record.

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 present himself 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.

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 curricula 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 Hygiene.

c. A minimum of one unit of biology and one unit of chemistry for Environmental Engineering Technology.

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 graduation or eighteen years of age with approved equivalent education which indicates that the student has the ability to be successful in post-high school training.
2. Applicants for Practical Nurse Education must show evidence of high school graduation or present a certificate of state approved equivalent education (GED).
3. No specific math or science requirements are necessary for entry into the diploma curricula.

Evening College Entrance Requirements

1. Students pursuing a degree or diploma must meet all entrance requirements as listed above.
2. For exploratory purposes, a student may take a maximum of 12 quarter hours credit in the Evening College before meeting all general entrance requirements. Progress in such courses will be used as an evaluative factor in further educational planning.

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 AND FEES

	Per Quarter	Per Year	Totals
Activity Fee		$23 (payable first qtr. of enrollment)	$ 23.00
Tuition (In-State)	$32	$96 (3 quarters)	96.00
Books (Estimated)	$50	$150	150.00
			$266.00

Other Fees

Practical Nurse Education and *Associate Degree Nursing* curricula students are required to pay $9.70 to cover a Malpractice Insurance cost which is required by the hospital. Also, the above students must purchase uniforms which total approximately $70.

Dental Hygiene students must purchase uniforms and instruments which cost approximately $100.

Ceratin other curricula in the Vocational Division require that students purchase basic tools each quarter which build toward a total set usually needed for-employment. Costs will vary with each quarter but usually range from $30 to $50.

Parking fees are assessed for on-campus parking at the rate of $2.50 per quarter. Parking stickers are issued on payment of fees.

Late Registration Fee

A late registration fee of $5 will be charged those students who register after the dates listed in the school calendar for student registration. The only exception will be those students

who, through circumstances beyond their control, are forced to register after the late date. This approval must be approved by the Dean of Student Affairs in writing. The student is responsible for class work from the first day of classes as listed in the school calendar.

Out-of-State Student Fees

Any student whose legal residence is outside of the state of North Carolina will be charged tuition rates as set forth by the N. C. State Legislature for out-of-state students and in effect at time of registration.

Out-of-state student rates for the 1972-73 academic year are $137.50 *per quarter* or $8.50 *per quarter hour under 13 quarter hours.*

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 and the Associate Degree in General Education to those students who complete the General Education curriculum.

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

D. Fayetteville Technical Institute has structured its vocational curricula, both one year and two-year duration, on a post-secondary level and grants credit on a quarter hour basis. Instruction in these curricula is such as to require students to be capable of study beyond the high school equivalency level for success. The curricula is designed on a quarter basis to

include general education areas which require extensive out-of-class preparation each quarter. Quarter hour credit is granted on a one credit to three hours of lab or shop and on one credit for each hour of classroom instruction. Normally each class hour requires two to three hours of outside preparation to insure successful completion of the curriculum.

E. 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.

F. Students with academic deficiencies who require remedial work as background material may enroll for a maximum of 25 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.

Curriculum Credit

All curricula offering either an Associate Degree or Diploma at Fayetteville Technical Institute are post-secondary in nature and require a minimum of outside preparation of two hours for each classroom hour and one hour for each lab hour.

Manipulative labs are based on three hours being equal to one credit hour. Regular labs (science, etc.) are based on two lab hours being equal to one credit hour. All class hours are based on a one-to-one ratio.

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.

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 five (5) school days with no grade penalty.
3. **W-P or W-F:** Students who drop a course after the first five (5) 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.
4. **NC—No Credit:** Fayetteville Technical Institute offers the student an alternative grading plan. The intent of this grading plan is to allow a student to explore fields of study outside their known areas of competency. Students who elect the "No Credit" plan will receive the "No Credit" notation on their records, which will indicate "0" grade points—no units earned. Such course will not be computed in grade point average, and, therefore, no credit or penalty is attached to the "No Credit" grade. A student may not exceed 12 hours attempted for a "NC" grade.

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 at the Institute.

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.

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 indebtedness to Fayetteville Technical Institute.

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. Students whose average is less than a grade of "B" will be subject to additional attendance regulations as stated in the Student Handbook of Fayetteville Technical Institute.
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 AFFAIRS SERVICES

Counseling Services

The Student Affairs Office provides a full program of counseling services by professionally-trained counselors. These services are available to every student from pre-admission through graduation including transfer and placement. These services are provided at no cost to the student in individual counseling sessions as well as in group interaction sessions.

To assist in the counseling service, each student is assigned a faculty advisor who is dedicated to assisting the student with educational goal planning.

Each student is also assigned a counselor and the counseling offices are always open. Students are urged to take advantage of all services offered by Student Affairs, whether the need be financial, academic, or personal.

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 and 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.

Financial Assistance

Students needing financial assistance may submit an application to the Financial Aid Officer once they have been accepted into a full-time curriculum. Based on their needs and resources available, the Financial Aid Officer will try to meet these needs through the various loan and scholarship programs. A "package deal" composed of National Direct Student Loan, Basic Opportunity Grant, and College Work-Study may be awarded or any combination of these may be awarded in attempting to meet the students' needs.

Other financial assistance funds available are as follows:

1. Federal funds for a Nurses Loan and Nurses Scholarship program specifically for Associate Degree Nursing students.
2. College Foundation (a federally insured student loan program available to all in-state students).
3. Local Loan funds: From time to time various companies and associations in the area donate money for loans and

scholarships. Since this type of funding is not necessarily repeated annually, an applicant may secure a list of local scholarships from the Financial Aid Officer.

4. Emergency Loan Fund (short-term loans not to exceed $100 and repayable in 30/60/90 days.
5. Fayetteville Technical Institute also has a deferred payment plan which must be repaid in 60 days.

Requests for all financial aid should be made during the admission interview or as soon as possible after being approved to attend school. Application should be no later than July 1. Applications will continue to be accepted and awards will be met as funds become available.

STUDENT ACTIVITIES

Students 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 Activities Coordinator who is a member of the Student Affairs Staff.

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 SGA includes the president, vice-president, secretary and treasurer. There is a first and second-year

representative from each curriculum. The faculty sponsor coordinates the activities of the SGA through the Student Activities Officer in the Student Affairs Office.

Student Publications

Faculty or staff sponsors work with the Student Activities Coordinator in helping students become active participants in the publication of the Technikos and the Technician.

Technikos is the yearbook of Fayetteville Technical Institute and is designed to present a graphic portrayal of student life on campus. It not only encompasses all phases of student life but also contains a pictoral record of most all students attending FTI.

Technician is the student newspaper which is normally published quarterly. Participation on the Technician staff usually gives students a well-rounded journalistic experience. The main purpose of the publication is to help implement better communications between students and administration and faculty.

Intramural Sports

A well-rounded intramural sports program functions under the Student Activities Coordinator's leadership. The program includes activities for both men and women and encompasses such sports as football, basketball, golf, tennis, volleyball, bowling, chess, billiards, table tennis, karate, softball and baseball. Team competition is encouraged and play-offs are held in each sport.

Clubs

FTI sponsors many student organizations and clubs. Club participation is encouraged along curricula interests lines and several student chapters of national organizations are established. Student chapters of service clubs are permitted when sponsors can be found. Club organization must meet the criteria set up under SGA regulations.

Area Activities

Students may join the local YMCA, 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, FTI students get special rates.

Intercollegiate Sports

The Institution is a member of the North Carolina Community College Athletic Conference, Eastern Division. Competition is with other Community Colleges and Technical Institutes in one major sport (basketball) and various minor sports (golf, tract, tennis, etc.) as interest dictates. We are recognized as the Trojans and all of our participation is governed by the National Junior College Athletic Association. Eligibility is based on academic rating and all team members must be approved for athletic events by Student Personnel Office and the Director of Athletics. All students with varsity experience are encouraged to try out for these teams.

SPECIAL SERVICES

Book Store

A campus book store operated by the institute provides a source of textbooks, supplies, and personal items usually found in most college campus bookstores. The book store is operated under the direction of the Business Manager and maintains daily hours for the convenience of the student body.

Snack Bar & Cafeteria

The college operates both a cafeteria and snack bar in the Paul H. Thompson Library building. The cafeteria serves break-

fast and lunch at scheduled hours and maintains a snack bar service at other times.

The college also operates an additional snack bar in LaFayette Hall for the convenience of both Day and Evening students. Both the cafeteria and snack bar are operated on a minimum profit basis and excess profits revert to the student fund to support student activities.

Student Lounge

FTI provides an excellent facility for relaxation and a home-like atmosphere for student use. The student lounge is located on tne upper level of the Paul H. Thompson Library and provides soft restful couches and chairs as well as an area for card playing, chess, and other table games.

A game room equipped with pool tables and ping-pong tables is set aside for student use on the lower level of the library building.

LEARNING RESOURCES

Library

The library provides excellent facilities for study, research, browsing, self improvement and enjoyment. A wide selection of library holdings include a growing collection of books, tapes, film-strips, microfilm, periodicals, and other materials in general, technical, and vocational fields. Qualified librarians and assistants are ever present to assist the student in attaining the best use of materials available.

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 fifty 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 10:00 p.m. Monday through Thursday and from 8:00 a.m. to 7:00 p.m. Friday. 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.

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. These rules and regulations may generally be summarized by the following statements.

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

Fayetteville Technical Institute students dress informally; however, in all cases neatness of dress is encouraged and neatness in personal appearance is a strong characteristic of FTI students.

The few rules and regulations necessary for the smooth operation of the college are listed in the Student Handbook.

Dismissal

Fayetteville Technical Institute reserves the right to suspend or dismiss any student when it believes such action is in the best interest of the college and/or the student. In all cases, the right of due process is the student's prerogative.

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.

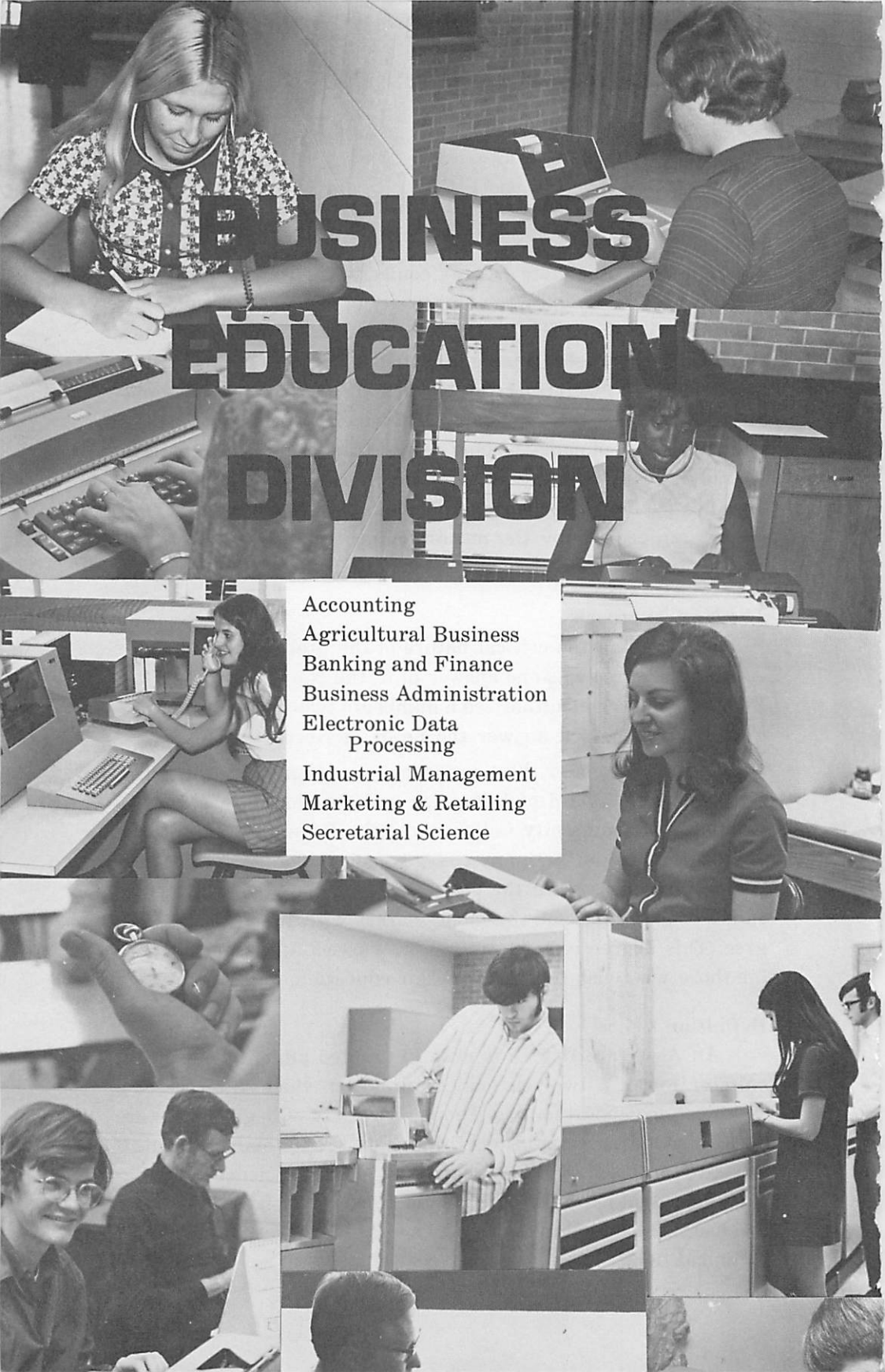
The New Approach

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
- Banking and Finance
- Business Administration
- Electronic Data Processing
- Industrial Management
- 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

INTRODUCTION

Purpose of Curriculum

Accounting is one of the fastest growing employment fields in America today. 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 help managers keep track of a firm's operation. The Accounting Curriculum is designed to fill this need by offering students the necessary accounting theories and skills for the entry into the accounting profession.

The Accounting Curriculum is designed to give the student an understanding of the principles of organization and management in business operations, understanding of the fundamentals of accounting and analysis of financial statements, and understanding and skill in effective communications for business.

Job Description

The graduate of the Accounting Curriculum may qualify for various positions in business and industry such as: accounting positions, accounting clerk, payroll clerk, auditor, and cost accountant.

ACCOUNTING CURRICULUM

Course	No.	Title	Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
BUS	120	Accounting Principles I	5	3	6
ECO	102	Economics	2	2	3
MAT	110	Business Mathematics	5	0	5
BUS	102	Typewriting*	2	3	3
			17	8	20
		SECOND QUARTER			
ENG	102	Composition	3	0	3
BUS	121	Accounting Principles II	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	221	Intermediate Accounting I	3	2	4
BUS	116	Business Law	2	2	3
			12	9	16
		SUMMER SESSION			
BUS	222	Intermediate Accounting II	3	2	4
SSC	205	American Institutions	2	2	3
			5	4	7
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
EDP	104	Introduction to Data Processing	3	2	4
BUS	223	Intermediate Accounting III	3	2	4
BUS	282	Business Statistics	3	2	4
BUS	234	Personnel and Business Management	5	0	5
			17	6	20
		FIFTH QUARTER			
ENG	206	Business Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
BUS	224	Advanced Accounting	5	3	6
BUS	229	Income Taxes	3	4	5
BUS	247	Business Insurance	3	0	3
			17	7	20
		SIXTH QUARTER			
BUS	219	Credit Procedures and Problems	2	2	3
BUS	225	Cost Accounting	3	4	5
BUS	269	Auditing	3	2	4
EDP	109	Cobol I	2	4	4
			10	12	16

*Credit is given if H.S. grade is "C" or better.

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 should 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 CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3
CHM	101	Chemistry	3	2	4
MAT	110	Business Mathematics	5	0	5
AGR	125	Animal Science	5	2	6
			16	4	18
		SECOND QUARTER			
ENG	102	Composition	3	0	3
BUS	185	Business Organization	3	0	3
BUS	120	Accounting Principles I	5	3	6
AGR	185	Soil Science & Fertilizers	5	2	6
			16	5	18
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	121	Accounting Principles II	5	3	6
AGR	104	Introduction to Agricultural Economics	3	2	4
AGR	170	Plant Science	5	2	6
			16	7	19
		SUMMER SESSION			
BUS	299	Cooperative Training	0	15	5
		FOURTH QUARTER			
ENG	204	Oral Communication	3	0	3
BUS	123	Business Finance	2	2	3
AGR	204	Farm Business Management	4	4	6
AGR	205	Agricultural Marketing	5	0	5
AGR	228	Livestock Disease & Parasites	3	2	4
			17	8	21
		FIFTH QUARTER			
BUS	110	Office Machines	2	3	3
BUS	115	Business Law	2	2	3
BUS	285	Salesmanship	5	0	5
SSC	205	American Institutions	2	2	3
AGR	201	Agricultural Chemicals	4	2	5
			15	9	19
		SIXTH QUARTER			
BUS	229	Taxes	3	4	5
BUS	272	Supervision	3	0	3
PSY	206	Applied Psychology	3	0	3
AGR	218	Agricultural Mechanization	3	2	4
AGR	258	Agricultural Production Enterprises	4	4	6
			16	10	21

Electives (See Course Descriptions)

BANKING AND FINANCE CURRICULUM

INTRODUCTION

The Associate Degree in Banking and Finance Curriculum is designed primarily for banking employees and others who wish to begin work toward a college degree or to continue a degree program interrupted at an earlier date. Many bank employees are presently enrolled in AIB certificate courses for professional development. These same courses, successfully completed, can now also, systematically lead to an Associate Degree in Banking and Finance from FTI. Further, through transfer of credits to a four year institution, a student can work toward a bachelor's degree.

BANKING AND FINANCE CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	101	Grammar	3	0	3 (1)
MAT	110	Business Mathematics	5	0	5 (2)
BUS	185	Business Organization	3	0	3 (1)
BUS	102	Typewriting*	2	3	3 (1)
ECO	102	Economics	2	2	3 (2)
SSC	205	American Institutions	2	2	3 (1)
			17	7	20
		SECOND QUARTER			
ENG	102	Composition	3	0	3 (1)
ECO	104	Economics	2	2	3 (2)
BUS	115	Business Law	2	2	3 (2)
BUS	234	Personnel & Business Management**	5	0	5 (2)
BUS	110	Office Machines	2	3	3 (1)
			14	7	17
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3 (2)
BUS	116	Business Law	2	2	3 (2)
EDP	104	Introduction to Data Processing	3	2	4 (2)
BUS	239	Marketing***	5	0	5 (2)
BUS	260	Government & Business	2	2	3 (1)
			15	6	18
		SUMMER SESSION			
AIB	233	Analysis of Financial Statements	4	0	4 (3)
BUS	272	Principles of Supervision	3	0	3 (2)
			7	0	7

		FOURTH QUARTER			
AIB	120	Accounting I	4	0	4 (3)
AIB	214	Effective Speaking	4	0	4 (3)
AIB	259	Law and Banking	4	0	4 (3)
AIB	219	Credit Administration	4	0	4 (3)
AIB	202	Principles of Bank Operations	4	0	4 (3)
			20	0	20
		FIFTH QUARTER			
AIB	203	Bank Investments	4	0	4 (3)
AIB	201	The Starter Series****	0	2	1 (3)
AIB	204	Bank Management By Objectives****	0	2	1 (3)
AIB	205	Bank Management	4	0	4 (3)
AIB	121	Accounting II	4	0	4 (3)
AIB	207	International Banking	4	0	4 (3)
			16	6	18
		SIXTH QUARTER			
AIB	208	Conference Planning and Leadership****	0	2	1 (3)
AIB	209	Installment Credit	4	0	4 (3)
AIB	210	Money and Banking	4	0	4 (3)
AIB	211	Federal Reserve System	4	0	4 (3)
AIB	212	Planning Management Development****	0	2	1 (3)
AIB	213	Trust Functions and Services	4	0	4 (3)
			16	4	18
		Alternates for Associate Degree			
AIB	230	Argumentation and Debate	4	0	4 (3)
AIB	231	Savings and Time Deposit	4	0	4 (3)
AIB	232	Agricultural Finance	4	0	4 (3)
AIB	123	Financing Business Enterprise	4	0	4 (3)
AIB	206	Bank Letters and Reports	4	0	4 (3)
			20	0	20

*Credit will be given if High School grade is "C" or better
**In lieu of AIB—Business Administration
***In lieu of AIB—Bank Public Relations and Marketing
****ONE night per week
(1) From College Curriculum—College Credit Only
(2) From College Curriculum—College & AIB Credit
(3) From AIB Curriculum—College & AIB Credit

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.

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
BUS	234	Personnel & Business Management	5	0	5
BUS	110	Office Machines	2	3	3
			14	7	17
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	116	Business Law	2	2	3
EDP	104	Introduction to Data Processing	3	2	4
BUS	239	Marketing	5	0	5
BUS	260	Gov't & Business	2	2	3
			15	6	18
		SUMMER SESSION			
BUS	272	Principles of Supervision	3	0	3
BUS	286	Real Estate	3	2	4
			6	2	7
		FOURTH QUARTER			
BUS	120	Accounting	5	3	6
ENG	204	Oral Communications	3	0	3
BUS	259	Business Law	2	2	3
BUS	123	Business Finance	2	2	3
BUS	282	Business Statistics	3	2	4
			15	9	19
		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			
PSY	206	Applied Psychology	3	0	3
BUS	229	Income Taxes	3	4	5
BUS	243	Advertising	5	0	5
BUS	257	Business Insurance II	3	0	3
BUS	219	Credit Procedures & Problems	2	2	3
			16	6	19

*Credit will be given if H.S. grade is "C" or better

ELECTRONIC DATA PROCESSING CURRICULUM

INTRODUCTION

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, Fortran, and NEAT / 3. 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 and 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			
ECO	102	Economics I	2	2	3
EDP	105	Introduction to Programming—Fortran I	4	3	5
EDP	112	Introduction to Computer Systems	3	3	4
ENG	101	English Grammar	3	0	3
MAT	106	Electronic Data Processing Math I	5	0	5
			17	8	20
		SECOND QUARTER			
ECO	104	Economics II	2	2	3
EDP	107	Compiler Language—Fortran II	2	5	4
EDP	109	Compiler Language—Cobol I	4	3	5
ENG	102	Composition	3	0	3
MAT	107	Electronic Data Processing Math II	5	0	5
			16	10	20
		THIRD QUARTER			
BUS	120	Accounting I	5	3	6
EDP	201	Compiler Language—Cobol II	2	5	4
EDP	205	Linear Programming and C.P.M.	2	5	4
ENG	103	Report Writing	3	0	3
			12	13	17
		SUMMER SESSION			
EDP	204	Compiler Language, Cobol III	2	5	4
ENG	204	Oral Communications	3	0	3
			5	5	7
		FOURTH QUARTER			
BUS	110	Office Machines	2	3	3
BUS	121	Accounting II	5	3	6
EDP	207	Assembler Language—Neat-3-I	4	3	5
BUS	115	Business Law I	2	2	3
			13	11	17
		FIFTH QUARTER			
BUS	122	Accounting III	5	3	6
BUS	282	Business Statistics I	3	2	4
EDP	208	Assembler Language—Neat-3-II	2	5	4
SSC	205	American Institutions	2	2	3
			12	12	17
		SIXTH QUARTER			
BUS	283	Business Statistics II	4	3	5
EDP	216	Data Processing Project	2	9	5
EDP	223	Computer Systems II	4	3	5
PSY	206	Applied Psychology	3	0	3
			13	15	18
Electives (See Course Descriptions)					

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
BUS	234	Personnel and Business Management	5	0	5
BUS	110	Office Machines	2	3	3
			14	7	17
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
BUS	116	Business Law	2	2	3
EDP	104	Introduction to Data Processing	3	2	4
BUS	239	Marketing	5	0	5
BUS	260	Government and Business	2	2	3
			15	6	18
		SUMMER SESSION			
BUS	272	Principles of Supervision	3	0	3
ISC	120	Principles of Industrial Management	3	2	4
			6	2	7
		FOURTH QUARTER			
PSY	206	Applied Psychology	3	0	3
ENG	204	Oral Communications	3	0	3
ISC	210	Job Analysis and Evaluation	2	2	3
ISC	102	Industrial Safety	2	2	3
BUS	282	Business Statistics	3	2	4
SOC	101	Introduction to Sociology	3	0	3
			16	6	19
		FIFTH QUARTER			
BUS	247	Business Insurance I	3	0	3
BUS	123	Business Finance	2	2	3
ISC	202	Quality Control	3	2	4
ISC	209	Plant Layout	3	2	4
ISC	211	Work Measurement	5	0	5
			16	6	19
		SIXTH QUARTER			
ENG	206	Business Communications	3	0	3
ECO	201	Labor Economics	3	2	4
ISC	204	Value Analysis	3	0	3
ISC	220	Management Problems	3	0	3
ISC	235	Industrial Management Seminar	3	2	4
MEC	213	Production Planning	3	0	3
			18	4	20

*Credit will be given if H.S. grade is "C" or better

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 AND RETAILING CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
BUS	102	Typewriting*	2	3	3
BUS	185	Business Organization	3	0	3
ECO	102	Economics	2	2	3
ENG	101	Grammar	3	0	3
MAT	110	Business Mathematics	5	0	5
SSC	205	American Institutions	2	2	3
			17	7	20
		SECOND QUARTER			
BUS	110	Office Machines	2	3	3
BUS	115	Business Law	2	2	3
BUS	234	Personnel & Business Management	5	0	5
ECO	104	Economics	3	0	3
ENG	102	Composition	3	0	3
			14	7	17
		THIRD QUARTER			
BUS	116	Business Law	2	2	3
BUS	239	Marketing	5	0	5
BUS	260	Government & Business	2	2	3
EDP	104	Introduction to Data Processing	3	2	4
ENG	103	Report Writing	3	0	3
			15	6	18
		SUMMER SESSION			
BUS	272	Principles of Supervision	3	0	3
BUS	249	Buying and Merchandising	2	2	3
			5	2	6
		FOURTH QUARTER			
BUS	120	Accounting	5	3	6
BUS	123	Business Finance	2	2	3
BUS	288	Fashion in Retailing	2	2	3
ENG	204	Oral Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
			15	7	18
		FIFTH QUARTER			
BUS	121	Accounting	5	3	6
BUS	124	Business Finance	2	2	3
BUS	247	Business Insurance I	3	0	3
BUS	285	Salesmanship	5	0	5
ENG	206	Business Communications	3	0	3
			18	5	20
		SIXTH QUARTER			
BUS	219	Credit Procedures & Problems	2	2	3
BUS	243	Advertising	5	0	5
BUS	257	Business Insurance II	3	0	3
BUS	268	Marketing & Retailing Internship	3	9	6
BUS	287	Commercial Display & Design I	2	4	3
			15	15	20

*Credit will be given if H.S. grade is "C" or better

SECRETARIAL SCIENCE CURRICULUM

(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 ot 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.

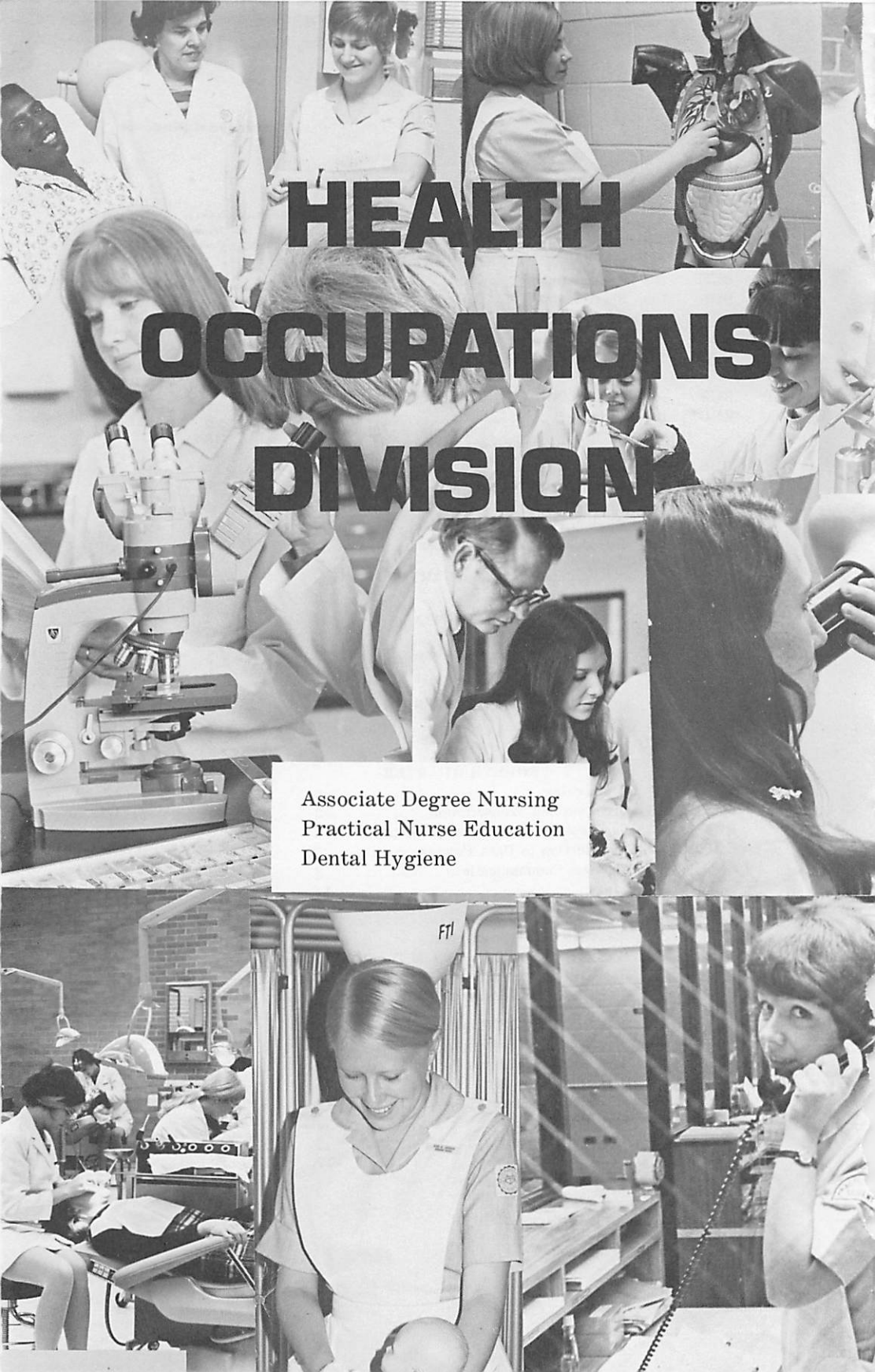
Job Description

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.

SECRETARIAL SCIENCE CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
BUS	102	Typewriting*	2	3	3
BUS	106	Shorthand**	3	2	4
BUS	110	Office Machines	2	3	3
MAT	110	Business Mathematics	5	0	5
ECO	102	Economics (1)	2	2	3
or					
BUS	185	Business Organization	3	0	3
ENG	101	Grammar	3	0	3
			15	7	18(2)
		SECOND QUARTER			
BUS	103	Typewriting	2	3	3
BUS	107	Dictation and Transcription	3	2	4
BUS	120	Accounting	5	3	6
ENG	104	English Usage & Composition	3	0	3
BUS	109	Introduction to Transcription	0	2	1
			13	10	17
		THIRD QUARTER			
BUS	104	Typewriting	2	3	3
BUS	108	Dictation and Transcription	3	2	4
BUS	121	Accounting	5	3	6
ENG	105	English Usage & Composition	3	0	3
PSY	206	Applied Psychology	3	0	3
			16	8	19
		SUMMER SESSION			
BUS	211	Office Machines	2	3	3
BUS	112	Filing***	3	0	3
			5	3	6
		FOURTH QUARTER			
BUS	205	Typewriting	2	3	3
BUS	206	Dictation and Transcription	3	2	4
BUS	183	Terminology & Vocabulary (E,L,M,T)	3	2	4
EDP	104	Introduction to Data Processing	3	2	4
ENG	206	Business Communications	3	0	3
			14	9	18
		FIFTH QUARTER			
BUS	115	Business Law	2	2	3
BUS	207	Dictation and Transcription	3	2	4
BUS	262	Machine Transcription (E,L,M,T)	1	4	3
BUS	256	General Offoce Practice	2	3	3
BUS	184	Terminology & Vocabulary (E,L,M,T)	3	2	4
			11	13	17
		SIXTH QUARTER			
BUS	208	Dictation and Transcription	3	2	4
BUS	214	Secretarial Procedures (E,L,M,T)	3	2	4
ENG	204	Oral Communications	3	0	3
BUS	271	Office Management	2	2	3
BUS	263	Payroll Taxes	3	0	3
BUS	247	Business Insurance	3	0	3
			17	6	20

*Credit is given if H.S. grade is "C" or better
**Credit is given if H.S. grade is "B" or better
***Proficiency will be given
(1) Elective (In lieu of BUS 185)
(2) Varies with electives
Electives (See Course Descriptions)



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 at 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.

The program is approved by the North Carolina Board of Nursing and the National League for Nursing. The Board requires that applicants to the program must be of good moral character and have good mental and physical health. Associate Degree Nursing is open to both men and women.

Graduates of the program are granted an associate degree and are eligible to write the State Board Examination for licensure as a Registered Nurse in the state of North Carolina. The Registered Nurse with an Associate Degree licensed for the practice of nursing is prepared for first level staff nursing positions in a hospital or similar situation. There are many employment opportunities in the greater Fayetteville area and it is anticipated that this demand will continue.

There is mobility of registered nurses throughout the United States. Those who have written the licensing examination in North Carolina may seek endorsement in other states.

ASSOCIATE DEGREE NURSING CURRICULUM

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	104	Usage and Composition I	3	0	3
BIO	106	Anatomy and Physiology 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
SOC	101	Sociology I (Introduction to Sociology) .	3	0	3
BIO	107	Anatomy and Physiology II	4	3	5
PSY	202	Psychology (Human Growth & Dev.) ..	3	0	3
			16	9	19
		THIRD QUARTER			
NUR	103	Nursing III (Nursing of Children and Adults, II)	6	9	9
BIO	108	Microbiology I	5	3	6
PSY	204	Abnormal Psychology	3	0	3
			14	12	18
		SUMMER SESSION			
NUR	104	Nursing IV (Nursing of Mothers and Infants)	3	6	5
SOC	102	Sociology II (Marriage and the Family)	3	0	3
			6	6	8
		FOURTH QUARTER			
NUR	205	Nursing V (Nursing of Children and Adults, III)	6	12	10
ENG	105	Usage and Composition II	3	0	3
		Elective—Humanities	3	0	3
			12	12	16
		FIFTH QUARTER			
NUR	206	Nursing VI (Nursing of Children and Adults, IV)	6	12	10
ENG	204	Speech (Oral Communications)	3	0	3
HIS	106	Western Civilization III	3	0	3
		Elective—Humanities	3	0	3
			15	12	19
		SIXTH QUARTER			
NUR	207	Nursing VII (Nursing of Children and Adults, V)	6	12	10
NUR	208	Nursing VIII (Professional Development)	3	0	3
ENG	210	American Literature I	3	0	3
ECO	102	Economics	2	2	3
			14	14	19

General Education	56
Nursing	63
	119

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 CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	104	English Usage and Composition I	3	0	3
DEN	111	Dental Hygiene I	4	5*	6
DEN	112	Dental Anatomy & Physiology	5	0	5
BIO	106	Human Anatomy & Physiology I	4	3	5
			16	8	19
		SECOND QUARTER			
ENG	105	English Usage and Composition II	3	0	3
DEN	121	Dental Hygiene II	1	6	3
DEN	122	Head and Neck Anatomy	2	0	2
BIO	107	Human Anatomy & Physiology II	4	3	5
DEN	133	Radiology	2	3	3
CHM	110	Fundamentals of Biochemistry	4	2	5
			16	14	21
		THIRD QUARTER			
ENG	204	Oral Communications	3	0	3
DEN	131	Dental Hygiene III	1	6	3
NUT	101	Nutrition	5	0	5
PED	111	First Aid	2	0	2
BIO	108	Microbiology	5	3	6
			16	9	19
		SUMMER SESSION			
DEN	113	Histology & Embryology	2	0	2
DEN	132	Dental Health Education	2	0	2
BIO	113	General Pathology	3	0	3
			7	0	7
		FOURTH QUARTER			
**ENG		Electives 106, 209, 210, 211	3	0	3
DEN	214	Periodontology	3	0	3
DEN	211	Dental Hygiene IV	1	12	5
DEN	212	Community Dental Health	3	0	3
DEN	213	Oral Pathology & Cardiology	3	0	3
			13	12	17
		FIFTH QUARTER			
PSY	101	Introduction to Psychology	3	0	3
DEN	221	Dental Hygiene V	1	12	5
DEN	222	Dental Materials in Dental Hygiene Practice	3	2	4
DEN	223	Dental Pharmacology & Anesthesiology	2	0	2
			9	14	14
		SIXTH QUARTER			
DEN	231	Dental Hygiene VI	0	15	5
DEN	232	Ethics & Jurisprudence	1	0	1
DEN	233	Dental Specialists	2	0	2
DEN	224	Office Management	1	0	1
SGC	101	Introduction to Sociology	3	0	3
			7	15	12

Electives (See Course Descriptions)

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

**Students must select the elective from: ENG 106—World Literature I; ENG 209—World Literature II; ENG 210—American Literature I; ENG 211—American Literature II.

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.

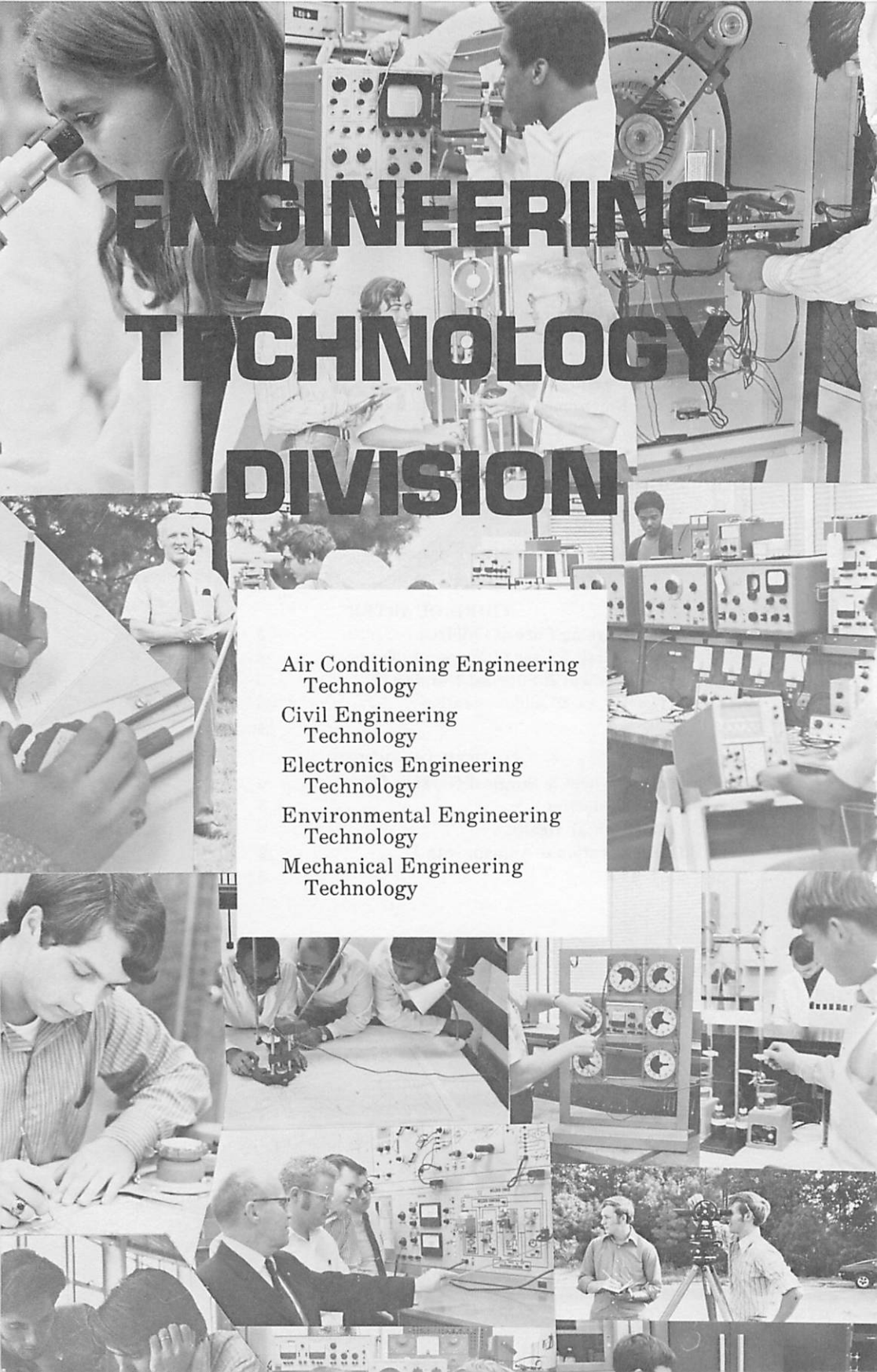
The Practical Nurse is a vital and integral segment of the health team; she bridges the gap between that which the individual can provide for himself and that which requires the complexity of skills given by professional members of the health team; that her place is at the patients' bedside fulfilling 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. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	1101	Communicative Skills: Grammar	3	0	3
PNE	1101	Vocational Adjustments I	3	0	3
PNE	1102	Body Structure & Functions	5	0	5
PNE	1103	Nursing Skills I	4	10	8
PNE	1104	Emergency & Disaster Nursing	2	0	2
			17	10	21
		SECOND QUARTER			
MAT	1105	Mathematics for Nurses	3	0	3
PNE	1105	Nutrition & Diet Therapy	3	0	3
PNE	1106	Nursing Skills II	3	4	5
PNE	1107	Medical & Surgical Nursing I	5	15	10
			14	19	21
		THIRD QUARTER			
PNE	1108	Nursing Care of Children	3	7	6
PNE	1109	Nursing Care of Mother & Newborn ...	3	7	6
PNE	1110	Medical & Surgical Nursing II	5	0	5
PNE	1111	Drugs & Administration	3	0	3
			14	14	20
		FOURTH QUARTER			
PNE	1112	Medical & Surgical Nursing III	0	21	7
PNE	1113	Geriatrics	3	4	5
PNE	1115	Mental Health	3	0	3
PNE	1116	Vocational Adjustments II	2	0	2
			8	25	17



ENGINEERING TECHNOLOGY DIVISION

- 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 technican 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 co-operative 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 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
DFT	101	Technical Drafting	0	6*	2
AHR	101	Fundamentals of Refrigeration I	4	3*	5
			12	9	15
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	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
PHY	102	Work, Energy, Power	3	2	4
AHR	104	Warm Air Systems	3	6*	5
			14	8	17
		SUMMER SESSION			
ELC	205	Applied Electricity	2	4	4
PHY	231	Fluid Mechanics	3	2	4
			5	6	8
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
DFT	204	Descriptive Geometry	2	4	4
AHR	216	Circuits and Controls I	3	3	4
AHR	210	Hydronic Systems	3	4	5
			11	11	16
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
DFT	226	Air Conditioning Systems Drawing	0	9*	3
AHR	203	Air Conditioning Principles	5	6*	7
AHR	217	Circuits and 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 and Contracts	3	3*	4
AHR	256	Installation and 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 CURRICULUM

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 sewage 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 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. This curriculum provides the necessary basic background and related theory with specific skills needed in the construction field. Basic construction knowledges and skills are 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.

CIVIL ENGINEERING 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
DFT	101	Technical Drafting	0	6*	2
CIV	101	Surveying I	2	6*	4
			10	12	14
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	101	Physics: Properties of Matter	3	2	4
DFT	102	Technical Drafting	0	6*	2
CIV	217	Construction Methods & Equipment	3	2	4
			14	10	18
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Physics: Work, Energy, Power	3	2	4
CIV	231	Portland Cement & Asphalt Concrete	3	3	4
CIV	102	Surveying II	2	6*	4
			16	11	20
		SUMMER SESSION			
CIV	114	Statics	5	0	5
ELC	205	Applied Electricity	2	4	4
			7	4	9
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
CIV	219	Strength of Materials & Properties of Engineering Materials	5	2	6
CIV	103	Surveying III	2	6*	4
CIV	223	Codes, Contracts & Specifications	2	0	2
EDP	107	Compiler Language I (Fortran IV)	2	4	4
			14	12	19
		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	228	Highway & Structural Drafting	0	6	2
CIV	221	Reinforced Concrete	3	2	4
			10	14	15
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
CIV	225	Construction Estimates and Costs	3	6*	5
CIV	204	Surveying IV	2	6	4
CIV	230	Design of Roads & Pavements	3	0	3
CIV	229	Municipal Engineering	3	3	4
			14	15	19

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

ELECTRONICS

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.

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.

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 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
CHM	101	Chemistry	3	2	4
ELC	101	Fundamentals of Electricity I	4	6*	6
			15	8	18
		SECOND QUARTER			
ENG	102	Composition	3	0	3
MAT	102	Technical Mathematics	5	0	5
PHY	101	Physics: Properties of Matter	3	2	4
DFT	101	Technical Drafting	0	6*	2
ELC	103	Fundamentals of Electricity	3	3	4
ELN	103	Introduction to Active Devices	1	2	2
			15	13	20
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Physics: Work, Energy, Power	3	2	4
DFT	102	Technical Drafting	0	6*	2
ELN	104	Active Devices	4	3	5
			15	11	19
		SUMMER SESSION			
ELN	106	Passive Networks	2	2	3
ELN	206	Application of Active Devices	4	6	6
			6	8	9
		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	209	Active Network Analysis	3	0	3
ELN	214	Wave Shaping and Pulse Circuits I	2	4	4
			14	6	17
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
ELN	211	Active Network Analysis	4	5	6
ELN	215	Wave Shaping and Pulse Circuits II	2	3	3
ELN	235	Industrial Mechanisms and Instrumentation	4	4	6
			13	12	18
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
ELN	220	Electronic Systems	5	6	7
ELN	240	Digital Computers	3	2	4
ELN	245	Electronic Design Project	0	4	2
			11	12	16

Electives (See Course Descriptions)

*"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 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	Properties of Matter	3	2	4
ENV	101	Environmental Sanitation	2	3	3
ENV	104	Environmental Biology	2	3	3
			15	8	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
DFT	101	Technical Drafting	0	6	2
			13	11	17
		THIRD QUARTER			
ENG	103	Report Writing	3	0	3
MAT	103	Technical Mathematics	5	0	5
CIV	101	Surveying	2	6	4
DFT	285	Drafting	0	6	2
			10	12	14
		SUMMER SESSION			
CIV	108	Basic Hydraulics	2	4	4
ELC	205	Applied Electricity	2	4	4
			4	8	8
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
ENV	204	Sanitation, Chemistry & Biology	2	6	5
EDP	117	Compiler Language (Fortran)	2	4	4
ENV	216	Water Purification	3	2	4
			10	12	16
		FIFTH QUARTER			
ECO	205	Applied Economics	3	0	3
ENV	205	Sanitation, Chemistry & Biology	2	6	5
ENV	217	Liquid Waste Treatment	3	2	4
MEC	237	Control Systems	2	4	4
ENV	112	Atmospheric Air Sampling	2	3	3
			12	15	19
		SIXTH QUARTER			
PSY	206	Applied Psychology	3	0	3
ENV	206	Sanitation, Chemistry & Biology	2	6	5
ENV	218	Liquid Waste Treatment	3	2	4
ENV	236	Codes, Contracts, Specifications & Estimates	2	3	3
ENV	226	Atmosphere Air Anslysis	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 specialties 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 supervision 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 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
MEC	103	Introduction to Mechanical Egr. Tech.	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	109	Applied Thermodynamics	3	2	4
			14	10	18
		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	104	Applied Mechanics	5	0	5
			15	4	17
		SUMMER SESSION			
MEC	205	Strength of Materials	3	2	4
MEC	246	Mechanisms	3	2	4
			6	4	8
		FOURTH QUARTER			
ENG	204	Oral Communications	3	0	3
EDP	117	Compiler Language I (Fortran)	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
MEC	210	Physical Metallurgy	3	3	4
MEC	237	Control Systems	2	4	4
MEC	245	Applied Hydraulics	3	3	4
			11	10	15
		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	Jig and Fixture Design	2	6	4
			13	15	18

Electives (See Course Descriptions)


WRITING A RESEARCH PAPER,
MANUSCRIPT FORM
AND DOCUMENTATION

GENERAL EDUCATION DIVISION

General Education includes all those instructional elements which are used in the teaching and learning of material in the areas of the Health Occupations, Engineering Technology, Business, and Vocational Education Divisions. Thus, General Education, which includes English, mathematics, the physical sciences, the behavioral sciences, and the Humanities, constitutes those subjects which enable students to learn the specialized materials which constitute the other major curricular areas.

As man is more than a wage-earner, General Education courses are designed to make FTI graduates social, thinking, positively oriented members of our diverse society.

The General Education Associate Degree curriculum includes those courses which traditionally are associated with the first two years of the four-year college program. In concert, these courses may be called the "liberating arts" as they free the mind from the limitations imposed by parochial backgrounds.

The GEAD program is designed to provide a means for an individual to become aware of the past human experience and to equip him intellectually to deal positively with today's and tomorrow's problems, be those problems social, job-related, or academic in nature.

Upon receiving an Associate Degree in General Education, a student may transfer to selected four-year colleges as a rising junior or he may enter other spheres of activity equipped to be a thinking, discerning member of our greater society.

ASSOCIATE DEGREE IN GENERAL EDUCATION

Purpose of Curriculum

Typically, post-secondary education in North Carolina has been one of two types: mainly, academic, or primarily job-related. While efforts at developing programs embracing both academic and job-related instruction have been largely successful, the opportunities to receive this instruction have been restricted to full-time day students for the most part. Thus, persons who, due to economic necessity or myriad other reasons, decided to forego the academic pursuits during the work-day have been denied the opportunity to further their general educational goals in a structured, degree-earning sense.

The aspirational and intellectual growth of persons who did not pursue post-secondary education has continued without a means by which this growth may be brought under systematic development. Thus, the persons who now make up middle management, wives whose families are semi-independent, and other persons (who crave to understand and fully appreciate the intellectual, political, and rational world in which we, today, find ourselves) should be provided a means by which they can gain orderly, progressive, awarenesses of the enriching factors which have contributed to our present and which will, in part, determine our future as individuals and as a people.

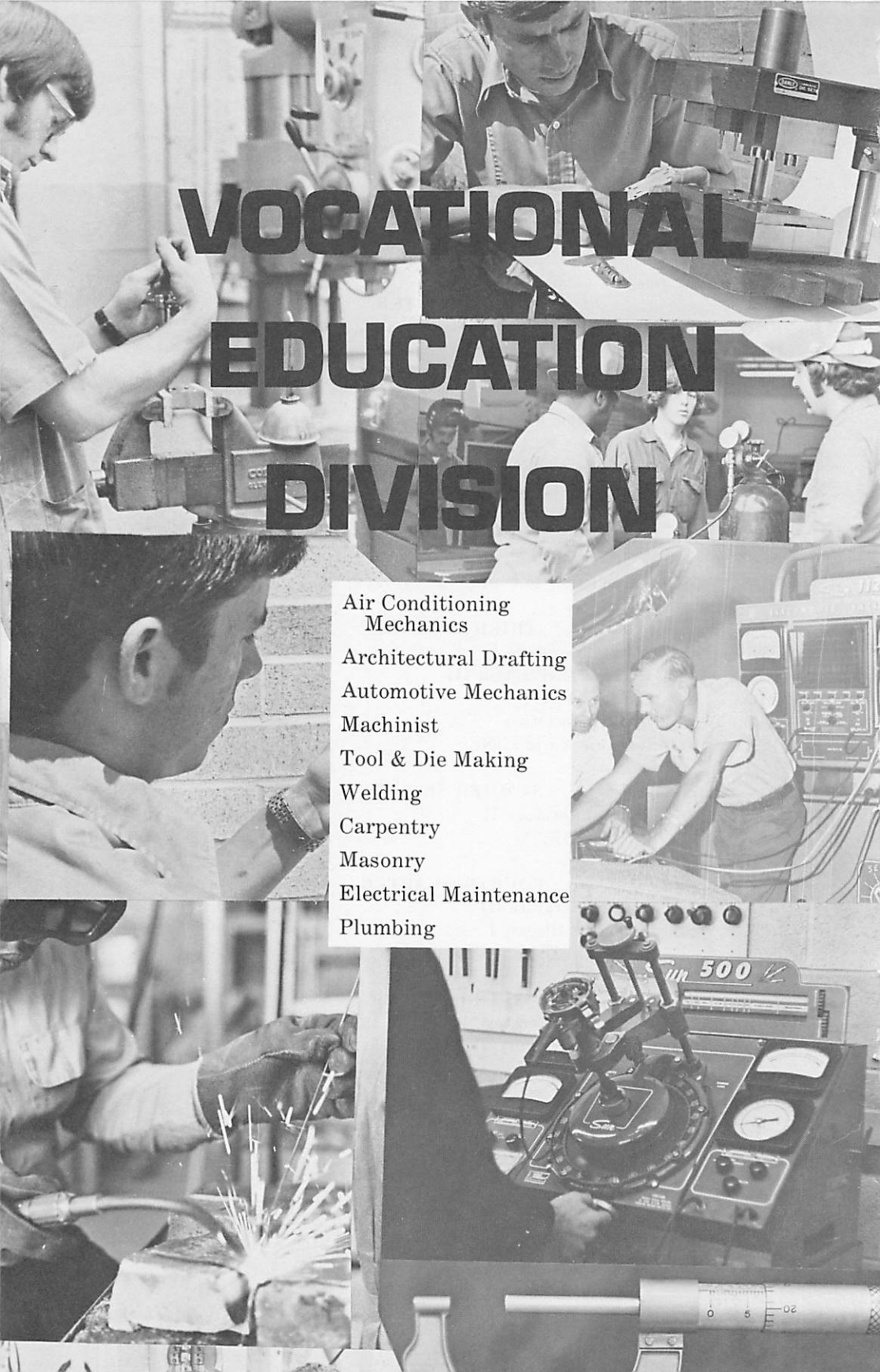
As Fayetteville Technical Institute is a tax-supported college and as a large tax-paying segment of our population is made up of persons who have finished high school but not college, it seems appropriate to offer a program of instruction which may be terminal (with a degree) or contributory to further individual development, designed specifically along general education lines.

The following proposed catalog description of the Program leading to the Associate in General Education Degree is consistent with the above considerations.

GENERAL EDUCATION CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ENG	104	English Usage and Composition I	3	0	3
HIS	104	Western Civilization I	3	0	3
MUS	104	Music Appreciation	3	0	3
PHI	101	Introduction to Philosophy	3	0	3
MAT	108	Introduction to College Mathematics ...	5	0	5
			17	0	17
		SECOND QUARTER			
ENG	105	English Usage and Composition II	3	0	3
HIS	105	Western Civilization II	3	0	3
BIO	201	Biology I	3	2	4
MAT	109	College Algebra	5	0	5
BUS	282	Introduction to Statistics	3	2	4
			17	4	19
		THIRD QUARTER			
ENG	106	World Literature I	3	0	3
HIS	106	Western Civilization III	3	0	3
BIO	202	Biology II	3	2	4
ART	104	Art Appreciation	3	0	3
PHI	102	Introduction to Logic	3	0	3
			15	2	16
		SUMMER SESSION			
ENG	107	World Literature II	3	0	3
		Elective (1)	3	0	3
			6	0	6
		FOURTH QUARTER			
ENG	209	World Literature III	3	0	3
HIS	201	American History I	3	0	3
		Electives (3)	9	0	9
			15	0	15
		FIFTH QUARTER			
ENG	210	American Literature I	3	0	3
HIS	202	American History II	3	0	3
		Electives (3)	9	0	9
			15	0	15
		SIXTH QUARTER			
ENG	211	American Literature II	3	0	3
HIS	203	American History III	3	0	3
		Electives (3)	9	0	9
			15	0	15

Electives (See Course Descriptions)



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 desirable.

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 mechanical 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 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	Grammar	3	0	3
AHR	1121	Fundamentals of Refrigeration I	5	6	7
DFT	1180	Trade Drafting	2	4	3
			15	10	18
		SECOND QUARTER			
PHY	1101	Properties of Matter	3	2	4
AHR	1122	Domestic & Commercial Refrigeration	4	5	6
ENG	1102	Industrial Communications	3	0	3
WLD	1180	Basic Welding	2	4	3
			12	11	16
		THIRD QUARTER			
PHY	1102	Applied Physics: Electricity	3	2	4
ENG	1103	Report Writing	3	0	3
AHR	1145	Heating Systems I	5	7	7
AHR	1135	Sheet Metal Layout & Fabrication I	2	4	4
			13	13	18
		SUMMER SESSION			
PHY	1103	Work, Energy, Power	3	2	4
AHR	1136	Sheet Metal Layout & Fabrication II	2	4	4
			5	6	8
		FOURTH QUARTER			
AHR	1125	Principles of Air Conditioning	5	3	6
AHR	1141	Control Systems I	2	3	3
ECO	1105	Applied Economics	3	0	3
AHR	1146	Heating Systems II	4	6	6
			14	12	18
		FIFTH QUARTER			
AHR	1142	Control Systems II	3	3	4
AHR	1129	Air Conditioning Shop Practice I	3	6	5
PSY	1106	Applied Psychology	3	0	3
AHR	1148	Estimating & Contracting	5	2	6
			14	11	18
		SIXTH QUARTER			
AHR	1130	Heat Pumps	3	3	4
AHR	1132	Chilled Water & Absorption Systems	3	3	4
AHR	1133	Air Conditioning Shop Practice II	3	6	5
BUS	1103	Small Business Operations	5	0	5
			14	12	18

Electives (See Course Descriptions)

ARCHITECTURAL DRAFTING AND DESIGN
BUILDING TRADES

INTRODUCTION

Since the beginning of man, two of his most basic needs have been food and shelter. The latter, referred to as architecture, has been defined as an expression of civilization through the medium of its buildings. Our buildings are, in fact, architecture reflecting the use of materials, light, and space. Every type of building in our environment is the result of the application of design, drawing and science. Today, architecture is still one of our most basic needs. There are more people involved in satisfying this need than any other single need.

If you are interested in a field of endeavor that is creative in nature and has unlimited opportunities, an architectural drafting and design career could well be the course to pursue.

The Curriculum at Fayetteville Technical Institute prepares the individual to assume a position in the broad building industry. Opportunities exist in all aspects of design, production and construction of our physical environment. Graduates find work with architects, architectural departments of corporations, contractors, residential designers, city planning departments, decorators, engineering firms, materials manufacturers, and virtually all types of businesses which require individuals skilled in reading, preparing and interpreting architectural drawings.

Although instruction is given in many other areas of architecture, the curriculum is basically oriented towards drafting. Also, since one involved in architecture associates with many levels of personnel and must communicate effectively with them, instruction will be given in the areas of mathematical communications, social studies, language communications, and the physical sciences. This will provide for the student drafting skills, architectural knowledge, confidence in his relations with other persons, and the ability to advance rapidly and proficiently upon entering the field.

ARCHITECTURAL DRAFTING CURRICULUM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ARC	1231	Arch. Drafting & Design I	1	3	2
ARC	1226	Graphic Communications I	1	3	2
ARC	1264	Mat. & Methods of Arch. Construction I	3	9	6
ARC	1241	Architectural Presentations I	1	3	2
MAT	1103	Geometry	3	0	3
ENG	1101	Grammar	3	0	3
			12	18	18
		SECOND QUARTER			
ARC	1232	Arch. Drafting & Design II	2	3	3
ARC	1227	Graphic Communications II	1	3	2
ARC	1242	Architectural Presentations II	1	3	2
ARC	1265	Mat. & Methods of Arch. Construction II	3	6	5
MAT	1102	Algebra	5	0	5
ENG	1102	Industrial Communications	3	0	3
			15	15	20
		THIRD QUARTER			
ARC	1233	Arch. Drafting & Design III	3	9	6
ARC	1243	Architectural Presentations III	1	3	2
ARC	1228	Graphic Communications III	1	3	2
PHY	1101	Applied Science	3	2	4
ENG	1103	Report Writing	3	0	3
MAT	1104	Trigonometry	3	0	3
			14	17	20
		SUMMER SESSION			
ARC	1251	Structural Systems	2	6	4
ECO	1105	Economics	3	0	3
			5	6	7
		FOURTH QUARTER			
ARC	1234	Arch. Drafting & Design IV	2	9	5
ARC	1244	Architectural Presentations IV	1	3	2
PHY	1102	Applied Science	3	2	4
ARC	1230	History of Arch.	3	0	3
PSY	1106	Applied Psychology	3	0	3
			12	14	17
		FIFTH QUARTER			
ARC	1235	Arch. Drafting & Design V	3	6	5
ARC	1245	Architectural Presentations V	1	3	2
ARC	1250	Site Surveying & Site Development	3	5	5
ARC	1238	Arch. Environmental Systems I	3	3	4
ARC	1145	Specifications & Contracts	3	0	3
			13	17	19
		SIXTH QUARTER			
ARC	1236	Arch. Drafting & Design VI	5	9	8
ARC	1246	Architectural Presentations VI	1	3	2
ARC	1239	Arch. Environmental Systems II	3	3	4
ARC	1112	Architectural Estimating	3	0	3
			12	15	17

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			
ENG	1101	Communication Skills: Grammar	3	0	3
MAT	1101	Vocational Mathematics I	5	0	5
PME	1101	Automotive: Engines	3	12	7
PSY	1106	Applied Psychology	3	0	3
			14	12	18
		SECOND QUARTER			
ENG	1102	Industrial Communications	3	0	3
PHY	1101	Physics: Properties of Matter	3	2	4
PME	1102	Electrical & Fuel Systems	3	12	7
PME	1180	Automotive Electronics	2	0	2
			11	14	16
		THIRD QUARTER			
ENG	1103	Report Writing	3	0	3
DFT	1180	Trade Drafting I	2	4	3
PHY	1102	Physics: Electricity	3	2	4
PME	1124	Power Train Systems	4	6	6
			12	12	16
		SUMMER SESSION			
PME	1188	Small Gasoline Engines	3	3	4
PHY	1103	Physics: Work, Energy, & Power	3	2	4
			6	5	8
		FOURTH QUARTER			
ECO	1105	Economics	3	0	3
PME	1123	Chassis & Suspension	6	9	9
PME	1181	Automotive: Tune Up	2	4	3
WLD	1180	Welding: Basic	2	4	3
			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
			13	16	18
		SIXTH QUARTER			
BUS	1103	Small Business Operations	3	0	3
PME	1125	Automotive: Servicing	3	9	6
PME	1135	Air Conditioning: Automotive	3	3	4
PME	1170	Power Plant Trouble Shooting	3	6	5
			12	18	18

*Electives (See Course Descriptions)

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

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
ELC	1112	Direct and Alternating Current	5	15	10
ENG	1101	Grammar	3	0	3
MAT	1115	Electrical Math	5	0	5
DFT	1110	Blueprint Reading: Building Trades ...	0	3	1
			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
			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
			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
			10	21	17

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

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
MEC	1101	Theory and Practice I	3	12	7
PSY	1106	Applied Psychology	3	0	3
			14	12	18
		SECOND QUARTER			
MAT	1102	Vocational Mathematics II	5	0	5
PHY	1101	Properties of Matter	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
			16	14	21
		THIRD QUARTER			
MAT	1123	Mathematics: Machinist I	5	0	5
DFT	1181	Trade Drafting II	2	3	3
ECO	1105	Applied Economics	3	0	3
PHY	1102	Applied Physics: Electricity	3	2	4
MEC	1103	Theory and Practice III	3	8	6
			16	13	21
		SUMMER SESSION			
PHY	1103	Work, Energy, Power	3	2	4
MEC	1107	Numerical Control in Manufacturing	2	3	3
			5	5	7
		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
			14	11	18
		FIFTH QUARTER			
WLD	1180	Basic Welding	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
			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
			11	19	17

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 CURRICULUM 1969-70

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
MEC	1101	Theory and Practice I	3	12	7
PSY	1106	Applied Psychology	3	0	3
			14	12	18
		SECOND QUARTER			
MAT	1102	Vocational Mathematics II	5	0	5
PHY	1101	Properties of Matter	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
			16	14	21
		THIRD QUARTER			
MAT	1123	Mathematics: Machinist I	5	0	5
DFT	1181	Trade Drafting II	2	3	3
ECO	1105	Applied Economics	3	0	3
PHY	1102	Applied Physics: Electricity	3	2	4
MEC	1103	Theory and Practice III	3	8	6
			16	13	21
		SUMMER SESSION			
PHY	1103	Work, Energy, Power	3	2	4
MEC	1107	Numerical Control in Manufacturing	2	3	3
			5	5	7
		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
			14	11	18
		FIFTH QUARTER			
WLD	1180	Basic Welding	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
			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
			11	19	17
		FIRST QUARTER			
MEC	1151	Tool Making: Jigs & Fixtures	2	9	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
			8	21	15
		SECOND QUARTER			
MEC	1155	Die Making II	2	9	5
MEC	1158	Introduction to Plastics Molding	2	9	5
MEC	1159	Blue Print Reading & Inspection	2	2	3
MAT	1152	Mathematics: Trigonometry	3	0	3
			9	20	16
		THIRD QUARTER			
MEC	1153	Advanced Tool Making	4	7	6
MEC	1160	Special Problems	2	6	4
MEC	1156	Die Making III	2	9	5
			8	22	15

WATER AND WASTEWATER PLANT OPERATORS PROGRAM

INTRODUCTION

Purpose of Curriculum

Our ever-increasing population and industrial expansion carries with it the demand for many services with one of the most vital of these services being the production and safeguarding of our water supply. To meet the increasing demand for cleaner water and to handle the complexity of pollutants from new products, technology has created more sophisticated and complicated systems for water purification and wastewater treatment. These technological advances have created a growing demand for highly trained personnel who can analyze, operate and control industrial water purification and wastewater treatment facilities, whether it be public or private.

This program was designed to train operators to perform at many levels, including management, in various types of water purification and wastewater treatment plants. In addition to specialized courses in water purification and wastewater treatment, the student will receive related courses in mathematics, English, drafting, and humanities.

Job Description

The graduate of this program will have a knowledge of laboratory procedures and skill in performing many types of tests on water and wastewater. He will have a knowledge of the purpose, construction, operation and maintenance of many processes and of equipment incidental to effective operation of water purification and wastewater treatment plants. To give the operator a basic understanding of the entire plant operation, application of laboratory results to optimum plant operation is stressed.

WATER AND WASTEWATER PLANT OPERATORS PROGRAM

Course No. and Title			Hours Per Week Class	Lab	Quarter Hours Credit
		FIRST QUARTER			
CHM	93	Chemistry I	3	2	4
ENG	1100	Reading Improvement	2	0	2
MAT	1101	Vocational Mathematics I	5	0	5
ENV	1100	Biology-Microbiology	2	3	3
ENV	1110	Introduction to Ecology	2	3	3
			14	8	17
		SECOND QUARTER			
ENG	1102	Industrial Communications	3	0	3
MAT	1102	Vocational Mathematics II	5	0	5
ENV	1101	Water Laboratory Control	2	6	4
ENV	1102	Water Plant Operations	3	2	4
			13	8	16
		THIRD QUARTER			
DFT	1180	Trade Drafting I	0	6	2
PSY	1101	Human Relations	3	0	3
ENV	1103	Waste Laboratory Control	2	6	4
ENV	1104	Waste Plant Operations	3	2	4
ENV	1105	Maintenance	2	3	3
			10	17	16
		FOURTH QUARTER			
ENV	1107	Stream Studies	2	6	4
ENV	1108	Control Systems	3	3	4
ENV	1109	Water and Waste Distribution	3	3	4
ENV	1111	Industrial Wastes	2	3	3
			10	15	15

WELDING

INTRODUCTION

Purpose of Curriculum

This curriculum was developed 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 is designed to give students sound understanding of 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, railroads, construction, pipe fitting, 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 "ozygen 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	1101	Grammar	3	0	3
ECO	1105	Applied Economics	3	0	3
			17	14	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
			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
			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	3
			8	24	16

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 above 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.

Each student is encouraged to progess to his utmost capability, and upon completion of the program, is permitted to select a curriculum consistent with his proven 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 curricula related shops and laboratories.

During each quarter, a student will take a course in English, Math, Physical Science, and Social Science. In addition to these, he may select an elective from the Business, Vocational, Technical or Health area.

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, line, angles, permetrics, areas, volumes, 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 with 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, economics, psychology, and the humanities.

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.

DEVELOPMENTAL STUDIES

Course Number and Title		Hours Per Week Class	Lab	Quarter Hours Credit
	FIRST QUARTER			
*				
**				
***				
****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 88	Business Machines I	3	2	4
	Electives			5
	Suggested Normal Load 18-20 Credit Hours			
	SECOND QUARTER			
*				
**				
***				
****ENG 92	Composition and Grammar	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 97	Economics I	5	0	5
**MAT 85	Business Math	3	2	4
	Electives			5
	Suggested Normal Load 18-20 Credit Hours			

Course Number and Title		Hours Per Week Class	Lab	Quarter Hours Credit
	THIRD QUARTER			
*				
**				
***				
****ENG 93	Vocabulary and Reading II	3	2	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 (Machines)	2	4	4
*AHR 95	Shop Practices (Air Conditioning)	2	4	4
***CIV 93	Introduction to Technology	2	2	3
****PNE 93	Introduction to Nursing	3	0	3
	Electives			5
	Suggested Normal Load 18-20 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.

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 receive 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.

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 and 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:

Masonry
Plumbing
Nursing Assistant
Dental Assistant

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.

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 pro-

duce. 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 258 Agricultural Production Enterprises 4 4 6

A study of the selection of production enterprises such as field crops, horticultural crops, and livestock with consideration of the application of up-to-date practices of production and management. Consideration is also given to the most profitable way to utilize resources in the production of one or more kinds of crops and/or livestock.

AGR 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 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.

AIB 120 Accounting I 4 0 4

This course supplies a comprehensive treatment of all up-to-date principles and also gives the student ample opportunity through examples, illustrations, and correlated activities to learn how the principles are applied. The course has special sections for both principles and managerial implications.

AIB 121 Accounting II 4 0 4

The content of this course was selected with two major objectives in mind: immediate on-the-job usefulness, and contribution to the student's future growth in the banking field. The course consists of a detailed study of balance sheet items, covers manufacturing accounting and product costing, and includes an appropriate study of cost analysis for managerial decisions.

AIB 123 Financing Business Enterprise 4 0 4

Stress is placed on the difference between lending and investing, and on the fact that investing in a corporation and financing a corporation are different aspects of the same subject. In this course, the material is presented from the viewpoint of the corporate treasurer who must safeguard the financial future of his corporation.

AIB 201 The Starter Series 0 2 1

This is a series of three short orientation seminars at the entry level for new bank employees. In order to earn one credit, all three seminars must be completed.

Your Place in Banking—This three-hour training unit is designed to give new employees information on the functions

of the various parts of a bank and the financial services offered by a commercial bank.

Your Personal Finances—This three-hour training unit is designed to show new employees the best methods of managing their personal income: how to spend it, save it, and borrow against it.

Your Personal Image—This nine- to twelve-hour training unit is designed to teach new employees office courtesies, telephone etiquette, and personal grooming.

AIB 202 Principles of Bank Operations 4 0 4

This course presents the fundamentals of bank functions in a descriptive fashion so that the beginning banker may view his chosen profession in a broad (and operational) perspective. The descriptive orientation is intentional. Banking is increasingly dependent upon personnel who have the broad perspective so necessary for career advancement.

AIB 203 Bank Investments 4 0 4

Because the bank's needs for primary reserves and loanable funds limit the funds available for investment, this course describes the nature of such funds and how their uses are determined. It also analyzes the primary and secondary reserve needs of commercial banks, the sources of reserves, and their random and cyclical fluctuations, showing the influence of these factors on investment policy. This analysis is followed by a study of yield changes as they affect a bank's long-term holdings.

AIB 204 Bank Management by Objectives 0 2 1

This middle management seminar is designed to assist bank officers in learning how to translate bank problems into realistic goals, for the individual and the bank, through the management-by-objectives system. Cases and outside readings are used in this seminar. It can be presented as a brief, intense workshop or as an eight-session seminar.

AIB 205 Bank Management 4 0 4

This course presents new trends which have emerged in the philosophy and practice of management. The study and applica-

tion of the principles outlined provide new and experienced bankers with a working knowledge of bank management. Since case study is becoming well established as an effective management learning technique, this course also introduces the use of cases as a new element.

AIB 206 Bank Letters and Reports 4 0 4

This course is designed for those bank officers, supervisors, and employees who dictate or review correspondence. Since bank letters are actually public relations documents, all persons should be familiar not only with the mechanical forms of bank letters but also with the psychological principles that help the letter writer achieve best results. The course reviews letter forms, emphasizes fundamental principles underlying modern correspondence, and examines different kinds of bank letters.

AIB 207 International Banking 4 0 4

An introduction to a vast field for those working in international departments, as well as for those involved in the domestic activities of their banks. The essential objective of this course is to present the basic framework and fundamentals of international banking: how money is transferred from one country to another, how trade is financed, what the international agencies are and how they supplement the work of commercial banks, and how money is changed from one currency to another.

AIB 208 Conference Planning and Leadership 0 2 1

This course is centered on a specific phase of the problem of human understanding. It is concerned with an important responsibility of management: to communicate and to coordinate ideas in the most effective way possible. It gives consideration to the dynamics of human interaction in groups convened to solve problems and make decisions. The essentials of parliamentary procedure are also stressed, thus presenting an effective technique for achieving consensus and formalizing and recording the decision-making process.

AIB 209 Installment Credit 4 0 4

In this course, the techniques of installment lending are presented concisely. Emphasis is placed on establishing the credit,

obtaining and checking information, servicing the loan, and collecting the amounts due. Each phase of a bank's installment credit operation should be carefully scrutinized to be certain that the most efficient methods are employed, for only through an efficient operation can a bank maximize its profits on this particular kind of credit. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending.

AIB 210 Money and Banking 4 0 4

This course stresses the practical aspects of money and banking and emphasizes the basic monetary theory needed by the banking student to apply his knowledge to his particular job. Historical treatment has been kept to a minimum. Emphasis is also placed on such problems as economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments, and foreign exchange, showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios.

AIB 211 Federal Reserve System 4 0 4

This totally new course examines the operations and policies of the Federal Reserve System during the past sixty years. The origins, administrative structure, and crucial periods in the history of the System are reviewed. A treatment of international monetary relations followed the end of World War II is also included. The course concludes with a review and analysis of monetary instruments and of the goals of monetary policy.

AIB 212 Planning Management Development 0 2 1

This middle management seminar is designed to assist bank officers who are responsible for the planning, recruiting, and development of bank management personnel. Cases and outside readings are used in this seminar. It can be presented as a brief, intense workshop or as a twelve-session seminar.

AIB 213 Trust Functions and Services 4 0 4

This new course presents a complete picture of the services rendered by institutions engaged in trust business. Providing an

introduction to the services and duties involved in trust operations, the course is intended for all bankers, not only those who are engaged in trust business. It endeavors to keep clear the distinction between business and legal aspects of trust functions.

AIB 214 Effective Speaking 4 0 4

This middle management seminar is designed to assist bank officers in learning how to translate bank problems into realistic goals, for the individual and the bank, through the management-by-objectives system. Cases and outside readings are used in this seminar. It can be presented as a brief, intense workshop or as an eight-session seminar.

AIB 219 Credit Administration 4 0 4

This course, directed toward the executive level, concerns itself partly with a statement and a discussion of factors influencing and determining loan policy. Methods of credit investigation and analysis, credit techniques, specific credit problems, and regular as well as unusual types of loans are discussed.

AIB 230 Argumentation and Debate 4 0 4

This course is planned to set forth the principles of argumentation, so that the debater will have the necessary background for the development of his own technique. It describes the analysis of the debate subject, gives the principles of logical argument, and suggests how the case may be presented most effectively.

AIB 231 Savings and Time Deposit 4 0 4

This course reflects recognition of the fact that a knowledge of the historical development of savings institutions and an awareness of the basic economic function of the savings process are necessary to an understanding of the current operations and policies of these institutions. It begins with a review of the economics of the savings process in order to clarify important differences between financial savings by individuals or organizations and real savings that appear as capital formation. Different types of financial savings are reviewed in order to describe the system of financial flows of income to capital investment.

AIB 232 Agricultural Finance 4 0 4

Reflecting the rapid growth of the off-farm agribusiness sectors (the suppliers of farm inputs), this course emphasizes general principles associated with the evaluation of management and the use of capital, rather than stressing the examination of land and labor resources, which are more closely aligned with agricultural production. An understanding of agricultural finance should help the banker in satisfying the credit needs of modern agriculture.

AIB 233 Analysis of Financial Statements 4 0 4

This course is organized into two main sections: Characteristics of Financial Statements and Financial Statement Analysis. The first section serves as a useful review of basic accounting principles for those students who have studied accounting. For those who have not, this section provides the minimum accounting background necessary for profitable study of financial statement analysis.

AIB 259 Law and Banking 4 0 4

This course, which will replace the current Commercial Law offering, is an introduction to law for bankers. Among the legal topics considered are: jurisprudence, the court system and civil procedure, contracts, quasi-contracts, property, torts and crimes, and agency. The standard commercial law subjects, including corporations and partnerships, are discussed. Though commercial law principles are broadly presented, attention is concentrated on the Uniform Commercial Code.

BUS 81 Filing 3 2 4

A course designed to provide training in records storage and control. Filing principles, and procedures are made realistic by the use of miniature letters, file boxes, and guides. Alphabetic, geographic, subject, and numeric filing are emphasized.

BUS 85 Typing I 2 3 3

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, and simple busi-

ness forms. Minimum speed of 30 words per minute for five minutes.

BUS 86 Typing II 2 3 3

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms. Minimum speed of 35 words per minute for five minutes.

BUS 87 Typing III 2 3 3

Emphasizes further development in typing letters, manuscripts, tabulation and special business forms. Minimum speed of 40 words per minute for five minutes.

BUS 88 Business Machines I 3 2 4

A beginning course in the care and use of business machines. Students will receive an introduction to and training in techniques, processes, operation, and application of the ten-key adding machines and calculators.

BUS 89 Business Machines II 3 2 4

A beginning course in the care and use of business machines. Students will receive an introduction to and training in techniques, processes, operation, and application of full keyboard adding-listing machines and rotary calculators.

BUS 93 Business Office Procedures I 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, data processing, telephone techniques, reception duties, motivation on the job, and speaking skills. Personal qualities, good working habits, and proper human relations are stressed.

BUS 94 Bookkeeping I 3 2 4

An introductory bookkeeping course designed to give an overview of the complete bookkeeping cycle in its simplest form.

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 satifies his wants and needs for material goods and services through the use of his mental and physical efforts.

BUS 98 Bookkeeping II 3 2 4

A continuation of the introductory bookkeeping course designed to give an overview of the complete bookkeeping cycle in its simplest form.

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 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.

BUS 103 Typewriting 2 3 3

Instruction emphasizing the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms.

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.

Prerequisite: BUS 103.

BUS 105 Shorthand Speedbuilding 0 5 2

A course designed to reinforce shorthand theory and to develop the ability to construct new outlines under the stress

of dictation. Minimum dictation rate of 60 words per minute for five minutes on new material.

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 Dictation and Transcription 3 2 4

Review of shorthand theory and the introduction of the mailable letter and the speed take on new matter dictation. Minimum dictation rate of 60 words per minute required for five minutes on new material.

Prerequisite: BUS 106 or the equivalent; BUS 102 or the equivalent.

BUS 108 Dictation and Transcription 3 2 4

Continued review of theory and further emphasis on the transcription of mailable copy. Minimum dictation rate of 80 words per minute for five minutes on new material.

Prerequisite: BUS 103; BUS 107.

BUS 109 Introduction to Transcription 0 2 1

A course designed to aid the student in transcribing shorthand notes at the typewriter into mailable letters. Emphasis is placed on the use of reference manuals and punctuation.

Prerequisite: BUS 102; BUS 106.

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 calculator.

BUS 112 Filing 3 0 3

Fundamentals of indexing and filing, combining theory and practice through the use of a practice set. Alphabetic, numeric, geographic and subject filing are emphasized.

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, riskbearing, partnership, corporation, mortgages, and property rights.

Prerequisite: BUS 115.

BUS 120 Accounting Principles I 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 Principles II 5 3 6

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.

Prerequisite: BUS 120.

BUS 122 Accounting III 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.

Prerequisite: BUS 123.

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 104.

BUS 207 Dictation and 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 100 words per minute required for five minutes on new material.

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 110 words per minute required for five minutes on new material.
Prerequisite: BUS 207.

BUS 211 Office Machines 2 3 3

Instructions in the operation of the accounting machine, duplicating equipment, and the executive typewriter. Further experience with calculators in the computation of business forms.
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 221 Intermediate Accounting I 3 2 4

Emphasis placed on accounting postulates and principles, and contemporary practices and forms in the development of financial statements. Working capital accounts are carefully analyzed.
Prerequisite: BUS 120; 121.

BUS 222 Intermediate Accounting II 3 2 4

Continuous emphasis on development of financial statement information with special attention given to noncurrent assets and liabilities. Investment in stocks and bonds; acquisition and

depreciation of plant and equipment; and issuance of bonds is covered.
Prerequisite: BUS 221

BUS 223 Intermediate Accounting III 3 2 4

Emphasis placed on the development of the stockholders equity section of the balance sheet. Attention also given to processes used in financial statement analysis. Funds-flow and cash-flow concepts are covered.
Prerequisite: BUS 222.

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 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 234 Personnel and 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 put 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 259 Business Law 2 2 3

A study of the powers, policies, methods, and procedures used by the various Federal, State and local administrative agencies in promoting the constitutional and statutory limitations on these bodies and judicial review of administrative action.

Prerequisite: BUS 115; 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 0 3

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 timekeeping 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 the 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 283 Business Statistics II 4 3 5

An extension of BUS 282 involving more complex classical statistical concepts and an introduction to Bayseian probability. Prerequisite: BUS 282.

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 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 105 Introduction to Programming—Fortran I 4 3 5

An introductory course in computer programming logic using Fortran as the programming language. Designed for the student who plans to pursue the degree in Electronic Data Processing. Flow-charting and decision tables are taught, using the Fortran Language structure, statements and programming methods for a logical approach to computer programming. The

student will develop program logic and write Fortran programs for solving sample problems.

EDP 107 Compiler Language—Fortran II 2 5 4

An extension of EDP 105, the student develops additional programming skills in writing Fortran programs using the more complex logic techniques and methods learned concurrently.
Prerequisite: EDP 105.

EDP 109 Compiler Language—Cobol I 4 3 5

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 112.

EDP 112 Introduction to Computer Systems 3 3 4

An introductory course in Computer Systems for the student who plans to pursue the degree in Electronic Data Processing. Covers the general area of computer terminology and concepts with concentrated class and laboratory work in the area of unit-record equipment.

EDP 117 Compiler Language (FORTRAN) 2 4 4

An introductory course in the Intermediate Fortran Programming Language as it specifically applies to problems occurring in the various engineering technology curricula. This will include a study of the language structure, statements, and programming methods so that the student will be able to develop the logic and write Fortran programs pertaining to his or her particular discipline.

EDP 198 Keypunch Operations 1 6 3

A course in the knowledge of the operating procedures of the IBM-029 keypunch. Emphasis is placed on obtaining the basic speed requirements of a keypunch operator. Emphasis is also placed on the day to day activities, operations, and decisions that a keypunch operator is expected to make on the job.

EDP 199 Computer Operations 1 6 3

A skills course in the operation of a disc oriented computer system. This will involve not only the manipulation of the hard-

ware but also the understanding of the basic software systems including compilers, utilities, and basic assembler programming.

EDP 201 Compiler Language—Cobol II 2 5 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 204 Compiler Language—Cobol III 2 5 4

A group project programming course organized under the data processing organizational environment of a business; a simulation of a business Data Processing Department and how it operates within the company.

Prerequisite: EDP 201.

EDP 205 Linear Programming and C.P.M. 2 5 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 problem solution using available library programs.

Prerequisite: EDP 107, MAT 107.

EDP 207 Assembler Language—Neat-3-I 4 3 5

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 appropriately assigned problems.

EDP 208 Assembler Language—Neat-3-II 2 5 4

An extension of EDP 207. The student will develop more complex program logic and write programs using more complex and sophisticated data files and input/output devices.

Prerequisite: EDP 207.

EDP 216 Data Processing Project 2 9 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.

EDP 223 Computer Systems II 4 3 5

A study of computer systems involving the multiple program system, plus other system concepts such as feasibility studies, scheduling and system implementation.
Prerequisite: EDP 105, EDP 107, EDP 112.

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.

HOR 150 General Plant Horticulture 3 2 4

A study of the basic concepts and principles of sexual and asexual propogation of plants. Emphasis is given to those propogation methods widely used in the nursery industry. Techniques are learned through practical laboratory exercises involving the use of a variety of soil media and plant materials.

HOR 254 Plant Propogation 3 2 4

A study of the fundamental principles involved in the production of plants from seed, leaves and stems, including the various techniques that are useful in the propogation of plants.

ENGINEERING TECHNOLOGY EDUCATION

Course Descriptions

AHR 95 Shop Practice (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 101 Fundamentals of Refrigeration I 4 3 5

Terminology, laws of refrigeration, absolute temperature and pressures, energy conversion units, heat and its measure-

ment, 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-type 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 2 6 4

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 & 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 labs, 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.

CIV 219 Strength of Materials & Properties of Engineering 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.
Prerequisite: 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;coordinating trades on building construction. Operations, charts, and practical application of Critical Path Method (CPM) for con-

struction planning, scheduling, and "timecost" determination.
Corequisite: CIV 223.
Prerequisite: CIV 217; CIV 219.

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.

CIV 223 Codes, Contracts & 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.

CIV 228 Highway & 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.
Prerequisite: DFT 102; CIV 103; CIV 219.

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 the organization of municipal services, and air pollution standards and controls.
Prerequisite: CIV 103; CIV 228; MAT 103; PHY 101.

CIV 230 Design of Roads & Pavements 3 0 3

The study and evaluation of modern highway and pavement design practices with emphasis on: highway planning and design;

including the practices of the AASHO, N. C. highway commission, and AREA: highway surveys, plans and computations; geometric design, traffic engineering and highway safety; highway drainage; highway economy; in addition, the usual topics of construction and maintenance are integrated when necessary to enhance the practice of design. Railroad civil engineering problems are studied as time permits.
Prerequisite: CIV 101; CIV 103.

CIV 231 Portland Cement & Asphalt Concretes 3 3 4

Study and testing of the composition and properties of cement and asphalt concretes, including cement, asphalt, admixtures and air-entrainment; design and proportioning of cement concrete mixes; design and proportioning of asphalt concrete mixes; methods of placing and curing; standard control tests.

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 Description 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.
Prerequisite: DFT 102; MAT 102.

DFT 207 Design Drafting 2 6 4

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, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem.
Prerequisite: DFT 104; ELC 205; MAT 102; MEC 201; PHY 102.

DFT 212 Jig and 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.
Prerequisite: DFT 211; MEC 201.

DFT 226 Air Conditioning Systems Drawing 0 9 3

Drawing of air conditioning systems and study of related architectural and structural elements. Types of duct installations. Air conditioning and refrigeration layouts, diagrams, and schematics.
Prerequisite: DFT 102; AHR 216.

DFT 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.

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 103 Fundamentals of Electricity 3 3 4

Elementary principles of electricity including the applications of basic laws and network theorems to inductive and capacitive elements with emphasis on alternating current systems. Prerequisite: ELC 101.

ELC 125 Introduction to Basic Logic Circuits 3 0 3

A study of basic logics and binary mathematics, including basic circuits used for their implementation and their applications in elementary digital systems.

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." Prerequisite: MAT 102; PHY 102.

ELN 103 Introduction to Active Devices 1 2 2

A basic study of transistor concepts limiting the scope of study to P-N Junction types. The approach is more descriptive than mathematical. Basic graphs and equations are introduced. Prerequisite: ELC 101.

ELN 104 Active Devices 4 3 5

Study in depth of a variety of active devices. A descriptive and mathematical approach is used with all emphasis on solid state devices.

ELN 106 Passive Networks 2 2 3

Analysis of passive networks under conditions of varying frequency or transient conditions.

ELN 206 Application of Active Devices 4 6 6

Applications of active devices to basic audio amplifiers, radio frequency amplifiers, detectors, modulators, oscillators, and power supplies, which is followed by an introduction of the basic systems.

ELN 209 Active Network Analysis I 3 0 3

A mathematical analysis of single stage circuit in the common configurations of active networks.

Prerequisite: ELN 104; ELN 106.

ELN 211 Active Network Analysis II 4 5 6

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 limitations pertinent to reliable operations are considered.

Prerequisite: ELN 206; ELN 209.

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.

Prerequisite: MAT 103.

ELN 215 Wave Shaping & 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 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 sys-

tems. 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 Mechanisms 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-sinusoidal 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 2 3 3

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.

ENV 112 Atmospheric Air Sampling 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 101, 102, 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 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 Est. 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 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 2 2 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. Func-

tions, 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 2 2 3

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 5 0 5

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 96 Shop Practice (Machine Shop) 2 4 4

Brief overview of machines that are used in the machine shop. Deals primarily with their identification, nomenclature of machine, elementary operation of the lathe, drill press, grinder, and milling machine. Simple projects will apply procedures using this equipment.

MEC 100 Introduction to Plastics Technology 2 4 4

Study of plastics as a class of material classifications, sources, properties, history of the industry, and applications of plastics. Fundamental relationships between properties and end use of plastic materials. Study of the plastics industry and plastic products, as they relate to the environment. Typical processing techniques will be studied.

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 techni-

cian 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 106 Engineering Economics 3 0 3

A study of the time value of money, including operational costs, present value, life of equipment, depreciation rates, economic lot sizes, selection of equipment, and cost studies.

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 111 Dental Hygiene I 4 5 6

An orientation to dental terminology and the history of dentistry and dental hygiene. Introduction to the roles and relationships of the members on the dental health team. Comprehensive study of the principles of the oral inspection; techniques for the oral prophylaxis; dental instruments; soft deposits, dental calculus, and stains; hand and motor-driven polishing techniques; equipment care and maintenance; methods of sterilization; completion of all records, including personal, medical, and dental histories; patient reception, positioning, and dismissal; and

patient instruction in plaque control. Laboratory will be utilized to orient students to instrumentation on manikins. Occasional clinic sessions will be held to practice procedures on student-patient prior to actual work on patients.

DEN 112 Dental Anatomy & Physiology 5 0 5

Study of the structure and function of the permanent dentition, primary dentition and supporting structures. Laboratory experiences consist of studying and identifying models and extracted natural teeth.

DEN 113 Histology & Embryology 2 0 2

Study of the embryonic development of the face and oral cavity, the structures and functions of the primary tissues, and the histology of the teeth and supporting tissues. Emphasis is given throughout to clinical considerations as related to dental hygiene practice.

DEN 121 Dental Hygiene II 1 6 3

Students perform a dental prophylaxis, chart the existing condition of the oral cavity, apply topical fluoride solutions to the teeth and give patient instruction in home-care procedures. Each student is instructed in instrument sharpening, the topical application of an anesthetic, and will be prepared to meet medical and dental emergencies.

Prerequisite: DEN 111; DEN 112.

DEN 122 Head and Neck Anatomy 2 0 2

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

Prerequisite: DEN 112.

DEN 131 Dental Hygiene III 1 6 3

A complete and thorough oral prophylaxis is performed on each patient. All procedures learned in DEN 111 and 121 will be expected to be applied in this course.

Prerequisite: DEN 121.

DEN 132 Dental Health Education 2 0 2

A study of the factual information and methods of instruction employed in teaching dental hygiene in the dental office, com-

munity, and school. Also the study of patients with special needs.
Prerequisite: DEN 121.

DEN 133 Radiology 2 3 3

A study of the nature, properties and use of x-rays, precautionary measures when using x-rays and the techniques of film placement, cone angulation, processing, mounting of films, and recognition of normal landmarks.

DEN 211 Dental Hygiene IV 1 12 5

A complete and thorough oral prophylaxis is performed on each patient. Proper use of the ultrasonic sealing device is expected in this course.
Prerequisite: DEN 131.

DEN 212 Community Dental Health 3 0 3

A survey of methods used to determine the dental health status of the community and of preventive measures used to improve the dental health of the population. Topics include epidemiological indexes and studies and evaluation of scientific reports and fluoridation.
Prerequisite: DEN 121; 113.

DEN 213 Oral Pathology & Cardiology 3 0 3

Study of the basic pathological processes, physical manifestations of selected diseases, their association with the oral cavity, and common pathological conditions of the teeth and oral cavity. Visual differentiation between normal and abnormal tissues.
Prerequisite: BIO 108; BIO 113.

DEN 214 Periodontology 3 0 3

The study of the diseases of the periodontium and methods of treatment of these diseases.
Prerequisite: DEN 113; 131.

DEN 221 Dental Hygiene V 1 12 5

A complete and thorough oral prophylaxis is performed on each patient. All procedures previously learned must be demonstrated.
Prerequisite: DEN 211.

DEN 222 Dental Materials in Dental Hygiene Practice 3 2 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.

DEN 223 Dental Pharmacology & Anesthesiology 2 0 2

Lecture coverage of the properties, dosage and effects of therapeutic drugs, palliative preparations and anesthetics. Emphasis is placed on pharmacological agents used in dentistry.
Prerequisite: CHM 110.

DEN 224 Office Management 1 0 1

Introduction to all phases of dental office administration including appointment control, patient records, inventory control, billing, filing and banking.

DEN 231 Dental Hygiene VI 0 15 5

A complete and thorough oral prophylaxis is performed on two patients per clinic session.
Prerequisite: DEN 221.

DEN 232 Ethics & Jurisprudence 1 0 1

Lecture coverage of professional ethics and laws and regulations related to the practice of dentistry and dental hygiene. Includes a study of the present role and possible future role of dental hygienists in dentistry.
Prerequisite: DEN 221.

DEN 233 Dental Specialities 2 0 2

Discussion with students by dental specialists of the scope of specialty practices and the utilization of dental hygienists in such practices. Includes the methodology of rendering dental and dental hygiene services to groups with special needs.
Prerequisite: DEN 221.

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 behavioral science principles. Basic concepts of nutrition, growth and development from infancy to old age, mental health, and communication skills are included. Nursing I introduces the student to the basic concept of pharmacology.

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

Nursing II (Nursing of Children and Adults, I) increases the student's background in the basic concept of pharmacology and provides a 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 action for specified nursing problems.

Prerequisite: NUR 101; PSY 101; BIO 106.

NUR 103 Nursing III (Nursing of Children and Adults, II) 6 9 9

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 com-

munity. 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.

Prerequisite: NUR 102; BIO 107; PSY 202.

NUR 104 Nursing IV (Nursing of Mothers and Infants) 3 6 5

Nursing IV (Nursing of Mothers and 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.

Prerequisite: NUR 103; BIO 108; SOC 101; PSY 202.

NUR 205 Nursing V (Nursing of Children and Adults, III) 6 12 10

Nursing V (Nursing of Children and Adults, III) 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 mental ill patients in the hospital setting and with those persons experiencing behavioral disorders who are being treated on an outpatient level in the community mental health center. Selected clinical experiences will also include patients whose illnesses result in a change in the individual's body image. Opportunity 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 foci of the course is on those physical and mental health problems which interfere with the individual's ability to function

in harmony with the society in which he lives.
Prerequisite: NUR 104; PSY 204.

NUR 206 Nursing VI (Nursing of Children and Adults, IV) 6 12 10

Nursing VI (Nursing of Children and Adults, IV) 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.
Prerequisite: NUR 205.

NUR 207 Nursing VII (Nursing of Children and Adults, V) 6 12 10

Nursing VII (Nursing of Children and Adults, V) 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) 3 0 3

Nursing VIII (Professional Development) 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.

NUT 101 Nutrition 5 0 5

Study of basic facts from the field of nutrition, with emphasis on applications to the planning of balanced diets to meet the needs of individuals in various life stages. The responsibilities of health workers in promoting good nutrition is stressed.

PNE 93 Introduction to Nursing 3 0 3

This course is designed to introduce and promote a basic understanding and appreciation of nursing as a service to others; to introduce a concept of health and disease; to observe skills and abilities to apply knowledge in the clinical situation.

PNE 1101 Vocational Adjustments I 3 0 3

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.

PNE 1102 Body Structure & Functions 5 0 5

The course consists of a study of the general plan of the body and the nine systems: nervous, skeleton, muscular, circulatory, digestive, respiratory, endocrine, urinary, male and female reproductive systems—designed for understanding the cooperate functions of the total human body. This course also includes a study of microorganisms and their relationship to diseases.

PNE 1103 Nursing Skills I 4 10 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 adapted to many situations. Insofar as possible, clinical nursing will coincide with classroom activity at the affiliating hospital in medical and surgical areas.

PNE 1104 Emergency & Disaster Nursing 2 0 2

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.

PNE 1105 Nutrition & Diet Therapy 3 0 3

This course is designed to give the Practical Nurse Student an understanding of good nutrition 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.

PNE 1106 Nursing Skills II 3 4 5

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.

PNE 1107 Medical & Surgical Nursing I 5 15 10

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 areas with continued depth training.

PNE 1108 Nursing Care of Children 3 7 6

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

PNE 1109 Nursing Care of Mother & Newborn 3 7 6

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

PNE 1110 Medical & Surgical Nursing II 5 0 5

This course is designed to give 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, genitourinary, reproductive, nervous systems, conditions of the eye, ear, skin, and female breast conditions.

PNE 1111 Drugs & Administration 3 0 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.

PNE 1112 Medical & Surgical Nursing III 0 21 7

This part of the training period deals with actual nursing care experiences 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.

PNE 1113 Geriatrics 3 4 5

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.

PNE 1115 Mental Health 3 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.

PNE 1116 Vocational Adjustments II 2 0 2

This course is designed to help the Practical Nurse Student to acquire 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.

VOCATIONAL EDUCATION

Course Descriptions

AHR 95 Shop Practice (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 Domestic & Commercial Refrigeration 4 5 6

Application of fundamentals and theory acquired in previous course. Emphasis is placed on repair of domestic refrigerators, freezers, window air conditioners. Installation of popular commercial systems are made. The student learns to use catalogs and data sheets to select proper equipment for a given purpose.
Prerequisite: AHR 1121.

AHR 1125 Principles of Air Conditioning 5 3 6

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.

AHR 1129 Air Conditioning Shop Practice I 3 6 5

Constant application of 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.
Prerequisite: AHR 1136; AHR 1141; AHR 1142; AHR 1146.

AHR 1130 Heat Pumps 3 3 4

Basic principles, coefficient of performance; reversing valves, unit controls, defrosting, heat capacity limits, supplementary strips, balance points and comparative cost of operation.
Prerequisite: AHR 1125; AHR 1146.

AHR 1132 Chilled Water & Absorption Systems 3 3 4

Principles of water chilling, chiller components, chiller application; basic absorption cycle, absorption controls, and application.
Prerequisite: AHR 1122; AHR 1125.

AHR 1133 Air Conditioning Shop Practice II 3 6 5

Emphasis on pipe work and water circuits with boilers and chillers; control problems with heat pumps, chillers and direct expansion air conditioning systems; fabrication and installation of motorized dampers automatically operated; stengthen 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 1137 Air Conditioning Heating Code 3 3 4

Code interpretation of the minimum standards, provisions and requirements for reasonable safety, stable design and methods of installation of air conditioning, heating, refrigeration and ventilation systems installed within the state of North Carolina.

AHR 1140 Oil Burner Service 3 3 4

Pot burners, low and high pressure gun burners, domestic and commercial equipment; electric controls; service procedures;

efficiency tests; burner application and safety.

AHR 1141 Control Systems I 2 3 3

Review of basic electricity and simple circuitry for controls. System components for special applications. Thermostats, solenoid valves, pressure switches, oil failure controls. Installation and service practice.

AHR 1142 Control Systems II 3 3 4

A continuation of the study of controls for automatic operation of mechanical systems. Motor controllers and starters. Motorized dampers and valves. Electronic and pneumatic operations.
Prerequisite: AHR 1141.

AHR 1145 Heating Systems I 5 7 7

Introduction to the components of warm air heating systems. Stress is placed upon sequence of operation and purpose of controls. Heat loss calculations and residential duct layouts are made.

AHR 1146 Heating Systems II 4 6 6

Continuation of AHR 1145 with study of burners and common service problems encountered by the serviceman. The student is introduced to small hydronic systems and familiarizes himself with pumps, piping, valves and boilers.
Prerequisite: AHR 1145.

AHR 1148 Estimating & Contracting 5 2 6

Take-off of material, equipment, and labor. Specifications, plans, contracts, bids, bonds, buying and selling.
Prerequisite: AHR 1125; AHR 1146.

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.

ARC 1112 Architectural Estimating 3 0 3

The study of estimating tasks involved in architectural construction including approximate and detailed estimates. Instruction will be given in the areas of materials cost, labor cost, plant and equipment cost, overhead cost, profit, and bid and contract procedures.

Prerequisite: ARC 1265.

ARC 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.

ARC 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.

ARC 1226 Graphic Communications I 1 3 2

The study of systems of graphic communications including orthographic projection and including the pictorial group; axonemetric, oblique and perspective. Instruction will also be given in methods of graphic reproduction.

ARC 1227 Graphic Communications II 1 3 2

A continuation of ARC 1226 (Graphic Communications I). See course description ARC 1226.

Prerequisite: ARC 1226.

ARC 1228 Graphic Communications III 1 3 2

A continuation of ARC 1227 (Graphic Communications II). See course description ARC 1227.

Prerequisite: ARC 1227.

ARC 1230 History of Architecture 3 0 3

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.

ARC 1231 Arch. Drafting & Design I 1 3 2

The study of methods of drafting architectural working drawings; the design process and their relationship to each other. Also instruction will be given in drafting room organization and operation in conjunction with the architectural office.

ARC 1232 Arch. Drafting & Design II 2 3 3

A continuation of ARC 1231 (Architectural Drafting & Design I). See course description ARC 1231.
Prerequisite: ARC 1231.

ARC 1233 Arch. Drafting & Design III 3 9 6

A continuation of ARC 1232 (Architectural Drafting and Design II). See course description ARC 1231.
Prerequisite: ARC 1231.

ARC 1234 Arch. Drafting & Design IV 2 9 5

A continuation of ARC 1233 (Architectural Drafting and Design III). See course description ARC 1231.
Prerequisite: ARC 1233.

ARC 1235 Arch. Drafting & Design V 3 6 5

A continuation of ARC 1234 (Architectural Drafting and Design III). See course description ARC 1231.
Prerequisite: ARC 1234.

ARC 1236 Arch. Drafting & Design VI 5 9 8

A continuation of ARC 1235 (Architectural Drafting and Design V). See course description ARC 1231.
Prerequisite: ARC 1235.

ARC 1238 Arch. Environmental Systems I 3 3 4

The study of architectural environmental systems with emphasis upon a comparison of different types of heating, air conditioning and electrical systems, their implications for architec-

tural drafting room production of mechanical drawings.
Prerequisite: ARC 1265.

ARC 1239 Arch. Environmental Systems II 3 3 4

A continuation of ARC 1238 (Architectural Environmental Systems I). See course description ARC 1238.
Prerequisite: ARC 1239.

ARC 1241 Architectural Presentations I 1 3 2

The study of methods of production of architectural presentations. Instruction will be given in architectural delineation and architectural models.

ARC 1242 Architectural Presentations II 1 3 2

A continuation of ARC 1241 (Architectural Presentations I). See course description ARC 1241.
Prerequisite: ARC 1241.

ARC 1243 Architectural Presentations III 1 3 2

A continuation of ARC 1242 (Architectural Presentations II). See course description ARC 1241.
Prerequisite: ARC 1242.

ARC 1244 Architectural Presentations IV 1 3 2

A continuation of ARC 1243 (Architectural Presentations III). See course description ARC 1241.
Prerequisite: ARC 1243.

ARC 1245 Architectural Presentations V 1 3 2

A continuation of ARC 1244 (Architectural Presentations IV). See course description ARC 1241.
Prerequisite: ARC 1244.

ARC 1246 Architectural Presentations VI 1 3 2

A continuation of ARC 1245 (Architectural Presentations V). See course description ARC 1241.
Prerequisite: ARC 1245.

ARC 1250 Site Surveying & Site Development 3 5 5

A study of site improvement methods including basic surveying instrumentation and topography, analysis and control of storm drainage, traffic flow and vehicular access, site design and landscaping.

ARC 1251 Structural Systems 2 6 4

A comparative study of structural systems including timber, steel, and concrete with emphasis upon structural behavior, economics and drafting room production of structural drawings. Prerequisite: ARC 1265.

ARC 1264 Mat. & Methods of Arch. Constr. I 3 9 6

Materials used in architectural construction will be studied. Their limitations as affected by the nature and the material, economic values, and codes will be stressed. Instruction will also be given in methods of residential and commercial construction.

ARC 1265 Mat. & Methods of Arch. Constr. II 3 6 5

A continuation of ARC 1264 (Materials and Methods of Architectural Construction I). See course description ARC 1264. Prerequisite: ARC 1264.

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 carpenter's 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 sheating 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 require-

ments of the Federal Housing Administration and the North Carolina State Code.
Prerequisite: CAR 1103.
Corequisite: CAR 1104.

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.

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 and schematics, and for describing objects in the graphic language.

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 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 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 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.

Prerequisite: DFT 1180; DFT 1181.

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.

Prerequisite: None.

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 thyratron tubes, and other basic types of systems commonly found in most industries. Prerequisite: ELN 1118.

ENV 1100 Biology-Microbiology 2 3 3

A basic course in biology with emphasis on biological organisms peculiar to water, wastewater treatment processes and stream sanitation. Collection methods, classification procedures and physiological systems are the area of interest.

ENV 1101 Water Laboratory Control 2 6 4

Theory and laboratory technique for control tests of waste purification plant as follows: bacteriology, color, turbidity, hydrogen-ion concentration, alkalinity, hardness, coagulation, fluoride, iron, manganese and detergents. Interpretation and application of test results are stresses.

ENV 1102 Water Plant Operations 3 2 4

Construction features and operational techniques of water pruification processes and equipment. Emphasis is placed on continuity of operation and proper control of treatment chemical dosages for purification purposes. Public health aspects of the population as well as safety of plant operators is part of the instructional material.

ENV 1103 Waste Laboratory Control 2 6 4

Theory and laboratory technique for control tests in wastewater treatment plant operation as follows: solid, dissolved oxygen, oxygen consumed, hydrogen-ion concentration, physical tests and bacterial enumeration. Interpretation and application of test results are stressed.

ENV 1104 Waste Plant Operations 3 2 4

Construction features and operational techniques of purification processes and equipment. Emphasis is placed on operator responsibility in the successful operation of waste water treatment plants. Classroom instruction will be given on campus with several laboratories at local plants.

ENV 1105 Maintenance 2 3 3

Preventive maintenance procedures and records for basic and specialized equipment in water and wastewater plant. Equipment nomenclature is covered in classroom with actual experience in local plants.

ENV 1107 Stream Studies 2 6 4

A study of the natural purification processes that occur in streams by chemical and biological tests. Emphasis is placed on methods of evaluating streams at various locations and determining the waste assimilating capacity of a stream.

ENV 1108 Control Systems 3 3 4

Application and operation of hydraulic, pneumatic, mechanical, electrical and electronic control systems utilized in water and wastewater treatment plants. Calibration and limitations of various types of equipment are presented.

ENV 1109 Water and Waste Distribution 3 3 4

Methods of sizing, maintaining and constructing collection systems for wastewater and distribution systems for potable water supplies. Purposes and construction details of appurtenances and special structures are included in the instructions.

ENV 1110 Introduction to Ecology 2 3 3

An introductory course designed to demonstrate some of the many systems employed in connection with environmental manipulation and overall protection for the public's health. Some of the systems discussed concern methods of disease transmission, protection of ground water, insect and rodent control, liquid and solid waste disposal, swimming pool sanitation and industrial hygiene.

ENV 1111 Industrial Wastes 2 3 3

Sources and effects of industrial waste on streams and on waste plants. Methods to reduce problems with particular wastes at industry and waste treatment plants.

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: MAT 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, nomenclature 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 turrent 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 turrent 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 1107 Numerical Control in Manufacturing 2 3 3

Numerical control using the slo-syn control unit with circular interpolation on the standard milling and drilling machine.

An introduction to concepts in numerical control machining and the role it holds in modern manufacturing. Deals with point to point positioning for drilling operations, straight line milling operations and contour milling operations. The command language and programming procedures as they apply to this particular unit will be applied.

MEC 1112 Machine Shop Processes 1 6 3

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 plastics, 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 and 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 turrent 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 education 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 Stream 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 12 7

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 Chassis & 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 4 6 6

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 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 2 0 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 Tuneup 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 1102.

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 designed 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 1185 Front-End Alignment 3 3 4

This course covers in depth, Steering Geometry, Steering Linkage and Front Suspension Systems. The braking system is studied and all phases of hydraulic and power brakes are covered. The use of special equipment such as front-end machines, brake-drum lathes and Honing equipment is thoroughly studied. Much emphasis is placed on the practical aspects of service and repair procedures in this course.

PME 1188 Small Gasoline Engines 3 3 4

Develop basic skills and knowledge in the principles and techniques involved in the operation, maintenance and repair of small gasoline engines. Safe work habits will be emphasized and quality workmanship developed.

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. 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.

WLD 95 Shop Practice (Welding) 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 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, trepanning, 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 mag-naflux.

Prerequisite: WLD 1120; WLD 1121.

WLD 1120 Oxyacetylene Welding & Cutting 3 9 6

Introduction to the history of oxyacetylene 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 metal alloys by the arc welding process. After the student is capable of running 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.

Prerequisite: WLD 1120.

WLD 1122 Commercial & Industrial Practice 3 9 6

Designed to build skills through practices in simulated 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 nondestructive tests and inspection.
Prerequisite: WLD 1120; WLD 1121; WLD 1124.

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.
Prerequisite: WLD 1120, WLD 1121.

WLD 1124 Pipe Welding 4 14 8

Designed to provide practice in the welding of 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 1120; 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 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 3 0 3

The preparation and use of materials and equipment. A study of color including the color wheel and its application in the use of oil pigments. The first steps: choice of subject for painting, composition, the drawing on the prepared canvas, and techniques including ala prima and monochrome, underpainting, glazing and varnishes, the care of colors, brushes and palettes.

ART 104 Art Appreciation 3 0 3

A course to establish an understanding of art, to develop an appreciation for the relationship between art and man, and to study art in a cultural environment.

ART 105 Ceramics 3 0 3

A basic course in the processes of ceramics as a fine art with an introduction to the potters wheel.

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 106 Human Anatomy & Physiology I 4 3 5

A course in anatomy and physiology of the human body with special emphasis on the morphological and physiological aspects of the body as an integrated whole, including cellular biology to organogenesis, with special emphasis on the skeletal, muscular and nervous systems. Designed laboratory experiments will take the student through the dissection of the anatomies of the cat and fetal pig with an insight in the comparative anatomy of the human body.

BIO 107 Human Anatomy & Physiology II 4 3 5

A continuation of BIO 106 Anatomy and Physiology I of the human body with the student completing the body as an integrated whole. Special emphasis will include the circulatory, respiratory, digestive, urinary, reproductive, and endocrine systems. Designed laboratory experiments will take the student through the dissection of the anatomies of the cat and fetal pig with an insight in the comparative anatomy of the human body. Prerequisite: BIO 106.

BIO 108 Microbiology 5 3 6

A basic course in microbiology with emphasis on microorganisms and laboratory procedures for the identification, differentiation, eradication and preservation of the microbes both pathogenic and non-pathogenic. The use of chemical, physical and biological agents to accomplish the goals as emphasized.
Prerequisite: BIO 107.

BIO 113 General Pathology 3 0 3

A study of differentiation between normal and abnormal tissues. Basic pathological processes and physical manifestations of selected diseases are discussed.
Prerequisite: BIO 106; 107; 108.

BIO 201 Biology I 3 2 4

An introduction to contemporary and traditional biological concepts.

BIO 202 Biology II 3 2 4

A continuation of BIO 201.

Prerequisite: BIO 201.

CHEMISTRY

CHM 93 Chemistry I 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.

CHM 101 Chemistry 3 2 4

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.

CHM 110 Fundamentals of Biochemistry 4 2 5

The application of basic chemical concepts to biological systems and a consideration of the chemical composition and metabolic pathways of lipids, carbohydrates, proteins and other compounds of biological significance.

CHM 185 Chemistry 3 0 3

Introduction of the physical and chemical properties of substances, chemical changes, elements, compounds, gases, atomic structure, electro chemistry 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.

ECO 104 Economics II 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 economics 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 demand. The role of government in the economy, a look at such problems as governmental services, 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 Economics 3 0 3

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 Composition and Grammar 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 95 Vocabulary and Spelling I 3 2 4

Designed to teach the student the fundamentals of vocabulary improvement and the essentials of good spelling.

ENG 96 Vocabulary and Spelling II 3 2 4

This course is designed to strengthen the student's word-attack and spelling skills and to improve his ability to punctuate.

ENG 97 Vocabulary and Spelling III 3 2 4

This course is designed not only to increase the student's vocabulary and reinforce his spelling skills but also to give him a working knowledge of the principles of rhetoric.

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 students. Practical application in the preparation of a full-length report is required of each student at the end of the term. This report must relate to the student's specific curriculum.

Prerequisite: ENG 102.

ENG 104 Usage and Composition I 3 0 3

The English language considered as a communicative tool including: correct usage and grammar, the study and use of the principles of expository writing, reading for meaning, and the types of literary genre.

ENG 105 English Usage & Composition 3 0 3

An extension of ENG 104 including reading, discussing, and writing themes clearly. Subject matter is drawn from sources considered appropriate by the instructor.

Prerequisite: ENG 104.

ENG 106 World Literature I 3 0 3

A study of the parallel developments of literary movements and great writings within the world's great cultures.

Prerequisite: ENG 104, ENG 105.

ENG 107 World Literature II 3 0 3

A continuation of ENG 106.

Prerequisite: ENG 106.

ENG 204 Oral Communications 3 0 3

A study of basic concepts and principles of oral communications to enable 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. Particular attention is given to conducting meetings, conferences, and interviews.

Prerequisite: ENG 103.

ENG 206 Business Communications 3 0 3

Develops skills in the techniques of writing effective communications. Emphasis is placed on correct procedure in writing the inquiry, sales, credit, collection, adjustment, complaint, order, acknowledgement, and remittance letters typical of the business office.

Prerequisite: ENG 103 or equivalent; BUS 102.

ENG 209 World Literature III 3 0 3

A continuation of ENG 107.

Prerequisite: ENG 107.

ENG 210 American Literature I 3 0 3

An exploration into the American cultural atmosphere as it developed from the earliest Colonial times to ca. 1860 through critical analysis of its literature and history.

Prerequisite: ENG 104; ENG 105.

ENG 211 American Literature II 3 0 3

An examination of the American literary culture from 1860 to the present.

Prerequisite: ENG 210.

ENG 1100 Reading Improvement 2 0 2

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 Communicative Skills: Grammar 3 0 3

This course is designed to aid the student in the improvement of self-expression in written composition and oral usage. Emphasis is on grammar, diction, sentence structure, punctuation, and spelling. This course is intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations at work and in social life.

ENG 1102 Industrial Communications 3 0 3

This course stresses the development of one's ability to communicate 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 104 Western Civilization I 3 0 3

An outline in depth tracing the western civilization heritage from its pre-Greek origins to 1660.

HIS 105 Western Civilization II 3 0 3

A continuation of western civilization from 1660 to 1850.
Prerequisite: HIS 104.

HIS 106 Western Civilization III 3 0 3

A continuation of western civilization from 1850 to the present.

HIS 201 American History I 3 0 3

A survey of American history from the discovery of America to the outbreak of the Civil War.

HIS 202 American History II 3 0 3

A continuation of HIS 201 from the outbreak of the Civil War through WWI.
Prerequisite: HIS 201.

HIS 203 American History III 3 0 3

A continuation of HIS 202 from the close of WWI to the present.
Prerequisite: HIS 202.

MATHEMATICS

MAT 85 Business Mathematics 3 2 4

A fundamental course in mathematical operations and their application to business problems. The course includes a basic review of mathematical concepts. Topics that are included are interest, payrolls, taxes, pricing, commissions and other pertinent uses of mathematics in the business field.

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, relationship between whole numbers, common fractions, and decimal fractions. Practical problems illustrating each operation.

MAT 92 Mathematics II, Level I 5 0 5

The meaning of percent. Relationship between percent, 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 of system, numbers in various bases, operations with integers, addition, subtraction, multiplication, division, common fractions, decimal fractions, percentages, 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.

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 106 Electronic Data Processing Math 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 nonlinear equations, linear and nonlinear function, linear inequalities, and common logarithms are studied. Emphasis throughout the course is placed on the orderly procedures in problem solving.

MAT 107 Electronic Data Processing Math II 5 0 5

A study of topics such as: linear and nonlinear 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 108 Introduction to College Mathematics 5 0 5

Essential and basic principles of mathematics including a study of elementary set theory and mathematical logic.

MAT 109 College Algebra 5 0 5

A logic, reasoned development of a real number system with emphasis on traditional arithmetic properties and operations, basic concepts of algebra and informal geometry.

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 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 Algebra 5 0 5

Basic concepts and operations of algebra; historical background of our base-10 number system; algebraic operations: addition, 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 Geometry 3 0 3

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 of plane figures, volumes of solids. Geometric principles are applied to shop operations.

MAT 1104 Trigonometry 3 0 3

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; percent-

ages; 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 104 Music Appreciation 3 0 3

A course designed to instill and to further the development of knowledge, understanding, and the appreciation of good music. Emphasis given to the historical development of music, pertinent criticism, forms of music, listening, and the relationship of music to a general cultural development.

MUS 107, 108, 109 Concert Chorus 3 0 3

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 studied and incorporated into the choral program. Time in class will be spent learning good vocal techniques and skills of singing, etc.

PHILOSOPHY

PHI 101 Introduction to Philosophy 3 0 3

An introductory course designed to give a philosophical perspective to the nature of and the scope of questions arising in the ever-changing yet constant areas of life and the problems and the philosophical answers which guide men's lives.

PHI 102 Introduction to Logic 3 0 3

An introduction to systematic logic systems (e.g., Syllagistic Reasoning) in which the principles and basic patterns of correct thinking are developed.

PHYSICAL EDUCATION

PED 111 First Aid 2 0 2

A study of theory and practice in giving the immediate and temporary aid to a victim of sudden illness or the victim of an accident.

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 concepts, 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 divisions included are solids and their characteristics, liquids in motion and at rest, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course.

PHY 102 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 application are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas.

Prerequisite: MAT 101; PHY 101.

PHY 104 Physics: Light and 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.

Prerequisite: 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 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.

Prerequisite: 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 method in psychology, theory of statistical concepts, intelligence, motivation, emotions and learning.

PSY 203 Psychology (Human Growth and 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 204 Abnormal Psychology 3 0 3

The principle 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.
Prerequisite: None.

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 Sociology I (Introduction to Sociology) 3 0 3

A study of the fundamental principles and concepts of sociology, with emphasis on contemporary American Institutions in relation 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 the sexes, and factors contributing to or mitigation against successful, stable marriages. Prerequisite: SOC 101.

SOCIAL SCIENCES

SSC 95 Social Science Elective 5 0 5

An overview of the social structure of American society as it relates to the individual, and his position as a functional participant within the confines of his culture.

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.

Musician-in-Residence