

# FAYETTEVILLE TECHNICAL INSTITUTE

1975-77





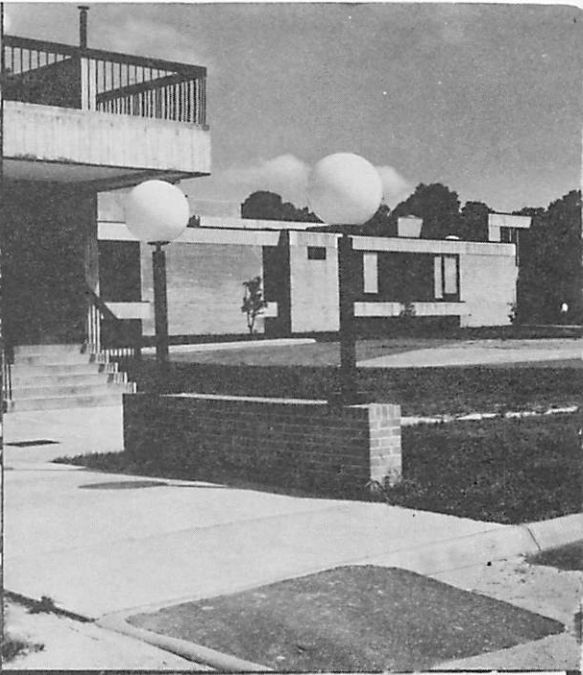
# FAYETTEVILLE TECHNICAL INSTITUTE

1975-1977

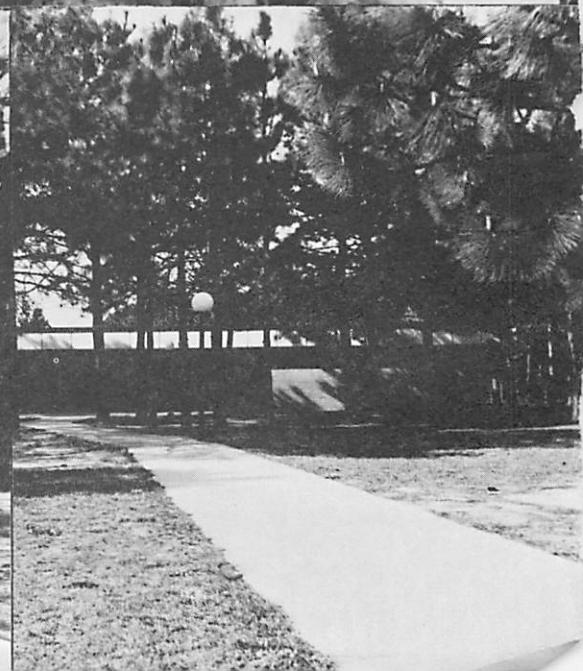
CATALOG

VOLUME V

P. O. BOX 5236, FAYETTEVILLE, NORTH CAROLINA 28303  
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# FAYETTEVILLE TECHNICAL INSTITUTE





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## Greetings from the President



Fayetteville Technical Institute, a charter member of the North Carolina Department of Community Colleges, was founded in September of 1961. Since its initial enrollment of 58 full-time curriculum students, FTI has grown and expanded its facilities to meet the challenges imposed by an ever-increasing and changing society. The citizens of Fayetteville and Cumberland County have witnessed and have been a part of a tremendous growth pattern during the past fourteen years.

Many changes have occurred over these years in the areas of curriculum, physical facilities, faculty, and students. Without the full cooperation and enthusiasm shared by the citizens of this area, these changes would not have been possible.

FTI has touched the lives of many thousands of citizens seeking educational opportunities. The educational needs of these people vary from the highly skilled technology subjects to their leisure and avocational desires. We have made a determined effort to meet the needs of this area and will continue to offer educational programs to accommodate the ever-changing and complex society in which we live and work.

Howard E. Boudreau, President  
Fayetteville Technical Institute.

# ACADEMIC CALENDAR 1975-76

## Fall Quarter

Registration for evening students	August 5 & 6
Registration for second-year students	September 2
Orientation for beginning and freshmen students	September 2
Registration for beginning and freshmen students	September 3
Classes begin for all students	September 4
Last day to drop-add course	September 10
Last day of Fall quarter	November 19

## Winter Quarter

Registration for evening students	November 4-5
Registration for second-year students	November 24
Registration for first-year students	November 24
Classes begin	November 25
Last day to drop-add courses	December 3
Last day of Winter quarter	February 24
Thanksgiving Holidays—November 27 - 30	
Christmas Holidays—December 22-January 1	
Last day of classes—December 19	
School resumes—January 2	

## Spring Quarter

Registration for evening students	February 10-11
Registration for all Day students	March 1
Classes begin	March 2
Last day to drop-add courses	March 8
Last day of Spring quarter	May 19
Graduation Exercises & President's Reception	May 22
Easter Holidays—April 16-19	
Last day of classes—April 15	
School resumes—April 20	

## Summer Quarter (1st Session)

Registration	May 24
Four Quarter Curriculum Classes Begin	May 25
Classes begin (1st session)	May 31
Late Registration ends	May 31



Last day of classes	July 7
July 4th Holidays—July 1-5	
Last day of classes—June 30	
School resumes—July 6	
Registration (2nd session)	July 8
Classes begin	July 12
Four Quarter Curriculum last day of classes	August 6
Last day of classes	August 13
Graduation Exercises & President's Reception	August 7
Labor Day Holidays—September 3-6	

## ACADEMIC CALENDAR 1976-77

### Fall Quarter

Registration for evening students	August 3 & 4
Registration for second-year students	August 30
Registration for beginning and freshmen students	August 30
Orientation for beginning and freshman students	August 31
Classes begin for all students	September 1
Last day to drop-add course	September 9
Last day of Fall quarter	November 18
Labor Day Holidays—September 3-6	
Last day of classes—September 2	
Classes resume—September 7	

### Winter Quarter

Registration for evening students	November 2 - 3
Registration for second-year students	November 23
Registration for first-year students	November 24
Classes begin	November 29
Last day to drop-add course	December 3
Last day of Winter quarter	February 24
Thanksgiving Holidays—November 25-28	
Last day of classes—November 24	
School resumes—November 29	
Christmas Holidays—December 22-January 3	
Last day of classes—December 21	
School resumes—January 4	

### **Spring Quarter**

Registration for evening students	February 8 - 9
Registration for second-year students	March 1
Registration for first-year students	March 2
Classes begin	March 3
Last day of Spring quarter	May 20
Last day to drop-add courses	March 9
Graduation Exercises and President's Reception	May 24
Easter Holidays—April 8-11	
Last day of classes—April 7	
School resumes—April 12	

### **Summer Quarter (2 Sessions)**

Registration for all students	May 30
Classes begin (1st session)	
Last day of Classes	July 5
July 4th Holidays—July 2-4	
Last day of classes—July 1	
School resumes—July 5	
Registration	July 11
Classes begin (2nd session)	July 12
Late Registration ends	July 14
Four Quarter Curriculum last day of classes	August 10
Last day of classes all others	August 15
Graduation Exercises and President's Reception	August 13
Labor Day Holidays—September 3-5	

## **ACADEMIC CALENDAR 1977-78**

### **Fall Quarter**

Registration for evening students	August 9 & 10
Orientation for beginning and freshmen students	September 7
Registration for second-year students	September 6 & 7
Registration for beginning & freshmen students	September 6 & 7
Classes begin for all students	September 8
Last day to drop-add courses	September 15
Last day of Fall quarter	November 23

**Labor Day Holidays—September 2-5**

**School resumes—September 6**

**Winter Quarter**

Registration for evening students

November 8 & 9

Registration for second-year students

November 29 & 30

Registration for first-year students

November 29 & 30

Classes begin

December 1

Last day to drop-add courses

December 8

Last day of Winter quarter

February 24

**Thanksgiving Holidays—November 24-27**

**Christmas Holidays—December 22-January 1**

**Last day of classes—December 21**

**School resumes—January 2**

**Spring Quarter**

Registration for evening students

February 13 & 14

Registration for second-year students

Feb. 28 & Mar. 1

Registration for first-year students

Feb. 28 & Mar. 1

Classes begin

March 2

Last day to drop-add courses

March 8

Last day of Spring quarter

May 19

Graduation exercises & President's  
reception

May 23

**Easter Holidays—March 24-27**

**Last day of classes—March 23**

**School resumes—March 28**

**Summer Quarter (1st Session)**

Registration for evening students

May 9-10

Registration for day students

May 30

Four Quarter Curriculum classes begin

May 31

Classes begin (1st session)

May 31

Last day of classes

July 6

**July 4th Holidays—July 3-4**

**Last day of classes—June 30**

**School resumes—July 5**

**Registration (2nd Session)**

July 11

**Classes begin**

July 12

**Four Quarter Curriculum Last day of  
classes**

Aug. 10

**Last day of classes—2nd session**

Aug. 15

**Graduation Exercises and President's  
Reception**

August 18

# FAYETTEVILLE TECHNICAL INSTITUTE

## BOARD OF TRUSTEES

Harry F. Shaw, Chairman  
John T. Henley, Vice-Chairman  
Howard L. Hall, Secretary

## APPOINTMENTS

<u>Name</u>	<u>Expiration Date</u>	<u>Appointed By</u>
William C. Beard, Jr.	June 30, 1977	Board of County Commissioners
Mrs. Daniel S. Currie, Jr.	June 30, 1979	Board of County Commissioners
Roscoe L. Blue	June 30, 1981	Board of County Commissioners
Steve Satsky	June 30, 1983	Board of County Commissioners
Neill A. Currie, Jr.	June 30, 1977	City and County School Boards
Harry B. Stein	June 30, 1979	City and County School Boards
John T. Henley	June 30, 1981	City and County School Boards
Howard H. Hall	June 30, 1983	City and County School Boards
Harry F. Shaw	June 30, 1977	Governor
F. C. Franklin	June 30, 1979	Governor
David G. Wilson	June 30, 1981	Governor
To be appointed	June 30, 1983	Governor

## ATTORNEY

L. Stacy Weaver, Jr.

## ADMINISTRATION STAFF

Howard E. Boudreau B.S., M.Ed., Colorado State University	President
Samuel Lee Johns Maj. (ASA) Ret.	Administrative Assistant to the President
William E. Sease B.S., M.Ed., Virginia Polytechnic Institute. Doctoral Study—North Carolina State University	Vice President for Academic Affairs
William O. Cameron B.S., M.Ed., North Carolina State University. Doctoral study—North Carolina State University	Dean of Instruction
Arthur T. Cavano B.A., M.A., Ph.D., University of North Carolina	Associate Dean of Instruction, General Education
Thaddeus Sexton, Jr. B.S., M.Ed., North Carolina State University	Associate Dean of Instruction Occupational Education
Betty J. Williamson B.S., M.A., East Carolina University	Associate Dean of Instruction, Learning Resources Center
Charles O. Plummer B.B.A., Campbell College. Graduate study—North Carolina State University	Director of Evening Programs
Thomas R. Koballa B.A., North Carolina State University. Graduate study—North Carolina State University	Associate Dean of Instruction, Off Campus
Niles E. Compton B.S., M.Ed., University of Florida	Dean of Student Affairs



Herbert B. Ayers, Jr. . . . . Associate Dean of Student Affairs  
 B.A., M.Ed., Ed.D., University of Florida

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

Ernest G. Fulghum . . . . . Associate Dean of Student Affairs, Off Campus  
 A.B., M.Ed., East Carolina University

Helen C. Winstead . . . . . Director of Counseling Services  
 B.S., M.Ed., North Carolina State University

William L. Bryant . . . . . Dean of Adult Continuing Education  
 B.S., M.Ed., North Carolina State University

Eli Anderon, Jr. . . . . Associate Dean of Adult Continuing  
 Education (General Adult Education)  
 B.S., M.Ed., North Carolina Central University

Charles G. Smith . . . . . Associate Dean of Extension Education  
 B.S., M.Ed., University of North Carolina

Linwood W. Powell . . . . . Associate Dean of Extension Education, Off Campus  
 B.S., M.Ed., North Carolina State University.  
 Doctoral study—North Carolina State University

Charles E. Koonce . . . . . Associate Dean of Occupational Extension Education  
 B.S., M.Ed., North Carolina State University

William P. Standley . . . . . Dean of Fiscal Affairs  
 CWO (AGC), Ret., San Francisco State University

Raymond E. Parker . . . . . Associate Dean of Fiscal Affairs  
 B.S., University of North Carolina

#### *Computer Center*

Emory H. Thigpen . . . . . Director, Computer Services  
 Burlington Technical Education Center,  
 Central Piedmont Community College

Richard H. Merritt, Jr. . . . . Systems Programmer  
 B.S., Cornell University, A.A.S., Fayetteville Technical Institute

Carolyn Sullivan . . . . . Programmer/Operator  
 Certificate: Victor's Comptometer School

Leola Stelle . . . . . Key punch Operator  
 St. Paul Area Technical Institute

#### *Public Information*

Joann L. MacMillan . . . . . Public Information Officer  
 A.B., M.Ed., North Carolina State University

#### *Student Affairs*

Sheila Locklear . . . . . Registrar

John M. Duncan . . . . . Counselor  
 B.A., M.A., University of North Carolina

Richard P. Beaudry . . . . . Counselor  
 B.S., M.Ed., University of North Carolina

Martha Brooks . . . . . Assistant Registrar, Off Campus

Farris DeLay . . . . . Counselor  
 B.A., Louisiana State University

Joe W. Edwards . . . . . Coordinator of Recruitment and Job Placement  
 B.S., East Carolina University, graduate study—North Carolina State University

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<b>Donald A. McCaskill</b> .....	<b>Counselor</b>
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<b>Ronald L. Miriello</b> .....	<b>Counselor - G.E.D.</b>
B.S., M.A., Appalachian State University	
<b>John W. Wheelous</b> .....	<b>Counselor</b>
B.S., M.A., Appalachian State University	
<b>Eddie S. Smith</b> .....	<b>Counselor</b>
B.S., M.A., North Carolina Central University	
<b>Loula P. Stewart</b> .....	<b>Counselor</b>
B.S., M.Ed., North Carolina State University	
<b>Leonard Shaw</b> .....	<b>Veterans' Affairs Coordinator</b>
B.S., Fayetteville State University	
<b>Catherine Tilghman</b> .....	<b>Counselor</b>
B.A., M.A., Wake Forest University	
<b>Niles E. Compton, Jr.</b> .....	<b>Veterans' Recruiter—Counselor</b>
North Carolina State University	
<b>Alvin R. Pierce</b> .....	<b>Student Activities Coordinator</b>
B.S., M.S., A&T University of North Carolina	
<b>Kenneth F. Hoehn</b> .....	<b>Testing Coordinator</b>
A.A.S., Fayetteville Technical Institute	
<b>Audrey A. Hardy</b> .....	<b>Financial Aid Coordinator</b>
A.A.S., Fayetteville Technical Institute	
<b>Martha Jean Yerian</b> .....	<b>Veteran Affairs Coordinator</b>
A.B., Duke University; M.A., Ohio State University	

## FACULTY

### *Business Education Division*

<b>Henry A. Baran, Jr.</b> .....	<b>Data Processing Lab Technician</b>
A.A.S., Fayetteville Technical Institute, undergraduate study—North Carolina State University	
<b>John E. Brett, Jr.</b> .....	<b>Secretarial Science</b>
B.B.A., M.Ed., Salisbury State College	
<b>Robert L. Carter</b> .....	<b>Accounting</b>
B.S., M.B.A., University of North Carolina	
<b>Walter K. Coker</b> .....	<b>Business Administration</b>
B.S., M.B.A., Syracuse University	
<b>Walter McD. Croom</b> .....	<b>Chairman, Agricultural and Horticulture</b>
B.S., M.Ed., Ed.D., North Carolina State University	
<b>Howell A. Dennis</b> .....	<b>Chairman, Electronic Data Processing Department</b>
B.S., M.S., University of Pittsburgh, Professional Engineer	
<b>Richard E. Esslinger</b> .....	<b>Chairman, Industrial Management</b>
B.S., Carson-Newman College, graduate work—University of Utah	
<b>Thomas J. Hall</b> .....	<b>Business Administration</b>
B.S., M.B.A., University of North Carolina, Chartered Life Underwriter	
<b>William T. Hall, Sr.</b> .....	<b>Accounting</b>
B.S., M.B.A., East Carolina University	
<b>John A. Hoffman</b> .....	<b>Business Administration</b>
B.A., M.A., College of St. Thomas	

Linwood T. Holt ..... Accounting  
B.C.S., Benjamin Franklin University, Certified Public Accountant

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

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

L. Dwain Joyce ..... Secretarial Science  
B.S., M.Ed., University of North Carolina

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

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

Charles M. Oldham ..... Chairman, Marketing and Retailing Department  
B.S., M.B.A., East Carolina University

Jimmy B. Simpson ..... Chairman, Business Administration Department  
B.S., M.B.A., University of Utah

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

John Smith ..... Banking and Finance  
B.S., M.Ed., University of North Carolina

John F. Streit, Jr. .... Chairman, Real Estate Department  
B.S., University of Omaha, graduate study—University of Utah

Robert H. Sutton ..... Electronic Data Processing  
A.B., Elon College, Graduate study—  
North Carolina State University

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

Robert E. Young, Jr. .... Business Administration  
B.S., M.B.A., East Carolina University

#### *Engineering Technology Division*

Granville C. Byrd ..... Electronics Engineering  
B.S., M.S., Rochester Institute of Technology

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

Bethel H. Davis ..... Civil Engineering  
B.C.E., North Carolina State University, Registered Surveyor—Licensed North Carolina Real Estate Broker

Phillip M. Deese ..... Drafting  
Undergraduate study—North Carolina State University

Gordon L. Dwiggin ..... Chairman, Environmental Engineering  
B.S., M.S.S.E., University of North Carolina, Professional Engineer Department

Robert S. Gordon ..... Electronics Engineering  
Undergraduate study—North Carolina State University

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

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

Michael J. Quarterman ..... Drafting  
Diploma, Fayetteville Technical Institute

Eugene H. Shannon ..... Environmental Engineering  
 B.S., M.S.P.H., University of North Carolina, Certified Wastewater Treatment Plant  
 Operator and Water Treatment Facility Operator

*General Education Division*

Geraldine Arnold ..... Chemistry/Biology  
 R.N., St. Elizabeth School of Nursing, A.B., Olivet Nazarene College, graduate study  
 —North Carolina State University

Ann N. Ashford ..... English  
 B.A., M.A.T., Duke University

Dewey Bass ..... Chairman, Science Department-Physics/Chemistry  
 B.A., M.A., University of North Carolina, graduate study—University of North Caro-  
 lina, North Carolina State University, East Carolina University

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 B.S., M.S. Ed., Syracuse University

Janet Bloyd ..... Basic Skills  
 B.A., University of California

Jerome Boggus ..... Chemistry/Physics  
 B.S., N. Georgia College, doctoral study—University of Tennessee

Noni E. Bohonak ..... Mathematics  
 B.S., M.S., University of Tennessee

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 B.S., Murray State University, graduate study—North Carolina State University

Otis L. Byrd ..... Science  
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Ava M. Cappa ..... English—Off Campus  
 B.A., Cabrini College, graduate study—North Carolina State University

Gene E. Collin ..... Mathematics—Off Campus  
 B.S., M.S.Ed., North Illinois University—DeKalb

Thomas P. Coyne ..... Sociology  
 B.A., M.S., North Carolina State University

Fred B. Culler, Jr. .... Psychology  
 A.B., M.A., East Carolina University

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

Joseph H. Foerch, Jr. .... Chairman, Social Science Department  
 B.A., M.Ed., North Carolina State University

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 B.A., M.A., East Carolina University

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 B.S., M.A., East Carolina University

Collins Gray, Jr. .... Biology  
 B.A., M.A., East Carolina University

Calton G. Hall ..... Physics/Chemistry—Off Campus  
 B.S., East Carolina University, graduate study—East Carolina University

Sulo H. Heikkinen ..... Social Science  
 B.A., M.S., A.B.D., North Carolina State University

Richard G. Hicks ..... Mathematics—Off Campus  
 B.M.E., Clemson A&M College



Philip Holladay B.S., M.S., North Carolina State University	Mathematics
Wallace L. Jernigan A.B., M.A.T., University of North Carolina	Mathematics
Doty Johnson B.A., M.A., Illinois Institute of Technology	Art
Larry T. Jones B.S., M.A., East Carolina University	Mathematics
Schridhar Joshi B.A., M.S., University of Bombay	Physics/Chemistry
Vijay S. Joshi Ph.D., Gujarat University, India	Science/Mathematics—Off Campus
Lourdes M. Kilbourn B.S., University of Tampa, graduate study—University of S. Florida	Mathematics—Off Campus
Stephen J. Kublank B.S., M.A., Bowling Green State University, doctoral study—University of Kentucky	Mathematics
William Paul Lewis B.S., M.A., East Carolina University, graduate study—Appalachian State University	Physics/Chemistry
Carol Malcom B.S., M.Ed., Clemson University	Physics/Chemistry/Biology
Joseph McCulloch B.S., M.A., North Carolina State University	Mathematics
Michael McLaurin B.S., M.A.T., Duke University	Chairman, Mathematics Department
Martha McLean B.A., M.A.T., University of North Carolina	English
Anne R. Moore B.A., M.A., East Carolina University, doctoral study—North Carolina State University	Social Science
Larry Norris B.A., M.A., University of Arkansas, doctoral study—North Carolina State University	Chairman, English Department
Susan F. O'Connor B.A., M.A., John Hopkins University	English
Pamolu E. Oldham B.A., M.F.A., Columbia University	English
Nanette Otto B.A., M.A., University of Florida	English
Ronald D. Orban B.S., M.S., Stephen F. Austin State University	Mathematics
Judith M. Pearson A.B., M.A., University of North Carolina	English
Robert Ralph B.S., M.S., The University of Akron	Mathematics
Margaret B. Riddle B.A., M.A., North Carolina State University	English
Frederick C. Salter B.A., M.A., East Carolina University	English
F. Keith Smith B.S., Campbell College, graduate study—North Carolina State University	Biology—Off Campus
Lonnie G. Smith B.S., M.A., Appalachian State University	English
Jesse Waters B.A., M.S., The College of William and Mary	Physics

Claude Watson ..... Mathematics  
 B.S., M.A., North Carolina State University

Mary R. Whatley ..... English—Off Campus  
 B.S., North Georgia College, graduate study—North Carolina State University

Floyd D. Whitehead ..... Psychology  
 B.S., M.Ed., Tufts University

Janet R. Wilkins ..... English  
 B.A., M.A., Appalachian State University

Christine W. Womble ..... Basic Skills  
 B.S., Fayetteville State University

Eugene Wood ..... Chairman, Developmental Studies Department  
 B.S., M.S., A&T University

*Health Occupations Division*

Anna Katheryn Bedinger ..... Associate Degree Nursing and Practical  
 R.N., Burge School of Nursing, Nurse Education Lab Technician  
 Undergraduate—Washburn University

Doris G. Bell ..... Chairman, Nursing Assistant Department  
 R.N., B.S., East Carolina University

Lilli M. Cheek ..... Practical Nurse Education  
 R.N., B.S., Limestone College, graduate study—East Carolina University

Barbara Crox ..... Dental Assistant  
 C.D.A., Milwaukee Area Technical College

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

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

Eileen G. Hoehn ..... Dental Hygiene  
 Registered Dental Hygienist—Ohio State University, undergraduate study—  
 Pembroke State University

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

Jean L. Joublanc ..... Associate Degree Nursing  
 B.S.N., Ohio State University

Eileen Joyner ..... Associate Degree Nursing  
 R.N., B.S., M.Ed., North Carolina State University

Ada M. Leonard ..... Chairman, Practical Nurse Education Department  
 R.N., B.S., Limestone College, graduate study—East Carolina University

Evelyn B. Lyons ..... Associate Degree Nursing  
 R.N., B.S., M.S., Boston College

Nancy A. McHale ..... Associate Degree Nursing  
 R.N., B.S., M.S., University of North Carolina

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

Ethelyn O. Page ..... Chairman, Operating Room Technician Department  
 R.N., Highsmith Hospital School of Nursing

Mary Jane Richardson ..... Chairman, Radiologic Technology  
 Certificate of Radiologic Technology, Medical College of Virginia, Virginia Common-  
 wealth University, B.S.R.N., University of Nebraska Medical School

Mildred Kay Sargent ..... Dental Hygiene  
B.S., University of North Carolina, Registered Dental Hygienist

Sue S. Slaughter ..... Chairman, Dental Assistant Department  
Certified Dental Assistant—University of North Carolina

Linda P. Spruill ..... Dental Hygiene  
A.A.S., Wayne Community College, Registered Dental Hygienist

Mary L. Suddath ..... Chairman, Physical Therapy Department  
M.S., Western Reserve University

Joyce Vaught ..... Associate Degree Nursing  
B.S., M.Ed., University of Miami

*Public Service Education Division*

Kenneth J. Anderson ..... Paralegal  
B.B.A., J.D., Wake Forest University

Darl H. Champion ..... Law Enforcement-Criminal Justice  
B.A., Indiana University of Pennsylvania, graduate study—North Carolina State University

Walter L. Crox ..... Chairman, Funeral Service Education Department  
B.S., University of Tennessee, Graduate of The Cincinnati College of Mortuary Science, Licensed Certified Funeral Director—North Carolina  
Licensed Certified Funeral Director and Licensed Embalmer—Tennessee, Wisconsin, Montana, graduate study—University of Wisconsin

Betty G. Davis ..... Chairman, Cosmetology Department  
B.S., M.A., East Carolina University

Sandra S. Edwards ..... Chairman, Paralegal Department  
A.B., M.S., J.D., Duke Law School

Stephen R. Ellerbe ..... Law Enforcement-Criminal Justice—Off Campus  
B.S., Virginia State College, graduate study—East Carolina University

Franz J. Grebner ..... Chairman, Law Enforcement-Criminal Justice  
B.A., M.Ed., St. Thomas College, graduate study—Florida State University—Certified Polygraphist Department

John R. Lifsey ..... Funeral Service Education  
B.S., Middle Tennessee State University, John A. Gupton College of Mortuary Science

James D. New ..... Law Enforcement-Criminal Justice  
B.S., Campbell College, Certified Polygraphist

*Vocational Education Division*

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

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

Steve Core ..... Automotive Mechanics  
Diploma Fayetteville Technical Institute

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

DeWayne E. Fields ..... Chairman, Carpentry Department  
B.S., University of Toledo

Merland F. Francis ..... Welding  
Diplomas, Fayetteville Technical Institute

Hubert Hall ..... Carpentry  
Master Carpenter

George W. Jeffreys ..... Electrical Installation and Maintenance  
Licensed Electrical Contractor, Licensed Plumbing and Heating Contractor

Forest E. Jernigan ..... Chairman, Plumbing Department  
B.A., Atlantic Christian College

Ronald L. Mace ..... Architectural Drafting  
B.A., North Carolina State University, A.I.A., Registered Architect, North Carolina

Franklin M. McDonald ..... Chairman, Automotive Mechanics Department  
Master Mechanic, Certified by the National Institute of Automotive Service  
Excellence, undergraduate study—North Carolina State University

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

Ervin D. Oakes, Jr. .... Chairman, Electrical Installation and Maintenance  
A.A.S., Fayetteville Technical Institute; Licensed Refrigeration Contractor, Licensed  
Electrical Contractor, undergraduate study—North Carolina State University

Bobby W. Perkins ..... Automotive Mechanics  
Master Mechanic, Diploma—Fayetteville Technical Institute

Bernard L. Pittman ..... Chairman, Masonry Department  
Master Brick Mason

James B. Pittman ..... Chairman, Machine Shop Department  
Master Machinist, A.A.S., Fayetteville Technical Institute, Certified Manufacturing  
Engineer, Undergraduate study—North Carolina State University

Paul B. Sharpe, Jr. .... Chairman, Air Conditioning and Refrigeration  
Department  
Diploma, Danville Technical Institute, A.A.S., Fayetteville Technical Institute,  
Licensed Air Conditioning and Refrigeration Contractor, undergraduate study—North  
Carolina State University

Donald G. Steen ..... Masonry  
Master Brick Mason

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

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

*Learning Resources Center*

Patricia H. Nunalee ..... Learning Laboratory Coordinator  
B.S., East Carolina University, graduate study—North Carolina State University

Patricia L. Carter ..... Learning Lab Assistant  
B.S., Campbell College

Juanita S. Clement ..... Learning Lab Assistant  
A.B., Livingstone College

Flora G. Dunham ..... Learning Lab Assistant  
B.S., Indiana University

Carolyn Freeman ..... Learning Lab Assistant  
B.A., Flora McDonald College

Wilestine Hall ..... Learning Lab Assistant  
B.S., Methodist College

Annette D. Hornsby ..... Learning Lab Assistant  
B.A., Methodist College

Nell P. Mayville ..... Learning Lab Assistant  
R.N., Highsmith Hospital School of Nursing

Kerry F. Stallings ..... Learning Lab Assistant  
B.S., Baylor University

Betty L. Ward .....	Learning Lab Assistant
Evelyn Watson .....	Learning Lab Assistant
B.S., Fayetteville State University	
Susan S. Rose .....	Librarian
B.A., M.L.S., University of North Carolina	
William G. Izquierdo .....	A-V Aids
Deborah S. Parker .....	Library Technician
Richard K. Folsom .....	A-V Aids Coordinator
B.A., M.Ed., East Carolina University	
Betsy S. Daniel .....	Library Technical Assistant
B.A., Pembroke State University, graduate study—University of North Carolina	
Joanne Ryan .....	Library Technical Assistant
B.S., Southwest Missouri State University	
Kymet N. Smith .....	Audio Visual Technician
Professional Photographer	
<i>Visiting Artist</i>	
Robin D. Lehrer .....	Visual Artist
B.F.A., M.F.A., Claremont Graduate School	

#### OFFICE AND GENERAL STAFF

Cathy Barefoot .....	Secretary to the Associate Dean of Student Affairs
Lynn Bledsoe .....	Secretary to the Dean of Fiscal Affairs
Barbara Boyd .....	Secretary to the Dean of Student Affairs
Doris Butler .....	Secretary in the Student Affairs Office
Brenda Byrd .....	Accounting Clerk/Machine Operator
Charlotte Coheley .....	Secretary to Vice President for Academic Affairs
Linda Collins .....	Mail Clerk/Relief Switchboard Operator
June Cooke .....	Secretary to the Director of Occupational Extension Service
Dorothy Dempster .....	Secretary—Business Division
Celeste DePriest .....	Secretary in the Student Affairs Office
Jean Dorbin .....	Registration Clerk—Adult Continuing Education Office
Kay Dove .....	Secretary in Library
Ida Estebon .....	Secretary—Associate Degree Nursing
Kathy England .....	Secretary to the President
Gloria Gray .....	Secretary to the Associate Dean of Instruction— Off Campus
Martha Hall .....	Secretary—Engineering Division
Mary Sue Hall .....	Secretary to Dean of Adult Continuing Education
Linda Hawley .....	Secretary to Associate Dean of Instruction, General Education
Marilyn Holmquist .....	Secretary in the Student Affairs Office
Audrey Huttner .....	Switchboard Operator
Linda Jackson .....	Accounting Clerk
Linda Jones .....	Accounting Clerk
Mary Jones .....	Secretary to the Associate Dean of Adult Continuing Education (General Adult Education)
Alene Kelly .....	Secretary to the Associate Dean of Student Affairs, Off Campus
Nicky Lavoy .....	Secretary—Vocational Division
Dot Lawing .....	Property Clerk
Glynda Lawrence .....	Secretary to the Director of Extension Education
Wanda Long .....	Secretary in the Student Affairs Office

Sandra Mayo	Secretary—General Education Division
Mary Ann McBennett	Evening Secretary—Student Affairs Office
Debbie McWilliams	Secretary to the Administrative Assistant
Mary Mitchell	Secretary in the Veterans' Affairs Office
Jane Monroe	Secretary to the Dental Departments
Margie Penney	Property Clerk
Bunnie Pere	Secretary to the Director of Evening Programs
Debbie Ratley	Secretary to the Registrar
Verlinda Ray	Secretary to the Veterans Outreach Coordinator
Sheila Rhodes	Accounting Clerk
Jill Russell	Secretary to the Director of Extension—Off Campus
Joey Schneider	Secretary to Faculty—Off Campus
Betty Shackelford	Secretary to the Dean of Instruction
Carolyn Shaw	Bookkeeper
Annette Smith	Accounting Clerk/Machine Operator
Martha Spangler	Secretary—Engineering Division
Eileen Turner	Library Clerk
Aleta Wiggs	Secretary to Associate Dean of Instruction, Occupational Education
Brenda Williams	Secretary to the Registrar
Peggy Workman	Secretary in Student Affairs Office—Evening
<i>Reproduction Room</i>	
Tommy H. Byrd	Reproduction Room Supervisor
Jimmy H. Taylor	Equipment Coordinator
Donald R. Hutchinson	Machine Operator
Tommy Owens	Machine Operator
<i>Maintenance</i>	
Orville O. Gravely	Maintenance Man
Richard I. Payne	Maintenance Man
William T. Robinson	Janitor Supervisor
<i>Bookstore</i>	
Dan Rogers	Manager
Richard L. Boese	Assistant Manager
Marilyn Blackburn	Cashier
Eva Simoneau	Secretary
Kenneth Stephens	Stock Clerk

## 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 that time.

The Center's progress in providing quality educational programs 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, 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.

Several renovations and two major constructions on our campus have increased the physical facilities from 38,000 square feet to a net assignable footage of 105,302 square feet. This includes 72,050 square feet for instructional purposes, 10,400 for library usage, 11,280 for administration and instructional services, and 11,500 for auxiliary functions. Construction is being completed at this time for an additional 40,000 square feet of instructional space to be added to Cumberland Hall.

## **PURPOSE**

The purpose of 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 or she may attain effective citizenship in his or her society.

To attain this purpose, offerings and programs are designed to meet the various interest 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, health, and public service occupations. These programs also provide the base upon which to build further formal or informal educational training, and strengthen the general educational base of our society.

All classes will be opened to both men and women on equal bases.



## CURRICULUM GROUPINGS

Each curriculum is presented within an instructional Division which groups related courses according to discipline, instructional orientation, and focus. The six instructional divisions are: (1) Business Occupation Education, (2) Engineering Technology Education, (3) General Education, (4) Health Occupational Education, (5) Public Service Occupation Education, (6) Vocational Occupation Education.

- A. 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. The curricula and instructional concentration in this Division are in the following instructional departments:

- Accounting (p. 52)
- Agricultural Business (p. 54)
- Agricultural Science and Mechanization (p. 56)
- Banking and Finance (p. 58)
- Business Administration (p. 60)
- Electronic Data Processing (p. 64)
- General Office Technology (p. 66)
- Horticulture Business Technology (p. 68)
- Industrial Management (p. 70)
- Marketing and Retailing (p. 73)
- Real Estate (p. 76)
- Secretarial Science (p. 79)

- B. Engineering Technology Education**—Highly specialized training for effective entrance into specialized areas of business and industry. Elements of training common to all technical occupations are included such as basic science, mathematics, oral and written communications, engineering and industrial drafting, and other appropriate technical skills. The curricula and instructional concentration in this Division are in the following instructional departments:

- Air Conditioning Technology\* (p. 84)

\*Inactive in 1974-75

Civil Engineering Technology (p. 86)  
Electronics Engineering Technology (p. 88)  
Environmental Engineering Technology (p. 90)

- C. General Education**—Instruction which is general to two or more Divisions such as English, mathematics, physical science, and the social sciences and the humanities.

The Associate Degree in General Education is essentially a two-year residential program in which 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 languages required by some colleges). Courses offered are the same high quality as those offered in four-year colleges.

**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.

The curricula and instructional concentrations in this Division are in the following instructional departments:

Associate Degree in General Education (p. 94)  
Developmental Studies (p. 98)  
English and Literature (pp. 205-208)  
Mathematics (pp. 209-214)  
Physical Science (Biology, Chemistry, and Physics)  
(pp. 201-204, and 216-218)  
Social and Behavioral Sciences, and Humanities  
(pp. 201, 208-209, 214-216, and 218-221)

- 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 health-related 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. The curricula and instructional concentration in this Division are in the following instructional departments:

- Associate Degree Nursing (p. 106)
- Dental Assistant (p. 108)
- Dental Hygienist (p. 110)
- Nurses' Assistant (p. 112)
- Operating Room Technician (p. 113)
- Physical Therapy (p. 115)
- Practical Nurse Education (p. 117)
- Radiologic Technician (p. 119)

**E. Public Service Education**—Highly specialized training leading to the professional pursuits of occupations which include direct and prolonged contact with the public. Elements of training common to all public service occupations include: communicative skills, psychology, sociology, and specialized legal considerations. The capacity to function in stressful, emotional situations and the willingness to work at irregular, unpredictable times are prerequisite to success in public service occupations. The curricula and instructional concentration in this Division are in the following instructional departments:

- Cosmetology (p. 124)
- Funeral Service Education (p. 126)
- Law Enforcement-Criminal Justice (p. 128)
- Paralegal Technology (p. 131)

**F. 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. The curricula and instructional concentration in this Division are in the following instructional departments:

- Air-Conditioning and Refrigeration—Mechanics (p. 136)
- Architectural Drafting and Design (p. 138)
- Automotive Mechanics (p. 140)
- Carpentry (p. 142)

Drafting—Mechanical (p. 144)  
Electrical Installation and Maintenance (p. 146)  
Machine Shop Trade (p. 148)  
Masonry (p. 150)  
Plumbing (p. 152)  
Tool and Die Making (p. 154)  
Water and Wastewater Plant Operator's Program  
(p. 157)  
Welding (p. 159)

- 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, Technical, Business, Public Service, and Health Occupational areas, and in General Education prompted Fayetteville Technical Institute to expand its evening offerings for credit so a student now can 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.

# **ACCREDITATION**

## **Department of Community Colleges**

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's Board of Trustees the authority to award the Associate of Applied Science Degree for the completion of the two-year engineering technology curricula and the two-year business curricula, the General Education Associate Degree, and to award 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. The Southern Association of Colleges and Schools is a regional accrediting agency for the purpose of identifying and accrediting institutions which meet their 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. Electronic Engineering Technology
3. Environmental 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 high standards of ethics in their educational programs and in published materials and other public announcements. 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.

#### **The American Board of Funeral Service Education**

Fayetteville Technical Institute's Department of Funeral Service Education is approved by the North Carolina State Board of Embalmers and Funeral Directors. The American Board of Funeral Service Education accredited the Funeral Service Education curriculum on May 3, 1974.

#### **National League for Nursing**

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

#### **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 education training for auxiliary personnel who will provide dental health care to people. Fayetteville Technical Institute has been granted full accreditation.

## **PROFESSIONAL ORGANIZATIONS**

The Institute has membership in several educational associations which 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
6. North Carolina Placement Association
7. The University Mortuary Science Education Association

# **GENERAL INFORMATION**

## **ADMISSION REQUIREMENTS**

### *Statement of Policy*

Fayetteville Technical Institute, as a technical, State-supported institution, adheres to an "Open-Door" admission policy. High school graduates, persons achieving a North Carolina equivalency certificate (GED), and adults who show potential for post high school education may be admitted to 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. If the applicant lacks a high school diploma, he will be given the opportunity to pursue courses to achieve an Adult High School Diploma or a North Carolina equivalency certificate (GED) prior to entering a regular 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*

Each applicant must request that his or her high school forward to the Director of Admissions a transcript of all courses taken. The applicant should request that available standardized tests scores be included on the transcript. Transfer students must request official transcripts of all work attempted from



each post-secondary institution 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 the 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*

Each applicant is required to submit a medical record. Medical records will be examined to help an applicant determine possible limitations that may interfere with his or her progress in his chosen field of work.

### *Residency Status*

Each applicant must complete a residency form as required by state law. This form is used to determine in-state or out-of-state tuition charges.

### **Entrance Requirements**

1. Applicants must have completed high school or must have attained the North Carolina equivalency GED scores.
2. Applicants for Engineering Technology curricula and Radiologic Technology must have a minimum of two units of algebra in their high school background; one unit of chemistry is required for Environmental Engineering and Radiologic Technology applicants.
3. Applicants for Associate Degree Nursing, Dental Hygiene, and Physical Therapy Technology must have a minimum of one unit of algebra, one unit of biology,

and one unit of chemistry in their high school backgrounds.

4. Applicants for Funeral Service Education must have a minimum of one unit of algebra and one unit of biology in their high school backgrounds.
5. Applicants for Electronic Data Processing and Accounting must have a minimum of one unit of algebra in their high school backgrounds.
6. Applicants for all other curricula need no specific requirements beyond the normal high school requirements beyond the normal high school courses required for a high school diploma. However, it may be advisable that applicants take refresher courses in the sciences, math, and have good reading habits.

### **Evening College Entrance Requirements**

1. Evening students must meet all entrance requirements as listed above.
2. For exploration purposes, a student may take a maximum of 12 quarter hours credit in the evening college before meeting all general entrance requirements except as listed in number 3, below. Progress in such courses will be used as an evaluative factor in further educational planning.
3. Applicants applying for VA benefits must meet all entry requirements before they can be certified by this institution to the Veterans Administration Regional Office.

### **Admission With Advanced Standing**

Students may be admitted with advanced standing by transfer from other accredited technical institutes, colleges or universities. All credits to be transferred must be equated with the curricula offerings at Fayetteville Technical Institute and be of "C" grade quality or better. No quality points are assigned for transfer grades.

To prevent duplication of work previously taken, an official

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

Admission with advanced standing in all major subject areas must be approved by the Department Chairman of the major subject area, and in some instances, students may be required to take proficiency examinations to indicate their depth of knowledge in those subjects for which they are requesting credit.

Fayetteville Technical Institute is a Serviceman's Opportunity College (SOC). Under this concept, credit may be received for service school completion, for college level examination programs (CLEP), and credit earned from courses taken through correspondence from a nationally accredited college or university. The SOC policies listed above are also applicable to bona fide dependents of military members.

## EXPENSES AND FEES

### Regular Fees

	<u>Per Quarter</u>	<u>Per Year</u>	<u>Totals</u>
Activity Fee		\$15 (payable first qtr. of enrollment)	\$15.00*
Tuition (In-State)	\$33.00	\$99 (3 quarters) \$132 (4 quarters)	99.00 132.00*
Under 12 credit hours	\$ 2.75 per credit hour		
Books (estimated)	\$65.00	\$195	<u>\$192.00*</u>

\*Approximate Maximum Total \$342.00\*

Payment of tuition and other fees or costs may be made by cash, personal check (in-state bank only), BankAmericard, or Master Charge. Personal checks will be accepted for the amount of tuition or fees only. *Personal checks drawn on out-of-state banks, second party checks, and checks in excess of actual costs will not, repeat will not, be accepted for payment of fees.*

### Other Fees

1. Health Occupations Division students are required to pay additional costs to cover special items such as uniforms, instruments, and malpractice insurance.
2. Certain other curricula in the Vocational Division re-

quire that students purchase basic tools each quarter which build toward a tool set usually needed for employment. Costs will vary with each quarter, but usually range from \$50 to \$60 per quarter.

3. On-campus parking is described in the Parking Regulations Bulletin. Parking stickers are issued on payment of fees at registration. Students are held responsible for all parking regulations as stated in the Parking Regulations Bulletin.

### **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 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 1975-76 academic year are \$162.50 per quarter or \$13.50 per quarter hour under 12 quarter hours. The Office of Student Affairs will determine, in accordance with applicable directives, those students required to pay out-of-state tuition fees.

## **ACADEMIC STANDING**

### **Credits**

A. All curricula students receive quarter hour credit for courses which they successfully complete.

B. The Board of Trustees of Fayetteville Technical Institute has been authorized by the North Carolina Board of Education to award the Associate of Applied Science Degree, Associate Degree in General Education, and the Diploma upon successful completion of curriculum requirements.

C. Fayetteville Technical Institute has structured its curricula, of both one and two years duration, on a post-secondary

level and grants credit on a quarter hour basis. Instruction in all curricula is post-secondary and requires students to be capable of study beyond the high school equivalency level for success. The curricula are designed on a quarter basis to include general education areas which require extra out of class preparation each quarter. Each class, lab and shop session is of 50 minutes duration, and requires a minimum of outside preparation of two hours for each classroom session, one hour for each lab session, and additional outside preparation for shop sessions. Quarter hour credit is granted on a one credit to three sessions of shop, on a one credit to two sessions of lab, and a one credit to each classroom session of weekly attendance.

D. It is the policy of this institution to permit students to enroll in additional subjects since the instructional hours shown in the curricula are minimum. A student may enroll on request for additional instructional hours deemed by the instructor to be consistent with the program and appropriate to the student, as approved by his advisor.

E. Students with academic deficiencies, who require remedial work as background material, may enroll in Developmental Studies. These Developmental Studies courses carry credit hours for institutional accounting purposes *only*, and are *not counted* as credit hours toward graduation in any of the curricula.

### 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 of 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. Students must remove Incompletes by the mid-term of the following quarter or an automatic "F" grade is assessed.
2. WD—No grade: A student may withdraw from a course anytime within the first five (5) school days of each quarter with no grade penalty.

3. W-P or W-F: A student withdrawing after the mid-term of any quarter will receive an automatic W-F unless he is compelled for unavoidable reasons to withdraw from the institution. In which case, with the instructor's consent, he may withdraw passing (W-P).
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 his known areas of competency. A student who elects the "No Credit" plan will receive the "No Credit" notation on his records, which will indicate "0" grade points—no credits earned. Such courses will not be computed in grade point average, and therefore, no credit or penalty is attached to the "No Credit" grade; however, all course requirements must be met by the student. Limitations on the number of courses taken for "No Credit" grade will be handled on an individual basis. A student may not repeat the same courses for a "No Credit" grade. Developmental Studies courses are remedial in nature and are ineligible for "No Credit" grades.

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

All students must have at least a 2.0 quality point average and have passed all curriculum subjects as listed in the course outline under which they entered to be eligible for graduation. They must also meet the grade level needed in major subjects required to take licensure examinations.

### Withdrawals

Students who transfer or withdraw from the college during the school year must consult with their faculty advisor and the Division Counselor.

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 insti-

tution. No student's record will be released until his financial record is cleared at the Institute.

### **Re-admittance**

When a student withdraws from the college for unavoidable reasons, he may be considered for re-entry at the beginning of the next quarter. A student who is dismissed from the college by administrative action may re-enter only upon approval by the administration. All students are given the right of due process as stated in the Student Handbook.

### **Refunds**

Tuition refunds for students shall not be made unless the student is compelled, in the judgment of the college, to withdraw for unavoidable reasons. In such cases, two-thirds ( $\frac{2}{3}$ ) of the student's tuition may be refunded if the student withdraws within ten calendar days after the first day of classes in each quarter. Otherwise, tuition refunds will not be considered unless a course or curriculum fails to materialize. No refunds will be made unless requests for such refunds are in writing stating the reason for withdrawal.

### **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.

Certain curricula have minimum course grade requirements which will be specified either in the Student Handbook or by a Division Bulletin.

### **Attendance**

Due to the nature and purpose of the college 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 and are listed in the current Student Handbook.

## **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 passing grades in all required courses (certain curricula, especially in the Health area, require that a student make at least a "C" grade on major subject areas for the student to be eligible to take State and National examinations for licensure), and
4. Must have taken care of ALL financial indebtedness to Fayetteville Technical Institute.

## **Honors**

Any student, who has earned a quality point average of 3.5 and has completed at least half of his diploma or degree requirements in residence at Fayetteville Technical Institute, will be granted a diploma or degree with honors.

## **Awards**

A scholastic award will be presented to three students who have obtained the highest grade average in all curricula work taken at Fayetteville Technical Institute. To be eligible to receive this award, a student must have taken a minimum of two quarters of work in a four quarter curriculum, and a minimum of four quarters of work in a two year curriculum in residence at Fayetteville Technical Institute. The awards presented are as follows: (1). One-Year Diploma Curricula, (2). Two-Year Diploma Curricula, and (3). Two-Year Associate of Applied Science Degree Curricula.

## **Outstanding Student Award**

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

1. Has demonstrated definite leadership ability,



2. Respects the responsibilities of the faculty, administrators, and fellow students,
3. Exhibits an attitude of thoroughness in the completion of assigned tasks,
4. Manifests good sportsmanship and a respect for public property,
5. Exhibits a high degree of integrity and general loyalty to the college, and
6. Exhibits leadership roles in the application and consideration for general rules and regulations of the college.

### **Citizenship Award**

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

1. Demonstrates respect for the position of faculty, administrators, and fellow students,
2. Demonstrates a willingness to follow the leadership of others and actively exhibits good sportsmanship in his participation in school activities,
3. Shows a willingness to work within the general rules and regulations of the college and represents the college to the general public as a loyal citizen, and
4. Assumes additional responsibilities and completes the tasks assigned in a thorough and orderly manner.

### **STUDENT AFFAIRS SERVICES**

The purpose of Student Affairs is to provide the professional services needed to effectively administer the functions listed below and to assist the students in their adjustment to the learning experience as presented in the instructional programs offered at Fayetteville Technical Institute. The counseling services provide the necessary support to the student to assist his highest possible achievement of a realistic self-concept. The office of Student Affairs is responsible to the college for the following functions: recruitment, testing, admissions, registration, orientation, counseling services, veterans affairs, financial aid, student housing, health services, student activities, graduate job placement, and alumni and follow-up studies.

## **Recruitment**

Fayetteville Technical Institute employs a full-time recruitment person who coordinates the recruiting efforts within the service area of our college. Contact is made with all high school students and other groups through slide presentations, talks to civic groups and service clubs, and through all news media sources. On-campus visits are arranged and tour groups are an integral part of the recruitment process.

## **Testing**

Each applicant must complete a series of aptitude and achievement tests which are used as counseling tools for placement by the Admissions Office. There is no cost for these tests. Each applicant is 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.

## **Admissions**

The admissions function of the Student Affairs services is coordinated by the Director of Admissions, and the processes required are listed in the Catalog under General Information (above).

## **Registration**

The registration procedures are a function of the Registrar's Office. The Registrar is also in charge of student records. Students are informed regularly by special bulletins and through the Student Handbook as to regulatory measures concerning both registration procedures and student record keeping. The Student Handbook also contains information concerning the rights and privileges of students (required by both State and Federal law regarding student records).

## **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 other leaders. The rules, policies and privileges of the college as contained in the Student Handbook are discussed with

the student during the orientation period. Also included in this orientation is information designed to make matriculation of students into the college life a pleasant and rewarding experience. It must be understood that all students are held responsible for what is contained in the Student Handbook as well as periodical requirements which are presented on bulletin boards throughout the college.

### **Counseling Services**

The Student Affairs Office provides a program of counseling services by professional counselors. These services are available to each student from pre-admission through graduation, including transfer and placement. These services are provided at no cost to the student. Each student is assigned a counselor who conducts individual counseling and group interaction sessions.

To assist in the counseling services, each student is also assigned a faculty advisor who assists the student with educational goal placement. Students are urged to take advantage of all services offered by Student Affairs, whether the need be financial, academic, or personal.

### **Veterans Affairs**

The college operates a Veterans Affairs Office to provide full support to all those students who attend the institution through VA benefits. The Veterans Affairs Office provides information services, outreach services, necessary forms, and performs follow-up tasks which include liaison with the Veterans Administration Regional Office. The office is staffed with professional and para-professional personnel, who, for the most part, are veterans themselves and can relate to the veteran from that viewpoint. Special information bulletins are distributed periodically to keep the veterans informed on special services or changes in the program.

### **Financial Aid**

A student needing financial assistance must submit an application to the Financial Aid Officer once he has been approved for full-time school work. Based on the student's needs and resources available, the Financial Aid Officer will help

meet those needs through the various loans and scholarship programs. A "package deal" composed of several types of available monies may be awarded in an attempt to meet the student's needs. Those financial assistance funds available are as follows:

1. Basic Educational Opportunity Grant,
2. Supplemental Educational Opportunity Grant,
3. National Direct Student Loan,
4. College Work-Study,
5. Federal funds for a Nurses Loan and Nurses Scholarship program specifically for Associate Degree Nursing students,
6. College Foundation (a Federally insured student loan program available to all in-state students),
7. 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,
8. Emergency Loan Fund: short term loans not to exceed \$100 and repayable in 30/60/90 days,
9. American Board of Funeral Service Education Scholarship, and
10. Fayetteville Technical Institute also has a deferred payment plan which permits payment within 60 days of registration.

Requests for all financial aid should be made during the admission interview or as soon as possible after being approved to attend school. Applications should be no later than July 15. Those received after that date may not receive consideration for first quarter aid; however, applications will continue to be accepted and awards will be met as funds become available.

### **Student Housing**

The Financial Aid Officer assists the student in finding housing when it is necessary or desirable on the part of the student to live in Fayetteville. Financial arrangements for rooms

or apartments are on an individual basis between the student and the landlord. The college assumes no responsibility in any financial arrangement between the student and the landlord.

### **Health Services**

Since Fayetteville Technical Institute is a commuter college, health services are handled through an arrangement with the local hospital. Students are referred to the Emergency Room when emergency treatment is needed. Each shop and lab is equipped with first-aid kits. The college does not have a paid medical staff on campus; however, it is in close proximity to a number of medical facilities. Each student is required to submit a medical form which is reviewed by the admissions staff.

### **Student Activities**

Student activities, coordinated through the Student Activities Coordinator, are an integral part of the total development of students at Fayetteville Technical Institute. These activities provide the student the opportunity to receive practical experiences in the responsibilities of citizenship. Students are encouraged to join and to participate in all student activities. The following areas are under the sponsorship of the Student Activities Coordinator:

#### **1. 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, the vice-president, the secretary, and the treasurer. There is a first and second year representative from each curriculum. SGA officers are elected during Spring Quarter for the following academic year.

## 2. Student Publications

Faculty or staff members sponsor 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 pictorial record of most 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, the administration, and the faculty.

## 3. Intramural Sports

A well-rounded intramural sports program functions under the Student Activities Coordinators' 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.

## 4. Clubs

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

## 5. 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, bowling, movies, arts and craft groups, concert series, music and choral groups, and little theatre presentations. In most cases, FTI students get special rates.

### **Graduate Job Placement**

A function of the Student Affairs Office is to provide 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 there is no guarantee of job placement, the placement record is extremely high in percentage of effectiveness. There is no cost for this service.

### **Alumni and Follow-Up Studies**

The Office of Student Affairs makes an effort to provide follow-up studies on its graduates, and efforts are maintained to create a functioning alumni association. With the diversity of the student body and the programs offered at Fayetteville Technical Insitute, the task of maintaining an up-to-date listing of former students is most difficult.

## **GENERAL STUDENT REGULATIONS**

The total educational program of the college is designed to assist the student to reach his highest level of potential in his personal development. Each curriculum is designed as a vital part of that development, and the successful completion of all course work will enhance the probability of 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 characterize the behavior of ladies and gentlemen. The college does not permit the use or the 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, and each student is held responsible for information in the Student Handbook which is revised periodically.

### **Dismissal**

Fayetteville Technical Institute reserves the right to suspend or dismiss any students 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.



## **LEARNING RESOURCES CENTER**

The Learning Resources Center, located in the Paul H. Thompson Library, contains a collection of carefully selected printed and non-printed materials to support and enrich instruction. Components of the Learning Resources Center are the library, learning lab, audio-visual equipment and media production.

The library provides excellent facilities for study, research, browsing, self-improvement and enjoyment. The library houses over 20,000 volumes of books and subscribes to over 200 current magazines and newspapers. Back issues of periodicals are available in bound volumes, unbound issues and on microfilm. Audio-visual software, such as filmstrips, disc recordings, cassettes, 16 mm films, and film loops are available to provide a wide range of information in various forms to students, faculty, and the community. Space and equipment are provided in the library for viewing and listening. Teaching of individualized or group library skills is a function of the library staff.

The Learning Lab makes available to the community and the student body an opportunity to learn new subjects, to strengthen weak areas of learning, or to study and to 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.

Through the use of programmed materials and teaching machines, the Learning Lab enable a person to further his knowledge in many subjects. Various types of instructional materials are employed including film loops, filmstrips, records, and cassettes. Subject available include English, Social Studies, Mathematics, Foreign Languages, Reading skills, and Science.

The audio-visual department provides a qualified staff and excellent facilities to support the instructional programs with materials production and equipment. Equipment that circulates is controlled through the audio-visual department.

The Learning Resources Center has a seating capacity of over 300 with study arrangements to meet student needs. The Learning Resources Center strives to make available all types of media for enjoyment, enrichment and instructional purposes for the student body, and the faculty and the staff of Fayetteville Technical Institute and the community.

## **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, yet perhaps not so important as easing a man-power 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 the problem, the North Carolina State Board of Education authorized a number of two-year training programs which helped answer the needs of North Carolina.

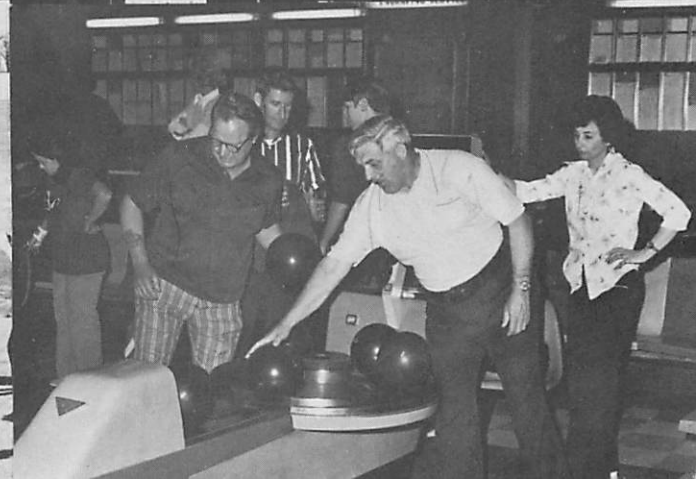
Approval to offer these programs was granted by the North Carolina State Board of Education and the North Carolina Department of Community Colleges in 1963. Fayetteville Technical Institute is one of the many colleges and universities across the country which in the past decade has prepared literally thousands of graduates for the labor market with the Associate in Applied Science Degree (AAS). While this degree may be terminal, it carries full transfer credit to many other colleges 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 the degree titles are used by granting institutions, Fayetteville Technical Institute awards the Associate in Applied Science degree (AAS) to graduates whose academic preparation includes the major areas of concentration and provides focused instruction in critical yet diverse areas of business, industry, technical fields, health areas, and public service education. General Education graduates are awarded the Associate Degree in General Education.



ACCOUNTING  
AGRICULTURAL SCIENCE &  
MECHANIZATION  
BANKING & FINANCE  
BUSINESS ADMINISTRATION  
ELECTRONIC DATA PROCESSING  
GENERAL OFFICE  
HORTICULTURE BUSINESS  
INDUSTRIAL MANAGEMENT  
LIFE INSURANCE  
MARKETING & RETAILING  
REAL ESTATE  
SECRETARIAL SCIENCE



## **BUSINESS EDUCATION DIVISION PURPOSE**

Tremendous business and industrial expansion has created an increasing need for trained people in accounting, administration and management, agriculture, horticulture, sales and marketing, computer programming, and secretarial science technology. Skills in these areas are obtained through specialized curricula such as Accounting, Agricultural, Business, Business Administration, Marketing and Retailing, Banking and Finance, 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 and are supplemental to the development of a basic theoretical background. In order to broaden his or her education, the business student is required to take related courses in economics, communicative skills, and the social and behavioral sciences. These courses enable the student to better adapt to the greater demands of the environment as well as to 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 advanced, higher educational institutions.

Four-year colleges and universities are now providing the opportunity for technical institute graduates to enter programs of study leading to baccalaureate degrees. Many of these programs have been developed within the systems of the University of North Carolina solely for graduates of Business Education Associate Degree curricula. Other institutions allow transfer credit for individual courses taken within business education curricula. Thus, the Business Education Division student develops skills and knowledges enabling him to be gainfully employed or to continue his education at other institutions of higher learning.

## ACCOUNTING

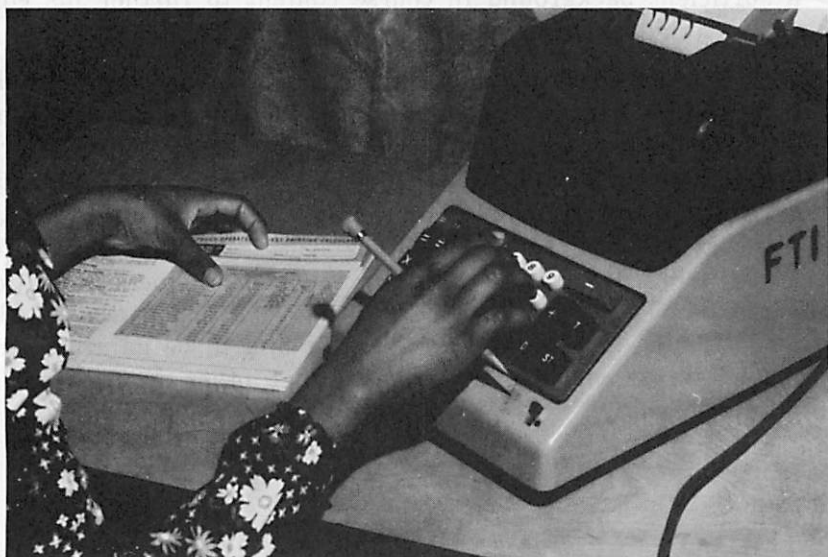
### Purpose of Curriculum

Accounting is one of the fastest growing employment fields in America today. 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 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. and Title			Hours Per Week	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	106	EDP Math I .....	5	0	5
BUS	102	Typewriting, or .....	2	3	3
BUS	103	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	123	Business Finance I .....	2	2	3
EDP	112	Intro. to Computer Systems .....	3	3	4
			15	10	19
THIRD QUARTER					
BUS	124	Business Finance II .....	2	2	3
BUS	110	Office Machines .....	2	3	3
BUS	122	Management Accounting (Survey of) ....	5	3	6
EDP	109	Cobol I .....	4	3	5
			13	11	17
SUMMER SESSION					
BUS	221	Intermeditae Accounting I .....	3	2	4
Social Science	Elective .....				3
					7
FOURTH QUARTER					
ENG	204	Oral Communications .....	3	0	3
BUS	115	Business Law I .....	3	2	4
BUS	222	Intermediate Accounting II .....	3	2	4
BUS	229	Income Taxes .....	3	4	5
BUS	282	Business Statistics .....	3	2	4
			15	10	20
FIFTH QUARTER					
BUS	116	Business Law II .....	3	2	4
BUS	223	Intermediate Accounting III .....	3	2	4
BUS	225	Cost Accounting .....	3	4	5
BUS	234	Personnel & Business Management .....	5	0	5
BUS	247	Business Insurance .....	3	0	3
			17	8	21
SIXTH QUARTER					
ENG	206	Business Communications .....	3	0	3
BUS	269	Auditing .....	3	2	4
BUS	224	Advanced Accounting, or .....	5	3	6
BUS	227	Managerial Accounting .....	5	3	6
Social Science	Elective .....				3
					16

# **AGRICULTURAL BUSINESS TECHNOLOGY**

## **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 to high schools or in four-year colleges.

The Agricultural Business Technology 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**

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

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



# AGRICULTURAL BUSINESS TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
CHM	101	Chemistry .....	3	2	4
MAT	110	Business Mathematics .....	3	2	4
AGR	185	Soil Science & Fertilizers .....	5	2	6
			14	6	17
SECOND QUARTER					
ENG	102	Composition .....	3	0	3
BUS	120	Accounting Principles I .....	5	3	6
BUS	185	Business Organization .....	3	0	3
AGR	104	Introduction to Agri-Economics .....	3	2	4
BUS	115	Business Law .....	3	2	4
			17	7	20
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
BUS	121	Accounting Principles II .....	5	3	6
AGR	170	Plant Science .....	5	2	6
Social Science	Elective*	.....	3	0	3
			16	5	18
SUMMER SESSION					
AGR	299	Cooperative Training** .....	0	15	5
FOURTH QUARTER					
ENG	204	Oral Communications .....	3	0	3
AGR	125	Animal Science .....	5	2	6
BUS	110	Office Machines .....	2	3	3
AGR	201	Agricultural Chemicals .....	4	2	5
Social Science	Elective*	.....	3	0	3
			17	7	20
FIFTH QUARTER					
BUS	123	Business Finance .....	2	2	3
AGR	205	Agricultural Marketing .....	5	0	5
AGR	228	Livestock Diseases & Parasites .....	3	2	4
AGR	258	Agricultural Production Enterprises ....	4	4	6
BUS	272	Supervision .....	3	0	3
			17	8	21
SIXTH QUARTER					
BUS	229	Taxes .....	3	4	5
BUS	285	Salesmanship .....	5	0	5
AGR	218	Agricultural Mechanization .....	3	2	4
AGR	204	Farm Business Management .....	4	4	6
			15	10	20

\*SSC 205, SOC 101, SOC 210, SOC 102, PSY 101, PSY 206, and/or SOC 270

\*\*May be scheduled another quarter by Dept. Chairman approval

# AGRICULTURAL SCIENCE AND MECHANIZATION

## (With Technical Specialty Option)\*

### INTRODUCTION

#### Purpose of Curriculum

This curriculum provides a training program for developing the basic knowledge and skills needed for successful operation and management of a general farming program involving crops and livestock. There is a growing scarcity of personnel trained in basic agriculture science and mechanics. Larger farming operations require more mechanization and tremendous outlays of capital; thus, the need for trained farmers becomes increasingly critical. The objective of this curriculum is to provide the managerial and operative training needed for the successful farm operation.

#### Job Description

The graduate of the General Agriculture and Mechanics curriculum is trained to manage and operate a farm. In addition, he should be able to perform most of the repairs to buildings and equipment as well as to perform the necessary electric, construction, and plumbing requirements pertaining to the farm operation.

\*The satisfactory completion of a minimum of 18 hours of general education in addition to the technical specialties will lead to an Associate of Applied Science Degree.

## AGRICULTURAL SCIENCE AND MECHANIZATION

### CURRICULUM

#### (With Technical Specialty Option)\*

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
AGR	118	Feed Grain Crops .....	3	0	3
AGR	136	Agricultural Math .....	2	0	2
AGR	272	Tobacco Production .....	3	2	4
			8	2	9
SECOND QUARTER					
AGR	101A	Farm Tractors I .....	1	3	2
AGR	106	Techniques of Welding .....	1	3	2
AGR	127	Animal Nutrition .....	2	0	2
			4	6	6
THIRD QUARTER					
AGR	154	Swine Production .....	2	0	2
AGR	108	Beef Cattle Production .....	2	0	2
AGR	186	Soils & Fertilizer .....	4	2	5
			8	2	9

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
SUMMER SESSION					
AGR	109	Soil Management, Terracing & Drainage .....	2	2	3
AGR	138	Farm Records & Taxes .....	3	0	3
AGR	155	Plant Diseases .....	3	0	3
			8	2	9
FOURTH QUARTER					
AGR	121	Weed Identification & Control .....	3	0	3
AGR	124	Plant Reproduction .....	2	0	2
AGR	228	Livestock Diseases & Parasites .....	3	2	4
			8	2	9
FIFTH QUARTER					
AGR	122	Farm Machinery Repair & Maintenance	1	3	2
AGR	131	Soybean Production .....	2	0	2
AGR	213	Farm Enterprise Management .....	2	2	3
			5	5	7
SIXTH QUARTER					
AGR	101B	Farm Tractors II .....	1	3	2
AGR	142	Agricultural Finance .....	2	0	2
AGR	200	Chemical Pest Control .....	2	2	3
			5	5	7
SUMMER SESSION					
AGR	190	Greenhouse Production & Management	3	2	4
AGR	208	Marketing Farm Products .....	3	0	3
AGR	245	Crop Insects .....	2	0	2
			8	2	9
SEVENTH QUARTER					
AGR	141	Surveying .....	2	3	3
AGR	183	Poultry & Egg Production .....	2	0	2
AGR	238	Farm Mechanization .....	3	0	3
			7	3	8
EIGHTH QUARTER					
AGR	114	Farm Electrification .....	1	2	2
AGR	128	Farm & Home Construction .....	2	3	3
AGR	133	Farm Water & Plumbing Systems .....	2	0	2
			5	5	7
NINTH QUARTER					
AGR	112	Small Engine Repair .....	1	3	2
AGR	126	Farm Forest Management .....	2	0	2
AGR	240	Fruit & Vegetable Production .....	2	2	3
			5	5	7
SUMMER SESSION					
AGR	243	New Sources of Farm Income .....	2	0	2
AGR	274	Pastures & Forage Crops .....	3	2	4
AGR	296	Agricultural Programs & Agencies .....	3	0	3
			8	2	9

\*The below additional subjects are provided for the student who pursues an Associate of Applied Science Degree.

ENG	101	Grammar .....	3	0	3
ENG	102	Composition .....	3	0	3
ENG	103	Report Writing .....	3	0	3
ENG	204	Oral Communication .....	3	0	3
SOC	101	Introduction to Sociology .....	3	0	3
PSY	206	Applied Psychology, or			
Science Elective		.....	3	0	3
			<u>18</u>	<u>0</u>	<u>18</u>

## BANKING AND FINANCE

### Purpose of Curriculum

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 American Institute of Banking (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.

### Job Description

The ultimate mission of the Banking and Finance Curriculum is excellence in job performance. Graduates entering the banking profession will have knowledge, skills, and attitudes consonant with employment opportunities in bank middle management. With only a minimum of specific on-the-job instruction, graduates will quickly be able to make a significant contribution to the banking enterprise.

## CURRICULUM BANKING AND FINANCE

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
MAT	110	Business Mathematics .....	3	2	4
BUS	185	Business Organization .....	3	0	3
ECO	102	Economics .....	2	2	3
BUS	102	Typewriting, or			
BUS	103	Typewriting .....	2	3	3
Social Science		Elective .....			3
			—	—	19
SECOND QUARTER					
ENG	102	Composition .....	3	0	3
ECO	104	Economics .....	2	2	3
BUS	115	Business Law I .....	3	2	4
BUS	234	Business Management .....	5	0	5
BUS	110	Office Machines .....	2	3	3
			15	7	18

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
BUS	116	Business Law II .....	3	2	4
EDP	104	Introduction to Data Processing .....	3	0	3
BUS	239	Marketing .....	5	0	5
Elective		.....			5

<b>SUMMER SESSION</b>					
AIB	202	Principles of Bank Operations .....	4	0	4 (3)
BUS	272	Principles of Supervision .....	3	0	3 (2)
			7	0	7

<b>FOURTH QUARTER</b>					
BUS	120	Accounting Principles I .....	5	3	6 (3)
AIB	210	Money and Banking .....	4	0	4 (3)
AIB	214	Effective Speaking .....	4	0	4 (3)
AIB	219	Credit Administration .....	4	0	4 (3)
			17	3	18

<b>FIFTH QUARTER</b>					
AIB	203	Bank Investments .....	4	0	4 (3)
AIB	205	Bank Management .....	4	0	4 (3)
BUS	121	Accounting Principles II .....	5	3	6 (3)
AIB	207	International Banking .....	4	0	4 (3)
			17	3	18

<b>SIXTH QUARTER</b>					
AIB	209	Installment Credit .....	4	0	4 (3)
AIB	211	Federal Reserve System .....	4	0	4 (3)
AIB	213	Trust Functions and Services .....	4	0	4 (3)
AIB	233	Analysis of Financial Statements .....	4	0	4 (3)
			16	0	16

<b>Electives for Associate Degree</b>					
AIB	231	Savings and Time Deposit .....	4	0	4 (3)
AIB	232	Agricultural Finance .....	4	0	4 (3)
AIB	206	Bank Letters and Reports .....	4	0	4 (3)
AIB	220	Business Financial Management .....	4	0	4 (3)
AIB	225	Home Mortgage Lending .....	4	0	4 (3)
AIB	227	Management of Commercial Bank Funds	4	0	4 (3)
AIB	259	Law and Banking .....	4	0	4 (3)
AIB*	120	Accounting I .....	4	0	4 (3)
AIB*	121	Accounting II .....	4	0	4 (3)
AIB	204	Effective English .....	4	0	4 (3)
			40	0	40

- (1) From College Curriculum—College Credit Only  
 (2) From College Curriculum—College and AIB Credit  
 (3) From AIB Curriculum—College and AIB Credit

#### REQUIREMENTS FOR ASSOCIATE DEGREE

108	Hours Total Credit Hours
57	Hours Core Curriculum Courses
44	Hours AIB Courses
7	Hours Curriculum Electives

\*AIB 120 and AIB 121 are equivalent to BUS 120.

## **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 designated 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 roles of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.

### **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 are responsibilities of this graduate vary in different firms. These encompassments might include: making up and filing reports, tabulating and posting, 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 the travel industry; insurance, transportation, and communications.

# CURRICULUM BUSINESS ADMINISTRATION

Course No. and Title			Hours Per Week	Lab	Quarter Hours Credit
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
MAT	110	Business Mathematics .....	3	2	4
BUS	185	Business Organization .....	3	0	3
ECO	102	Macroeconomics .....	2	2	3
BUS	102	Typewriting, or			
BUS	103	Typewriting .....	2	3	3
Social Science		Elective .....			3
					19
SECOND QUARTER					
ENG	102	Composition .....	3	0	3
ECO	104	Microeconomics .....	2	2	3
BUS	115	Business Law I .....	3	2	4
BUS	234	Business Management .....	5	0	5
BUS	110	Office Machines .....	2	3	3
			15	7	18
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
BUS	116	Business Law II .....	3	2	4
EDP	104	Introduction to Data Processing .....	3	0	3
BUS	239	Marketing .....	5	0	5
Elective		.....			5
					20
SUMMER QUARTER					
BUS	247	Business Insurance I .....	3	0	3
Elective		.....			3
					6
FOURTH QUARTER					
BUS	120	Accounting Principles I .....	5	3	6
ENG	204	Oral Communications .....	3	0	3
BUS	285	Salesmanship .....	5	0	5
Social Science		Elective .....			3
Elective		.....			3
					20
FIFTH QUARTER					
BUS	123	Business Finance I .....	2	2	3
ENG	206	Business Communications .....	3	0	3
BUS	121	Accounting Principles II .....	5	3	6
Elective		.....			8
					20
SIXTH QUARTER					
BUS	120	Business Finance II .....	2	2	3
ISC	220	Management Problems .....	3	0	3
Elective		.....			11
					17

# BUSINESS ADMINISTRATION CURRICULUM SUMMARY

120 Hours	Total Credits for Associate Degree
52 Hours	Core Curriculum
38 Hours	Required Courses
18 Hours	Curriculum Electives
12 Hours	Business Electives
3 Hours	Social Science Elective

Required Courses 38 Hours

Course No. and Title	Class	Lab	Credit
BUS 120 Accounting Principles I .....	5	3	6
BUS 121 Accounting Principles II .....	5	3	6
BUS 123 Business Finance I .....	2	2	3
BUS 124 Business Finance II .....	2	2	3
✓BUS 247 Business Insurance I .....	3	0	3
BUS 285 Salesmanship .....	5	0	5
✓ENG 204 Oral Communications .....	3	0	3
ENG 206 Business Communications .....	3	0	3
ISC 220 Management Problems .....	3	0	8
✓PSY 206 Applied Psychology .....	3	0	3

Curriculum Electives—Average 18 Hours

✓AIB 202 Principles of Bank Operations ....	4	0	4
✓BUS 260 Government and Business .....	2	2	3
✓BUS 272 Principles of Supervision .....	3	0	3
✓BUS 125 Personal Finance .....	2	2	3
BUS 282 Statistics .....	3	2	4
BUS 229 Income Taxes .....	3	4	5
BUS 243 Advertising .....	5	0	5
BUS 257 Business Insurance II .....	3	0	3
BUS 286 Real Estate .....	3	2	4
✓BUS 279 Stocks and Bonds .....	3	0	3
BUS 289 Contemporary Business & Economics .....	3	0	3
BUS 235 Small Business Management .....	3	0	3
ECO 201 Labor Economics .....	5	0	5

Business Electives 12 Hours

Any technical course approved by Department Chairman and the Faculty Adviser.

3 3



# LIFE INSURANCE OPTION TO BUSINESS ADMINISTRATION CURRICULUM

Course No. and Title		Hours Per Week		Quarter Hours Credit
		Class	Lab	
SUMMER QUARTER				
CLU 195	Accounting and Finance .....	3	0	3
Electives	.....	—	—	3
				6

<b>FOURTH QUARTER</b>			
CLU 202 Life Insurance Law & Mathematics .....	3	0	3
CLU 207 Income Tax .....	3	0	3
CLU 208 Pension Planning .....	3	0	3
Electives .....	—	—	6
			15

<b>FIFTH QUARTER</b>			
CLU 211 Economic Security and Individual Life Insurance .....	3	0	3
CLU 213 Group and Social Insurance .....	3	0	3
CLU 214 Insurance Economics .....	3	0	3
Electives .....	—	—	6
			15

<b>SIXTH QUARTER</b>			
CLU 229 Business Insurance .....	3	0	3
CLU 220 Estate Planning and Taxation .....	3	0	3
CLU 226 Investments & Family Financial Mgt. ..	3	0	3
Electives .....	—	—	6
			15

## **ELECTRONIC DATA PROCESSING**

### **Purpose of Curriculum**

The use of computers for electronic data processing in the field of business applications is growing rapidly. The Electronic Data Processing curriculum is designed to prepare a student to enter the business programming field. The graduate will be trained to process programs dealing with business applications such as: accounting reports, sales reports, or production reports.

The curriculum is developed on three general levels of depth. The first, introductory, level includes courses in Computer Logic, Punched-Card Data Processing, and An Introduction to Data Processing. The second level, Compiler Languages and their applications, includes courses in Cobol and NEAT/3. The third level, Introduction to Systems, includes courses in Computer Systems and Business Statistics. Analysis and solution decision-making are taught to the student to prepare her or him as a programmer-analyst trained to solve business and industry problems from identification 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. Analyzing the entire problem, logically determining the proper solution, coding of the programs to solve the problem in the appropriate computer language, testing the completed system for accuracy, and working with all levels of management are some of the tasks for which the graduate of the Electronic Data Processing Curriculum is prepared.

# ELECTRONIC DATA PROCESSING CURRICULUM

			Hours Per Week		Quarter Hours Credit
Course No. and Title			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
BUS	120	Accounting Principles I .....	5	3	6
ECO	102	Macroeconomics .....	2	2	3
MAT	106	EDP Math I .....	5	0	5
BUS	102	Typewriting, or			
BUS	103	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	Microeconomics .....	2	2	3
BUS	123	Business Finance I .....	2	2	3
EDP	112	Intro. to Computer Systems .....	3	3	4
			15	10	19
THIRD QUARTER					
BUS	124	Business Finance II .....	2	2	3
BUS	110	Office Machines .....	2	3	3
BUS	122	Management Accounting (Survey of) ..	5	3	6
EDP	109	Cobol I .....	4	3	5
			13	11	17
SUMMER SESSION					
EDP	201	Cobol II .....	2	5	4
Social Science	Elective .....				3
					7
FOURTH QUARTER					
ENG	204	Oral Communications .....	3	0	3
BUS	115	Business Law I .....	3	2	4
BUS	229	Income Taxes .....	3	4	5
BUS	282	Business Statistics .....	3	2	4
EDP	204	Cobol III .....	2	5	4
			14	13	20
FIFTH QUARTER					
BUS	225	Cost Accounting .....	3	4	5
BUS	234	Personnel & Business Management .....	5	0	5
EDP	207	Assembler Language—Neat-3-I .....	4	3	5
EDP	223	Computer Systems II .....	4	3	5
			16	10	20
SIXTH QUARTER					
ENG	206	Business Communications .....	3	0	3
EDP	208	Assembler Language—Neat-3-II .....	2	5	4
EDP	216	Data Processing Project .....	3	12	7
Social Science	Elective .....				3
					17

## GENERAL OFFICE TECHNOLOGY

### Purpose of Curriculum

More persons are now employed in clerical occupations than in any other single job category. Automation and increased production will mean that business industry and government will need employees with more technical skills and a greater adaptability for diversified types of jobs.

The General Office Technology curriculum is designed to develop the necessary variety of skills for employment in the business world. Specialized training in skill areas is supplemented by related courses in mathematics, accounting, business law, and applied psychology.

### Job Description

The graduate of the General Office Technology curriculum may be employed as an administrative assistant, accounting clerk, assistant office manager, bookkeeper, file clerk, machine transcriptionist, or a variety of other clerical-related jobs. Positions are available in almost every type of business, large or small.

### GENERAL OFFICE TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
BUS*	102	Typewriting .....	2	3	3
MAT	110	Business Mathematics .....	3	2	4
ECO	102	Macroeconomics .....	2	2	3
ENG	101	Grammar .....	3	0	3
Social	Science	Elective .....	3	0	3
			<u>13</u>	<u>7</u>	<u>16</u>

\*Credit is given if high school grade is "C" or better

<b>SECOND QUARTER</b>			
BUS 103 Typewriting .....	2	3	3
BUS 120 Accounting .....	5	3	6
BUS 110 Office Machines .....	2	3	3
ENG 102 Composition .....	3	0	3
BUS 185 Business Organization .....	3	0	3
	<u>15</u>	<u>9</u>	<u>18</u>

### THIRD QUARTER

BUS	104	Typewriting .....	2	3	3
BUS	121	Accounting .....	5	3	6
ENG	110	Business English .....	3	0	3
BUS	183B	Terminology & Vocabulary (Business) ..	3	2	4
ENG	103	Report Writing .....	3	0	3
			<u>16</u>	<u>8</u>	<u>19</u>

### SUMMER QUARTER

BUS	261	Introduction to Machine Transcription ..	1	4	3
BUS	184B	Terminology & Vocabulary (Business) ..	3	2	4
			<u>4</u>	<u>6</u>	<u>7</u>

### FOURTH QUARTER

BUS	203	Typewriting .....	2	3	3
BUS	211	Office Machines .....	2	3	3
ENG	204	Oral Communications .....	3	0	3
BUS	263	Payroll Taxes .....	3	0	3
BUS	112	Filing .....	3	0	3
Social Science	Elective .....				3
			<u>—</u>	<u>—</u>	<u>18</u>

### FIFTH QUARTER

ENG	206	Business Communications .....	3	0	3
BUS	256	General Office Practice .....	2	3	3
BUS	115	Business Law I .....	3	2	4
BUS	247	Business Insurance I .....	3	0	3
BUS	204	Typewriting .....	2	3	3
			<u>13</u>	<u>8</u>	<u>16</u>

### SIXTH QUARTER

BUS	116	Business Law .....	3	2	4
EDP	104	Introduction to Data Processing .....	3	0	3
BUS	257	Business Insurance II .....	3	0	3
BUS	205	Typewriting .....	2	3	3
BUS	228	Personal Income Taxes .....	2	2	3
			<u>13</u>	<u>7</u>	<u>16</u>

## HORTICULTURE BUSINESS TECHNOLOGY\*

### Purpose of Curriculum

Horticulture has experienced accelerated development in recent years in response to the growing demand for house, garden, agricultural, and ornamental plants. This expansion in the horticulture field has generated a specific need for the preparation of horticulture business technicians to work in supervisory and managerial positions in the production, operation, and sales of horticulture plants.

The Horticulture Business Curriculum is designed to help students acquire the knowledge, understanding, and ability in the broad field of horticulture production and management. It combines the knowledge of horticulture with business accounting, supervision, and sales principles to prepare the graduate for many of the employment opportunities in horticulture.

### Job Description

Upon graduation from this curriculum, an individual should qualify for various jobs in the production of a variety of horticulture plants in greenhouses, the operation of garden shops and nurseries, and certain service types of activities, such as lawn and garden establishment, and maintenance.

The broad-based business training offered in the curriculum, coupled with on-the-job experience, should enable the graduate to advance rapidly to a managerial position with high level responsibility.

\*1st year curriculum is identical to Agricultural Business Technology.

## HORTICULTURE BUSINESS TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
CHM	101	Chemistry .....	3	2	4
MAT	110	Business Mathematics .....	3	2	4
AGR	185	Soil Science & Fertilizers .....	5	2	6
			<u>14</u>	<u>6</u>	<u>17</u>

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
SECOND QUARTER					
ENG	102	Composition .....	3	0	3
BUS	120	Accounting Principles I .....	5	3	6
BUS	185	Business Organization .....	3	0	3
AGR	104	Introduction to Agri-Economics .....	3	2	4
BUS	115	Business Law I .....	3	2	4
			<u>17</u>	<u>7</u>	<u>20</u>

<b>THIRD QUARTER</b>					
ENG	103	Report Writing .....	3	0	3
BUS	121	Accounting Principles II .....	5	3	6
AGR	170	Plant Science .....	5	2	6
*Social		Science Elective .....	3	0	3
			<u>16</u>	<u>5</u>	<u>18</u>

<b>SUMMER SESSION</b>					
**HOR	299	Cooperative Training .....	0	15	5

<b>FOURTH QUARTER</b>					
ENG	204	Oral Communications .....	3	0	3
BUS	110	Office Machines .....	2	3	3
HOR	151	Plant Materials .....	3	2	4
AGR	201	Agricultural Chemicals .....	4	2	5
HOR	254	Plant Propagation .....	3	2	4
			<u>15</u>	<u>9</u>	<u>19</u>

<b>FIFTH QUARTER</b>					
BUS	123	Business Finance .....	2	2	3
HOR	153	Greenhouse Management .....	3	2	4
HOR	205	Horticulture Retail Marketing .....	3	2	4
HOR	204	Plant Management Practices .....	4	2	5
BUS	272	Supervision .....	3	0	3
*Social		Science Elective .....	3	0	3
			<u>18</u>	<u>8</u>	<u>22</u>

<b>SIXTH QUARTER</b>					
BUS	229	Taxes .....	3	4	5
BUS	285	Salesmanship .....	5	0	5
HOR	228	Plant Diseases & Parasites .....	3	2	4
HOR	258	Horticulture Enterprises (mgt) .....	5	2	6
			<u>16</u>	<u>8</u>	<u>20</u>

\*SSC 205, SOC 101, SOC 210, SOC 102, PSY 101, PSY 206, and/or SOC 270

\*\*May be scheduled another quarter by Department Chairman approval.

## **INDUSTRIAL MANAGEMENT**

### **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 who 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 effect personnel working under 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 develops 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 provides one with the opportunity to enter into an industrial occupation and, with experience, to assume the responsibilities that go with supervisory and mid-management positions in industry.

### **Job Description**

The Industrial Management graduate should be prepared to work as a supervisor or foreman who coordinates the activities of workers in one or more occupations. His duties may encompass interpreting company policies to workers, involvement in planning of production schedules, and estimating man hour requirements for job completion. The establishment or adjustment of work procedures, analysis and resolution of work problems, and initiation or suggestion of plans to motivate workers to achieve work goals may be expected of the graduate.



# INDUSTRIAL MANAGEMENT CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3 ✓
MAT	110	Business Mathematics .....	3	2	4 ✓
BUS	185	Business Organization .....	3	0	3 ✓
ECO	102	Macroeconomics .....	2	2	3 ✓
BUS	102	Typewriting, or .....			
BUS	103	Typewriting .....	2	3	3 ✓
Social Science		Elective .....	3	0	3 ✓
			16	7	19
SECOND QUARTER					
ENG	102	Composition .....	3	0	3 ✓
ECO	104	Microeconomics .....	2	2	3 ✓
BUS	115	Business Law I .....	3	2	4 ✓
BUS	234	Business Management .....	5	0	5 ✓
BUS	110	Office Machines .....	2	3	3 ✓
			15	7	18
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3 ✓
BUS	116	Business Law II .....	3	2	4 ✓
EDP	104	Introduction to Data Processing .....	3	0	3 ✓
BUS	239	Marketing .....	5	0	5 ✓
Elective		.....	—	—	5
					20
SUMMER QUARTER					
BUS	247	Business Insurance I .....	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	240	Industrial Relations .....	2	2	3
ISC	102	Industrial Safety .....	2	2	3
BUS	120	Accounting Principles I .....	5	3	6
			15	7	18
FIFTH QUARTER					
ENG	206	Business Communications .....	3	0	3
BUS	123	Business Finance I .....	2	2	3
ISC	202	Quality Control .....	3	2	4
ISC	221	Intro. to Industrial Engineering .....	3	2	4
ISC	204	Value Analysis .....	3	0	3
Elective		.....	—	—	3
					20

## SIXTH QUARTER

ISC	232	Industrial Dynamics .....	5	0	5
ISC	220	Management Problems .....	3	0	3
ISC	235	Industrial Management Seminar .....	3	2	4
Elective		.....	—	—	<u>6</u>
					18

## INDUSTRIAL MANAGEMENT CURRICULUM SUMMARY

120 Hours	Total Credits for Associate Degree
52 Hours	Core Curriculum
50 Hours	Required Courses
18 Hours	Business Electives
3 Hours	Social Science Elective

Required Courses		50 Hours			
PSY	206	Applied Psychology .....	3	0	3
ENG	204	Oral Communications .....	3	0	3
BUS	120	Accounting Principles I .....	5	3	6
ISC	240	Industrial Relations .....	2	2	3
ENG	206	Business Communications .....	3	0	3
BUS	123	Business Finance I .....	2	2	3
ISC	202	Quality Control .....	3	2	4
ISC	221	Intro. to Industrial Engineering ....	3	2	4
ISC	204	Value Analysis .....	3	0	3
ISC	232	Industrial Dynamics .....	5	0	5
ISC	220	Management Problems .....	3	0	3
ISC	235	Industrial Management Seminar ....	3	2	4
BUS	247	Business Insurance I .....	3	0	3
ISC	102	Industrial Safety .....	2	2	3

### Business Electives 18 Hours

Any technical course approved by Department Chairman and Faculty Advisor.

## **MARKETING AND RETAILING**

### **Purpose of Curriculum**

Marketing and Retailing Technology is a program of instruction which teaches students the techniques of marketing, management, and distribution. 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. Distribution occupations are those followed by workers engaged in marketing or merchandising activities, or in contacting 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. Distribution 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 starts 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 in which he served his apprenticeship. The student is also given academic credit for his apprenticeship.

### **Job Description**

The graduate of the Marketing and Retailing Technology curriculum may enter a variety of career opportunities from beginning sales person to a manager trainee. Opportunities are available in the following type institutions: retailing, wholesaling, manufacturing, and others such as hotel, motel, transportation, finance, insurance, real estate and other institutions that are performing the market functions such as buying, management, and marketing (export, industrial, credit operations, and sales promotion).

## MARKETING & RETAILING CURRICULUM

Course No. and Title			Hours Per Week	Class	Lab	Quarter Hours Credit
FIRST QUARTER						
ENG	101	Grammar .....	3	0		3
MAT	110	Business Mathematics .....	3	2		4
BUS	185	Business Organization .....	3	0		3
ECO	102	Macroeconomics .....	2	2		3
BUS	102	Typewriting, or				
BUS	103	Typewriting .....	2	3		3
Social Science		Elective .....	—	—		3
						19
SECOND QUARTER						
ENG	102	Composition .....	3	0		3
ECO	104	Microeconomics .....	2	2		3
BUS	115	Business Law I .....	3	2		4
BUS	234	Business Management .....	5	0		5
BUS	110	Office Machines .....	2	3		3
			15	7		18
THIRD QUARTER						
ENG	103	Report Writing .....	3	0		3
BUS	116	Business Law II .....	3	2		4
EDP	104	Introduction to Data Processing .....	3	0		3
BUS	239	Marketing .....	5	0		5
Elective		.....	—	—		5
						20
SUMMER QUARTER						
BUS	247	Business Insurance I .....	3	0		3
BUS	249	Buying & Merchandising .....	2	2		3
Elective		.....	—	—		3
						9
FOURTH QUARTER						
BUS	120	Accounting Principles I .....	5	3		6
PSY	206	Applied Psychology .....	3	0		3
ENG	204	Oral Communications .....	3	0		3
BUS	285	Salesmanship .....	5	0		5
BUS	288	Fashion in Retailing .....	2	2		3
			18	5		20
FIFTH QUARTER						
BUS	123	Business Finance I .....	2	2		3
ENG	206	Business Communications .....	3	0		3
BUS	121	Accounting Principles II .....	5	3		6
Elective		.....	—	—		6
						18

			Hours Per Week		Quarter
Course No. and Title			Class	Lab	Hours Credit
SIXTH QUARTER					
BUS	124	Business Finance II .....	2	2	3
BUS	243	Advertising .....	5	0	5
BUS	268	Marketing & Retailing Internship .....	3	9	6
Elective		.....	—	—	2
					16

#### MARKETING & RETAILING CURRICULUM SUMMARY

120 Hours	Total Credits for Associate Degree
52 Hours	Core Curriculum
52 Hours	Required Courses
16 Hours	Business Electives

#### Required Courses 52 Hours

BUS 285 Salesmanship .....	5	0	5
BUS 120 Acct. Prin. I .....	5	3	6
BUS 121 Acct. Prin. II .....	5	3	6
BUS 123 Bus. Finance I .....	2	2	3
BUS 124 Bus. Finance II .....	2	2	3
BUS 288 Fashions in Retailing .....	2	2	3
BUS 243 Advertising .....	5	0	5
BUS 247 Business Insurance I .....	3	0	3
BUS 249 Buying & Merchandising .....	2	2	3
BUS 268 Marketing & Retailing Internship ..	3	9	6
PSY 206 Applied Psychology .....	3	0	3
ENG 204 Oral Communications .....	3	0	3
ENG 206 Business Communications .....	3	0	3

#### Business Electives 16 Hours

Any technical course approved by the Department Chairman and Faculty Advisor.

## **REAL ESTATE**

### **Purpose of Curriculum**

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this State, real estate has become a more competitive and complicated industry. Better opportunities in real estate will be filled by persons with specialized education beyond the high school level. The Real Estate curriculum is designed to prepare the student for employment in one of many occupations common to real estate. Training is aimed at preparing the student in many phases of administrative work that might be encountered in the real estate industry.

The specific objectives of the Real Estate curriculum are to develop the following competencies:

1. An understanding of the principles of organization and management in the real estate industry,
2. An understanding of our economy through a study and analysis of the role of the purchase, development and sale of real estate, and
3. A knowledge in specific elements of accounting, finance, law, sales, market trends, land development and property management.

### **Job Description**

The graduate of the Real Estate 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: preparing and filing sales reports, tabulating and posting data in various books, sending out bills, checking calculations, adjusting complaints, and assisting managers in supervision. Positions are available in real estate such as advertising; mortgage banking; credit; finance; retailing; brokerage and insurance.

# REAL ESTATE CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
MAT	110	Business Mathematics .....	3	2	4
BUS	185	Business Organization .....	3	0	3
ECO	102	Macroeconomics .....	2	2	3
BUS	102	Typewriting, or			
BUS	103	Typewriting .....	2	3	3
Social Science		Elective .....	—	—	3
					19
SECOND QUARTER					
ENG	102	Composition .....	3	0	3
ECO	104	Microeconomics .....	2	2	3
BUS	115	Business Law I .....	3	2	4
BUS	234	Business Management .....	5	0	5
BUS	110	Office Machines .....	2	3	3
					18
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
BUS	116	Business Law II .....	3	2	4
EDP	104	Introduction to Data Processing .....	3	0	3
BUS	239	Marketing .....	5	0	5
Elective		.....	—	—	5
					20
SUMMER QUARTER					
BUS	272	Supervision .....	3	0	3
BUS	286	Real Estate Principles & Practices .....	3	3	4
					7
FOURTH QUARTER					
BUS	120	Accounting Principles I .....	5	3	6
ENG	204	Oral Communications .....	3	0	3
RLS	203	Real Estate Finance .....	2	3	3
RLS	215	Real Estate Trends & Investments .....	3	0	3
RLS	225	Real Estate Law .....	2	2	3
					18
FIFTH QUARTER					
BUS	247	Business Insurance I .....	3	0	3
BUS	121	Accounting Principles II .....	5	3	6
RLS	235	Real Estate Selling .....	5	0	5
RLS	236	Real Estate Appraisal .....	2	3	3
Elective		.....	—	—	3
					20

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
SIXTH QUARTER					
PSY	206	Applied Psychology .....	3	0	3
BUS	229	Income Taxes .....	3	4	5
RLS	241	Land Resources & Property Management .....	3	3	4
RLS	245	Real Estate Brokerage & Management	3	0	3
Elective		.....	—	—	3
					15

## REAL ESTATE CURRICULUM SUMMARY

120 Hours	Total Credits for Associate Degree
52 Hours	Core Curriculum
60 Hours	Required Courses
8 Hours	Business Electives
3 Hours	Social Science Elective

### Required Courses 60 Hours

BUS	260	Government and Business .....	2	2	3
BUS	272	Principles of Supervision .....	3	0	3
BUS	286	Real Estate Principles & Practices	3	3	4
BUS	120	Accounting Principles I .....	5	3	6
BUS	247	Business Insurance I .....	3	0	3
BUS	121	Accounting Principles II .....	5	3	6
BUS	229	Income Taxes .....	3	4	5
RLS	203	Real Estate Finance .....	2	3	3
RLS	215	Real Estate Trends & Invest. ....	3	0	3
RLS	225	Real Estate Law .....	2	2	3
RLS	235	Real Estate Selling .....	5	0	5
RLS	236	Real Estate Appraisal .....	2	3	3
RLS	241	Land Resources & Property Management .....	3	3	4
RLS	245	Real Estate Brokerage & Management .....	3	0	3
PSY	206	Applied Psychology .....	3	0	3
ENG	204	Oral Communications .....	3	0	3

### Business Electives: 8 Hours

Any technical course approved by the Department Chairman and Faculty Advisor.



## **SECRETARIAL SCIENCE**

**(Medical, Executive, Legal and Technical)**

### **Purpose**

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

The Secretarial curriculum is designed to offer the students the necessary secretarial skills in typing, office machines, dictation, transcription, and terminology for employment. The special training in Secretarial subjects is supplemented by related courses in mathematics, English, accounting, business law, and personality development to provide training in the accepted procedures required by the business world and to enable a person to become proficient soon after accepting employment in the business office. With today's office so profoundly influenced by the computer's impact, the students are acquired with automated equipment and procedures which effect 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 may be employed as a stenographer or a secretary in a variety of offices, such as insurance companies, banks and financial institutions, marketing firms, medical and health organizations, Federal and State governmental agencies, and legal offices. Intensive training in this curriculum also provides the background for jobs as office managers and administrative assistants.

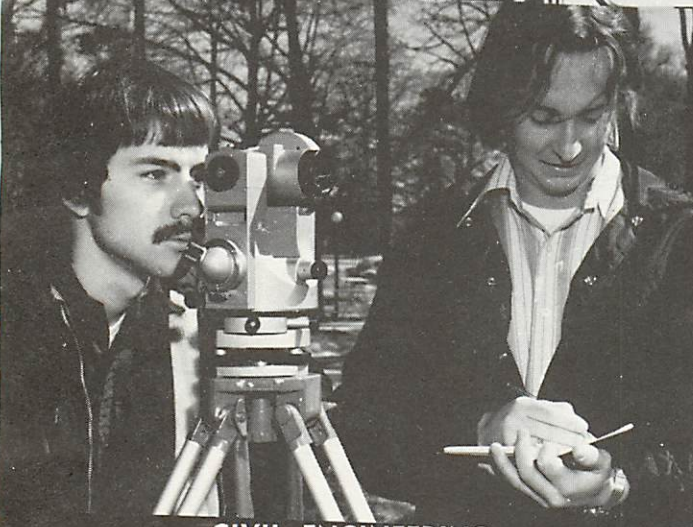
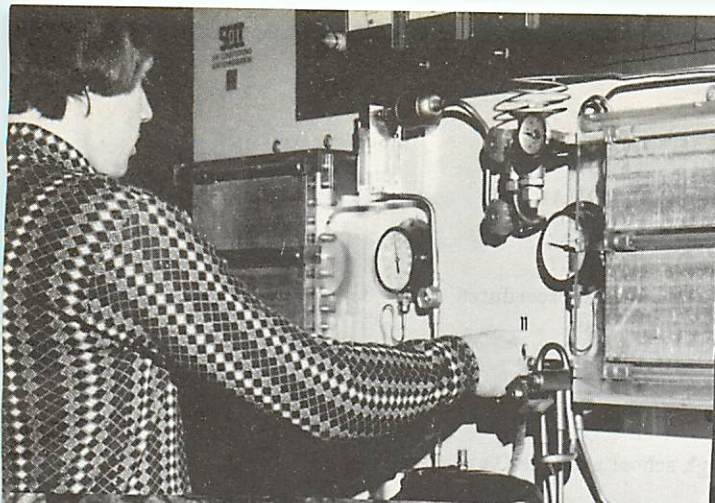
## SECRETARIAL SCIENCE CURRICULUM

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
MAT	110	Business Mathematics .....	3	2		4
ENG	101	Grammar .....	3	0		3
ECO	102	Macroeconomics, or .....	2	2		3
BUS	185	Business Organization .....	3	0		3
Social Science		Elective .....	—	—		3
						20
SECOND QUARTER						
BUS	103	Typewriting .....	2	3		3
BUS	107	Dictation and Transcription .....	3	2		4
BUS	120	Accounting Principles I .....	5	3		6
ENG	110	Business English .....	3	0		3
ENG	204	Oral Communications .....	3	0		3
			16	8		19
THIRD QUARTER						
BUS	104	Typewriting .....	2	3		3
BUS	108	Dictation and Transcription .....	3	2		4
BUS	121	Accounting Principles II .....	5	3		6
BUS	110	Office Machines .....	2	3		3
BUS	115	Business Law I .....	3	2		4
			15	13		20
SUMMER SESSION						
BUS	211	Office Mchines .....	2	3		3
EDP	104	Intro to Data Processing .....	3	0		3
			5	3		6
FOURTH QUARTER						
BUS	205	Typewriting .....	2	3		3
BUS	206	Dictation & Transcription .....	3	2		4
BUS	183	Terminology & Vocabulary .....	3	0		3
BUS	206	Business Communications .....	3	0		3
BUS	263	Payroll Taxes .....	3	0		3
Social Science		Elective .....	—	—		3
						19
FIFTH QUARTER						
BUS	207	Dictation & Transcription .....	3	2		4
BUS	262	Machine Transcription .....	1	4		3
BUS	214	Secretarial Procedures .....	3	2		4
BUS	184	Terminology & Vocabulary .....	3	0		3
BUS	271	Office Management .....	2	2		3
			12	10		17

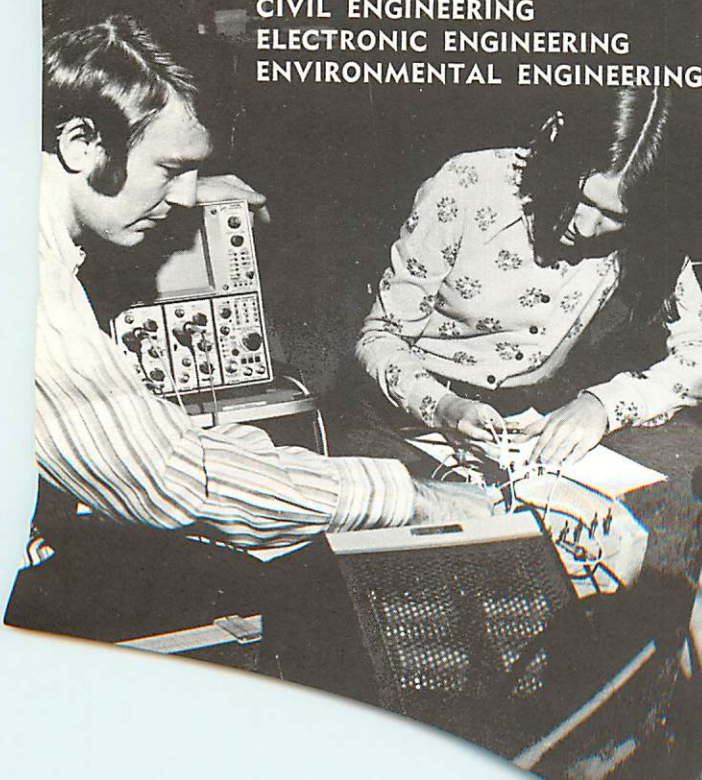
Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
SIXTH QUARTER					
BUS	208	Dictation & Transcription .....	3	2	4
BUS	112	Filing .....	3	0	3
BUS	248	Insurance Principles & Procedures .....	3	0	3
BUS	270	Office Practice Seminar .....	3	0	3
BUS	290	Secretarial Internship or			
		Approved Elective .....	—	—	6
					19

\*Credit will be given if high school grade is C or better.





CIVIL ENGINEERING  
ELECTRONIC ENGINEERING  
ENVIRONMENTAL ENGINEERING



## ENGINEERING TECHNOLOGY DIVISION

### Purpose

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

The Technology curricula are designed to build in the first year that degree of competence 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 certain basic skill courses in his major area to this core of fundamentals, the student is given a thorough foundation on which to build his second year of intensive training. The second year is spent in the major subject area of highly specialized technical training needed to produce a qualified technician with a given 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/or 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-technological areas.

## **AIR CONDITIONING 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, man-made 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 returns from his 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		Quarter Hours Credit	
		Class	Lab		
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
MAT	101	Technical Mathematics I .....	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 II .....	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 III .....	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**

### **Purpose of Curriculum**

Civil Engineering is the oldest branch and one of the broadest fields of engineering. Consequently, the general purpose of the curriculum is to provide the base upon which to build future training either formal, informal or self-motivated to assure future advancement in the expanding world of technology. Specifically, the curriculum provides training in the acceptable performance of those duties commonly assigned Civil Engineering technicians including:

- A. Field operations;
  - 1. Field surveys (i.e., plane, geometric and site surveys, utility surveys, geological and traffic surveys),
  - 2. Project inspections and test of soils, concrete, asphalt and aggregates, structures, and
- B. Office services;
  - 1. Preparation of cost estimates, designs, and drawings,
  - 2. Writing of specifications, reports, letters and job orders,
  - 3. Operation and programming of electronic computers,
  - 4. Performance of limited photogrammetric duties,
  - 5. Calculation of field surveys, and
- C. Construction Management;
  - 1. Preparation of schedules for work and materials, maintenance of progress records,
  - 2. Coordination of personnel, financing, materials, facilities and equipment,
  - 3. Assist foremen in interpreting plans, specifications and coordinating work, and
  - 4. Management of financial records.

### **Job Description**

Civil Engineering technicians perform many of the planning, design and construction tasks in building highways, railroads, bridges, airfields, dams, factories, and ground facilities for sea transportation; and control the flow of and uses of water for flood protection, power generation and recreation. Although they are trained to perform different tasks, they generally specialize in certain activities. The greater part of the field work, surveys, soil investigation and construction is carried on out-of-doors. Those preferring in-door work would probably be involved in design drafting, estimating, photogrammetry, traverse computations or assisting engineers and sociologists as technical assistants for city planning and urban renewal projects.



# CIVIL ENGINEERING TECHNOLOGY CURRICULUM

CIVIL ENGINEERING TECHNOLOGICAL			Hours Per Week	Quarter Hours Credit	
Course No. and Title			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
MAT	101	Technical Mathematics I .....	5	0	5
PHY	101	Properties of Matter .....	3	2	4
CIV	101	Surveying I .....	2	6	4
			13	8	16
SECOND QUARTER					
ENG	102	Composition .....	3	0	3
MAT	102	Technical Mathematics II .....	5	0	5
PHY	102	Work, Energy, Power .....	3	2	4
CIV	107	Civil Engineering Computations .....	2	2	3
CIV	114	Statics .....	5	0	5
			18	4	20
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
*MAT	103	Technical Mathematics III .....	5	0	5
DFT	101	Technical Drafting .....	0	6	2
CIV	231	Portland Cement and Asphalt Concrete .....	3	3	4
CIV	102	Surveying II .....	2	6	4
			13	15	18
SUMMER QUARTER					
CIV	217	Construction Planning Methods and Equipment .....	3	2	4
ELC	205	Applied Electricity .....	2	4	4
			5	6	8
FOURTH QUARTER					
ENG	204	Oral Communications .....	3	0	3
CIV	219	Strength of Materials and Properties of Engineering Materials ..	5	2	6
CIV	103	Surveying III .....	2	6	4
CIV	223	Codes, Contracts, and Specifications ....	2	0	2
CIV	108	Hydraulics .....	3	3	4
			15	11	19
FIFTH QUARTER					
ECO	205	Applied Economics .....	3	0	3
CIV	271	City and Regional Planning .....	5	0	5
CIV	202	Properties of Soils .....	2	3	3
CIV	228	Highway and Structural Drafting .....	1	6	3
CIV	221	Reinforced Concrete .....	5	0	5
			16	9	19
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 and Pavements .....	3	0	3
CIV	229	Municipal Engineering .....	3	3	4
			14	15	19

\*Required for students pursuing a BS in CET; elective for others.

# **ELECTRONIC ENGINEERING TECHNOLOGY**

## **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 to business and industry. Courses are designed to develop competent electronics technicians who may take their places as assistants to engineers, or as 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.

# ELECTRONIC ENGINEERING TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
MAT	101	Technical Mathematics I .....	5	0	5
CHM	101	Chemistry .....	3	2	4
ELG	101	Fundamentals of Electricity I .....	4	6*	6
MAT	298	Special Problems .....	1	0	1
			16	8	19
SECOND QUARTER					
ENG	102	Composition .....	3	0	3
MAT	102	Technical Mathematics II .....	5	0	5
PHY	101	Properties of Matter .....	3	2	4
DFT	101	Technical Drafting .....	0	6*	2
ELC	103	Fundamentals of Electricity II .....	2	3	3
ELN	103	Introduction to Active Devices .....	2	2	3
			15	13	20
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
MAT	103	Technical Mathematics III .....	5	0	5
PHY	102	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	206A	Application of Active Devices .....	2	3	3
			4	5	6
FOURTH QUARTER					
ENG	204	Oral Communications .....	3	0	3
MAT	286	Technical Mathematics IV .....	3	0	3
PHY	104	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
ELN	206B	Application of Active Devices .....	2	3	3
			16	9	20
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

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

## **ENVIRONMENTAL ENGINEERING TECHNOLOGY**

### **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 producing and safeguarding 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. Industrial expansion coupled with rapid increase in automotive vehicles is beginning to create air pollution problems which can only be solved by personnel technically trained in air resources control and sampling techniques.

These activities require increasing numbers of highly skilled 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 receives related courses in the communicating skills, 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.

### **Additional Admission Requirements**

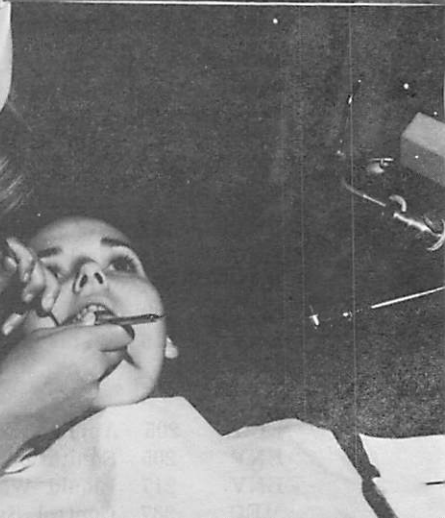
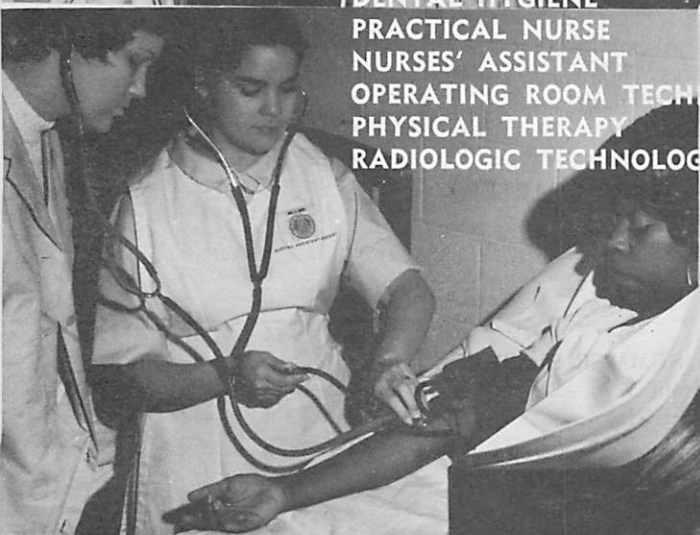
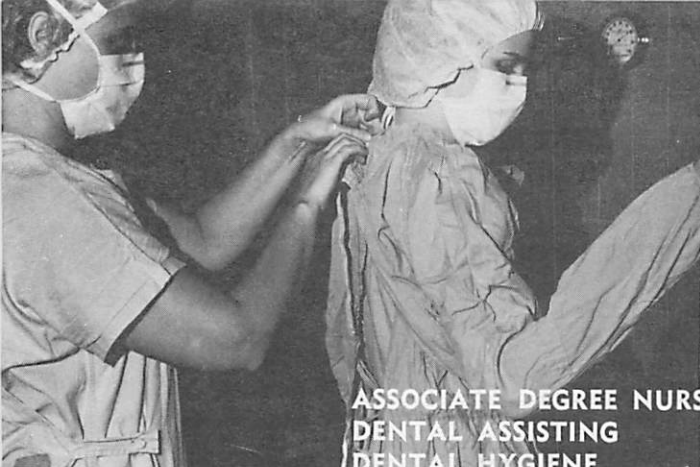
In addition to the minimum admission requirements for technician programs, one unit of chemistry is required for entrance into the Environmental Engineering Technology Curriculum.

### **Job Description**

The graduate of this curriculum has knowledge of laboratory procedures and skill in performing many types of tests on liquid and solid wastes, foods, water and air to determine physical and bacteriological characteristics. He is qualified for entry into a variety of positions such as public health engineering aide, sanitation aide, treatment plant operators, stream sanitation technician positions with Federal, State, and local governments and municipalities, related to food, water and air pollution problems.

# ENVIRONMENTAL ENGINEERING TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
MAT	101	Technical Mathematics I .....	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 II .....	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
ENV	105	Environmental Chemistry .....	3	2	4
CIV	101	Surveying .....	2	6	4
DFT	285	Drafting .....	0	6	2
			8	14	13
SUMMER SESSION					
ENV	108	Basic Hydraulics .....	2	4	4
ELC	205	Applied Electricity .....	2	4	4
			4	8	8
FOURTH QUARTER					
ENV	112	Atmospheric Air Sampling .....	2	3	3
ENG	204	Oral Communications .....	3	0	3
ENV	204	Sanitation, Chemistry & Biology I .....	2	6	5
ENV	109	Hydrology .....	3	2	4
ENV	216	Water Purification .....	3	2	4
			13	13	19
FIFTH QUARTER					
ECO	205	Applied Economics .....	3	0	3
ENV	205	Sanitation, Chemistry & Biology II .....	2	6	5
ENV	217	Liquid Waste Treatment .....	3	2	4
MEC	237	Control Systems .....	2	4	4
ENV	226	Atmospheric Air Analysis .....	2	3	3
			12	15	19
SIXTH QUARTER					
PSY	206	Applied Psychology .....	3	0	3
ENV	206	Sanitation, Chemistry & Biology III .....	2	6	5
ENV	218	Liquid Waste Treatment .....	3	2	4
ENV	236	Codes, Contracts, Specifications & Estimates .....	2	3	3
			10	11	15



ASSOCIATE DEGREE NURSING  
DENTAL ASSISTING  
DENTAL HYGIENE  
PRACTICAL NURSE  
NURSES' ASSISTANT  
OPERATING ROOM TECHNICIAN  
PHYSICAL THERAPY  
RADIOLOGIC TECHNOLOGIST

## 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, Public Service, Business, and Vocational Education Divisions. Thus, General Education, which includes English, mathematics, the physical sciences, the social and behavioral sciences and the humanities, includes those general subjects which enable students to learn and to appreciate 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 Division has three main instructional responsibilities:

1. General Education courses integral or elective to other curricula,
2. The Developmental Studies (Remedial) Program (see page 113, below), and
3. The General Education Associate Degree (GEAD) curriculum which 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 a General Education Associate Degree, 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 great 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, as well as the more traditional college students (who crave to understand and fully appreciate the intellectual, political, and rational world in which we, today, find ourselves) are provided a means by which they can gain orderly, progressive, awareness of the enriching factors which have contributed to our present and which will, in part, determine our future as individuals and as a people.

This program may be terminal (with a degree) or contributory to further individual development, designed specifically along general education lines, with parallel classes offered in the day and in the evening.

### **Job Description**

The General Education Associate Degree Program offered at Fayetteville Technical Institute is for the student who is basically interested in two years of education beyond the high school.

The Program is principally designed for students wanting only two years of higher education; however, many of the required and elective courses in the program are the equivalent of regular freshman and sophomore work which may permit the application of these courses toward senior college degree programs.

When the student has completed basic general education requirements and has accumulated additional satisfactory work to a minimum total of 104 quarter hours, he will be granted a General Education Associate Degree (GEAD).



## Associate Degree in General Education Summary

	Minimum Credit Hours Required
English Composition .....	9
World Literature .....	9
Physical Science (Natural Science)	
Bio 201 and 202 .....	10
Mathematics—at least one course in “academic” mathematics (algebra, trigonometry, calculus, etc.), the other unit from among the quan- titative subjects (Bus. Math, Computer Sci- ence, Statistics, etc. ....	10
Social and Behavioral Sciences .....	27
Western Civilization .....	9
Philosophy & Logic .....	6
Art Appreciation .....	3
Music Appreciation .....	3
Electives: Two courses must be selected .....	6
from among the following discipline areas: history, political sciences, psychology, sociology.	
<hr/> Total Required .....	<hr/> 65
Electives—non-duplicating courses from General Education, Business, Health or Technology Curricula....	39
<hr/> Total Degree Requirements .....	<hr/> 104

## GENERAL EDUCATION CURRICULUM

Course No. and Title			Hours Per Week		Quarter
			Class	Lab	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 Math, or .....	5	0	5
MAT	109	College Algebra .....	5	0	5
			17	0	17
SECOND QUARTER					
ART	104	Art Appreciation .....	3	0	3
ENG	105	English Usage and Composition II .....	3	0	3
HIS	105	Western Civilization II .....	3	0	3
BIO	201	Biology I .....	4	2	5
MAT	109	College Algebra .....	5	0	5
or					
MAT	111	College Trigonometry .....	5	0	5
					19

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
THIRD QUARTER					
ENG	108	English Usage and Composition II .....	3	0	3
HIS	106	Western Civilization III .....	3	0	3
BIO	202	Biology II .....	4	2	5
PHI	102	Introduction to Logic .....	3	0	3
Elective		.....			3

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<b>SUMMER QUARTER</b>					
ENG	106	World Literature I .....	3	0	3
Elective		.....	—	—	3
					6

<b>FOURTH QUARTER</b>					
ENG	107	World Literature II .....	3	0	3
Electives		.....	—	—	12
					15

<b>FIFTH QUARTER</b>					
ENG	209	World Literature III .....	3	0	3
Electives		.....	—	—	12
					18

<b>SIXTH QUARTER</b>					
Electives		.....			15

#### Suggested General Education Electives:

##### Sciences:

BIO	106	Human Anatomy & Physiology I ....	4	3	5
BIO	107	Human Anatomy & Physiology II ..	4	3	5
BIO	108	Microbiology .....	5	3	6
BIO	113	General Pathology .....	3	0	3
CHM	101	General Chemistry .....	3	2	4
CHM	102	General Chemistry .....	3	2	4
CHM	103	General and Introductory Analytical Chemistry .....	3	2	4
PHY	101	Properties of Matter .....	3	2	4
PHY	102	Work, Energy, Power .....	3	2	4
PHY	104	Light and Sound .....	3	2	4
PHY	231	Fluid Mechanics .....	3	2	4

##### Mathematics:

MAT	201	Calculus I .....	5	0	5
MAT	202	Calculus II .....	5	0	5
MAT	203	Calculus III .....	5	0	5
MAT	204	Calculus IV .....	5	0	5
MAT	111	College Trigonometry .....	5	0	5

Course No. and Title		Hours Per Week	Class	Lab	Quarter Hours Credit
English:					
ENG	103	Report Writing .....	3	0	3
ENG	204	Oral Communications .....	3	0	3
ENG	210	American Literature I .....	3	0	3
ENG	211	American Literature II .....	3	0	3
ENG	212	Creative Writing .....	3	0	3
Social Science:					
ART	102	Drawing and Composition .....	1	2	2
ART	103	Drawing and Oil Painting .....	1	2	2
ART	105	Ceramics I .....	1	2	2
ART	106	Ceramics II .....	1	2	2
ART	107	Advanced Drawing I .....	1	5	3
ART	108	Advanced Oil Painting .....	1	5	3
HIS	201	American History I .....	3	0	3
HIS	202	American History II .....	3	0	3
HIS	203	American History III .....	3	0	3
HIS	210	North Carolina History I .....	3	0	3
HIS	211	North Carolina History II .....	3	0	3
MUS	107	Concert Chorus I .....	0	3	1
MUS	108	Concert Chorus II .....	0	3	1
MUS	109	Concert Chorus III .....	0	3	1
PED	101	Personal Hygiene .....	2	0	2
PED	102	Personal and Community Health .....	5	0	5
PED	111	First Aid and Safety .....	2	0	2
PED	116	Physical Education .....	0	3	1
PED	120	Swimming (Beginner) .....	0	2	1
PED	121	Swimming (Intermediate) .....	0	3	1
PED	122	Swimming (Advanced) .....	0	3	1
PED	124	Water Sports .....	0	2	1
PED	143	Tennis .....	0	3	1
PED	211	First Aid & Safety .....	3	2	4
PED	212	First Aid & Safety .....	3	2	4
POL	102	State and Local Government .....	3	0	3
POL	103	National Government .....	3	0	3
PSY	101	Introduction to Psychology .....	3	0	3
PSY	202	Human Growth and Development .....	3	0	3
PSY	204	Abnormal Psychology .....	3	0	3
PSY	208	Grief Psychology .....	3	0	3
SOC	101	Introduction to Sociology .....	3	0	3
SOC	102	Marriage and the Family .....	3	0	3
SOC	210	Contemporary Social Problems .....	3	0	3
SSC	205	American Institutions .....	2	2	3

## 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 the 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 progress 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, and physical science. In addition to these, he may select an elective from the Business, Vocational, Technical, Health, Social Science, or Learning Skills Areas.

*English*—instruction is designed to develop the student's functional ability in the successful use of the language and includes:

- a. Vocabulary and Reading—designed to promote interest

in reading while enhancing the student's vocabulary, dictionary, and research skills.

- b. Grammar and Composition—review the rules related to meaningful English usage which provides the students with the opportunity to apply those rules, while focusing on the writing of good sentences, paragraphs, and short papers.
- 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*—instruction is 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 student's 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 necessary to succeed in Technical curricula. Included are the application of mathematics to problem solving by using ratio and proportion, direct measurement, line, angles, perimeters, areas, volumes, indirect measurement, triangles, and polygons. Emphasis is placed on the application of mathematics and mathematical procedures to the industry of today.

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

Developmental Physical Science acquaints the student with laboratory 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 and Health 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, geography, 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 environment.

## DEVELOPMENTAL STUDIES CURRICULUM

### Level I\*

Course No. and Title		Hours Per Week		Quarter Hours Credit	
		Class	Lab		
FIRST QUARTER					
ENG	91	Vocabulary and Reading .....	3	2	4
MAT	91	Mathematics, I, Level I .....	3	2	4
PHY	91	Physical Science, I, Level I, or .....	3	2	4
BIO	92	Fundamental Biology I .....	3	2	4
Elective		.....	3	2	4
			12	8	16
SECOND QUARTER					
ENG	92	Grammar and Composition .....	3	2	4
MAT	92	Mathematics II, Level I .....	3	2	4
PHY	92	Physical Science II, Level I, or .....	3	2	4
BIO	93	Fundamental Biology II .....	3	2	4
Elective		.....	3	2	4
			12	8	16
THIRD QUARTER					
ENG	93	Vocabulary and Composition .....	3	2	4
MAT	93	Mathematics, III, Level I .....	3	2	4
PHY	93	Physical Science III, Level I, or .....	3	2	4
BIO	94	Fundamental Biology III .....	3	2	4
Elective		.....	3	2	4
			12	8	16

\*For students with vocational orientations and business orientations except as selected as an elective course with instructor's approval.

## DEVELOPMENTAL STUDIES CURRICULUM

### Level II\*\*

Course No. and Title		Hours Per Week		Quarter Hours Credit	
		Class	Lab		
FIRST QUARTER					
ENG	91	Vocabulary and Reading .....	3	2	4
MAT	94	Mathematics I, Level II .....	3	2	4
PHY	94	Physical Science I, Level II, or .....	3	2	4
BIO	92	Fundamental Biology I .....	3	2	4
Elective		.....	3	2	4
			12	8	16
SECOND QUARTER					
ENG	92	Grammar and Composition .....	3	2	4
MAT	95	Mathematics II, Level II .....	3	2	4
CHM	93	Chemistry, Physical Science II, Level II, or .....	3	2	4
BIO	93	Fundamental Biology II .....	3	2	4
Elective		.....	3	2	4
			12	8	16

			Hours Per Week		Quarter
Course No. and Title			Class	Lab	Hours Credit
THIRD QUARTER					
ENG	93	Vocabulary and Composition .....	3	2	4
MAT	96	Mathematics III, Level II .....	3	2	4
PHY	95	Physical Science III, Level II, or .....	3	2	4
CHM	96	Chemistry, Physical Science III, Level II, or .....	3	2	4
BIO	94	Fundamental Biology III .....	3	2	4
Elective		.....	3	0	3
			<u>15</u>	<u>8</u>	<u>19</u>

**\*\*For students with technical orientations and health orientations except as selected as an elective course with instructor's approval.**

## DEVELOPMENTAL STUDIES ELECTIVES

Course No. and Title		Hours Per Week			Quarter Hours Credit
		Class	Lab	Clinic	
AHR	95	Shop Practice .....	2	0	4
BUS	81	Filing .....	3	2	0
BUS	85	Typing I .....	2	3	0
BUS	86	Typing II .....	2	3	0
BUS	87	Typing III .....	2	3	0
BUS	91	Simplified Office Machines .....	2	3	0
BUS	93	Business Office Procedures .....	3	2	0
BUS	94	Bookkeeping I .....	3	2	0
BUS	96	Shorthand .....	3	2	0
BUS	97	Economics I .....	3	2	0
BUS	98	Bookkeeping II .....	3	2	0
BUS	99	Economics II .....	3	2	0
DFT	90	Mechanical Drawing I .....	2	2	0
DFT	92	Mechanical Drawing II .....	2	2	0
DFT	93	Elementary Drawing .....	2	2	0
*EDU	80	Basic Study Skills .....	3	2	0
EDU	90	Career Planning .....	3	2	0
MAT	85	Business Math .....	3	2	0
MEC	96	Shop Practice (Machines) .....	2	0	4
PNE	93	Introduction to Practical Nursing .....	2	7	0
SSC	95	Introduction to Social Science..	3	2	0
WLD	95	Shop Practice (Welding) .....	2	0	4

**\*EDU 80 must be taken during one quarter.**



## PRELIMINARY DEVELOPMENTAL STUDIES

To provide access to levels of instruction within their capabilities, a preliminary series of Developmental Studies courses is available to students who cannot profitably function on either Level I or on Level II. These courses are characterized by a rudimentary level of instruction, concentrated attention, small class size, and special-purpose audio-visual equipment.

## PRELIMINARY DEVELOPMENTAL STUDIES

### CURRICULUM

#### FIRST QUARTER

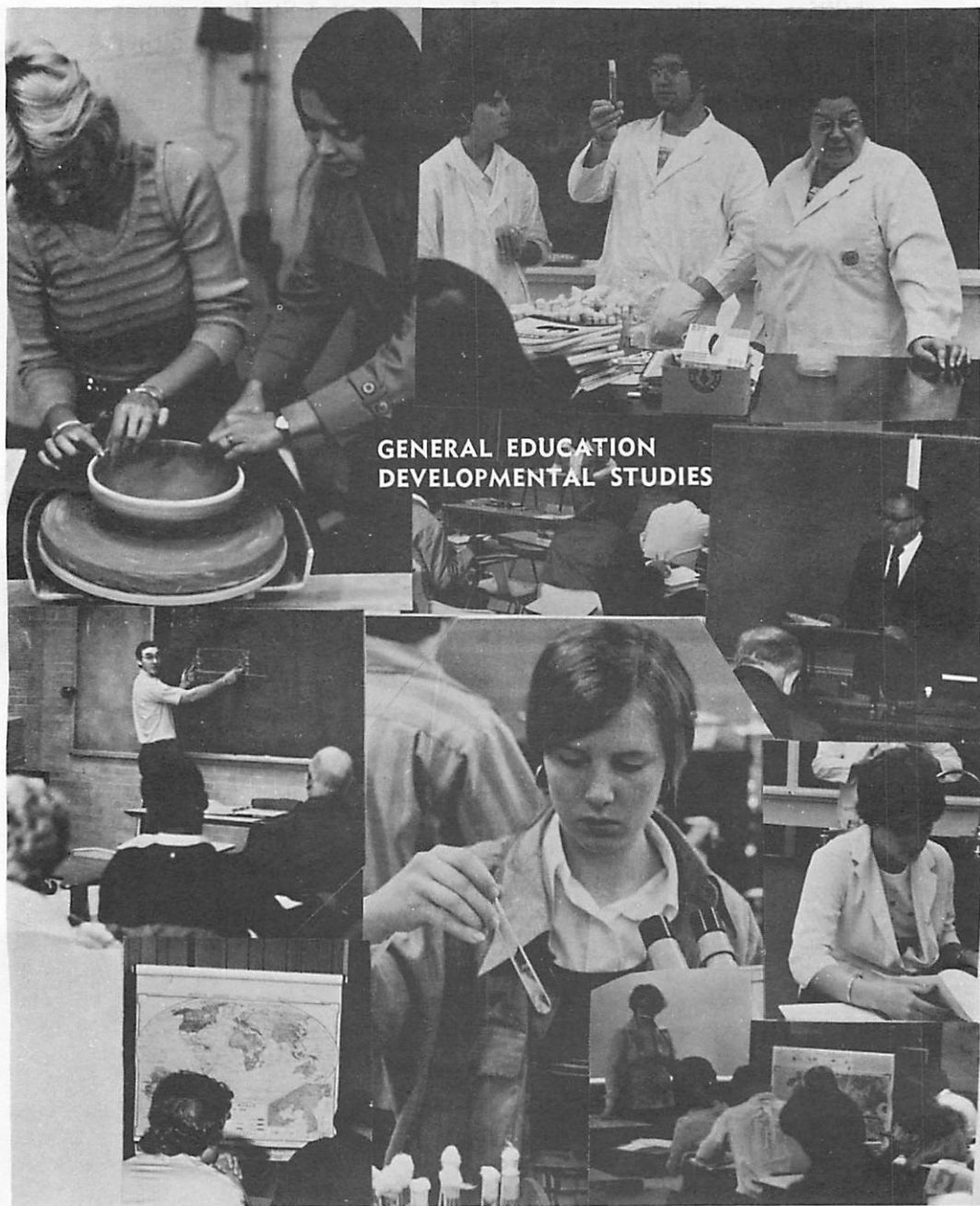
ENG	50	Usage and Reading .....	3	2	4
MAT	50	General Mathematics .....	3	2	4
SCI	50	General Science .....	3	2	4
EDU	50	Study Skills I .....	3	2	4
			<u>12</u>	<u>8</u>	<u>16</u>

#### SECOND QUARTER

ENG	60	Language and Writing .....	3	2	4
MAT	60	Intermediate Mathematics and Introductory Geometry .....	3	2	4
SCI	60	Introduction to Biology .....	3	2	4
EDU	60	Study Skills II .....	3	2	4
			<u>12</u>	<u>8</u>	<u>16</u>

#### THIRD QUARTER

ENG	70	Functional English .....	3	2	4
MAT	70	Introductory Algebra .....	3	2	4
SCI	70	Introduction to Physical Science .....	3	2	4
EDU	70	Study Skills III .....	3	2	4
			<u>12</u>	<u>8</u>	<u>16</u>



## HEALTH OCCUPATIONS DIVISION

### Purpose

Health occupations education prepares individuals to function in a close working relationship with professionals who provide services to persons with health problems. The professional nature of these occupations dictates that certain personal attributes are required for successful performance; such as favorable appearance, a pleasant manner, social skills sufficient to communicate effectively and to establish rapport with many types of persons. The graduate must also have 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 work designed to preserve health and treat diseases at an intermediate level on the health team.

Curricula are designed to lead to either the Associate of Applied Science degree or a Diploma, depending upon the Health Occupation pursued.

The health hospital programs in this Division include the Licensed Practical Nursing Program, Nurses' Assistant, the Associate Degree Nursing, Operating Room Technician, Radiologic Technician, and Physical Therapy Technician programs. The majority of the graduates of these programs will work in hospitals. However, there are numerous job opportunities in nursing homes, doctor's offices, school nursing, public health clinics, private duty and many other areas. The expanding health needs of society continue to increase career opportunities for medical practitioners at all levels.

The dental areas of concentration are the Dental Hygienist (Associate Degree) and the Dental Assistant curricula, which are designed to meet a critical need in dentist's offices. The graduates will assist in making dental examinations, taking oral x-rays, cleaning teeth, and performing other appropriate 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

### Purpose of Curriculum

One of the great needs of this community in the field of health is found in communities across the nation: 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. Graduates of the program are granted an Associate Degree and are eligible to write the State Board Examination for licensure in the State of North Carolina.

### Job Description

The registered nurse with an Associate Degree, licensed for the practice of nursing, carries out nursing and other therapeutic measures with a high degree of skill, using principles from an ever-expanding body of medical science.

## ASSOCIATE DEGREE NURSING CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
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	Introduction to Sociology .....	3	0	3
BIO	107	Anatomy and Physiology II .....	4	3	5
PSY	202	Human Growth & Development .....	3	0	3
			16	9	19

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
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
			<u>14</u>	<u>12</u>	<u>18</u>

<b>SUMMER SESSION</b>					
NUR	104	Nursing IV (Nursing of Mothers and Infants) .....	3	6	5
SOC	102	Marriage and the Family .....	3	0	3
			<u>6</u>	<u>6</u>	<u>8</u>

<b>FOURTH QUARTER</b>					
NUR	205	Nursing V (Nursing of Children and Adults, III) .....	6	12	10
ENG	105	Usage and Composition II .....	3	0	3
HIS	106	Western Civilization III .....	3	0	3
Elective	—	Humanities .....	3	0	3
			<u>15</u>	<u>12</u>	<u>19</u>

<b>FIFTH QUARTER</b>					
NUR	206	Nursing VI (Nursing of Children and Adults, IV) .....	6	12	10
ENG	204	Oral Communications .....	3	0	3
ENG	210	American Literature I .....	3	0	3
Elective	—	Humanities .....	3	0	3
			<u>15</u>	<u>12</u>	<u>19</u>

<b>SIXTH QUARTER</b>					
NUR	207	Nursing VII (Nursing of Children and Adults, V) .....	6	12	10
NUR	208	Nursing VIII (Professional Development) .....	3	0	3
ECO	102	Economics .....	2	2	3
			<u>11</u>	<u>14</u>	<u>16</u>

<b>SUMMARY</b>	<b>Required Credit Hours</b>
General Education .....	55
Nursing .....	<u>63</u>
	<u>118</u>

## **DENTAL ASSISTING**

### **Purpose of Curriculum**

In an effort to meet an ever-increasing demand for dental health services, the team concept of dental service is being practiced. In this concept the dental assistant makes a significant contribution to increased productivity by working with the dentist as a "second pair of hands." Furthermore, in specified procedures, she assumes responsibility for direct intra-oral treatment. Assumption of the latter responsibilities requires formal training. Hence, the current demand for trained dental assistants for expansion and replacement purposes greatly exceeds the supply.

In North Carolina, educational criteria for dental assistants are established. The 1970 amendments to the North Carolina Dental Practice Act designated two categories of dental assistants: Dental Assistant I and Dental Assistant II. Furthermore, qualifications and functions for each classification are defined. The Dental Assistant II is legally permitted to perform certain procedures within the patient's mouth.

### **Job Description**

The primary function of the Dental Assistant is to serve as an extra pair of hands for the dentist. He or she plays an integral role in dental procedures by preparing the patient for treatment, mixing restorative materials, keeping the operative field clear, and sterilizing, organizing and transferring instruments to the dentist during operative procedures.

## DENTAL ASSISTING CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
DEN	1001	Introduction to Dental Assisting and Terminology .....	2	0	0	2
DEN	1002	Dental Materials .....	3	4	5	6
DEN	1003	Preclinical Sciences I .....	4	0	0	4
DEN	1022	Dental Anatomy .....	4	0	0	4
ENG	1102	Communications Skills .....	3	0	0	3
			<u>16</u>	<u>4</u>	<u>5</u>	<u>19</u>

<b>SECOND QUARTER</b>						
DEN	1004	Preclinical Sciences II .....	4	0	0	4
DEN	1005	Dental Office Management I ....	3	0	0	3
DEN	1006	Clinical Procedures I .....	3	0	6	5
DEN	1012	Dental Roentgenology .....	2	0	3	3
DEN	1025	Nutrition .....	2	0	0	2
			<u>14</u>	<u>0</u>	<u>9</u>	<u>17</u>

<b>THIRD QUARTER</b>						
DEN	1007	Clinical Procedures II .....	4	2	0	5
DEN	1008	Dental Office Management II ..	2	0	3	3
DEN	1009	Dental Office Practice I .....	0	2	12	5
DEN	1013	Oral Health Education .....	1	2	0	2
ENG	1103	Report Writing .....	3	0	0	3
			<u>10</u>	<u>6</u>	<u>15</u>	<u>18</u>

<b>FOURTH QUARTER</b>						
DEN	1010	Dental Office Practice II .....	0	0	24	8
DEN	1011	Dental Assistant Seminar .....	2	0	0	2
PSY	1101	Human Relations .....	3	0	0	3
			<u>5</u>	<u>0</u>	<u>24</u>	<u>13</u>

## 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 four 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 graduate dental hygienist functions 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 the instruction of patients and the public. 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		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	104	English Usage and Composition I ....	3	0	3
DEN	111	Dental Hygiene I .....	6	3	7
DEN	112	Dental Anatomy & Physiology .....	4	0	4
BIO	106	Human Anatomy & Physiology I ....	4	3	5
DEN	113	Histology & Embryology .....	2	0	2
			19	6	21



Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
SECOND QUARTER					
ENG	105	English Usage and Composition II ..	3	0	3
DEN	121	Dental Hygiene II .....	2	3	3
DEN	122	Head & 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
			17	11	21
THIRD QUARTER					
ENG	204	Oral Communication .....	3	0	3
DEN	131	Dental Hygiene III .....	2	12*	6
NUT	101	Nutrition .....	3	0	3
BIO	108	Microbiology .....	5	3	6
			13	15	18
SUMMER SESSION					
DEN	210	Periodontology I .....	2	0	2
BIO	113	General Pathology .....	3	0	3
DEN	116	Dental Emergencies .....	2	0	2
			7	0	7
FOURTH QUARTER					
DEN	214	Periodontology II .....	2	0	2
DEN	211	Dental Hygiene .....	2	16*	7
DEN	212	Community Dental Health .....	4	0	4
DEN	213	Oral Pathology & Cariology .....	3	0	3
SOC	101	Introduction to Sociology .....	3	0	3
ENG**	Elective	.....	3	0	3
			17	16	22
FIFTH QUARTER					
DEN	216	Community Dental Health Seminar....	0	3	1
PSY	101	Introduction to Psychology .....	3	0	3
DEN	221	Dental Hygiene V .....	2	16*	7
DEN	222	Dental Hygiene Materials in Dental Hygiene Practice .....	3	2	4
DEN	223	Dental Pharmacology & Anesthesiology .....	2	0	2
DEN	298	Dental Hygiene Seminar .....	2	0	2
			12	21	19
SIXTH QUARTER					
DEN	231	Dental Hygiene VI .....	1	16*	6
DEN	232	Ethics & Jurisprudence .....	1	0	1
DEN	233	Dental Specialities .....	2	0	2
DEN	224	Office Management .....	1	0	1
DEN	225	Chairside Assisting .....	3	0	3
			8	16	13

\*"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 form: ENG 108, Usage and Composition III; ENG 106, World Literature I; ENG 209, World Literature II; ENG 210, American Literature I; or ENG 211, American Literature II.

## THE NURSES' ASSISTANT

### Purpose of Curriculum

The Nurses' Assistant curriculum is designed to prepare qualified men and women to give effective nursing care to selected patients, to make and report observations, and to carry out routine aspects of ward management. Classroom teaching is centered on modern concepts of health, functional relationships with a hospital, fundamentals of effective interpersonal relations, and nursing procedures related to daily needs of patients and to common therapeutic measures. Throughout the course emphasis is given to the role of the nurses' assistant. Clinical experiences provide opportunities for applying classroom learnings to practice in the hospital setting.

### Job Description

The Nurse Assistant is a member of the nursing team who performs non-professional nursing care prescribed by and performed under the direction of a registered or licensed practical nurse.

### NURSES' ASSISTANT CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
PML	1190	Introduction to Role of the Nurses' Assistant .....	2	0	0	2
PML	1191	Understanding Effects of Illness	1	0	0	1
PML	1192	Making Observations on Patients .....	1	0	3	2
PML	1193	Safety Measures in Care of the Sick .....	1	0	3	2
PML	1194	Measures to Promote the Patient's Comfort .....	0	2	3	2
PML	1195	Special Types of Patient Care ..	2	2	3	4
PML	1196	Becoming a Hospital Employee	2	2	3	4
			<hr/> 9	<hr/> 6	<hr/> 15	<hr/> 17

## **OPERATING ROOM TECHNICIAN**

### **Purpose of Curriculum**

The Operating Room Technician curriculum is designed to permit the devoted student to develop an understanding of the principles of operating room technique and to acquire fundamental skills essential to assisting in the operating room. Instruction includes environmental and personal orientation; weights and measures; anesthesia; operating room procedures; operating room techniques; operating room personnel duties and ethical, moral and legal responsibilities. Laboratory exercises are designed to provide support through practice and skill development of the principles and techniques discussed in class.

### **Job Description**

The operating room technician is prepared to be part of the medical-surgical team by working directly with patients' surgical preps, transportation to the operating room, positioning of patients and applications of dressings. The operating room technician always works under the direct supervision of a registered professional nurse while cleaning, stocking, and preparing the operating room; functions as scrub nurse of the operative field, assists the surgeon by anticipating his needs; handles sterile instruments, sutures and equipment.

The operating room technician assists the anethetist and the anesthesiologist, prepares specimen, prepares notes on operative procedures, and prepares the operating room for surgery by pulling instruments and special supplies from the stock supply. The operating room technician operates sterilizers and all other equipment commonly used in the operating room, and determines what is and is not sterile by using aseptic technique principles. An operating room technician performs the duties of circulating nurse.

## OPERATING ROOM TECHNICIAN CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
PML	1090	Principles of Operating Room Technique .....	2	0	3	3
PML	1080	Nursing Procedures .....	3	2	3	5
PML	1091	Anatomy and Physiology I .....	3	2	0	4
ENG	1101	Communicative Skills: Grammar .....	3	0	0	3
PML	1092	Microbiology .....	3	0	3	4
			14	4	9	19
SECOND QUARTER						
PML	1093	Theory of Surgical Procedures I	4	4	0	6
PML	1096	Anatomy and Physiology II .....	3	2	0	4
PML	1085	Pharmacology .....	3	0	0	3
PML	1094	Clinical Practice I .....	0	0	15	5
PML	1098	Seminar I .....	0	2	0	1
			10	8	15	19
THIRD QUARTER						
PML	1097	Theory of Surgical Procedures II .....	4	4	0	6
PML	1095	Clinical Practice II .....	0	0	24	8
PML	1099	Seminar II .....	0	2	0	1
			4	6	24	15

## **PHYSICAL THERAPY ASSISTANTS**

### **Purpose of Curriculum**

The Physical Therapy Technician Program is designed to prepare the student to fill the role of a technical assistant working under the supervision of a qualified physical therapist in providing quality physical therapy care.

Increasing demands are being placed upon the profession of Physical Therapy as a patient care service due to an increasing number of persons who are living today with chronic diseases or disabilities, an increasing number and new types of facilities which are serving patients who could benefit from physical therapy services, and an increasing amount of knowledge and skill within the profession itself which are required to meet the needs of the patients.

### **Job Description**

Many patient care needs can be met by developing physical therapy services which utilize a technical level worker—the physical therapy assistant. Such a worker is recognized by the American Physical Therapy Association and the North Carolina chapter of that association. The profession has long utilized supportive personnel for clerical, maintenance, and transportation duties. The formal education of a second level worker in physical therapy will produce more people to provide therapeutic care for the patient. At the same time, this will permit the professional physical therapist to extend his services in specialized therapy, supervision, consultation, and teaching.

# PHYSICAL THERAPY ASSISTANTS CURRICULUM

Course No. and Title			Hours Per Week	Lab	Quarter Hours Credit
FIRST QUARTER					
BIO	106	Human Anatomy and Physiology I ....	4	3	5
ENG	101	Grammar .....	3	0	3
ENG	115	Medical Terminology & Vocabulary ....	3	0	3
BUS*	102	Typewriting .....	2	3	3
PTH	101	Introduction to Physical Therapy .....	3	3	4
			15	9	18
SECOND QUARTER					
BIO	107	Human Anatomy & Physiology II .....	4	3	5
ENG	102	Composition .....	3	0	3
PSY	101	Introduction to Psychology .....	3	0	3
PTH	102	Physical Therapy Procedures I .....	3	6	5
			13	9	16
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
PTH	103	Physical Therapy Procedures II .....	3	6	5
PTH	110	Therapeutic Exercise .....	3	6	5
SOC	101	Introduction to Sociology .....	3	0	3
PTH	120	First Aid .....	2	0	2
			14	12	18
SUMMER QUARTER					
PTH	201	Patho-Physiology .....	4	0	4
SSC	205	American Institutions .....	2	2	3
			6	2	7
FOURTH QUARTER					
PSY	202	Human Growth and Development .....	3	0	3
PSY	210	Human Relations .....	3	0	3
PTH	104	Physical Therapy Procedures III .....	3	9	6
PTH	210	Psychology of Adjustment .....	3	0	3
			12	9	15
FIFTH QUARTER					
ENG	204	Oral Communication .....	3	0	3
MAT	108	College Math .....	5	0	5
PTH	105	Physical Therapy Procedures IV .....	3	12	7
PTH	215	Community Health and Welfare .....	3	0	3
Elective—	Physical Education .....		0	3	1
			14	15	19
SIXTH QUARTER					
PTH	106	Seminar in Physical Therapy Procedures .....	3	0	3
PTH	298	Clinical Education .....	4	30	14
			7	30	17

\*Waived if student has 2 years typing in high school with grade of "C" or better.

## **PRACTICAL NURSE EDUCATION**

### **Purpose of Curriculum**

The accelerated growth of population in North Carolina and rapid advancement in medical technology demands an increased number of well-trained personnel for health services. Realizing this need, 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 as 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; her place is at the patient's bedside fulfilling needs requiring moderate nursing skills and assisting with activities dependent upon more complex skills, always under the guidance of the professional leader.

Students are selected on the basis of demonstrated aptitudes for nursing as determined by pre-entrance tests, high school records, character references, reports of medical and dental examinations and interviews with faculty members.

Throughout the one-year program, the student grows continuously by acquiring knowledge and understanding related to nursing, biological sciences, the social sciences, and in skills related to nursing practice, communications, interpersonal relationship and the use of good judgment. She must maintain a "C" average in all major courses to be eligible upon graduation to take the licensing examination given by the North Carolina Board of Nursing.

### **Job Description**

After passing the state board, the practical nurse is entitled to receive a license and to use a legal title "Licensed Practical Nurse" and she or he is eligible for inter-state licensure.

The LPN functions under supervision of a registered nurse and/or licensed physician or dentist. The LPN is prepared to function in a variety of situations: hospitals, nursing homes, doctors' offices and, in some localities, public health facilities. The LPN must avoid assuming responsibility beyond that for which the one-year program prepares her.

Upon graduation, a student must continue to practice her skills with integrity, actively participating in her professional organizations, and by keeping abreast of the rapidly advancing concepts of optimum health care.

# PRACTICAL NURSE EDUCATION CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
ENG	1101	Communicative Skills:				
		Grammar .....	3	0	0	3
PNE	1101	Vocational Adjustments I .....	3	0	0	3
PNE	1102	Body Structure & Functions ....	5	0	0	5
PNE	1103	Nursing Skills I .....	4	4	6	8
PNE	1104	Emergency & Disaster Nursing ..	2	0	0	2
			<u>17</u>	<u>4</u>	<u>6</u>	<u>21</u>
SECOND QUARTER						
MAT	1105	Mathematics for Nurses .....	3	0	0	3
PNE	1105	Nutrition & Diet Therapy .....	3	0	0	3
PNE	1106	Nursing Skills II .....	3	4	0	5
PNE	1107	Medical & Surgical Nursing I ..	5	0	15	10
			<u>14</u>	<u>4</u>	<u>15</u>	<u>21</u>
THIRD QUARTER						
PNE	1108	Nursing Care of Children .....	3	4	3	6
PNE	1109	Nursing Care of Mother & Newborn .....	3	4	3	6
PNE	1110	Medical & Surgical Nursing II ..	5	0	0	5
PNE	1111	Drugs & Administration .....	3	0	0	3
			<u>14</u>	<u>8</u>	<u>6</u>	<u>20</u>
FOURTH QUARTER						
PNE	1112	Medical & Surgical Nursing III ..	0	0	21	7
PNE	1113	Geriatrics .....	3	4	0	5
PNE	1115	Mental Health .....	3	0	0	3
PNE	1116	Vocational Adjustments II.....	2	0	0	2
			<u>8</u>	<u>4</u>	<u>21</u>	<u>17</u>



# **RADIOLOGIC TECHNOLOGIST**

## **Purpose of Curriculum**

This curriculum is designed to prepare a person to become a Radiologic Technologist. The course of study combines technical and general education courses. The clinical education is carefully planned with hospitals and other community health facilities under the direction and supervision of a physician radiologist.

The completion of this two-year course (24 months) fulfills the educational requisite for confirmation of the Associate Degree in Applied Science and meets the requirements for the examination by the American Registry of Radiologic Technologists for certification as Registered Technologist in X-ray

## **Technology.**

Radiologic technologists are in great demand in research laboratories, industry and governmental agencies as well as hospitals, health clinics, and nuclear medicine departments.

The changes created by new techniques have resulted in demands for increased knowledge on the part of radiologic technicians. In addition to mastering X-ray technique, the student must also become familiar with other sources of radiation in order to properly assist the physician. This curriculum provides opportunity for training in this exacting science.

## **Job Description**

The Radiologic Technologist may assist in examining for broken bones, tumors or malfunctioning organs, and under the supervision of a physician, assist the treating of diseased or affected areas of the body. Other tasks may include maintaining equipment, ordering supplies, keeping records of patient's films and reports, and mixing solutions. Upon successful completion of the course of study, the student may take examinations to qualify as a Registered Radiologic Technician.

# RADIOLOGIC TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	104	Usage and Composition I .....	3	0	3
MAT	101	Technical Mathematics I .....	5	0	5
BIO	106	Anatomy and Physiology I .....	4	3	5
RDT	101	Radiologic Technology I .....	4	3	5
RDT	111	Clinical Education I .....	0	10	3
			16	16	21
SECOND QUARTER					
ENG	105	Usage and Composition II .....	3	0	3
BIO	107	Anatomy and Physiology II .....	4	3	5
PHY	101	Properties of Matter .....	3	2	4
RDT	102	Radiologic Technology II .....	4	3	5
RDT	112	Clinical Education II .....	0	10	3
			14	18	20
THIRD QUARTER					
ENG	103	Report Writing .....	3	0	3
RDT	103	Radiologic Technology III .....	4	3	5
RDT	113	Clinical Education III .....	0	10	3
Electives		.....	6	0	6
			13	13	17
FOURTH QUARTER					
RDT	114	Clinical Education IV .....	2	36	14
FIFTH QUARTER					
ENG	204	Oral Communications .....	3	0	3
RDT	201	Topographic Anatomy .....	2	0	2
RDT	204	Radiologic Technology IV .....	4	3	5
RDT	215	Clinical Education V .....	3	34	8
			9	27	18
SIXTH QUARTER					
RDT	215	Clinical Education .....	0	24	8
BIO	208	Pathology for Paramedical Personnel ..	3	0	3
PSY	101	Introduction to Psychology .....	3	0	3
RDT	205	Radiologic Technology V .....	4	3	5
RDT	216	Clinical Education VI .....	0	24	8
			10	27	19
SEVENTH QUARTER					
PSY	202	Human Growth & Development .....	3	0	3
SOC	101	Introduction to Sociology .....	3	0	3
RDT	206	Radiologic Technology VI .....	4	0	4
RDT	217	Clinical Education VII .....	0	24	8
			10	24	18

# **EIGHTH QUARTER**

BUS	234	Business Management .....	5	0	5
RDT	218	Clinical Education VIII .....	2	36	14
			<u>7</u>	<u>36</u>	<u>19</u>

**Total Quarter Hours in Course**

**142**

**Suggested Fields of Study for Electives**

**Business and Personnel Management**

**English**

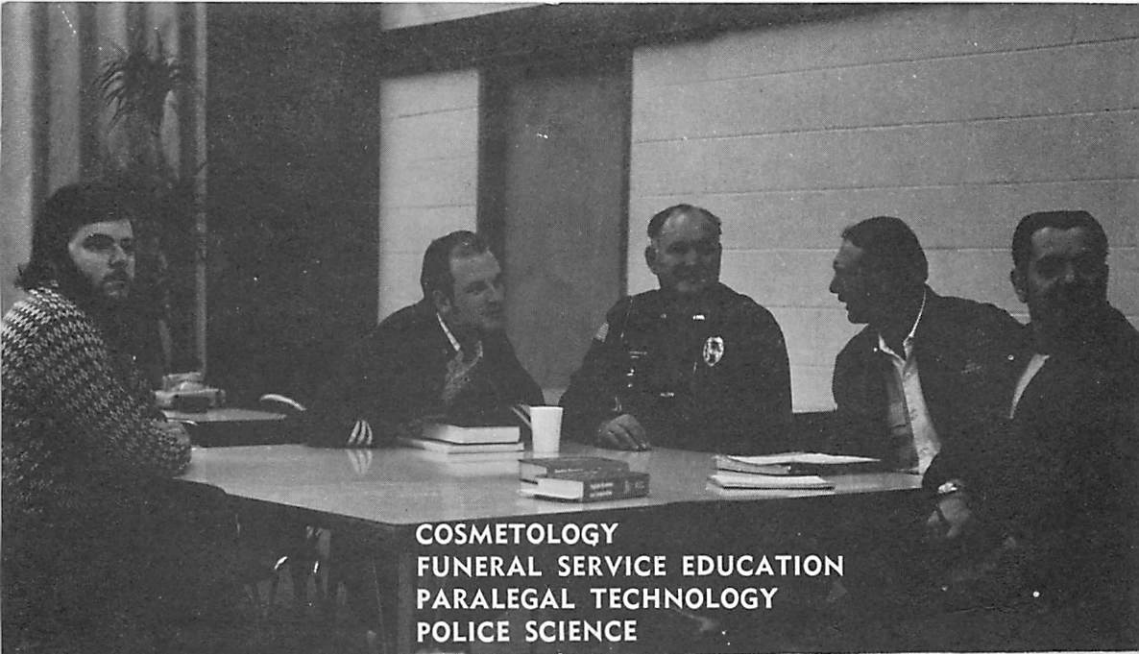
**History**

**Mathematics**

**Physical Education**

**Psychology**

**Sociology**



**COSMETOLOGY  
FUNERAL SERVICE EDUCATION  
PARALEGAL TECHNOLOGY  
POLICE SCIENCE**



## **PUBLIC SERVICE EDUCATION DIVISION**

Professional services which are designed to fill a public need have increased in number and in complexity as our social structure has matured. These public services use highly specialized scientific methods and paraphernalia. The specialized curricula of Public Service Education include: Cosmetology; Funeral Service Education, Law Enforcement-Criminal Justice, and Paralegal Technologies.

Each curriculum is designed to prepare the student for employment in his chosen area of Public Service as well as to provide a means through which employed practitioners can update their professional competencies.

Many senior colleges are now providing the opportunity for technical institute graduates from the Public Service curricula to continue specialized education through the baccalaureate level. Other institutions allow transfer credit for individual courses taken from within the Public Service Division. Thus, the Public Service Division students develop skills and knowledges which enable them to be gainfully employed or to continue their education at other institutions of higher learning.



## COSMETOLOGY

### Purpose of Curriculum

Professional titorial and cosmetic care for today's women and men has attained professional status as the once-luxury has become a contemporary necessity. It is generally recognized that the demands for personal grooming in today's professional and personal encounters are essential. Cosmetologists are the experts who, in minimum time, provide many of the personal grooming services necessary to meet contemporary demands.

The Cosmetology curriculum is designed to prepare the student for employment in the field of Cosmetology. The curriculum provides instruction and practice in manicuring, shampooing, permanent waving, facials, massages, scalp treatments, haircutting styling, hair pressing, chemical relaxing, thermal waving, curling, and wig service.

### Job Description

After fulfilling course work and passing the State Board Cosmetology Test, the Cosmetology graduate may begin work immediately. A six-month apprenticeship is required to provide in-depth professional experience with a licensed, experienced cosmetologist while earning and learning. After that, the Cosmetologist will be eligible to work in any existing licensed cosmetology establishment or will be free to open his or her own business and perform any duties outlined in the curriculum.

## COSMETOLOGY CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
COS	1101	Cosmetology Law and Ethics ..	5	0	8	7
COS	1102	Hair Styling I .....	5	0	8	7
COS	1103	Permanent Waving I .....	5	0	9	8
			<u>15</u>	<u>0</u>	<u>25</u>	<u>22</u>
SECOND QUARTER						
COS	1104	Permanent Waving II .....	3	0	12	7
COS	1105	Hair Styling II .....	2	0	12	6
COS	1106	Anatomy—Skin-Hair-Nails .....	4	0	7	6
			<u>9</u>	<u>0</u>	<u>31</u>	<u>19</u>
THIRD QUARTER						
COS	1107	Permanent Waving III .....	2	0	12	6
COS	1108	Hair Coloring .....	4	0	9	7
COS	1109	Shop Management-Salesmanship	5	0	8	7
			<u>11</u>	<u>0</u>	<u>29</u>	<u>20</u>



## FUNERAL SERVICE EDUCATION

### Purpose of the Curriculum

The Funeral Service Education curriculum is a two year college-level program leading to the Associate in Applied Science Degree. The curriculum is designed to support "The Whole-Man-Total-Funeral Concept." The student is provided with the opportunity to acquire the knowledge and skills necessary to practice both embalming and funeral directing. The student learns the basic funeral service skills which include embalming techniques and restorative art practices.

The principles, techniques, and practices of the operation of the historic and modern funeral home are taught for the students to acquire a foundation on which to build his professional practice.

A very important function of the program is to provide communications and human relations skills so the student can be better qualified to counsel the families of the deceased.

The student examines the current mortuary case law, death registration and the laws, rules, and regulations of both funeral service and vital statistics from the state in which he seeks licensure.

In the Professional Practicum the student applies what he has been previously taught and experiences the panorama of modern funeral service practice following funeral services from removal through interment.

### Job Description

The graduate is qualified to take the National Board Examination which is produced by the Conference of Funeral Service Examining Boards. Licensees may practice funeral service by gaining employment at a funeral home. They may become funeral home owners or salesmen of funeral supplies. The graduate may elect to continue work on a Funeral Service baccalaureate degree at a four-year institution.

## FUNERAL SERVICE EDUCATION CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIRST QUARTER					
ENG	104	English Usage and Composition I .....	3	0	3
BIO	106	Human Anatomy and Physiology I ....	4	3	5
BUS	234	Business Management .....	5	0	5
PSY	101	Introduction to Psychology .....	3	0	3
FSE	101	Introduction to Funeral Service .....	2	0	2
			<u>17</u>	<u>3</u>	<u>18</u>



Course No. and Title			Hours Per Week	Class	Lab	Quarter Hours Credit
SECOND QUARTER						
ENG	105	English Usage and Composition II ....	3		0	3
BIO	107	Human Anatomy and Physiology II ....	4		3	5
BUS	115	Business Law I .....	3		2	4
CHM	101	Chemistry .....	3		2	4
SOC	203	Sociology of Death & Dying .....	3		0	3
			16		7	19
THIRD QUARTER						
BIO	108	Microbiology .....	5		3	6
BUS	120	Principles of Accounting I .....	5		3	6
BUS	116	Business Law II .....	3		2	4
*Elective		.....	3		0	3
			16		8	19
SUMMER QUARTER						
FSE	115	Funeral Law .....	3		0	3
FSE	206	Embalming Chemistry .....	3		2	4
			6		2	7
FOURTH QUARTER						
FSE	121	Funeral Service Practices .....	1		2	2
FSE	120	Public Health and Sanitation .....	2		4	4
FSE	214	Restorative Arts I .....	2		4	4
ENG	120	Public Health and Sanitation .....	2		0	2
ENG	204	Oral Communications .....	3		0	3
BIO	113	General Pathology .....	3		0	3
			14		9	18
FIFTH QUARTER						
PED	Elective	.....	0		3	1
FSE	211	Embalming Theory and Practice II ....	3		3	4
FSE	224	Funeral Home Operation .....	2		2	3
FSE	215	Restorative Arts II .....	2		4	4
BIO	114	Advanced Pathology .....	3		0	3
PSY	208	Grief Psychology .....	3		0	3
			13		12	18
SIXTH QUARTER						
FSE	225	Research in Funeral Service .....	3		0	3
FSE	280	Professional Practicum .....	1		24	9
			4		24	12

Total Quarter Hours in Courses

110

\*Students must select the elective from: ENG 108, Usage & Composition III; ENG 106, World Literature I; ENG 107, World Literature II; ENG 209, World Literature III; ENG 210, American Literature I; or ENG 211, American Literature II.

## **LAW ENFORCEMENT-CRIMINAL JUSTICE**

### **Purpose of Curriculum**

Today's criminal justice personnel must be knowledgeable in many areas if they are to function effectively in our complex society. They are expected to handle matters dealing with human relations, often handled by those specifically trained in the behavioral sciences. They frequently must act in legal matters which require trained law personnel and much deliberation to resolve; they must be skilled in the most recent operational techniques in order to insure equality of justice to all.

To this end, the Law Enforcement-Criminal Justice curriculum is dedicated to the purpose of developing proficiency in both pre-service high school graduates and in-service personnel. Its development is based on present and future educational needs. It offers theoretical and practical instruction to meet the requirements of various law enforcement-criminal justice agencies and provides the student with the skills, knowledge, and attitudes necessary for employment in the various areas of this profession.

There is an increasing demand for properly trained law enforcement-criminal justice personnel in industry, municipal, county, State and Federal agencies, and there is every reason to believe that the highly trained individual will find challenging opportunities within the public and private sectors.

### **Job Description**

The graduate of the Law Enforcement-Criminal Justice curriculum is able to further his specialization by transferring to an approved four-year college program, or by being employable as a police officer, corrections officer, assistant parole or probation officer.

It is conservatively estimated that in excess of 600,000 positions will be available in the criminal justice field in the near future.

# LAW ENFORCEMENT-CRIMINAL JUSTICE CURRICULUM

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
ENG	101	Grammar .....	3	0	3
LJC	101	Introduction to Law Enforcement and Criminal Justice .....	5	0	5
SOC	101	Introduction to Sociology .....	3	0	3
PSY	101	Introduction to Psychology .....	3	0	3
MAT*		Required Elective .....	5	0	5
			<u>19</u>	<u>0</u>	<u>19</u>
<b>SECOND QUARTER</b>					
ENG	102	Composition .....	3	0	3
POL	102	State and Local Government .....	3	0	3
LCJ	102	Constitutional Law .....	5	0	5
LCJ	103	Introduction to Criminology .....	5	0	5
SCIENCE**		Required Elective (Biology, Physics, or Chemistry) .....	3	2	4
			<u>19</u>	<u>2</u>	<u>20</u>
<b>THIRD QUARTER</b>					
ENG	103	Report Writing .....	3	0	3
POL	103	National Government .....	3	0	3
PED	111	First Aid .....	2	2	3
LCJ	104	Police Organization & Administration ..	5	0	5
LCJ		Elective .....	5	0	5
			<u>18</u>	<u>2</u>	<u>19</u>
<b>SUMMER QUARTER</b>					
LCJ		Elective .....			3-5
<b>FOURTH QUARTER</b>					
ENG	204	Oral Communications .....	3	0	3
LCJ	203	Criminal Law I .....	3	0	3
LCJ	210	Criminal Investigations I .....	4	2	5
LCJ	212	Corrections and Rehabilitations .....	3	0	3
LCJ		Elective .....	5	0	5
			<u>18</u>	<u>2</u>	<u>19</u>
<b>FIFTH QUARTER</b>					
PSY	204	Abnormal Psychology .....	3	0	3
LCJ	209	Juvenile Justice Planning & Administration .....	5	0	5
**SCIENCE		Required Elective (Biology, Physics, or Chemistry) .....	3	2	4
SOC		Elective .....	3	0	3
LCJ		Elective .....	5	0	5
			<u>19</u>	<u>2</u>	<u>20</u>

## SIXTH QUARTER

Course No. and Title	Hours Per Week		Quarter Hours Credit
	Class	Lab	
LCJ 211 Police Community Relations .....	2	4	4
LCJ Elective .....	5	0	5
Electives .....	9	0	9
	<u>16</u>	<u>4</u>	<u>18</u>

Requirements for completion of A.A.S. Degree in Law Enforcement-Criminal Justice:

The graduate must have completed a minimum of 100 quarter hour credits of which a minimum of 60 quarter hours credits must have been earned within the Law Enforcement-Criminal Justice curriculum. All electives taken outside the curriculum must be a 100 or 200 level courses. Students will be encouraged to select non-curriculum electives in the fields of sociology, history, psychology and the humanities.

\*Mathematics electives must be drawn from the following:

MAT 101 Technical Mathematics I .....	5	0	5
MAT 108 Introduction to College Mathematics ....	5	0	5
MAT 109 College Algebra .....	5	0	5
MAT 110 Business Mathematics .....	3	2	4

\*\*Science electives must be drawn from the following. Both electives must be in the same scientific discipline area.

BIO 106 Human Anatomy and Physiology I .....	4	3	5
BIO 107 Human Anatomy and Physiology II .....	4	3	5
CHM 101 Chemistry .....	3	2	4
CHM 110 Fundamentals of Biochemistry .....	4	2	5
PHY 101 Property of Matter .....	3	2	4
PHY 102 Work, Energy, Power .....	3	2	4
PHY 104 Light and Sound .....	3	2	4

### LAW ENFORCEMENT-CRIMINAL JUSTICE

Electives must be drawn from the following:

LCJ 108 Police Patrol and Field Interrogation ..	3	0	3
LCJ 201 Traffic Planning, Management & Supervision .....	4	2	5
LCJ 204 Criminal Law II .....	3	0	3
LCJ 205 Criminal Evidence & Procedure .....	5	0	5
LCJ 206 Special Problems in Law Enforcement	3	0	3
LCJ 207 Interview & Interrogations—Confes- sions and Admissions .....	3	0	3
LCJ 208 Identification Techniques .....	4	2	5
LCJ 213 Fire Arms and Defensive Tactics .....	4	2	5
LCJ 214 Criminal Investigations II .....	4	2	5
LCJ 215 Law Enforcement Photography .....	3	2	4
LCJ 216 Police Supervision .....	3	0	3
LCJ 217 Current Law Studies .....	3	0	3
LCJ 218 Vice Control Investigation .....	3	0	3
LCJ 219 Introduction to Criminalistics .....	4	2	5
LCJ 220 Crime Prevention and Control .....	3	0	3

## **PARALEGAL TECHNOLOGY**

### **Purpose of Curriculum**

The legal profession is a very involved one and a profession that requires specialists and general practitioners. A legal specialist may be a lawyer specializing in one facet of law or a paralegal assisting a lawyer or group of lawyers.

This curriculum is designed to train individuals to work by the side of a lawyer, to relieve the lawyer of routine matters, and to assist him in the conduct of more complicated and difficult tasks.

The Paralegal Technician is capable of doing independent legal work under the general supervision of a lawyer.

### **Job Description**

The graduate of the Paralegal Curriculum will be able to directly assist the lawyer in most facets of law, but must always work under the supervision of a lawyer. In no case will the paralegal technician give legal advice, enter into courtroom procedure, or be involved in litigation except as an assistant to the lawyer. The paralegal technician will be able to assist and supervise legal secretaries, not only as to general pleading and practice, but also in general office management.

**Some Specific Jobs for the Paralegal:** Interview witnesses, take any additional statements needed, obtain medical reports, obtain and verify special information, make measurements at accident scenes and draw rough diagrams, take photographs, obtain driving records, police accident reports, and other official documents; Obtain appraisals, arrange for medical examination of client or adverse party with doctor's office, prepare in rough form proposed complaints, answers, motions, orders—including extensions of time, depositions, prepare in rough form judgments and stipulations of dismissal, prepare Agreements of Final Settlement and Releases, check incoming pleadings for errors and ascertain whether properly served, and of proper venue.

# PARALEGAL TECHNOLOGY CURRICULUM

Course No. and Title			Hours Per Week		Quarter
			Class	Lab	Hours Credit
FIRST QUARTER					
ENG	101	Grammar .....	3	0	3
PSY	206	Applied Psychology .....	3	0	3
MAT	110	Business Mathematics .....	3	2	4
BUS	102	Typewriting, or .....	2	3	3
BUS	103	Typewriting .....	2	3	3
BUS	115	Business Law I .....	3	2	4
			14	7	17

<b>SECOND QUARTER</b>					
ENG	102	Composition .....	3	0	3
BUS	120	Accounting I .....	5	3	6
BUS	116	Business Law II .....	3	2	4
LEG	103	Techniques of Investigation I .....	3	3	4
			<u>14</u>	<u>8</u>	<u>17</u>

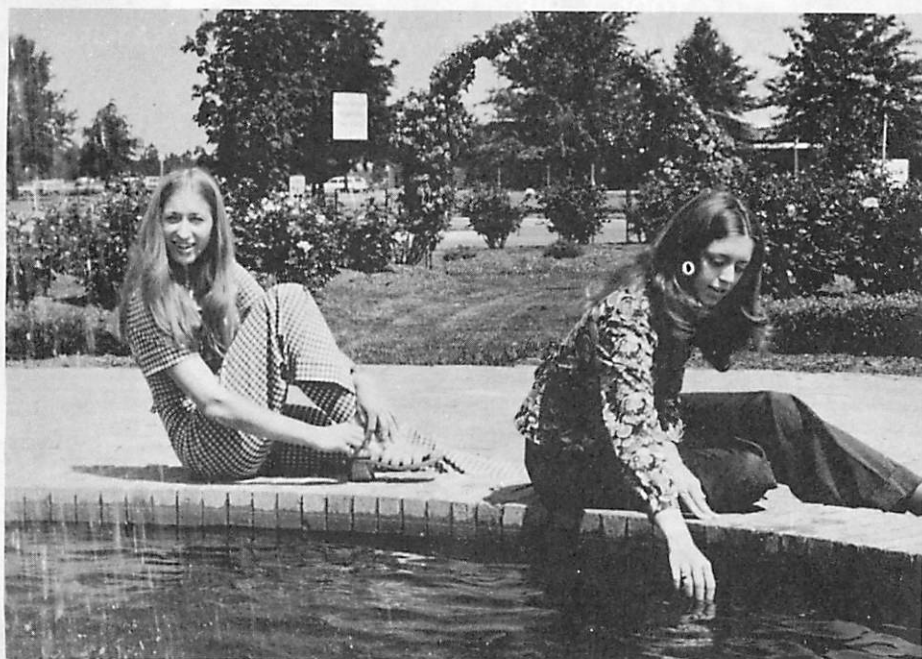
<b>THIRD QUARTER</b>					
ENG	103	Report Writing .....	3	0	3
LEG	104	Techniques of Investigation II .....	3	3	4
BUS	121	Accounting II .....	5	3	6
POL	103	National Government .....	3	0	3
			<u>14</u>	<u>6</u>	<u>16</u>

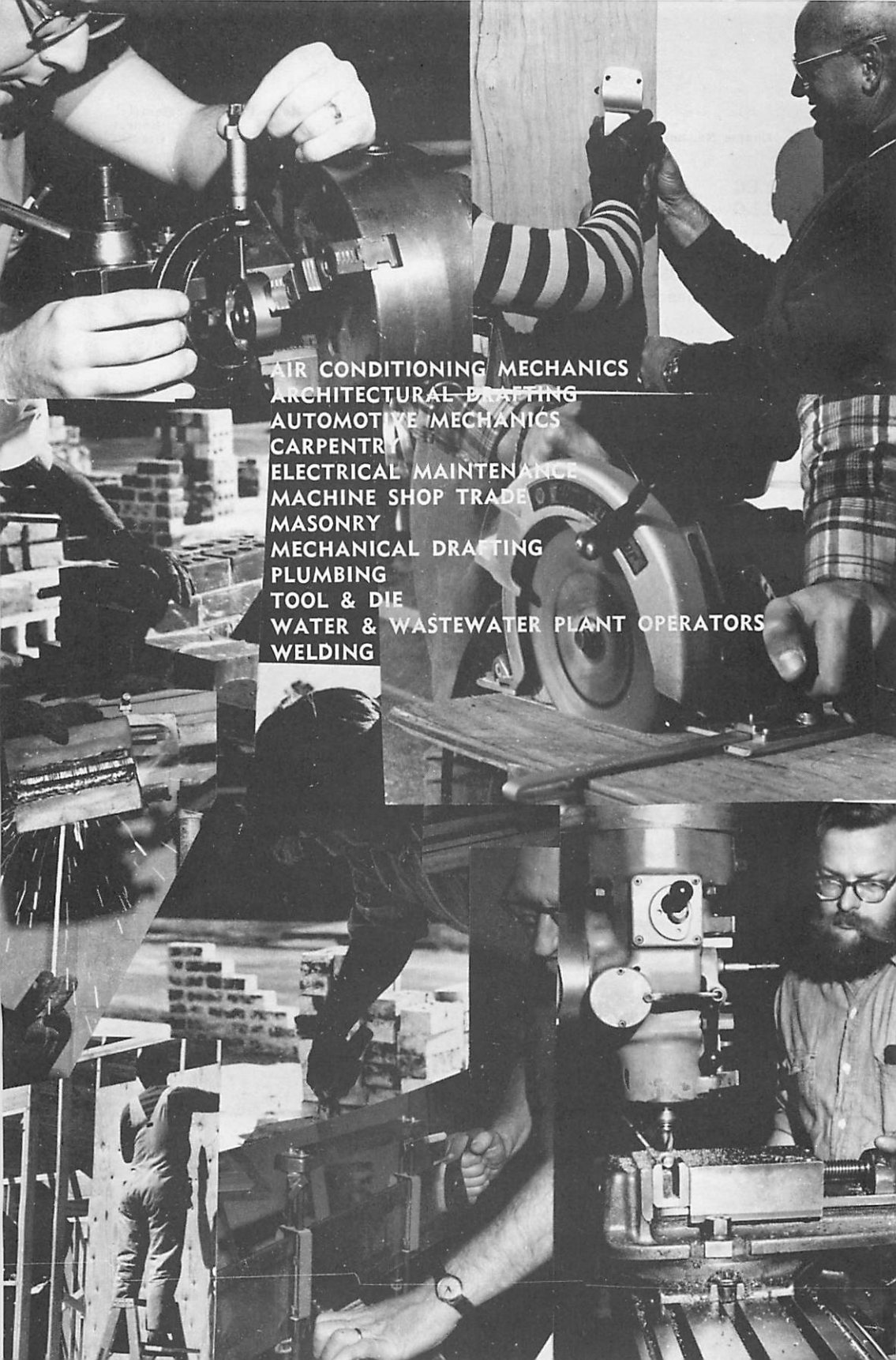
<b>SUMMER SESSION</b>					
LEG	132	Legal Bibliography & Library Management .....	3	2	4
LEG	135	N. C. Legal Systems I .....	3	0	3
			<u>6</u>	<u>2</u>	<u>7</u>

<b>FOURTH QUARTER</b>					
ENG	204	Oral Communication .....	3	0	3
BUS	229	Tax Accounting .....	3	4	5
LEG	136	N. C. Legal Systems II (Functions of Clerk of Court) .....	3	0	3
LEG	212	Investigation of Criminal Cases I .....	3	0	3
LEG	214	Mechanics of Property Transaction and Title Abstracting .....	3	3	4
			<u>15</u>	<u>7</u>	<u>18</u>

Course No. and Title			Hours Per Week		Quarter Hours Credit
			Class	Lab	
FIFTH QUARTER					
LEG	231	Investigation of Criminal Cases II .....	3	0	3
LEG	223	Investigation of Civil & Real Property Condemnation Cases .....	2	3	3
LEG	225	Law Office Management .....	3	3	4
LEG	235	Litigation Preparation .....	3	0	3
Social	Science	Elective .....	—	—	3
					16

SIXTH QUARTER					
LEG	213	Law and the Family .....	3	0	3
LEG	290	Internship .....	1	18	7
			4	18	10





AIR CONDITIONING MECHANICS  
ARCHITECTURAL DRAFTING  
AUTOMOTIVE MECHANICS  
CARPENTRY  
ELECTRICAL MAINTENANCE  
MACHINE SHOP TRADE  
MASONRY  
MECHANICAL DRAFTING  
PLUMBING  
TOOL & DIE  
WATER & WASTEWATER PLANT OPERATORS  
WELDING



## VOCATIONAL EDUCATION DIVISION

The rapid expansion of industry with its technology advancement has created a demand for skilled workers who can enter an occupation with the knowledge and the manipulative skills required as well as the capacity to perform these skills. Knowledgeable people from industry continually emphasize the urgent need for skilled craftsmen to replenish the manpower shortage being felt in many areas where manipulative skills are paramount. These occupations require some knowledge of mathematics, science, and communicative skills. 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 so he needs a workable background which includes the related subject materials to communicate intelligently with every other member of the work team.

Our trade curricula are designed to give the tradesman a strong basic background of related subjects especially geared to his capabilities. Added to these 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 competence which a skilled worker must have to effectively enter a trade occupation is geared through in-depth courses in specific skills in subsequent instruction. These courses are taught in laboratory and shop situations utilizing to the maximum industrial equipment.

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

# AIR CONDITONING AND REFRIGERATION MECHANICS

## Purpose of Curriculum

There is today a great demand from industry for qualified mechanical experts in all areas of the field of Air Conditioning and Refrigeration. This curriculum is designed to help equip those who plan for a vocation in this broad sphere of activity.

A comprehensive study of theory and fundamentals of re-frigeration, 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, and 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, service mechanic, or both. Some of the larger contractors work 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 & REFRIGERATION MECHANICS CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
MAT	1101	Vocational Mathematics I .....	3	2	0	4
ENG	1101	Communicative Skills: Grammar .....	3	0	0	3
AHR	1121	Fundamentals of Refrigeration I .....	5	0	6	7
DFT	1180	Trade Drafting .....	2	4	0	4
			13	6	6	18

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
SECOND QUARTER						
PHY	1101	Properties of Matter .....	3	2	0	4
AHR	1122	Domestic & Commercial Refrigeration .....	4	2	3	6
ENG	1102	Industrial Communications .....	3	0	0	3
WLD	1180	Basic Welding .....	2	0	4	3
			12	4	7	16
THIRD QUARTER						
PHY	1102	Electricity .....	3	2	0	4
ENG	1103	Report Writing .....	3	0	0	3
AHR	1145	Heating Systems I .....	5	4	3	8
AHR	1135	Sheet Metal Layout & Fabrication I .....	2	0	4	3
			13	6	7	18
SUMMER SESSION						
PHY	1103	Work, Energy, Power .....	3	2	0	4
AHR	1136	Sheet Metal Layout & Fabrication II .....	2	0	4	3
			5	2	4	7
FOURTH QUARTER						
AHR	1125	Principles of Air Conditioning .....	3	2	0	4
AHR	1141	Control Systems I .....	2	0	3	3
ECO	1105	Applied Economics .....	3	0	0	3
AHR	1146	Heating Systems II .....	4	0	6	6
ELC	1181	Power Wiring for Air Conditioning .....	1	2	0	2
			13	4	9	18
FIFTH QUARTER						
AHR	1142	Control Systems II .....	3	0	3	4
AHR	1129	Air Conditioning Shop Practice I .....	3	0	6	5
PSY	1106	Applied Psychology .....	3	0	0	3
AHR	1148	Estimating & Contracting .....	5	2	0	6
			14	2	9	18
SIXTH QUARTER						
AHR	1130	Heat Pumps .....	3	0	3	4
AHR	1132	Chilled Water & Absorption Systems .....	3	0	3	4
AHR	1133	Air Conditioning Shop Practice II .....	3	0	6	5
BUS	1103	Small Business Operations .....	3	0	0	3
			12	0	12	16

## **ARCHITECTURAL DRAFTING AND DESIGN**

### **Purpose of Curriculum**

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.

For one 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.

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 is given in the areas of mathematical communications, social studies, language communications, and the physical sciences. This provides 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.

### **Job Description**

This curriculum prepares the individual to assume a position in the 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.

# ARCHITECTURAL DRAFTING CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
ARC	1231	Arch. Drafting & Design I .....	1	0	3	2
ARC	1226	Graphic Communications I .....	1	0	3	2
ARC	1264	Materials & Methods of Arch. Construction I .....	3	3	6	6
ARC	1241	Arch. Presentations I .....	1	0	3	2
MAT	1103	Geometry .....	3	0	0	3
ENG	1101	Communicative Skills: Grammar .....	3	0	0	3
			12	3	15	18
SECOND QUARTER						
ARC	1232	Arch. Drafting & Design II .....	2	0	3	3
ARC	1227	Graphic Communications II .....	1	0	3	2
ARC	1242	Arch. Presentations II .....	1	0	3	2
ARC	1265	Materials & Methods of Arch. Construction II .....	3	3	3	5
MAT	1102	Algebra .....	3	2	0	4
ENG	1102	Industrial Communications .....	3	0	0	3
			13	5	12	19
THIRD QUARTER						
ARC	1233	Arch. Drafting & Design III ..	3	3	6	6
ARC	1243	Arch. Presentations III .....	1	0	3	2
ARC	1228	Graphic Communications III ..	1	0	3	2
PHY	1101	Properties of Matter .....	3	2	0	4
ENG	1103	Report Writing .....	3	0	0	3
MAT	1104	Trigonometry .....	3	2	0	4
			14	7	12	21
SUMMER SESSION						
ARC	1251	Structural Systems .....	2	0	6	4
ECO	1105	Applied Economics .....	3	0	0	3
			5	0	6	7
FOURTH QUARTER						
ARC	1234	Arch. Drafting & Design IV ....	2	3	6	5
ARC	1244	Arch. Presentations IV .....	1	0	3	2
PHY	1102	Electricity .....	3	2	0	4
ARC	1230	History of Arch. ....	3	0	0	3
PSY	1106	Applied Psychology .....	3	0	0	3
			12	5	9	17
FIFTH QUARTER						
ARC	1235	Arch. Drafting & Design V ....	3	0	6	5
ARC	1245	Arch. Presentations V .....	1	0	3	2
ARC	1250	Site Surveying & Site Development .....	3	2	3	5
ARC	1238	Arch. Environmental Systems I ..	3	0	3	4
ARC	1145	Specifications & Contracts .....	3	0	0	3
			13	2	15	19
SIXTH QUARTER						
ARC	1236	Arch. Drafting & Design VI ..	5	3	6	8
ARC	1246	Arch. Presentations VI .....	1	0	3	2
ARC	1239	Arch. Environmental Systems II .....	3	0	3	4
ARC	1112	Arch. Estimating .....	3	0	0	3
			12	3	12	17

## **AUTOMOTIVE MECHANICS**

### **Purpose of Curriculum**

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

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 repairing 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 over-all knowledge of automotive repair and may occasionally be called upon to do other types of work.

# AUTOMOTIVE MECHANICS CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
MAT	1101	Vocational Mathematics I .....	3	2	0	4
ENG	1101	Communicative Skills:				
		Grammar .....	3	0	0	3
PHY	1101	Properties of Matter .....	3	2	0	4
PME	1101	Auto: Basic Engines .....	3	0	12	7
			12	4	12	18
SECOND QUARTER						
PHY	1102	Electricity .....	3	2	0	4
ENG	1102	Industrial Communications .....	3	0	0	3
PSY	1106	Applied Psychology .....	3	0	0	3
PME	1102	Auto: Fuel & Electrical				
		Systems .....	3	0	12	7
			12	2	12	17
THIRD QUARTER						
PHY	1103	Work, Energy & Power .....	3	2	0	4
ENG	1103	Report Writing .....	3	0	0	3
PME	1180	Auto: Electronics .....	2	0	0	2
PME	1124	Auto: Power Trains .....	3	0	9	6
DFT	1180	Trade Drafting .....	2	4	0	4
			13	6	9	19
SUMMER QUARTER						
ECO	1105	Applied Economics .....	3	0	0	3
PME	1120	Auto: Servicing I .....	2	0	4	3
			5	0	4	6
FOURTH QUARTER						
PME	1123	Chassis and Suspensions .....	6	0	9	9
PME	1181	Auto: Tune Up .....	3	0	6	5
WLD	1180	Welding: Basic .....	2	0	4	3
			11	0	19	17
FIFTH QUARTER						
MEC	1198	Auto: Machine Shop .....	2	0	6	4
PME	1182	Automatic Transmissions .....	6	0	6	8
PME	1183	Power Accessories .....	5	0	4	6
			13	0	16	18
SIXTH QUARTER						
BUS	1103	Small Business Operations ....	3	0	0	3
PME	1125	Auto: Servicing II .....	3	0	9	6
PME	1135	Auto: Air Conditioning .....	3	0	3	4
PME	1170	Power-Plant Trouble Shooting	3	0	6	5
			12	0	18	18

## **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 power tools. The work must conform to local building codes for both residential and commercial structures.

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

The modern carpenter works 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, wallboard and other materials, safely using carpenters hand and power tools to conform to local building codes. He is required to use specifications, blueprints, sketches or building plans for information pertaining to type of material, dimensions, layouts and design of structure, and method of construction.



## CARPENTRY CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
ENG	1101	Communicative Skills:				
		Grammar .....	3	0	0	3
MAT	1110	Math for Building Trades .....	3	2	0	4
DFT	1110	Blueprint Reading: Building				
		Trades .....	0	3	0	1
CAR	1101	Carpentry .....	3	0	18	9
			9	5	18	17

### SECOND QUARTER

ENG 1102	Industrial Communications .....	3	0	0	3
CAR 1102	Carpentry: Framing .....	3	0	18	9
DFT 1111	Blueprint Reading & Sketching	0	3	0	1
PHY 1103	Work, Energy, Power .....	3	2	0	4
		<u>9</u>	<u>5</u>	<u>18</u>	<u>17</u>

### THIRD QUARTER

CAR 1103	Carpentry: Millwork &				
	Cabinet Making .....	3	0	18	9
CAR 1113	Carpentry: Estimating .....	3	3	0	4
PSY 1101	Human Relations .....	3	0	0	3
		<u>9</u>	<u>3</u>	<u>18</u>	<u>16</u>

### FOURTH QUARTER

CAR 1104	Carpentry: Finishing .....	3	0	18	9
CAR 1114	Building Codes .....	3	0	0	3
BUS 1103	Small Business Operations .....	3	0	0	3
		<u>9</u>	<u>0</u>	<u>18</u>	<u>15</u>

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

## **DRAFTING - MECHANICAL**

### **Purpose of Curriculum**

This curriculum is designed to prepare students to enter the field of mechanical drafting.

Each course is prepared to enable an individual to advance rapidly in drafting proficiency upon entering the field of work. Courses are arranged in sequence to develop drafting skills and proficiency in mathematics and science. The draftsman associates with many levels of personnel—administrative, engineers, skilled workmen—and must be able to communicate effectively with them. Courses to develop knowledge and skills in communication, human relations, economics and industrial organization are provided to assist the student in developing understandings and confidence in his relations with other persons.

### **Job Description**

Upon completion of this program, the graduating draftsman will be able to prepare clear, complete, and accurate working plans and detail drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions, make final sketch of the proposed drawing, checking dimension of parts, materials to be used, the relation of one part to another and the relation of the various parts to the whole structure. He may work at making any adjustments or changes necessary or desired, lay tracing paper on drawing and trace drawings in pencil or ink, make charts for representation of statistical data, make finished designs from sketches; utilize knowledge of various machines, engineering practices, mathematics, building materials, and other physical sciences to complete the drawings.

The mechanical draftsman performs the general duties of a draftsman and also specializes in making rough drafting sketches of proposed mechanical devices, and then by drawing necessary details. He or she also prepares accurate scale drawings of parts or machines from specifications.

## DRAFTING — MECHANICAL CURRICULUM

Course No. and Title		Hours Per Week			Quarter Hours Credit
		Class	Lab	Clinic	
FIRST QUARTER					
ENG	1101	Communicative Skills:			
		Grammar .....	3	0	0
MAT	1103	Geometry .....	3	0	0
PHY	1101	Properties of Matter .....	3	2	0
DFT	1170	Basic Drafting .....	1	2	3
DFT	1171	Drafting—Working			
		Drawings .....	1	2	3
MEC	1110	Machine Processes I .....	1	0	6
			12	6	12
					19

### SECOND QUARTER

ENG 1102	Industrial Communications ..	3	0	0	3
MAT 1102	Algebra .....	3	2	0	4
DFT 1172	Technical Sketching .....	2	1	3	3
PHY 1103	Work, Energy, Power .....	3	2	0	4
DFT 1173	Mechanical Drafting I .....	1	0	6	3
MEC 1111	Machine Processes II .....	2	0	3	3
		<u>14</u>	<u>4</u>	<u>12</u>	<u>20</u>

### THIRD QUARTER

MAT 1104	Trigonometry .....	3	2	0	4
DFT 1125	Descriptive Geometry .....	2	3	0	3
DFT 1190	Mechanical Drafting II .....	1	0	6	3
DFT 1191	Machine and Tool Drafting..	1	0	6	3
MEC 1108	Basic Metallurgy .....	3	0	3	4
		<u>10</u>	<u>5</u>	<u>15</u>	<u>17</u>

### FOURTH QUARTER

DFT 1192	Manufacturing Processes				
	& Tolerancing .....	2	0	3	3
DFT 1193	Mechanical Drafting III .....	1	0	6	3
DFT 1194	Design Drafting .....	1	0	6	3
MEC 1179	Materials Testing .....	2	0	3	3
PSY 1101	Human Relations .....	3	0	0	3
DFT* 1195	ELECTIVE: Steel Fabricating				
	Drafting .....	(1)	(3)	(0)	(2)
		<u>9(10)</u>	<u>0(3)</u>	<u>18(18)</u>	<u>15(17)</u>

\*Optional course for selected mechanical drafting students and others with the instructor's approval.

## **ELECTRICAL INSTALLATION AND MAINTENANCE**

### **Purpose of Curriculum**

The rapid expansion of the national economy and the increasing development of new electrical equipment. By mid-1975 more than 700,000 persons 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. The majority of the electrical tradesmen today are trained through apprenticeship or on-the-job training programs.

This curriculum guide provides a training program in the basic knowledge, fundamentals, 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 applicatory experience in the fundamentals taught in class.

### **Job Description**

The graduate of the electrical trades program is qualified to enter an electrical trade as an on-the-job trainee or apprentice. There he assists in the planning, layout, installation, check out, and maintenance of systems in residential, commercial, or industrial plants. He has 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, and he has 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 advance through experience and additional training through upgrading courses.

# ELECTRICAL INSTALLATION & MAINTENANCE CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
ELC	1112	Direct and Alternating Current .....	5	0	15	10
PHY	1102	Electricity .....	3	2	0	4
MAT	1110	Math for Building Trades .....	3	2	0	4
			<u>11</u>	<u>4</u>	<u>15</u>	<u>18</u>

<b>SECOND QUARTER</b>					
ELC 1113	Alternating Current and Direct Current Machines and Controls	5	0	15	10
DFT 1113	Blueprint Reading: Electrical..	0	3	0	1
DFT 1110	Blueprint Reading: Building Trades .....	0	3	0	1
ENG 1101	Communicative Skills: Grammar .....	3	0	0	3
		<u>8</u>	<u>6</u>	<u>15</u>	<u>15</u>

<b>THIRD QUARTER</b>					
ENG 1102	Industrial Communications .....	3	0	0	3
ELC 1124	Residential Wiring .....	5	0	9	8
ELN 1118	Industrial Electronics .....	3	0	6	5
PSY 1101	Human Relations .....	3	0	0	3
BUS 1103	Small Business Operations .....	3	0	0	3
		<u>17</u>	<u>0</u>	<u>15</u>	<u>22</u>

<b>FOURTH QUARTER</b>					
ELC 1125	Commercial and Industrial Wiring .....	5	4	6	9
ELN 1119	Industrial Electronics .....	3	0	6	5
BMS 1133	Building Codes and Laws .....	2	2	3	4
		<u>10</u>	<u>6</u>	<u>15</u>	<u>18</u>

## **MACHINE SHOP TRADE**

### **Purpose of Curriculum**

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 craftsmen who have the background knowledge and a potential to advance.

This curriculum 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.

### **Job Description**

The machinist is a skilled metal worker who shapes metal parts by using machine tools and hand tools. He is trained and experienced in turning out a machined product and in switching 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 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 gages to measure the accuracy of his work to thousandths of an inch or centimeter.

This graduate machinist should be able to set up and operate most 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. The graduate machinist should be able to enter into private industry as a skilled machine craftsman.

# MACHINE SHOP TRADE CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
ENG	1101	Communicative Skills:				
		Grammar .....	3	0	0	3
MAT	1101	Vocational Mathematics I .....	3	2	0	4
MEC	1101	Theory and Practice I .....	3	0	12	7
PSY	1106	Applied Psychology .....	3	0	0	3
			12	2	12	17
SECOND QUARTER						
MAT	1102	Vocational Mathematics II .....	3	2	0	4
PHY	1101	Properties of Matter .....	3	2	0	4
ENG	1102	Industrial Communications .....	3	0	0	3
DFT	1180	Trade Drafting I .....	2	4	0	4
MEC	1102	Theory and Practice II .....	3	2	6	6
			14	10	6	21
THIRD QUARTER						
MAT	1123	Mathematics: Machinist I .....	3	2	0	4
DFT	1181	Trade Drafting II .....	2	3	0	3
ECO	1105	Applied Economics .....	3	0	0	3
PHY	1102	Electricity .....	3	2	0	4
MEC	1103	Theory and Practice III .....	3	2	6	6
			14	9	6	20
SUMMER SESSION						
PHY	1103	Work, Energy, and Power .....	3	2	0	4
MEC	1107	Numerical Control in Manufacturing .....	2	0	3	3
			5	2	3	7
FOURTH QUARTER						
MAT	1180	Mathematics: Machinist II .....	3	2	0	4
MEC	1180	Industrial Specifications .....	3	0	0	3
MEC	1104	Structure of Metals .....	3	2	0	4
MEC	1105	Theory and Practice IV .....	3	0	9	6
			12	4	9	18
FIFTH QUARTER						
WLD	1180	Basic Welding .....	2	0	4	3
DFT	1281	Jig & Fixture Design .....	2	4	0	4
MEC	1106	Heat Treating Practices .....	2	0	4	3
MEC	1181	Precision Machines .....	3	0	9	6
			9	4	17	16
SIXTH QUARTER						
MEC	1182	Jig and Fixture Making .....	3	0	9	6
MEC	1183	Machine Repair .....	2	0	4	3
MEC	1184	Advanced Machine Processes ..	3	0	6	5
ENG	1103	Report Writing .....	3	0	0	3
			11	0	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, the need for cement masons, and stonemasons also increases.

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 CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
MAS	1101	Bricklaying I .....	5	0	15	10
MAT	1110	Math for Building Trades .....	3	2	0	4
DFT	1110	Blueprint Reading: Building Trades .....	0	3	0	1
ENG	1101	Communicative Skills: Grammar .....	3	0	0	3
			11	5	15	18
SECOND QUARTER						
MAS	1102	Bricklaying II .....	5	0	15	10
DFT	1111	Blueprint Reading & Sketching .....	0	3	0	1
ENG	1102	Industrial Communications .....	3	0	0	3
PHY	1103	Work, Energy and Power .....	3	2	0	4
			11	5	15	18
THIRD QUARTER						
MAS	1103	General Masonry I .....	5	0	15	10
MAS	1113	Masonry Estimating .....	3	0	3	4
DFT	1114	Blueprint Reading & Sketching .....	0	3	0	1
			8	3	18	15
FOURTH QUARTER						
BUS	1103	Small Business Operations .....	3	0	0	3
PSY	1101	Human Relations .....	3	0	0	3
MAS	1104	General Masonry II .....	3	0	18	9
			9	0	18	15

## 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 craftsmen. As building construction continues to increase, this demand for plumbers will also increase.

This plumbing curriculum 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 and heating practices 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. Pipefitters, in particular, are employed as maintenance personnel in the petroleum, chemical, and food-processing industries.

### 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.

Plumbing and pipefitting are sometimes considered to be a single trade, journeymen in this field can specialize in either. 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 CURRICULUM

Course No. and Title		Hours Per Week			Quarter Hours Credit	
		Class	Lab	Clinic		
FIRST QUARTER						
ENG	1101	Communicative Skills: Grammar .....	3	0	0	3
DFT	1110	Blueprint Reading: Building Trades .....	0	3	0	1
MAT	1110	Math for Building Trades .....	3	2	0	4
PLU	1110	Plumbing Pipework .....	5	0	15	10
			11	5	15	18

### SECOND QUARTER

ENG	1102	Industrial Communications .....	3	0	0	3
WLD	1101	Basic Gas Welding .....	2	0	4	3
DFT	1115	Blueprint Reading: Plumbing				
		Trades .....	0	3	0	1
PLU	1111	Domestic Water Systems .....	2	0	9	5
PLU	1120	Low Pressure Steam Systems ..	2	0	6	4
			<u>9</u>	<u>3</u>	<u>19</u>	<u>16</u>

### THIRD QUARTER

PSY	1101	Human Relations .....	3	0	0	3
PLU	1121	High Pressure Steam Systems..	3	0	9	6
BUS	1103	Small Business Operations .....	3	0	0	3
PLU	1112	Installation of Plumbing				
		Fixtures .....	3	0	9	6
			<u>12</u>	<u>0</u>	<u>18</u>	<u>18</u>

### FOURTH QUARTER

BMS	1133	Building Codes and Laws .....	2	2	3	4
PLU	1126	Hydraulic Systems Plumbing ..	2	0	3	3
PLU	1125	Industrial Piping .....	3	0	6	5
PLU	1123	Hot Water and Panel Heating	3	0	6	5
			<u>10</u>	<u>2</u>	<u>18</u>	<u>17</u>

## **TOOL AND 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, gages, 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.

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 gage making.

### **Job Description**

Tool and die making graduates should be able to be responsible for the accuracy of thousands of parts because the jigs, fixtures, dies, molds and gages which are the basic tools of mass production, are built by the tool and die men. They should 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 CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
ENG	1101	Communication Skills:				
		Grammar .....	3	0	0	3
MAT	1101	Vocational Mathematics I .....	3	2	0	4
MEC	1101	Theory and Practice I .....	3	0	12	7
PSY	1106	Applied Psychology .....	3	0	0	3
			12	2	12	17
SECOND QUARTER						
MAT	1102	Vocational Mathematics II .....	3	2	0	4
PHY	1101	Properties of Matter .....	3	2	0	4
ENG	1102	Industrial Communications .....	3	0	0	3
DFT	1180	Trade Drafting I .....	2	4	0	4
MEC	1102	Theory and Practice II .....	3	2	6	6
			14	10	6	21
THIRD QUARTER						
MAT	1123	Mathematics: Machinist I .....	3	2	0	4
DFT	1181	Trade Drafting II .....	2	3	0	3
ECO	1105	Applied Economics .....	3	0	0	3
PHY	1102	Electricity .....	3	2	0	4
MEC	1103	Theory and Practice III .....	3	2	6	6
			14	9	6	20
SUMMER SESSION						
PHY	1103	Work, Energy, Power .....	3	2	0	4
MEC	1107	Numerical Control in				
		Manufacturing .....	2	0	3	3
			5	2	3	7
FOURTH QUARTER						
MAT	1180	Mathematics: Machinist II .....	3	2	0	4
MEC	1180	Industrial Specifications .....	3	0	0	3
MEC	1104	Structure of Metals .....	3	2	0	4
MEC	1105	Theory and Practice IV .....	3	9	9	6
			12	13	9	18
FIFTH QUARTER						
WLD	1180	Basic Welding .....	2	0	4	3
DFT	1281	Jig & Fixture Design .....	2	4	0	4
MEC	1106	Heat Treating Practices .....	2	0	4	3
MEC	1181	Precision Machines .....	3	0	9	6
			9	4	17	16

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
SIXTH QUARTER						
MEC	1182	Jig and Fixture Making .....	3	0	9	6
MEC	1183	Machine Repair .....	2	0	4	3
MEC	1184	Advanced Machine Processes ..	3	0	6	5
ENG	1103	Report Writing .....	3	0	0	3
			<u>11</u>	<u>0</u>	<u>19</u>	<u>17</u>

SEVENTH QUARTER						
MEC	1151	Tool Making:				
		Jigs and Fixtures .....	1	0	6	3
MEC	1154	Die Making I .....	2	0	6	4
MAT	1151	Trigonometry I .....	3	0	0	3
MEC	1158	Introduction to Plastic Molding	2	0	9	5
			<u>8</u>	<u>0</u>	<u>21</u>	<u>15</u>

EIGHTH QUARTER						
MEC	1155	Die Making II .....	2	0	9	5
MEC	1152	Gages and Special Tools .....	2	2	0	3
MEC	1170	Mold Making I .....	2	0	9	5
MAT	1152	Trigonometry II .....	3	0	0	3
			<u>9</u>	<u>2</u>	<u>18</u>	<u>16</u>

NINTH QUARTER						
MEC	1153	Advanced Tool Making .....	4	0	7	6
MEC	1156	Die Making III .....	2	0	9	5
MEC	1171	Mold Making II .....	2	0	6	4
			<u>8</u>	<u>0</u>	<u>22</u>	<u>15</u>

## **WATER AND WASTEWATER PLANT OPERATORS PROGRAM**

### **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 our own 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 the humanities. To give the operator a basic understanding of the entire plant operations, application of laboratory results to optimum plant operation is stressed.

### **Job Description**

The graduate of this program is able to find employment requiring knowledge of laboratory procedures and skill in performing many types of tests on water and wastewater. He has 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.

# WATER & WASTEWATER PLANT OPERATORS CURRICULUM

Course No. and Title			Hours Per Week			Quarter Hours Credit
			Class	Lab	Clinic	
FIRST QUARTER						
CHM	1101	Chemistry I .....	3	2	0	4
ENG	1101	Communicative Skills:				
		Grammar .....	3	0	0	3
MAT	1101	Vocational Mathematics I .....	3	2	0	4
ENV	1100	Biology-Microbiology .....	2	3	0	3
ENV	1110	Introduction to Ecology .....	2	3	0	3
			<u>15</u>	<u>8</u>	<u>0</u>	<u>17</u>

<b>SECOND QUARTER</b>						
ENG	1102	Industrial Communications .....	3	0	0	3
MAT	1102	Vocational Mathematics II .....	3	2	0	4
ENV	1101	Water Laboratory Control .....	2	0	6	4
ENV	1102	Water Plant Operations .....	3	2	0	4
			<u>11</u>	<u>4</u>	<u>6</u>	<u>15</u>

<b>THIRD QUARTER</b>						
DFT	1180	Trade Drafting I .....	2	4	0	4
PSY	1101	Human Relations .....	3	0	0	3
ENV	1103	Waste Laboratory Control .....	2	0	6	4
ENV	1104	Waste Plant Operations .....	3	2	0	4
ENV	1105	Maintenance .....	2	3	0	3
			<u>12</u>	<u>9</u>	<u>6</u>	<u>18</u>

<b>FOURTH QUARTER</b>						
ENV	1107	Stream Studies .....	2	0	6	4
ENV	1108	Control Systems .....	3	0	3	4
ENV	1109	Water and Waste Distribution .....	3	0	3	4
ENV	1111	Industrial Wastes .....	2	0	3	3
			<u>10</u>	<u>0</u>	<u>15</u>	<u>15</u>



## **WELDING**

### **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.

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 the metals industry.

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

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

### **Job Description**

The field of welding offers the graduate welder prestige, security, and a future of continuous employment with steady advancement. It offers employment in practically any metal-using industry; shipbuilding, automobile, aircraft, guided missiles, railroads, construction, pipe fitting, production shop, job shop, and many others.

## WELDING CURRICULUM

Course No. and Title		Hours Per Week			Quarter Hours Credit	
		Class	Lab	Clinic		
FIRST QUARTER						
WLD	1120	Oxyacetylene Welding				
		Cutting .....	3	0	12	7
MAT	1101	Vocational Mathematics I .....	3	2	0	4
DFT	1104	Blueprint Reading: Mechanical .....	0	3	0	1
MEC	1104	Structure of Metals .....	3	2	0	4
ENG	1101	Communicative Skills:				
		Grammar .....	3	0	0	3
			<u>12</u>	<u>9</u>	<u>12</u>	<u>19</u>
SECOND QUARTER						
WLD	1121	Arc Welding .....	3	0	15	8
MAT	1103	Vocational Mathematics III ....	3	0	0	3
DFT	1117	Blueprint Reading: Welding ....	0	3	0	1
ELC	1180	Basic Electricity .....	3	0	0	3
ENG	1102	Industrial Communications .....	3	0	0	3
			<u>12</u>	<u>3</u>	<u>15</u>	<u>18</u>
THIRD QUARTER						
WLD	1124	Pipe Welding .....	4	0	14	8
WLD	1123	Inert Gas Welding .....	1	0	3	2
DFT	1118	Pattern Development				
		& Sketching .....	3	0	0	3
PSY	1106	Applied Psychology .....	3	0	0	3
			<u>11</u>	<u>0</u>	<u>17</u>	<u>16</u>
FOURTH QUARTER						
WLD	1112	Mechanical Testing and				
		Inspection .....	1	2	3	3
WLD	1122	Commercial & Industrial				
		Practice .....	3	0	9	6
WLD	1125	Certification Practices .....	3	0	6	5
MEC	1112	Machine Shop Processes .....	1	0	6	3
			<u>8</u>	<u>2</u>	<u>24</u>	<u>17</u>

## **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 enrollment and the number of course offerings, 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 public school of both systems. These schools have been designated as Adult Education Centers and are integral parts 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.

## **Certificates and Diplomas**

Fayetteville Technical Institute issues a certificate of participation to each student successfully completing a course who attends 80 percent 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.

# **EDUCATIONAL PROGRAMS**

## **General Adult Education—Grades 1-12**

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.

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 or proof of previous work. He is then placed in the appropriate level of instruction.

To be eligible to receive the Adult Diploma, a student must successfully complete a minimum of one year of attendance.

## **EXTENSION AND OCCUPATIONAL EDUCATION**

The Extension Division sponsors courses in many occupational areas providing adults an opportunity to upgrade and improve their abilities and to learn new skills. Classes are offered in the Adult Education centers, and special courses are organized for business and industry to meet the immediate educational needs of working adults.

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.

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 educations.

## **SPECIAL PROGRAMS**

### **New and Expanding Industry Education**

New and expanding industry education provides F.T.I. an opportunity to cooperate with industry in an effort to provide an adequately trained labor force to meet the needs of a rapidly expanding industrial development in North Carolina. Individuals learn basic skills required by a particular job 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 designed to train only that number of individuals for which the participating industry can assure jobs.

## Comprehensive Employment Training

The Comprehensive Employment Training Act (CETA) is a current, Federally-funded, program established to alleviate conditions of substantial and persistent unemployment and under-employment in economically distressed areas of the State. Special programs are sponsored by F.T.I. and administered through the CETA Division.

Program needs are identified by the local manpower committee, and courses are funded by the Cumberland County prime sponsor. Students are selected by the Employment Security Commission with regard to ability, aptitude, physical condition and referred to the CETA Division Chairman at F.T.I.

F.T.I. is responsible for advertising and supervising the CETA classes.



## BUSINESS EDUCATION

### Course Descriptions

	Class Hours	Lab Hours	Quarter Hours Credit
<b>AGR 101A Farm Tractors I</b>	<b>1</b>	<b>3</b>	<b>2</b>
A study of farm tractors including gas and diesel engines. Emphasis is placed on combustion engines and electrical systems. Prerequisite: None.			
<b>AGR 101B Farm Tractors II</b>	<b>1</b>	<b>3</b>	<b>2</b>
A continuation of the study of gas and diesel farm tractors. Emphasis is on power trains, braking and hydraulic systems. Prerequisite: AGR 101A.			
<b>AGR 104 Introduction to Agriculture Economics</b>	<b>3</b>	<b>2</b>	<b>4</b>
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 effect agriculture firms. Prerequisite: None.			
<b>AGR 106 Techniques of Welding</b>	<b>1</b>	<b>3</b>	<b>2</b>
This course covers arc and gas welding, the safe and correct methods of assembling, and the operation of welding equipment. The application of welding to mechanical repair work and steel fabrication is emphasized. Care, maintenance and selection of welding equipment and supplies are applied to the course. Prerequisite: None.			
<b>AGR 108 Beef Cattle Production</b>	<b>2</b>	<b>0</b>	<b>2</b>
A study of the principles of selecting, feeding, breeding and management of beef cattle. Emphasis is placed upon cow-calf and cattle operations. Prerequisite: None.			
<b>AGR 109 Soil Management, Terracing &amp; Drainage</b>	<b>2</b>	<b>2</b>	<b>3</b>
The application of soil science principles to the mechanics of terracing and drainage. Soil types are reviewed as they pertain to terracing and drainage. Prerequisite: None.			
<b>AGR 112 Small Engine Repair</b>	<b>1</b>	<b>3</b>	<b>2</b>
A study of two and four cycle, one cylinder gasoline engines and their power trains. The student is taught preventive maintenance, trouble shooting, and repair of the typical auxiliary engine used on the farm. Prerequisite: None.			
<b>AGR 114 Farm Electrification</b>	<b>1</b>	<b>2</b>	<b>2</b>
The basic principles involved in the wiring of farm buildings to accommodate electrical equipment employed on mechanized farms. Emphasis placed upon wire sizes, switches, protective and safety devices and maintenance of electrical motors and appliances. Prerequisite: None.			

**AGR 118    Feed Grain Crops** 3    0    3

A study of the scientific methods and the application of approved practices to the production of corn, oats, barley and sorghum. Varieties, soils, fertilization, cultivation, harvesting and utilization are included. Prerequisite: None

**AGR 121    Weed Identification and Control** 3    0    3

A study of the identification and control of annual and perennial weeds of economic importance in North Carolina. Prerequisite: None.

**AGR 122    Farm Machinery Repair and Maintenance** 1    3    2

This course emphasizes the proper care, service and management of farm machinery. All kinds of farm machinery are utilized to develop skills needed to repair farm machinery and to maintain them properly. Prerequisite: None.

**AGR 124    Plant Reproduction** 2    0    2

The various methods of scientific plant reproduction are studied. Special attention is given to the propagation of plants and shrubs for the farm and home landscape. Prerequisite: None.

**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 selecting feeding, improveing, processing and marketing livestock. Prerequisite: None.

**AGR 126    Farm Forest Management** 2    0    2

The fundamentals of forestry and farm forestry problems, including planting, thinning and harvesting timber production and the marketing of forestry products. Prerequisite: None.

**AGR 127    Animal Nutrition** 2    0    2

A study of the composition of feeds, feed additives, and the nutritional requirements of livestock. Principles used in the formulation of practical and economical livestock rations are employed. Prerequisite: None.

**AGR 128    Farm and Home Construction** 2    3    3

This course deals with the fundamentals of fencing, concrete mixing, pouring and finishing, use of block and brick, and general carpentry. Field trips are utilized to study farm structures. Prerequisite: None.

**AGR 131    Soybean Production** 2    0    2

A study of crop characteristics, varieties, approved production practices; the effects of environmental factors, rotation, fertilizers, pests and disease upon the profitable production of soybeans. Prerequisite: None.

**AGR 133    Farm Water & Plumbing Systems** 2    0    2

This study deals with the farm water needs and waste disposal. Attention is given to planning and installing the system and its proper care and maintenance. Prerequisite: None.



**AGR 136 Agricultural Math****2 0 2**

This course stresses the fundamental operations and their application to business problems. Topics covered include pricing, payrolls, interest and discount, commissions, taxes, and pertinent uses of mathematics in the field of business. Prerequisite: None.

**ARG 138 Farm Records & Taxes****3 0 3**

This is a study of the kinds of farm records needed and how they should be kept in order to have an adequate farm accounting system. Exercises involving procedures and tax computation skills are used for income tax filing. Prerequisite: None.

**AGR 141 Surveying****2 3 3**

Theory and practice of elementary plane surveying, measurements, differential and profile leveling, and the use of transits and tapes in laying-out farm buildings; grading for proper tile drain, installation of open ditches and laying-out of terraces. Prerequisite: None.

**AGR 142 Agricultural Finance****2 0 2**

Analysis of the capital structure of modern commercial agriculture with emphasis on the sources of credit; lending institutions, credit instruments and repayment schedules; practice in the procedure of evaluating farm resources with attention to information needed for valuation. Prerequisite: None.

**AGR 154 Swine Production****2 0 2**

A study of the scientific methods of selecting, breeding, feeding and management of swine. Special attention is given to housing and marketing. Prerequisite: None.

**AGR 155 Plant Diseases****3 0 3**

A course dealing with the nature and symptoms of diseases of crops; characteristics, causal agents; cause, identification and control of the major plant diseases of the area. Prerequisite: None.

**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. Prerequisite: None.

**AGR 183 Poultry and Egg Production****2 0 2**

A study of the principles and practices associated with the production of broilers and laying flocks including selection, feeding, breeding, disease and parasite control, and marketing. Prerequisite: None.

**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. Prerequisite: None.

- AGR 186    Soils and Fertilizer** 4    2    5
- A course dealing with basic principles of efficient classification, evaluation, and management of soils; care, cultivation, and fertilization of the soil, and the conservation of soil fertility. Prerequisite: None.
- AGR 190    Greenhouse Production & Management** 3    2    4
- A course dealing with the production of breeding plants, vegetable plants and the product of vegetable crops as cash crops in the greenhouse. Exercises are provided for the development of skills in preparing soil media, planting, fertilizing, watering methods, temperature control, diseases, and insect control, and greenhouse management. Prerequisite: None.
- AGR 200    Chemical Pest Control** 2    2    3
- A study of farm chemical pesticides, their ingredients, formulation, and farm application with emphasis on the effective and safe use of chemicals in agricultural pest control. Prerequisite: None.
- AGR 201    Agricultural Chemicals** 4    2    5
- A study of farm and horticulture chemical pesticides, their ingredients, formulation and application with emphasis upon the effective use of chemicals in agricultural pest control. Prerequisite: CHM 101 or equivalent.
- AGR 204    Farm Business Management** 4    4    6
- A review of the functions of the manager of a business farm and the problems he faces. Development of the concept of planning by both partial and complete budgeting. Review of the concepts of costs and the length of run in production. Practice in preparing enterprise budgets as an aid in choosing what to produce; use and analysis of input-output potentials in the development of a farm management plan that results in an efficient farm operation. 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 208    Marketing Farm Products** 3    0    3
- A review of the market structure including local, terminal, wholesale and retail markets. Problems involved in the operation of marketing firms, buying, selling, processing, standardizing and grading, risk taking and storage, and financing. Emphasis is placed upon the grain, tobacco, cotton, soybean, swine, beef animals, poultry and dairy products. Prerequisite: None.

- AGR 213 Farm Enterprise Management** 2 2 3  
 A course dealing with the functions of a manager, production costs, length of run in production, partial and complete budgeting of enterprises and complete farm operation. Exercises will be provided for practice and the development of skill in determining least cost, analysis of production data for the selection of the most desirable enterprise and production factors in relation to the size type and income of a farm. Prerequisite: None.
- 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. Prerequisite: AGR 258 or equivalent.
- 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. Prerequisite: AGR 125.
- AGR 238 Farm Mechanization** 3 0 3  
 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, mixers, storage facilities, harvesters, and materials handling systems. Prerequisite: None.
- AGR 240 Fruit & Vegetable Production** 2 2 3  
 This course includes the selection of fruit and vegetable enterprises as cash crops; the selection of varieties, soil preparation, propagation, cultivation, disease and insect control, harvesting, and marketing of these crops. Prerequisite: None.
- AGR 243 New Sources of Farm Income** 2 0 2  
 Consideration of new areas of production that are not in practice in the student's present farming program. The farm enterprise system is analyzed and new enterprises suggested. Prerequisite: None.
- AGR 245 Crop Insects** 2 0 2  
 A study of common local crop insects, their economic importance, identification, life cycle and host. Field trips are utilized as a means of noting insect damage and identifying the causative insects. Prerequisite: None.
- 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. Prerequisite: AGR 185.

**AGR 272 Tobacco Production****3 2 4**

This course includes the production practices relevant to flue cured tobacco in North Carolina. Topics covered include plant bed practices, field production practices including the use of machinery in the cultivation, fertilization and harvesting of tobacco, and the preparation of tobacco for marketing. Prerequisite: None.

**AGR 274 Pastures & Forage Crops****3 2 4**

A review of the major grasses and legumes of economic importance utilized for pastures, hay or silage. Attention is given to establishing pastures and in the production of forage crops of high nutrient value in keeping with livestock needs. Prerequisite: None.

**AGR 296 Agriculture Programs & Agencies****3 0 3**

A review of the public agricultural programs and agencies that provide services, including financial aid for agricultural procedures; the organization, objectives, function, and services of these organizations. Prerequisite: None.

**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 are 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: 2nd year standing or by permission.

**AIB 102 Principles of Economics****4 0 4**

A broad view of economic institutions and the basic principles of market pricing lead to a discussion of managerial economics. The distribution of functional income is covered in context with national income and its determination. The role of money and the operation of the monetary system are also discussed. Prerequisite: None.

**AIB 110 Teller Training****2 4 4**

An introduction to the basic knowledge and practical skills required of the bank teller. This course is designed for potential and currently employed bank tellers and stresses loss prevention and customer relations. Prerequisite: None.

**AIB 120 Accounting I****4 0 4**

A basic course in accounting principles and procedures. Coverage includes analysis of transactions, the accounting cycle, special journals and ledgers, payroll and control systems, payables and receivables, taxes and accruals. Prerequisite: None.

**AIB 121 Accounting II****4 0 4**

This course builds upon the foundation developed in Accounting I. The student learns more advanced concepts and techniques including departmentalized accounting, the partnership accounting cycle, branch and home office accounting, manufacturing and cost accounting, budgeting and statement analysis. Prerequisite: AIB 120. AIB 120 and AIB 121 are equivalent to BUS 120.

**AIB 202 Principles of Bank Operations****4 0 4**

This course presents the fundamentals of bank operations in a descriptive fashion so that the beginning banker may acquire 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. Prerequisite: None.

**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 longterm holdings. Prerequisite: None.

**AIB 204 Effective English****4 0 4**

This course seeks to impress upon the student the need to consider both the purpose of the communication and the person who will receive it: the fundamental principles underlying effective use of the English language. It points out the ways in which communication may be heightened by proper use of the techniques of language. It also is concerned with the mastery of language through wide reading, an interest in words, and practice in writing. Prerequisite: None.

**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 application of the principles outlined provide new and experienced bankers with a working knowledge of bank management. The case method is introduced as a technique of evaluating effective management. Prerequisite: None.

**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. Prerequisite: None.

**AIB 207 International Banking****4 0 4**

This is 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 objectives of this course is to present the basic framework and fundamentals of international banking: how money is changed from one currency to another. Prerequisite: None.

**AIB 209 Installment Credit****4 0 4**

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 the bank's installment credit operation is carefully scrutinized. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. Prerequisite: None.

**AIB 210 Money and Banking****4 0 4**

This course emphasizes the basic monetary theory needed by the banking student to apply knowledge acquired on the 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 effecting yield curves and the structuring of portfolios. Prerequisite: None.

**AIB 211 Federal Reserve System****4 0 4**

This 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. Attention is given to international monetary affairs and economic developments effecting the American fiscal system. Prerequisite: None.

**AIB 213 Trust Functions and Services****4 0 4**

This course presents a complete picture of the services rendered by institutions engaged in 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. Prerequisite: None.

**AIB 214 Effective Speaking****4 0 4**

In this course, the student is given an opportunity to study all phases of speech situations. Although directed primarily to the student seeking to give an account of himself on the public platform, other speech situations have not been neglected. Having studied the basic principles involved in organizing and presenting a speech, the student is given suggestions to aid in developing speaking ability in such situations as conferences, panel discussions, and media presentations. Prerequisite: None.

**AIB 219 Credit Administration****4 0 4**

The course's primary objective is to acquaint the student thoroughly 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. Prerequisite: None

**AIB 220 Business Financial Management 4 0 4**

This course's primary objective is to acquaint the student thoroughly with the principles of finance as applied to the operations of a profit-seeking (nonbank) firm. Active participation in the process of financial administration and decision-making teaches the student to use the tools and techniques necessary for the efficient financial management of a modern business enterprise. An up-to-date overview of the activities of the modern business financial manager is provided including: re-introduction measuring needs for business funds, acquiring business funds, using business funds, and problem situations. Prerequisite: None.

**AIB 225 Home Mortgage Lending 4 0 4**

This course approaches the subject from the viewpoint of the mortgage loan officer who seeks to develop a sound mortgage portfolio. A picture of the mortgage market is presented first, then the acquisition of a mortgage portfolio, mortgage plans and procedures, mortgage loan processing and servicing, and finally the obligations of the mortgage loan officer in all overall portfolio management. Prerequisite: None.

**AIB 227 Management of Commercial Bank Funds 4 0 4**

This course deals with those necessary principles from which the student can derive an adequate philosophy of funds management. Differences between practices in large banks and smaller institutions are defined. The importance of funds management as the catalyst that brings together policies in the areas of loans, deposits, investments and capital, and relates each to the other is stressed. Prerequisite: None.

**AIB 231 Savings and Time Deposit 4 0 4**

This course reflects that a knowledge of the historical development of savings institutions and an awareness of the basic economic functions of the savings process are necessary to an understanding of the current operations and policies. A review of the savings process clarifies 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. Prerequisite: None.

**AIB 232 Agricultural Finance 4 0 4**

Reflecting the rapid growth of the off-farm agri-business sectors (the suppliers of farm inputs), this course emphasizes general principles associated with the evaluation of management 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. Prerequisite: None.

**AIB 233 Analysis of Financial Statements 4 0 4**

After a review of accounting procedures, this course examines the tools of financial analysis. The student acquires a working knowledge of ratio analysis, funds, flow and other techniques in determining the financial status of the business firm. Prerequisite: AIB 120 or BUS 120.

**AIB 259 Law and Banking****4 0 4**

This course presents the rules of American law which underlie banking. Topics includes jurisprudence, the court system and civil procedure, contracts, quasi-contracts, property, torts and crimes, agencies, corporations, partnerships, sales, negotiable instruments, bank deposits and collections, documents of title and secured transactions. Emphasis is on the Uniform Commercial Code. Prerequisite: None.

**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 filing is emphasized. Prerequisite: None.

**BUS 85 Typing I****2 3 3**

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, centering, and simple tabulation. Prerequisite: None.

**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, and personal and business correspondence. Prerequisite: BUS 85.

**BUS 87 Typewriting****2 3 3**

Emphasizes further development in typing letters, manuscripts, tabulations and special business forms. Prerequisite: BUS 86.

**BUS 93 Business Office Procedures****3 2 4**

A course designed to introduce the student to skills and knowledges needed in a business office. Certain office procedures and techniques included are handling the mail, filing, telephone techniques, and receptionist duties. Personal qualities, good work habits, and proper human relations are stressed. Prerequisite: None.

**BUS 94 Bookkeeping I****3 2 4**

An introductory course designed to give an overview of the complete bookkeeping cycle in its simplest form. Prerequisite: None.

**BUS 95 Bookkeeping III****3 2 4**

This course continues the expansion of basic bookkeeping begun in bookkeeping 98. It covers the use of special journals and many of the non-routine transactions most businesses encounter, such as notes and interest, sales tax, fixed assets and depreciation, and others. It also introduces those aspects of partnership and corporation accounting which differ from the sole proprietorship. Prerequisite: BUS 98.

**BUS 97 Economics I****5 0 5**

The study of how man satisfies his wants and needs for material goods and services through the use of his mental and physical efforts. Prerequisite: None.



**BUS 98 Bookkeeping II****3 2 4**

A continuation of the basic bookkeeping course, designed to cover the bookkeeping problems of a merchandising business including payroll and payroll taxes. It also gives a basic introduction to automated data processing. Prerequisite: BUS 94.

**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. Prerequisite: None.

**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. Prerequisite: None.

**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 speedbuilding. Attention given 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 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. Prerequisite: None.

**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 equivalent and BUS 102 or equivalent, Corequisite: ENG 110.

**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 and 107.

**BUS 110 Office Machines****2 3 3**

An advanced course in the use of business machines. Students receive instructions in computing interest; calculating percent of increase or decrease; calculating selling price, cost and markup; calculating installment purchases; discounting notes; and computing chain discounts on the electronic and printing calculators. Supplemental materials may be included on the full keyboard machines. Prerequisite: None.

**BUS 111 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 of 60 words per minute for five minutes on new material  
Prerequisite: BUS 106, or equivalent, and BUS 102, or equivalent.

**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. Prerequisite: None.

**BUS 115 Business Law I** 3 2 4

An introductory course designed to acquaint the student with fundamentals and principles of business law, including the Federal and the State court systems, contracts, legal forms of business, property rights, wills and inheritance. Prerequisite: None.

**BUS 116 Business Law II** 3 2 4

An advanced course pertaining to negotiable instruments, agency, bailments, sales and conclusion of contracts. Prerequisite: BUS 115.

**BUS 120 Accounting Principles I** 5 3 6

Principles, techniques and tools of accounting, for understanding the mechanics of accounting, collecting, summarizing, analyzing and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: None.

**BUS 121 Accounting Principles II** 5 3 6

Partnership and corporation accounting including use of a vouchers system, bank reconciliations, payroll and payroll taxes. Emphasis is placed on transactions including partners' capital, corporate stocks, bonds, retained earnings and investments. Prerequisite: BUS 120.

**BUS 122 Management Accounting (Survey of)** 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 I** 2 2 3

Basic financial management including the study of the nature of financial management and the business environmental financial analysis, planning and control; long-term investment decisions; and valuation and financial structure. Prerequisite: BUS 120.

**BUS 124 Business Finance II** 2 2 3

A continuation of BUS 123 including the study of working capital management, long-term financing and valuation in mergers and corporate re-adjustment. Prerequisite: BUS 123.

**BUS 125 Personal Finance****3 0 3**

A course designed to enable the student to analyze and direct his or her own family's financial affairs. Emphasis is placed on setting goals and determining present financial position, protecting what one already has, getting more out of income, increasing income, and retirement planning and estate transfer. Prerequisite: None.

**BUS 183 Terminology & Vocabulary****3 0 3**

A course designed to increase and improve the student's vocabulary with meaningful learning experiences in the development of spelling ability and vocabulary enrichment. Special emphasis is placed on business and professional vocabularies. Prerequisite: BUS 108.

**BUS 183B Terminology & Vocabulary****3 2 4**

A course designed to increase and improve the student's vocabulary with meaningful learning experiences in the development of spelling ability and vocabulary enrichment. Special emphasis is placed on prefixes, suffixes, troublesome word endings, synonyms, antonyms and business vocabularies. Prerequisite: None.

**BUS 184 Terminology & Vocabulary****3 0 3**

A continuation of the study to increase and improve the student's vocabulary with meaningful learning experiences in the development of spelling ability and vocabulary enrichment. Additional emphasis is placed on special vocabularies and employment tests. Prerequisite: BUS 183.

**BUS 184B Terminology & Vocabulary****3 2 4**

A continuation of the study to increase and improve the student's vocabulary with meaningful learning experiences in the development of spelling ability and vocabulary enrichment. Emphasis is placed on business and special vocabularies as well as a review of grammar, punctuation, and basic business information in preparation for employment tests. Prerequisite: BUS 183B.

**BUS 185 Business Organization****3 0 3**

A survey of the types, function and practices of modern business organizations designed to develop an appreciation of the place of business organization and management in our economic society. Prerequisite: None.

**BUS 203 Advanced Typewriting****2 3 3**

Emphasis is placed on increasing individual production rates. The student applies techniques in planning and typing mailable office copy. A review of letter styles, manuscripts and statistical reports is stressed. Prerequisite: BUS 104.

**BUS 204 Advanced Typewriting****2 3 3**

A continuation of individual production rates as stressed in BUS 203, with emphasis placed on legal documents, statistical tabulation, and business forms of mailable quality. Prerequisite: BUS 203.

- BUS 205    Advanced Typewriting** 2    3    3  
 An accumulation of skills and techniques is typing from rough-draft material in a simulated office approach. Stress is placed upon the student's ability to make decisions, use initiative, place priorities upon work, and produce mailable copy in form and content. Prerequisite: BUS 204 for General Office Education, or BUS 104 for Secretarial Science.
- BUS 206    Dictation and Transcription** 3    2    4  
 An advanced shorthand course designed to increase the student's dictation and transcription rate. Emphasis on mailable copy is further stressed. Individual dictation speeds are satisfied in lab and speed-building exercises. Minimum rate of 90 words per minute for five minutes on new material. Prerequisite: BUS 104 and 108.
- BUS 207    Dictation and Transcription** 3    2    4  
 An advanced shorthand course designed to increase the student's dictation and transcription rate. Emphasis on mailable copy is further stressed. Individual dictation speeds are satisfied in lab and speed-building exercises. Minimum dictation rate of 110 words per minute for five minutes on new material. Prerequisite: None.
- BUS 208    Dictation and Transcription** 3    2    4  
 An advanced shorthand course designed to increase the student's dictation and transcription rate. Emphasis on mailable copy is further stressed. Individual dictation speeds are satisfied in lab and speed-building exercises. Minimum dictation rate of 110 words per minute for five minutes on new material. Prerequisite: BUS 207.
- BUS 211    Office Machines** 2    3    3  
 The secretarial and general office student receives instruction in the manipulation of the proportional spacing and the magnetic tape typewriters, and extensive training in the preparation of materials and the use of various duplicating equipment. Prerequisite: BUS 104.
- BUS 214    Secretarial Procedures** 3    2    4  
 A course designed to help the secretary become a more efficient and valuable employee. Personality and efficient work habits are stressed. Semi-executive duties involving secretarial decision-making and planning are included to promote job enhancement. Prerequisite: BUS 205 and 206.
- 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 121.
- BUS 222    Intermediate Accounting II** 3    2    4  
 Continued 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 are 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, and partnership accounting. Prerequisite: BUS 223.

**BUS 225 Cost Accounting****3 4 5**

Nature and purpose of cost accounting; accounting for direct labor, materials, and factory burden; job cost, process cost, and standard cost principles and procedures; selling and distribution cost; budgets and executive use of cost figures. Prerequisite: BUS 122.

**BUS 227 Managerial Accounting****5 3 6**

The student uses accounting data to prepare various reports used by management for planning and control including, but not limited to, budgets, gross profit and department profit analysis, break-even analysis, cost-volume-profit analysis differential and comparative cost analysis, capital expenditure planning, and opportunity cost analysis. The student also is introduced to the use of linear programming for planning and decision making. Prerequisite: BUS 225.

**BUS 229 Income Taxes****3 4 5**

Application of Federal taxes to individuals, partnerships and corporations. Includes procedures for filing W-4 form, form 1040 with supporting schedules, form 1065-partnerships, and for 1120-corporations. Prerequisite: BUS 121.

**BUS 234 Business Management****5 0 5**

Emphasis is placed on the basic principles of management including planning, organizing, staffing, directing, and controlling. Also presented is the role of the manager in the changing environment. Prerequisite: None.

**BUS 235 Small Business Management****3 0 3**

A study of the functions of planning, organizing, directing, and controlling as they relate to the small business designed to help the owner and/or manager understand the various responsibilities a small businessman has to face and the challenges generated by the marketplace under a capitalistic economy system. Prerequisite: None.

**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 matching of goods and services with markets in which the business enterprise develops, distributes, promotes, and prices them. Prerequisite: None.

**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 marketing research, selection media, means of testing effectiveness of advertising, and theory and practice of writing advertising copy. Prerequisite: None.

**BUS 247 Business Insurance I****3 0 3**

A presentation of the basic principles of life, health, property, and automobile insurance, and their application. Particular emphasis is placed on the interests of the consumer. Prerequisite: None.

**BUS 248 Insurance Principles and Procedures****3 0 3**

A presentation of the basic principles of life, health, property and automobile insurance and their applications. Secretarial procedures in underwriting applications and processing claims is stressed. Prerequisite: None.

**BUS 249 Buying and Merchandising****2 2 3**

Analysis of the organization for buying and what and how much to buy. Topics included are the psychology of dealing with people, vendor relations, planning merchandise assortment, inventory and stock control, and pricing. Prerequisite: None.

**BUS 256 General Office Practice****2 3 3**

A course designed to help the clerical worker develop proper attitudes and efficient work habits. Dress and grooming, telephone communication, and mail processing and services are given special emphasis. Attention is also focused on job placement and advancement. Prerequisite: BUS 203.

**BUS 257 Business Insurance II****3 0 3**

Business uses of life and health insurance relative to proprietorship, partnership, and corporation continuation problems and solutions. Also included are deferred compensation plans and split dollar plans. Prerequisite: BUS 247.

**BUS 259 Business Law****2 2 3**

Includes the study of laws relating to creation, operation and termination of an agency; the employer-employee relationship; and labor legislation. Also covers formation, operation and dissolution of partnerships and corporations as well as the nature and transfer of property. Prerequisite: BUS 116.

**BUS 260 Government and Business****2 2 3**

An in-depth study of the influence that government regulation has on business, labor, and consumers. The constitutional basis for Federal and State government regulation of various sectors of the economy is examined. Prerequisite: ECO 102 and 104.

**BUS 261 Introduction to Machine Transcription****1 4 3**

A course that acquaints the student with dictation-transcription equipment. The student is introduced to mailable transcription which involves correct spelling and punctuation. Prerequisite: BUS 104 and ENG 110.

- BUS 262 Machine Transcription** 1 4 3  
 This course develops the skill of direct transcription from oral dictation to mailable typewritten form. Decisions in editing, punctuation, spelling, and formatting are emphasized. Prerequisite: BUS 104 and ENG 110.
- BUS 263 Payroll Taxes** 3 0 3  
 Designed to acquaint students with the various phases of the Social Security Act and other laws relating to the payment of wages and salaries, to 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, to develop payroll records that provide information required by laws, to provide practice in all payroll operations, and to introduce various types of automatic equipment that eliminate many of the repetitive operations that are common in payroll taxes and the accounting thereof. Prerequisite: BUS 120.
- BUS 268 Marketing and Retailing Internship** 3 9 6  
 This course contains a minimum of 110 hours of approved on-the-job work experience related to marketing and retailing jobs. Each student conducts and makes a written report on a practical project related to his internship. Prerequisite: Approval of instructor and advisor.
- 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 270 Office Practice Seminar** 3 0 3  
 This course is designed as a review of previous courses dealing with duties of business offices. A review of office procedures and actions are in this seminar. Prerequisite: Permission of instructor or faculty advisor.
- 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. Prerequisite: BUS 206.
- BUS 272 Supervision** 3 0 3  
 Introduces the basic responsibilities and duties of the supervisor and his relationship to his supervisors, subordinates, and associates. Emphasis is placed on the role of the supervisor in obtaining and maintaining an effective work force. Prerequisite: None.
- BUS 279 Stocks and Bonds** 3 0 3  
 Focuses on the development of a coherent and logical framework of thought for coming to decisions about investment policy. Selection and management of stock and bond portfolios of individual investors and the formulations of portfolio policies and their revisions to meet conditions are emphasized. Prerequisite: None.

**BUS 282 Business Statistics I****3 2 4**

An introduction to the fundamentals of the use of quantitative data. The collection, summarizing, and presentation of statistical data is stressed. Prerequisite: High School Algebra or equivalent.

**BUS 283 Business Statistics II****3 2 4**

A continuation of BUS 282 stressing sampling techniques, drawing inferences from sample data, and the use of statistical data in decision making. Prerequisite: BUS 282.

**BUS 285 Salesmanship****5 0 5**

A study of the significance of sales in the economy, basic principles underlying the sales process, practical development and application of sales techniques, and the management of sales and sales forces. Prerequisite: None.

**BUS 286 Real Estate****3 3 4**

A survey course designed to provide both the beginner and the practitioner with a basic knowledge of real estate. It includes the basic aspects of real estate ownership, contracts, financing, closing, licensing, mathematics, brokerage, land use, property management and law of agency. Prerequisite: None.

**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, and application of color and design analysis. Prerequisite: None.

**BUS 289 Contemporary Business and Economic Problems** **3 0 3**

A course designed to identify and analyze significant national and local business economic problems. The student will evaluate the historical, economic, technological, and sociological causes. The ability of the student to relate his personal value system and his philosophy of management to potential solutions is stressed. Prerequisite: None.

**BUS 290 Secretarial Internship****1 15 6**

This course provides on-the-job secretarial work experience. The employer and the type of work experience must be approved by the advisor. Prerequisite: Consent of advisor.

**BUS 1103 Small Business Operations****3 0 0 3**

An introduction to business with emphasis placed on basic business law, business forms and records, financial problems, employer-employee relations, and problems of starting and operating a small business. Prerequisite: None.

**BUS 1106 Personal Financial Management****3 0 0 3**

This course is designed to apprise the student of his financial ability, responsibility, potential in saving money, and need for planning for the future. Prerequisite: None.



<b>CLU 195</b>	<b>Accounting and Finance</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers basic accounting principles including data accumulation systems, income measurement, valuation of assets and liabilities, and financial statement analysis; the accounting process from the recording of a business transaction in the books of account to the final preparation of financial statements; various sources of short-term, intermediate-term, and long-term funds available to business enterprise. Prerequisite: None.

<b>CLU 202</b>	<b>Life Insurance Law and Mathematics</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Legal aspects of contract formation, policy provisions, assignments, ownership rights, creditor rights, beneficiary designations, and disposition of life insurance proceeds. Also covered is the mathematics of life insurance as related to premiums, reserves, nonforfeiture values, surplus and dividends. Prerequisite: None.

<b>CLU 207</b>	<b>Income Tax</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers the Federal income tax system with particular reference to the taxation of life insurance and annuities; the income taxation of individuals, sole proprietorships, partnerships, corporations, trusts, and estates; and the income taxation of transactions involving annuities as well as life and health insurance. Prerequisite: None.

<b>CLU 208</b>	<b>Pension Planning</b>	<b>3</b>	<b>0</b>	<b>3</b>
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**This course covers the basic features of pension plans, cost factors, funding instruments, and tax considerations involved in private pensions, profit-sharing plans, and tax-deferred annuities; thrift and savings plans and plans for the self-employed. Prerequisite: None.**

<b>CLU 211</b>	<b>Economic Security and Individual Life Insurance</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Economic security needs, human behavior, professionalism and ethics in life and health insurance. Individual life, health and annuity contracts. Life Insurance programming. Types of insurers, investments, financial statements, risk selection, taxation and regulation of companies. Prerequisite: None.

<b>CLU 213</b>	<b>Group and Social Insurance</b>	<b>3</b>	<b>0</b>	<b>3</b>
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**This course covers an analysis of group life and group health insurance including products, marketing, underwriting, reinsurance, premiums, and reserves; socio-economic problems related to death, old age, unemployment, and disability. Prerequisite: None.**

<b>CLU 214</b>	<b>Insurance Economics</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers economic principles, the governmental and banking institutions which have an effect on the national economy, national income, theory and application of price determination, business cycles, money and banking, monetary and fiscal policy, international trade and finance, and problems of economic growth. Prerequisite: None.

**CLU 220 Estate Planning and Taxation 3 0 3**

This course covers estate and tax planning emphasizing the nature, valuation, disposition, administration, and taxation of property; the use of revocable and irrevocable trusts, testamentary trusts, life insurance, powers of appointment, wills, lifetime gifts, and the marital deduction; and the role of life insurance in minimizing the financial problems of the estate owner. Prerequisite: None.

**CLU 226 Investments & Family Financial Management 3 0 3**

This course covers various aspects of investment principles and their application of family management, yields, limited income securities, growth factors, and analysis of financial statements, family budgeting, property insurance, mutual funds, variable annuities, and aspects of other investment media. Prerequisite: None.

**CLU 229 Business Insurance 3 0 3**

This course covers the business uses of life and health insurance, including proprietorship, partnership and corporation continuation problems and their solutions through the use of buy-sell agreements properly funded to preserve and distribute business values; other business uses of life and health insurance, such as key man insurance, non-qualified deferred compensation plans and split-dollar plans; human behavior and ethics in business. Prerequisite: Must be the last course taken in the ten course sequence of the CLU test, or with the permission of the instructor.

**ECO 102 Macroeconomics 2 2 3**

An introductory economics course with attention focused on such problems as the level of unemployment, the rate of inflation, the nation's total output of goods and services, the ways in which government raises and spends money, and other matters of economy-wide significance. Prerequisite: None.

**ECO 104 Microeconomics 2 2 3**

An introductory course concerned with the specific units or parts that make up an economic system and the relationships between these parts. Emphasis is placed on understanding the behavior of individual firms and households and the ways in which such entities interact. Prerequisite: None.

**ECO 201 Labor Economics 3 2 4**

An advanced course stressing basic economic principles and their application to the field of labor. Emphasis is placed on the structure of American unions and the role they play in the economy, income distribution, and the role of collective bargaining in American society. Prerequisite: ECO 102 and 104.

**ECO 205 Applied Economics 3 0 3**

A course in economics and its practical applications as it relates to man in his quest for economic security. The roles of land, labor, capital, and government are emphasized along with free enterprise and its place among world economic systems. Prerequisite: None.

A course designed to help the student better 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. Prerequisite: None.

**EDP 104 Introduction to Electronic Data Processing** 3 0 3

This course has been developed to meet the need for a broadly based, non-technical over-view of electronic data processing. Fundamental principles and concepts of business data processing systems are examined. General business applications are studied with somewhat more detailed attention given to electronic data processing procedures associated with business accounting. This course is intended for those students pursuing degrees in business curricula other than Electronic Data Processing. Prerequisite: None.

**EDP 105 Fortran I** 4 3 5

An introductory course in computer programming with the Fortran language. Flowcharting, language structure, statements and programming techniques are presented for a logical approach to computer programming. The student develops program logic and codes several Fortran programs for solving problems typical of everyday business and industry. Prerequisite: EDP 112, similar experience, or consent of instructor.

**EDP 107 Fortran II** 2 5 4

An extension of EDP 105. The student develops additional programming skills in writing Fortran programs using more complex logic techniques and methods. Use of Fortran in solving problems which requires more advanced mathematical concepts is explored. Prerequisites: EDP 105 or 117.

**EDP 109 Cobol I** 4 3 5

An introductory course in computer programming with the Cobol language. Flowcharting, language structure, statements and programming techniques are presented for a logical approach to business programming. The student develops program logic and codes several Cobol programs for solving problems typical of everyday business. Prerequisite: EDP 112, similar experience, or consent of instructor.

**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. The course covers the general area of computer terminology, management information systems, introduction to hardware, key punching, flowcharting, progress preparation, file concepts, and three languages—Cobol, Fortran, RPG. Prerequisite: None.

**EDP 117 Fortran-Engineering****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 course is also an elective for EDP students interested in mathematically oriented computer programming concepts. It provides a study of the language structure, statements, logic, and programming methods which permit a student to develop and code several programs in his particular discipline. Prerequisite: MAT 106 or equivalent.

**EDP 198 Key punch I****1 6 3**

A practical course in the basics of keypunch operations for computers and automatic data processing equipment. The course gives realistic approaches to the keypunch machine operations, to individual jobs, to the most commonly used codes for program cards, to the punched card by colors and cuts, to the terminology used in data processing, to the fact that keypunch is the initial and very important step in the data processing job. Prerequisite: Basic typing ability.

**EDP 199 Computer Operator****3 4 5**

A skills course in the operation of a disc-oriented computer system, which includes the manipulation of hardware as well as operating system software routines, utilities, and compilers. A basic study of the assembler language is included. Prerequisite: EDP 112 or its equivalent.

**EDP 201 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 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 New Areas in Electronic Data Processing****3 0 3**

A research course in the new areas of computer science, from new technological advances in hardware to the new advances in software and languages, and the new applications of computers in business and industry. Prerequisite: EDP 112.

**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 develops program logic and writes programs using assembly language to solve appropriately assigned problems. Prerequisite: EDP 112 and one other programming language.

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

An extension of EDP 207. The student develops more complex program logic and writes programs using more complex and sophisticated data files and input/output devices. Prerequisite: EDP 207.

**EDP 216 Data Processing Project****3 12 7**

During the last quarter the student will develop a simulated field project using materials from texts supplemented by actual industrial problems. Students interview local firms, construct proposed systems and progress through the actual proposal with samples of work to be done. Prerequisite: EDP 204 and 207.

**EDP 223 Computer Systems II****4 3 5**

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

**EDP 229 Key punch II****2 2 3**

An extension of EDP 198. This course is presented to develop speed and accuracy in keypunch ability. Typical business data are presented for practice. Prerequisite: EDP 198 or consent of instructor.

**EDP 230 PRG II-I****4 3 5**

A first course in the Report Program Generator Language commonly known as RPG II. This course includes a study of the language formulation, rules, and programming methods. The student develops program logic and codes several commercial type programs in the RPG II language. Prerequisite: EDP 112 or consent of instructor.

**EDP 231 RPG II-II****2 5 4**

An extension of EDP 230, the student develops additional programming skills in writing RPG II programs on more complex business problems. Techniques learned for card systems are extended to disc operating systems. The student codes several programs using these more advanced techniques. Prerequisite: EDP 230.

**EDP 299 EDP Cooperative Training****0 15 5**

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences are held with each student and employer while the student is receiving training. This course offers valuable experience and training in on-the-job experience and gives realism and motivation to his academic and technical study program. Prerequisite: Consent of instructor.

**HOR 150 General Plant Horticulture****3 2 4**

A course dealing with horticulture principles and the application of plant science fundamentals to horticultural practices. Prerequisite: None.

**HOR 151 Plant Materials****3 2 4**

A study of horticultural plants normally produced in greenhouse and nursery operations with emphasis upon the identification of plants by their names and characteristics. Prerequisite: None.

**HOR 153 Greenhouse Management****3 2 4**

A study of the principles involved in the operation of a greenhouse on a commercial basis. Class instruction is supplemented by student assignments in greenhouse operation and by field trips to observe successful greenhouse operations. Prerequisite: HOR 150 or AGR 190.

- HOR 190 Greenhouse Production of Plants & Crops** 3 2 4  
 A course dealing with the application of the principles of plant science in the production of plants and crops in the greenhouse. Emphases are placed upon the methods of plant propagation, specific plant requirements, scheduling production operations, and the application of marketing principles and practices. Prerequisite: HOR 150 or equivalent.
- HOR 200 Ornamental Horticulture & Landscaping** 3 2 4  
 A study of the basic principles and practices utilized in the propagation, growth and transplantation of ornamental plants, and the process and procedures utilized in landscaping the home grounds. Prerequisite: HOR 151 or equivalent.
- HOR 204 Plant Management Practices** 4 2 5  
 A course designed to identify the general principles and practices involved in turf lawn and nursery establishment and management. Emphasis is given to the appropriate types and kinds of equipment available and to their use in each type of operation. Prerequisite: AGR 170 or HOR 150.
- HOR 205 Horticulture Retail Marketing** 3 2 4  
 A study of the basic marketing principles with emphasis upon how to operate a small business involved in selling horticultural plants and garden supplies. Students are provided experience in selling as a part of the course. Field trips are used to observe successful operation. Prerequisite: None.
- HOR 228 Plant Diseases and Parasites** 3 2 4  
 A study of the diseases and parasites which the horticulturalist must be able to identify and control. Laboratory examination of diseases and parasites accompanies the class instruction. Prerequisite: None.
- HOR 254 Plant Propagation** 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 propagation of plants. Prerequisite: None.
- HOR 258 Horticulture Enterprises (MGT)** 5 2 6  
 Types of production enterprises as a specialty, such as greenhouse production of vegetable plants, tomatoes or other crops, bedding of pot plants and ornamental plants. The student is provided experience in analyzing one or more production enterprise to determine what is required for a successful operation. Prerequisite: AGR 170 or HOR 150.
- HOR 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 are 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 giving realism and motivation to the student. Prerequisite: 2nd year standing or by permission of advisor.

**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. Prerequisite: ISC 120 or consent of instructor.

**ISC 120 Principles of Industrial Management****3 2 4**

The basic managerial decisions; organizational structure, plant location, building requirements, and internal factory organization; problems of factory operations and control, planning, scheduling, routing factory production, stores control, labor control, purchasing, cost control. Plant problems are utilized as lab experiments. Prerequisite: None.

**ISC 202 Quality Control****3 2 4**

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control: Sampling inspections, process control and tests for significance. Prerequisite: ISC 120 or consent of instructor.

**ISC 204 Value Analysis****3 0 3**

The modern concept in the control of manufacturing production. This course provides 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. Prerequisite: ISC 120 or consent of instructor.

**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. Prerequisite: Consent of instructor.

**ISC 211 Work Measurement****5 0 5**

This course is designed to give students a broad concept of work measurement as a management tool. It includes a study of methods and techniques utilizing flow and process charts, multiple activity charts, operations charts, flow diagrams, work sampling, personnel and work scheduling, standards development, and time and motion data utilization. Students are afforded laboratory experiences to develop proficiency in the application of the aforementioned management tools. The preparation of written analyses, based on the finding during laboratory periods, are an integral part of the course. Prerequisite: ISC 120

**ISC 220 Management Problems****3 0 3**

An environment is created to encourage students to develop the perspective or method of thinking necessary to effectively cope with the value premises needed in making their own managerial decision. In effect, students are motivated to formulate their own "philosophy" of management. Prerequisite: BUS 234 and approval of instructor.

**ISC 221 Introduction to Industrial Engineering****3 2 4**

A practical study of the functions of the industrial engineer. Motion and time studies, predetermined time systems, and their bases for establishing remuneration and incentive are surveyed. Effective plant layout, material handling, and packaging are evaluated by motion and time study principles. Prerequisite: ISC 120 or consent of instructor.

**ISC 232 Industrial Dynamics****5 0 5**

Management decision-making examined from the overall systems point of view. Emphasis on identification of decision variables in the dynamic state, their effect on the entire system, and selection of optimal alternates within the existing environment. Prerequisite: Second year standing.

**ISC 235 Industrial Management Seminar****3 2 4**

A study of the problems facing local industry with plant visitations and interviews. The student summarizes his findings in written reports to include both problem areas and proposed solutions. Prerequisite: Second year standing.

**ISC 240 Industrial Relations****2 2 3**

Study of the effective development and utilization of manpower by study of present day procurement, selection, training, employee maintenance functions and case studies of typical industrial situations. Prerequisite: ISC 120 or consent of instructor.

**RLS 203 Real Estate Finance****2 3 3**

The economics of finance is covered together with the legal aspects of real estate finance, sources of mortgage money, terms under which different financing should be used, sources of funds, mathematics of real estate finance and appraisals for finance purposes. Prerequisite: BUS 286.

**RLS 215 Real Estate Trends & Investments****3 0 3**

Local and national trends in the development, use, and value of real property, as well as governmental policies and their effect on the real estate market, are examined and discussed. Skills are developed in the analysis, research, and correlation of the various trends, policies, and factors effecting real estate. A study of real estate as an investment. Prerequisite: BUS 286.

**RLS 225 Real Estate Law****2 2 3**

A survey course of law for persons engaged in the real estate business or allied fields. It includes the study of the nature of real property and the doctrines of estates. Emphasis is placed upon legal steps that should be observed in the handling of real estate transactions from the preparation of the listing contract to the closing statement and the recording of papers. Prerequisite: BUS 286.



**RLS 235 Real Estate Selling****5 0 5**

The relation of the salesman and the broker is studied. Also covered are such factors of selling as sources of prospects, bringing the prospect and property together, the use of advertising in selling, the basic development of a sales plan, and a sales presentation. Prerequisite: BUS 286.

**RLS 236 Real Estate Appraisal****2 3 3**

The study of the functions of real estate appraisers; planning and the process of appraisal, sight evaluation, and building materials, and equipment. The three methods of appraising property are considered: the income approach, the market data approach, and the cost approach, including depreciation and renovation. Prerequisite: BUS 286.

**RLS 241 Land Resources & Property Management****3 3 4**

The course includes the physical, economic and institutional factors that effect conditions and control man's use of land resources, and an analysis of the major problems of planning in rapidly growing areas.

The course also includes the nature and types of property management, organization for management leases and contracts, rent scheduling, selling of space, and techniques of renting. Tenant selections, supervision and selection, supervision, and relations with owners are included. Purchasing, budget preparation, reports, ethics, and legal and professional relationships are discussed. Prerequisite: BUS 286.

**RLS 245 Real Estate Brokerage and Management****3 0 3**

Organization and conduct of real estate brokerage and managerial business and professional activities, and the social, economic, legal licensing and ethical responsibilities of the real estate broker and real property manager. Prerequisite: BUS 286.

**ENGINEERING TECHNOLOGY EDUCATION****Course Descriptions**

	Class Hours	Lab Hours	Quarter
			Hours Credit
<b>CIV 93 Introduction to Technology</b>	<b>2</b>	<b>2</b>	<b>3</b>

A course designed to acquaint the student with various technologies. This survey course helps the student to understand the role of the technician in the fields of engineering. The instruction time is 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. Prerequisite: None.

- CIV 101    Surveying I** 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. Prerequisite: None. Corequisite: MAT 101.
- CIV 102    Surveying II** 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, Corequisite: MAT 102.
- CIV 103    Surveying III** 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. Prerequisite: CIV 102.
- CIV 107    Civil Engineering Computations** 2    2    3
- The use and manipulation of portable electronic calculators and the set-up and programming of "mini" computers (Monroe Surveyor, Wang, and HP 9100) for solving civil engineering problems. Computer programming logic using FORTRAN as the programming language will be introduced by practical application through writing programs to solve engineering problems. The school computer facilities and the NCR Century computers will be visited to observe procedures and equipment. Prerequisite: None.
- CIV 108    Basic Hydraulics: Principles of Flow** 3    3    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 and PHY 101.
- CIV 114    Statics** 5    0    5
- Forces, resultants, and type of force systems; moments, equilibrium of coplanar forces by analytic 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. Corequisites: MAT 102 and 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 Planning Methods & Equipment 3 2 4**

Methods and equipment used in building and highway construction; pile driving; construction techniques and equipment used in reinforced concrete buildings; bridges, lift slabs, thinshells, and folded plates; analysis of construction activities to improve methods and quality of construction; construction scheduling; project control and supervision by practical application of the critical path method (CPM) for scheduling and time cost determination. Prerequisite: None.

**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 and 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 construction planning, scheduling, and "time-cost" determination. Prerequisite: CIV 217 and 219, Co-requisite: CIV 223.

**CIV 221 Reinforced Concrete 5 0 5**

Analysis and design of reinforced concrete beams, floor systems, and columns by the working stress method; use of CRSI Design Handbook and ACI Building Code; principles of precast concrete. Prerequisite: CIV 114 and 219.

**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 specifications. Prerequisite: None.

**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 217 and 221.

- CIV 228 Highway & Structural Drafting** 1 6 3  
 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 101, CIV 103 and 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 to the organization of municipal services, and air pollution standards and controls. Prerequisites: CIV 103, 228, and 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 103 and 202.
- CIV 231 Portland Cement & Asphalt Concrete** 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. Prerequisite: None.
- CIV 271 City and Regional Planning** 5 0 5  
 To provide a framework for better understanding of current urban and regional problems. The responsibility and involvement of the civil engineer in solving the complex and constantly changing problems are explored by practical application through development of a sketch plan for a nearby small city. Prerequisite: CIV 103 and 223, Corequisite: ECO 205.
- 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 are 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 motivation to the student and realism 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. Prerequisite: None.

**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: None.

**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. Prerequisite: None.

**DFT 101 Technical Drafting****0 6 2**

The field of drafting is introduced as the student begins study of drawing principles and practices for 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 principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced. Prerequisite: None

**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 are studied. More 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 is also included. Introduction is given to intersection and developments of various types of geometrical objects. Prerequisite: DFT 101.

**DFT 104 Applied Descriptive Geometry****2 4 4**

Intersections 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**

This is a study of the graphic analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Also included are problems dealing with solid geometry theorems. Where applicable, each graphical solution is accompanied by the analytical solution. Visualization shall be stressed on every problem. Prerequisite: DFT 102 and MAT 102.

**DFT 226 Air Conditioning Systems Drawing****0 9 3**

Drawing of air conditioning systems and study of related architectural and structural elements. Sheet metal intersections and development, and types of duct installations. Air conditioning and refrigeration layouts, diagrams, and schematics. Prerequisite: DFT 102 and 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 and 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 are developed by the individual. Prerequisite: Recommendation of the faculty advisor.

**ELC 101 Fundamentals of Electricity I****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 capacitors. Prerequisite: None, Co-requisite: MAT 101 and 298.

**ELC 103 Fundamentals of Electricity II****2 3 3**

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 Basic Logic****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. Prerequisite: None.

**ELC 205 Applied Electricity****2 4 4**

Electrical code, interpretations of name-plate data, motor characteristics and selection, motor controls and protection devices, single-phase and three-phase current applications, wire size calculations, "Wye" connections and "Delta" connections. Prerequisite: PHY 102.

**ELN 103 Introduction to Active Devices****2 2 3**

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. Prerequisite: ELN 103.

**ELN 106 Passive Networks****2 2 3**

Analysis of passive networks under conditions of varying frequency or transient conditions. Prerequisite: ELC 103.

- ELN 206A Application of Active Devices I** 2 3 3  
Applications of active devices to basic audio amplifiers, detectors, and power supplies. Prerequisite: ELN 104.
- ELN 206B Application of Active Devices II** 2 3 3  
Applications of active devices to radio-frequency amplifiers, oscillators and modulators, which are followed by an introduction of the basic systems. Prerequisite: ELN 206A.
- 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 and 106.
- ELN 211 Active Network Analysis II** 4 5 6  
A study in some depth of the analysis and design of transistor circuits. Net-work theorems and equivalent circuits are used extensively in evaluating total circuit performance. Device peculiarities and limitations pertinent to reliable operations and considered. Prerequisite: ELN 206 and 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: ELN 206A and 106, and 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 systems. Systems are 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 are 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. Prerequisite: ELN 209.
- ELN 240 Digital Computers** 3 2 4  
An exploration into the methodology of counting and computing. Various computer techniques are 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 215.

**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, and others. Prerequisite: None, Co-requisite: ELN 240.

**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 are held with each student and the 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 motivation to the student and realism to academic and technical program of studies. Prerequisite: Completion of first year academics.

**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. Prerequisite: None.

**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 and skin infections; the study of several pathogenic bacteria associated with water and food, natural and acquired resistance to bacteria, and respiratory disease-producing microbes. Prerequisite: None.

**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 and air-borne infections of man. Prerequisite: None.

**ENV 105 Environmental Chemistry****3 2 4**

A beginning course in the utilization of chemical concepts as applied to the measurement and abatement of pollutants of the environment. Topics covered are formulas, solutions, stoichiometric equations, equilibrium, oxidation-reduction electro-chemistry, organic chemistry and chemical instrumentation. Laboratory problems to include gravimetric, colorimeters, and electro-metric analysis. The principle purpose of the course is to better prepare the student for the ENV 204, 205, 206 series of courses. Prerequisite: None.



**ENV 108 Basic Hydraulics****2 4 4**

A beginning course in pressure, capacities, flow parameters, and energy losses in open and closed conduits. Empirical equation for flow are substantiated by laboratory experiments. Mechanical and electrical energy for water transportation are illustrated by simulated water supply systems. Prerequisite: MAT 102.

**ENV 109 Hydrology****3 2 4**

A study of *hydrologic cycle* to include precipitation, percolation, transpiration, evaporation, and transportation of water. Interpretation of rainfall record and run-off calculations as pertaining to adequate surface supplies is included. Ground water systems are covered to complete all phases of domestic water supplies. Prerequisite: MAT 102 and ENV 108.

**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. Prerequisite: MAT 102 and PHY 102.

**ENV 204 Sanitary Chemistry and Biology I****2 6 5**

Theory and laboratory technique for the determination of solids, dissolved oxygen, oxygen consumed, relative stability, water and sewage bacteria. Prerequisite: ENV 104.

**ENV 205 Sanitary Chemistry & Biology II****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 III****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: ENV 108.

**ENV 217 Liquid Waste Treatment****3 2 4**

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

**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 216 and 217.

**ENV 226 Atmospheric Air Analysis****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. Prerequisite: ENV 105 and 204.

**ENV 236 Codes, Contracts, Specifications and Estimating****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. Prerequisite: DFT 285.

**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 are held with each student, and employer, while the student is receiving training. This course gives valuable experience and training which is incorporated into the student's education from the standpoint of ON-THE-JOB EXPERIENCE, and gives motivation to the student and realism to his academic and technical program of studies. Prerequisite: Completion of first and second quarter academics.

**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 machines, elementary operation of the lathe, drill press, grinder, and milling machine. Sample projects will apply procedures using this equipment. Prerequisite: None.

**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. Drafting room layouts for planning and control are explored. Prerequisite: DFT 102.

**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: PHY 102 and ELC 205.

# GENERAL EDUCATION

## Course Descriptions

	Class Hours	Lab Hours	Quarter Hours Credit
<b>ART 102 Drawing and Composition</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course presents beginning drawing and the problem of composing a picture. Various techniques including pencil and charcoal are used. Still life and nature are the subjects. Prerequisite: None.			
<b>ART 103 Drawing and Oil Painting</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course is an introductory, first course in oil painting. It includes the study of color including the colorwheel and its application in the use of oil pigments. Other major subjects are: choice of subject for painting, composition, drawing on the prepared canvas, and techniques including a-la-prima and monochrome, underpainting, glazing and varnishing, the care of colors, brushes, and palettes, and other basic oil painting techniques and practices. Prerequisite: None.			
<b>ART 104 Art Appreciation</b>	<b>3</b>	<b>0</b>	<b>3</b>
This is 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. Prerequisite: None.			
<b>ART 105 Ceramics I</b>	<b>1</b>	<b>2</b>	<b>2</b>
Ceramics I is a basic course in the processes of ceramics as a fine art with an introduction to the potter's wheel. Prerequisite: None.			
<b>ART 106 Ceramics II</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course is a continuation of Ceramics I with an emphasis on technique. Prerequisite: ART 105.			
<b>ART 107 Advanced Drawing I</b>	<b>1</b>	<b>5</b>	<b>3</b>
The purpose of this course is to teach the student good design and composition through drawing and the use of design principles. The student not only learns good principles, but also learns to render and to recognize them. Prerequisite: ART 102.			
<b>ART 108 Advanced Oil Painting</b>	<b>1</b>	<b>5</b>	<b>3</b>
This is a continuation of ART 103 with special emphasis on the proper use of the color wheel. Prerequisite: ART 103.			
<b>BIO 92 Fundamental Biology I</b>	<b>2</b>	<b>2</b>	<b>3</b>
The study of the structure, physiological processes, reproduction, evolutionary relationships, and economic implications of plants. Laboratory emphasis on cultures of plant cells and tissue, photosynthesis, natural history and the genetics of major plant taxes. Prerequisite: None.			
<b>BIO 93 Fundamental Biology II</b>	<b>2</b>	<b>2</b>	<b>3</b>
The study of the anatomy of invertebrates and lower vertebrates and the mechanisms responsible for maintaining the functional integrity of invertebrates and lower vertebrates. Laboratory collection and dissection of representative invertebrates and lower vertebrates, genetics and ecology of local fauna. Prerequisite: None.			

**BIO 94 Fundamental Biology III****2 2 3**

Fundamental principles of animal morphology, physiology, genetics, and ecology of the vertebrates with special emphasis on North Carolina fauna. Laboratory emphasis on the study of basic principles underlying the functions of protoplasm and organ systems; and, dissections of the dogfish and selected vertebrate types for comparative anatomy and evolution of the vertebrates. Prerequisite: None.

**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 include the dissection of the anatomies of the cat and fetal pig with an insight into the comparative anatomy of the human body. Prerequisite: None.

**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 includes the circulatory, respiratory, digestive, urinary, reproductive, and endocrine systems. Designed laboratory experiments include the dissection of the anatomies of the cat and the fetal pig with an insight into the comparative anatomy of the human body. Prerequisite: None.

**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 both pathogenic and non-pathogenic microbes. The use of chemical, physical and biological agents to accomplish the goals as emphasized. Prerequisite: None.

**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 108.

**BIO 114 Advanced Pathology****3 0 3**

The student becomes acquainted with the principles of pathology from the anatomic and physiologic aspects, including gross and microscopic pathology. Emphasis is placed on the study of frequently seen systemic diseases and discussion of the pathology of the various organ systems. Prerequisite: BIO 108.

**BIO 201 General Biology I****4 2 5**

A general introduction to the biological sciences for the liberal arts student. In addition to a consideration of the historical development of biology, the structure and function of representative members of the plant and animal kingdom are used to illustrate the basic principles of biology. Emphasis is given to fauna during Biology 201. Prerequisite: None.

**BIO 202 General Biology II****4 2 5**

A general introductory course in biology. Particular attention is given to the structure and function of representative members of the plant kingdom with emphasis on flora indigenous to this region. Prerequisite: None.

**CHM 93 Chemistry, Physical Science II, Level II****3 2 4**

An introductory course for beginning students covering topics such as: scientific methods, metric system, states of matter, elements, mixtures, compounds, physical and chemical properties of matter, atomic theory with special emphasis on electronic configurations, periodic table, stoichiometry, 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. Prerequisite: High School algebra or equivalent.

**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  $\text{pH}$  of acids, bases and salts; buffer solutions, titrations, ionization constants, solubility of weak acids, colloidal suspensions and absorption. A brief introduction to the types of organic compounds and the nomenclature of the important compounds. Laboratory experiments selected will correspond to the material covered during this course. Prerequisite: CHM 93.

**CHM 101 General Chemistry****3 2 4**

An introduction to chemical principles of inorganic compounds. Emphasis is on atomic structure and bonding, properties of gases, chemical reactions, stoichiometric calculations and the chemistry of the elements in terms of the periodic table. Prerequisite: Algebra.

**CHM 102 General Chemistry****3 2 4**

Inorganic chemistry; elementary, physical and chemical properties of liquids and solids; ionization, solutions, acids and bases;  $\text{pH}$ , oxidation and reduction, chemical and equilibrium and ionic equations. A brief introduction to the types of aliphatic, aromatic, and substituted hydrocarbons and the nomenclature of some of the important compounds. Laboratory work consists of various inorganic tests and experiments. Prerequisite: CHM 101 or equivalent.

**CHM 103 General and Introductory Analytical Chemistry****3 2 4**

Topics such as ionic equilibrium, electrochemistry, solubility product, common ion effect, radioactive isotopes and chemical kinetics are studied. Qualitative analysis is introduced with a brief study of the separation and identification of some cations and anions. Methods and techniques of quantitative analysis are introduced using volumetric titrations. Prerequisite: CHM 102.



**EDU 90 Career Planning****3 2 4**

This course provides the student an opportunity to understand the basic steps required for preparation and entrance into a career. Concepts are stressed which are valuable in identifying and eliminating barriers which inhibit selection of, and progress in chosen careers. Prerequisite: None.

**ENG 50 Usage & Reading****3 2 4**

This English course is designed for high school graduates who possess deficiencies in usage and reading. Practical usage of a basic level is emphasized. Vocabulary development and reading are combined with grammar to give the student a better understanding of the structure of the language. Students are taught to use various resource materials such as the library and reference books. Prerequisite: None.

**ENG 60 Language and Writing****3 2 4**

This course is designed for high school graduates to improve and expand their English language skills, both verbal and written. It includes techniques and practical exercises for increasing reading rate and comprehension. The development of vocabulary and application of grammatical principles in written assignments is also stressed. Emphasis is placed on refining and supplementing language skills already mastered in ENG 50. Prerequisite: ENG 50.

**ENG 70 Functional English****3 2 4**

This course is designed to enable high school graduates to develop new English skills and refine previously learned ones. It is the study of English principles and their uses. It includes the parts of speech, usage, composition, vocabulary building, sentence structure, and reading skills. Prerequisite: ENG 60.

**ENG 91 Vocabulary and Reading****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. Prerequisite: None.

**ENG 92 Grammar and Composition****3 2 4**

This course is 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 is stressed. Prerequisite: None.

**ENG 93 Vocabulary and Composition****3 2 4**

This course is a continuation of reading and vocabulary development which carefully combines theory and practice. These skills transfer into a language program providing opportunity to transfer reading skills into writing areas. Prerequisite: None.

**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. Prerequisite: None.

**ENG 96 Vocabulary and Spelling II** 3 2 4

This course is designed to enlarge the students' active vocabularies, to improve the students' spelling abilities through the application of principles of good spelling, and to improve the students' abilities to punctuate properly. Prerequisite: ENG 95.

**ENG 97 Vocabulary and Spelling III** 3 2 4

This course is designed to eliminate gross spelling errors in the students' writing, to develop a mastery of the basic rules of rhetoric, and to increase the students' awareness of words and develop in him a mastery of words. Prerequisite: ENG 96.

**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. Prerequisite: None.

**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 the 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 course. This report must relate to the student's specific curriculum. Prerequisite: ENG 102 or 105.

**ENG 104 Usage and Composition I** 3 0 3

A consideration of standard usage of the English language and a study of the rhetoric of expository writing. Emphasis is placed on the reading and/or the writing of essays. Prerequisite: None.

**ENG 105 Usage and Composition II** 3 0 3

An introduction to basic elements of fiction and an introduction to research techniques. Emphasis is placed on the reading and the writing about short fiction and on creating a research paper related to that reading. 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 with concentration on the Ancient World. Prerequisite: ENG 102 or 105.

**ENG 107 World Literature II** 3 0 3

A continuation of the study of parallel developments of literary movements and great writings from the Middle Ages through the Renaissance. Prerequisite: ENG 102 or 105.



**ENG 108 Usage and Composition III** 3 0 3

An advanced consideration of the rhetoric of fiction and a refinement of the student's critical and analytical skills. Emphasis is placed on evaluative reading of and writing about poetry and dramas. Prerequisite: ENG 105.

**ENG 110 Business English** 3 0 3

Emphasis is placed on the use of the dictionary and the application of the rules for punctuation, capitalization, the expression of numbers, proof-reading and spelling, word division, and the formation of plurals and possessives as they are applied constantly by the secretary, stenographer, and typist in producing mailable transcripts. Prerequisite: None.

**ENG 115 Medical Terminology & Vocabulary** 3 0 3

This course deals with the basic tools for building a medical vocabulary and mastering the identification of anatomical roots, prefixes and suffixes of words. Anatomical body parts, diseases, operations, tumors, drugs and descriptive terms are emphasized by analysis of the terms and structure of the words. Prerequisite: None.

**ENG 204 Oral Communications** 3 0 3

A study of basic concepts and principles of oral communication to enable the student to communicate with others verbally. Emphasis is placed on improving diction and voice, and on applying particular techniques of theory to correct speaking habits and to produce effective oral presentation. Prerequisite: None.

**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 the equivalent, or BUS 102.

**ENG 209 World Literature III** 3 0 3

A continuation of the study of parallel developments of literary movements and great writings from the Eighteenth Century to the Present. Prerequisite: ENG 102 or 105.

**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 102 or 105.

**ENG 211 American Literature II** 3 0 3

An examination of the American literary culture from 1860 to the present. Prerequisite: ENG 102 or 105.

**ENG 212 Creative Writing** 3 0 3

Designed as a discipline for and a forum of criticism for students who wish to write verse or short fiction. Prerequisite: ENG 102 or 105.

**ENG 1100 Reading Improvement** 2 0 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. Prerequisite: None.

**ENG 1101 Communicative Skills: Grammar** 3 0 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. Prerequisite: None.

**ENG 1102 Industrial Communications** 3 0 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. Prerequisite: ENG 1101.

**ENG 1103 Report Writing** 3 0 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 is given and some time is devoted to oral speech and note taking. Prerequisite; ENG 1102.

**HIS 104 Western Civilization I** 3 0 3

This course presents a survey of the western civilization heritage from its pre-Greek origins to 1660. Major social, cultural, economic, and political trends are presented in depth and traced in detail. Prerequisite: None.

**HIS 105 Western Civilization II** 3 0 3

This course is a continuation of western civilization from 1660 to 1850. Prerequisite: None. HIS 104 recommended.

**HIS 106 Western Civilization III** 3 0 3

This is a continuation of western civilization from 1850 to the present. Prerequisite: None. HIS 105 recommended.

**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. Prerequisite: None.

**HIS 202 American History II** 3 0 3

This is a continuation of His 201 from the outbreak of the Civil War through World War I. Emphasis is given to the periods of Reconstruction, Industrialization, Imperialism, and World War I. Developments in foreign policy are related to the domestic occurrences in the United States. Prerequisite: None. HIS 201 recommended.

**HIS 203 American History III****3 0 3**

This is a continuation of HIS 202 from World War I to the present. Emphasis is given to the periods of the Great Depression, World War II, the Cold War and the social unrest in the 1960's. Developments in foreign policy are related to the domestic occurrences in the United States. Prerequisite: None. HIS 202 recommended.

**HIS 210 North Carolina History I****3 0 3**

This course presents a study of geographical, political, economic and social conditions existing in North Carolina from the discovery of America through the Civil War Period. Particular emphasis is placed on those aspects of development which tended to make North Carolina unique during the colonial period and in the development of basic institutions. Prerequisite: None.

**HIS 211 North Carolina History II****3 0 3**

This course presents a study of geographical, political, economic and social conditions existing in North Carolina from the Civil War to the present. Particular emphasis is placed on the aspects of development which tended to make North Carolina unique during this period. Prerequisite: None. HIS 210 recommended.

**MAT 50 General Mathematics****3 2 4**

This course is designed to improve the mathematical background of those high school graduates who need either to learn or to review the basic facts and techniques that are normally covered in a general mathematics course. The course includes the fundamental mathematical operations of addition, subtraction, multiplication, and division using whole numbers. The meaning and use of both common fractions and decimal fractions, as well as the fundamental mathematical operations using both types of fractions, are included. Emphasis is on the practical application and use of mathematical principles. Prerequisite: None.

**MAT 60 Intermediate Mathematics****& Introductory Geometry****3 2 4**

This course is designed for the high school graduate who has learned the basic facts, principles, and techniques of general mathematics, and who desires to learn or review the use of his skills in a higher level of mathematics. The course teaches an understanding of percent and its practical use. Also included are the fundamentals of standard measurements, using simple formulas and calculations of areas and volumes. By including the principles of techniques of solving simple equations, the student is provided a basis for later study of geometry and algebra. Emphasis is on the practical application and use of mathematical fundamentals, principles, and techniques. Prerequisite: None.

**MAT 70 Introductory Algebra****3 2 4**

This course is designed for the high school graduate who desires to learn or to review, the fundamentals of basic algebra. The course includes the methods of solving problems involving basic formulas. Also included are the fundamental techniques and principles used with monomials and

simple equations; including the use of exponents and the algebraic laws of signs in the course provides the basis for solving problems using simple simultaneous equations. The course also includes the methods and techniques of solving binomials, ratio, and proportion. Emphasis is on practical work in solving problems involving the fundamentals, principles, and techniques of basic algebra. Prerequisite: None.

**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. Prerequisite: None.

**MAT 91 Mathematics I, Level I, Basic Math I** 3 2 4

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. Prerequisite: None.

**MAT 92 Mathematics II, Level I, Basic Math II** 3 2 4

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. Prerequisite: MAT 91.

**MAT 93 Mathematics III, Level I, Basic Math III** 3 2 4

The meaning and measurements of angles, reading and drawing angles, application of angles, measurement of areas, volumes, weight, time, and speed. Units of measure and relationship of units of measure, and the metric system. Prerequisite: MAT 92.

**MAT 94 Mathematics I, Level II, Pre-Algebra** 3 2 4

A review of arithmetic, the 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, and spheres. Prerequisite: None.

**MAT 95 Mathematics II, Level II, Algebra I** 3 2 4

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. Prerequisite: MAT 94.

- MAT 96 Mathematics III, Level II, Algebra II** 3 2 4  
 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, and problem solving. Prerequisite: MAT 95.
- MAT 101 Technical Mathematics I** 5 0 5  
 The real number system is developed as an extension of natural numbers. Number systems of various bases are introduced. Fundamental algebraic operation, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: None.
- MAT 102 Technical Mathematics II** 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 III** 5 0 5  
 A continuation of MAT 102. 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 functions, linear inequalities, and common logarithms are studied. Emphasis throughout the course is placed on the orderly procedures in problem solving. Prerequisite: None.
- 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 or equivalent Math background.
- 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. Prerequisite: None.
- MAT 109 College Algebra** 5 0 5  
 A logical, reasoned development of a real number system with emphasis on traditional arithmetic properties and operations, basic concepts of algebra and informal geometry. Prerequisite: High School algebra or equivalent.

- MAT 110 Business Mathematics** 3 2 4
- This course stresses the fundamental math operations and their application to business problems. Topics covered include price-making, interest and discounts, and commissions. Prerequisite: None.
- MAT 111 College Trigonometry** 5 0 5
- Trigonometric ratios; trigonometric functions, angles, real numbers, and composite arguments; trigonometric identities; graphs of trigonometric functions; use of logarithms in trigonometry. Prerequisite: Two years of algebra and permission of instructor or MAT 109.
- MAT 201 Calculus I** 5 0 5
- A brief study is made of the real numbers along with an introduction to analytical geometry. The concept of a function is introduced and a thorough study is made of limits and continuity. A thorough study is made of the concept of the derivative and its applications. Prerequisite: Two years of algebra and one year of trigonometry and permission of instructor, or MAT 109 and 111.
- MAT 202 Calculus II** 5 0 5
- The definite integral is introduced and studied in detail. Particular attention is given to the Fundamental Theorem of calculus along with applications of the definite integral. The logarithmic and exponential functions are introduced and studied in relation to the derivative and the definite integral. Prerequisite: MAT 201.
- MAT 203 Calculus III** 5 0 5
- A review is made of trigonometry and then the derivative and definite integral of the trigonometric functions are studied. Major emphasis is placed on the study of techniques of integration. Polar coordinates are introduced and studied. Prerequisite: MAT 202.
- MAT 204 Calculus IV** 5 0 5
- The concept of the indefinite integral is introduced and studied and a study is made of indeterminate forms. Taylor's formula is studied and the concept of an infinite series is introduced and studied in detail. Prerequisite: MAT 203.
- MAT 286 Technical Mathematics IV** 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 298 Special Problems** 1 0 1
- The operational aspects of the following are developed: sine, cosine, tangent; rectangular and polar forms of complex numbers; determinants to 3rd order; Cramer's Rule. Prerequisite: None.

**MAT 1101 Vocational Mathematics I 3 2 0 4**

Practical number theory. Analysis of basic operations; addition, subtraction, multiplication, and divisions, fractions, decimals, powers and roots, percentages, ratio and proportion, plane and solid geometric figures used in industry; measurement of surfaces and volumes, and the introduction to algebra used in trades. Practice in depth. Prerequisite: None.

**MAT 1102 Vocational Algebra 3 2 0 4**

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. Prerequisite: MAT 1101 or equivalent.

**MAT 1103 Vocational Geometry 3 0 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 and volumes of solids. Prerequisite: None.

**MAT 1104 Vocational Trigonometry 3 2 0 4**

Trigonometric ratios; solving problems with right triangles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse function of trigonometric equations. All topics are applied to practical problems. Prerequisite; MAT 1102.

**MAT 1105 Mathematics for Nurses 3 0 0 3**

Review of fundamental operations with numbers; whole numbers, common fractions, decimal fractions, roman numerals, percentage, proportion; applications to nursing procedures; Apothecaries' system, metric system, household systems, percentage strength, finding the amount of pure drugs and tablets, working with solutions, pediatric dosages, dosage by division of tablets, calculation of doses in minims. Prerequisite: None.

**MAT 1110 Math for Building Trades 3 2 0 4**

Basic concepts of arithmetic: addition, subtraction, multiplication, and division; fractions and decimals; powers and roots; percentage. Basic concepts of algebra: signs and symbols, addition, subtraction, multiplications, and division; equations; ratio and proportion; factors, exponents, and roots; formulas. Basic concepts of geometry: principles of linear, angular, circular, surface and volume measurement; geometric lines and shapes; angles; common geometric construction. Basic concepts of applied trigonometry; right triangles and the trigonometric functions; acute triangles; oblique triangles. Application of these basic mathematical concepts of the carpentry, electrical, masonry, and plumbing trades. Prerequisite: None.

**MAT 1112 Building Trades Mathematics** 3 0 0 3

Practical problems dealing with volumes, weights, ratios; mensuration; and basic estimating practices for building materials. Prerequisite: MAT 1110.

**MAT 1123 Machinists Mathematics I** 3 2 0 4

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 and concludes with an introduction to compound angle problems. Prerequisite: MAT 1101.

**MAT 1151 Trigonometry I** 3 0 0 3

A review of trigonometric functions and tables and solution of problems involving 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. Prerequisite: MAT 1102 or equivalent.

**MAT 1152 Trigonometry II** 3 0 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. Prerequisite: MAT 1151.

**MAT 1180 Machinist Mathematics II** 3 2 0 4

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, and solution of oblique triangles. Prerequisite: MAT 1123.

**MUS 104 Music Appreciation** 3 0 3

The course is designed to further the development of knowledge, understanding, and the appreciation of all media of music. Emphasis is given to the historical development, forms and styles, and to the art of correct listening. Analysis is conducted through lectures, reports, projects, and listening. Prerequisite: None.

**MUS 107 Concert Chorus I** 0 3 1

This course consists of a choral singing group of mixed voices (male and female) which learn the art and technique of choral singing and perform a variety of outstanding music. The chorus is designed for all students who love to sing and is open to all men and women regardless of planned major. Basic fundamentals of music are studied and injected into the choral program. Included in this course are studies of choral literature ranging from simple folk songs to extended compositions in larger forms. Public performances are given periodically. Prerequisite: None.



**MUS 108 Concert Chorus II****0 3 1**

This course consists of a choral singing group of mixed voices (male and female) which use the art and technique of choral singing to perform a variety of outstanding music. The chorus is designed for all students who love to sing and is open to all men and women regardless of planned major. Basic fundamentals of music are studied and injected into the choral program. Included in this course are studies of choral literature ranging from simple folk songs to extended compositions in larger forms. Public performances are given periodically. Prerequisite: MUS 107.

**MUS 109 Concert Chorus III****0 3 1**

This course consists of a choral singing group of mixed voices (male and female) which use the art and technique of choral singing to perform a variety of outstanding music. The chorus is designed for all students who love to sing and is open to all men and women regardless of planned major. Basic fundamentals of music are studied and injected into the choral program. Included in this course are studies of choral literature ranging from simple folk songs to extended compositions in larger forms. Public performance are given periodically. Prerequisite: MUS 108.

**PED 101 Personal Hygiene****2 0 2**

Presents basic health knowledge and develops proper health habits and attitudes, including mental health in the individuals necessary to meet their current and future health needs. Prerequisite: None.

**PED 102 Personal and Community Health****5 0 5**

This course includes information and principles for protection and promotion of individual and public health. Emphasis is given to mental health, parenthood, nutrition, disease prevention, and the community organizations for maintaining and improving health in the society. The functions of health agencies at all governmental levels and their role in control and prevention of communicable diseases, air and water pollution control, and promotion of community health are covered. Prerequisite: None.

**PED 111 First Aid and Safety****2 0 2**

An introductory first aid course to explain the fundamental theories and practices in prevention of accidents, current safety practices and rules for daily living, and in giving immediate and temporary aid to victims of sudden illness or accidents. Prerequisite: None.

**PED 116 Physical Education****0 3 1**

This course is a survey of physical education including swimming, physical conditioning, team sports, and individual sports. Prerequisite: None.

**PED 120 Swimming (Beginner)****0 2 1**

This is a course for NON-SWIMMERS or VERY WEAK SWIMMERS designed to develop the fundamental skills of swimming and to overcome fears of water. It includes some water safety techniques and practices. Prerequisite: None.

- PED 121 Swimming (Intermediate)** 0 3 1
- This is a course designed to give competence in four basic leg strokes and their corresponding arm strokes, safety practices, and other swimming including floating, sculling, treading, and underwater swimming; includes two basic dives. Prerequisite: Must be able to swim 25 yards (free style and untimed).
- PED 122 Swimming (Advanced)** 0 3 1
- This is a course designed to develop skills and competence in swimming, diving, lifesaving, and water safety techniques, practices, and skills. Prerequisite: PED 121 or must be able to swim 300 yards (freestyle, untimed) and demonstrate knowledge of water safety satisfactory to the instructor.
- PED 124 Water Sports** 0 2 1
- A course to improve one's stamina and water skills applied in all water sports. Includes introduction to water sports such as water polo and water basketball. Prerequisite: PED 122 or equivalent to satisfaction of the coach-instructor.
- PED 143 Tennis** 0 3 1
- A course to teach the history, rules, strategy, and the development of requisite skills for singles and doubles tennis with extensive application. Prerequisite: None.
- PED 211 First Aid & Safety I** 3 2 4
- A standard first aid and safety course conducted according to the standards of the American Red Cross including basic lifesaving and water safety techniques and practices. Prerequisite: PED 121.
- PED 212 First Aid & Safety II** 3 2 4
- An advanced course; the American Red Cross Certificate is awarded upon completion of the course. Prerequisite: PED 211.
- PHI 101 Introduction to Philosophy** 3 0 3
- This is 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. Prerequisite: None.
- PHI 102 Introduction to Logic** 3 0 3
- This is an introductory course designed to help one acquire the ability and habit of correct reasoning, or sound thinking. This course introduces one to the traditional logic of the syllogism and to modern "symbolic" logic. Much attention to inductive logic, and a brief survey of the classical fallacies in argument. Prerequisite: None.
- PHY 91 Physical Science I, Level I** 3 2 4
- To introduce the student to the fundamental concepts that are directly related to our physical world; to acquaint the student with the scientific facts upon which the major concept and theories of science depend. A practical approach to science through laboratory exercises and demonstration is maintained. Prerequisite: None.

**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, sound, and applied electricity. Emphasis is placed on acquiring the basic concepts and the application of these concepts to our physical environment and work. Prerequisite: PHY 91.

**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 student. Prerequisite: PHY 92.

**PHY 94 Physical Science I, Level II****3 2 4**

Introductory physics and its application in fundamental concepts, fluids, simple and compound machines, work, energy, power, and heat. Selected experiments are performed by students in the laboratory. Prerequisite: None.

**PHY 95 Physical Science III, Level II****3 2 4**

A study of sound, light, color, magnetism, static electricity, electrical current and circuits, electromagnetism and alternating current. Demonstration and lab selected experiments are conducted by the student. Prerequisite: PHY 94.

**PHY 101 Properties of Matter****3 2 4**

A fundamental course covering several basic principles of physics. Included are solids and their characteristics, liquids at rest and in motion, gas laws, temperature and heat, heat transfer and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course. Prerequisite: Algebra.

**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 applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas. Prerequisite: MAT 101 and PHY 101.

**PHY 103 Electricity****3 2 4**

Basic theories of electricity, types of electricity, methods of production, and transmission and the transformation of electricity; electron theory, electricity by chemical action, friction, and magnetism; induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course. Prerequisite: PHY 101 and MAT 101.

**PHY 104 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 and PHY 102.

**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 is 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. Prerequisite: MAT 103 and PHY 102.

**PHY 1101    Properties of Matter** **3    2    0    4**

Introductory physics and its applications. Systems of measurement, theory of matter, properties of solids, liquids, and gases. Prerequisite: None.

**PHY 1102    Electricity** **3    2    0    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: None.

**PHY 1103    Work, Energy, Power** **3    2    0    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 and MAT 1101.

**POL 102    State and Local Government** **3    0    3**

This course is a study of local and state governments. Emphasis is given to the theory and practical application of operating non-national governments. The roles and divisions in government are examined in regard to their effect on the community. Prerequisite: None.

**POL 103    National Government** **3    0    3**

This course is a study of the Federal Government. Emphasis is given to the Constitution, the concept of federalism and the three branches of government. The interaction of pressure groups and media on the national government are examined and evaluated. Prerequisite: None.

**PSY 101    Introduction to Psychology** **3    0    3**

Through an introductory survey of the field of psychology, the student becomes better acquainted with a human as a biological social organism. Topics covered include the history of psychology, the scientific method in psychology, theory of statistical concepts, intelligence, motivation, emotions and learning. Prerequisite: None.

**PSY 104    Dynamics of Human Behavior** **3    2    4**

The course consists of a study of human behavior, with emphasis on developmental aspects, motivations, common behavioral patterns, and the role of defense mechanisms in human behavior. Laboratory experiences demonstrate a variety of theories related to human behavior. Prerequisite: None.

**PSY 116 Perspectives on Death****2 0 2**

This course is designed to create an understanding of death as a biological reality, as a cultural phenomenon, as a spiritual event, as an economic reality, and as a physiological process. Students develop an objective and realistic point of view of death based on information and understanding. Prerequisite: None.

**PSY 202 Human Growth and Development****3 0 3**

This course presents physical and psychological growth and development from infancy to adulthood with consideration of the social, biological, and cultural influences upon growth. Prerequisite: None.

**PSY 204 Abnormal Psychology****3 0 3**

The course in abnormal psychology assists students in relating understandings derived from normal psychology and child psychology to the various deviations from the norm which may be encountered. It assists in familiarizing students with the terminology utilized in studying abnormal behavior. Prerequisite: PSY 101.

**PSY 206 Applied Psychology****3 0 3**

The course presents a study of psychology as it relates to the individual and his work. Emphasis is placed on the adaptability of an individual to his working and social environment. The transition from school to work, factors effecting job selection, job satisfaction and personality adjustment are considered in an effort to familiarize the individual with the basic problems that he must face in society. Identification with social groups are studied in order to gain a better understanding of the whole self and how it is affected by motivation, frustration and psychological interrelationships. Prerequisite: None.

**PSY 208 Grief Psychology****3 0 3**

This course explores the future role of the funeral director in grief counseling. The purpose of the course is to make the aspiring funeral director more understanding and aware of the impact of death on the bereaved. The concepts of dying, death, immortality, grief management, religion and the funeral as a medium in resolving grief is examined from a psychological standpoint. Prerequisite: PSY 101.

**PSY 210 Human Relations****3 0 3**

This is a course in the basic principles of human behavior, beginning with an explanation of the biological and cultural roots of human behavior and social drive, and continuing through the many problems of the individual in relationship with others in society. Topics covered include the elements of social behavior, perception during interaction, two-person interaction, small social groups, social organizations, the self and interaction, and training for social competence, especially within varied work situations. Prerequisite: None.

**PSY 216 Applied Police Psychology****3 0 3**

A study which builds upon the principles of psychology taught in PSY 101. It is designed to assist law enforcement officers in a better understanding of relationships on the job, at home, and in the community as members of the law enforcement team. Prerequisite: PSY 101.

**PSY 260 Social Psychology** 3 0 3

A study of the effects of groups on the individual; opinion and attitude change and surveys are examined. Prerequisite: PSY 101.

**PSY 1101 Human Relations** 3 0 0 3

This course is a study of basic principles of human behavior beginning with an explanation of the biological and cultural roots of human behavior and social drive, and continuing through the many problems of the individual in relationship with others in his society. Topics covered include the elements of social behavior, perception during interaction, two-person interaction, small social groups, and social organizations, the self and interaction, and training for social competence, especially within varied work situations. Prerequisite: None.

**PSY 1106 Applied Psychology** 3 0 0 3

This course presents a study of human behavior with emphasis on the application of psychological principles to the problems of adjustment in every-day life. Special emphasis is given to the consideration of the world of work. Prerequisite: None.

**SCI 50 General Science** 3 2 4

This course is designed for high school graduates with deficiencies in the field of science. This basic course includes introduction to the topics such as earth and space science, life and health science, environmental science and physical sciences. Emphasis is placed on creating interest in science. Prerequisite: None.

**SCI 60 Introduction to Biology** 3 2 4

This biology course is designed for high school graduates who possess deficiencies in the area of biology. The course work includes the study of micro-organisms, the plant kingdom, and structure and function of the human body. Prerequisite: None.

**SCI 70 Introduction to Physical Science** 3 2 4

This course is designed to serve the needs of high school graduates who possess deficiencies in the area of physical sciences. This course includes the fundamentals of physics, chemistry, and earth and space sciences. Prerequisite: None.

**SOC 101 Introduction to Sociology** 3 0 3

This course demonstrates to the student the scientific method of observation and analysis of social data. It introduces the principles, concepts, and terminology used in sociological study of social organizations, social institutions, social control and change. Prerequisite: None.

**SOC 102 Marriage and the Family** 3 0 3

This course presents 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 mitigating against successful, stable marriages. Prerequisite: None.

**SOC 210 Contemporary Social Problems****3 0 3**

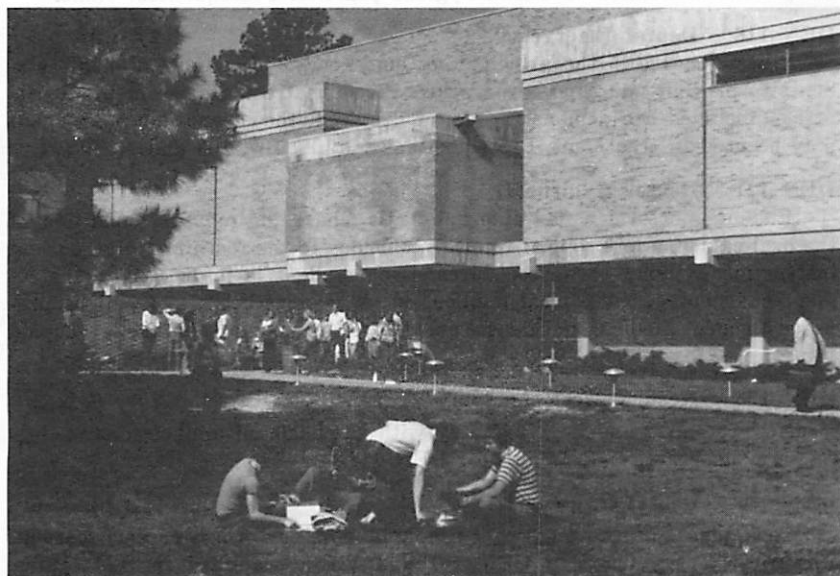
A course using the macrosociological and the microsociological approach to study contemporary social problems. Specific problems such as deviant behavior, crime and criminal structures, social disorganization, racial and intergroup conflicts, poverty, violence and conflict, and the crisis in population, politics and environment are used to demonstrate the integration and disintegration of family, community and society. Prerequisite: SOC 101.

**SSC 90 Introduction to Social Sciences****3 2 4**

This course offers the student a general introduction to the following social sciences, anthropology, economics, geography, history, political science, psychology, and sociology. The student is provided with an historical perspective of the development of the substantive content of the social sciences, the scientific methods used by social sciences, and some possible applications of each social science. A basic aim of this introductory course is to supply the student with the tools and information he needs to understand and appreciate scientific endeavors in the various social sciences. Prerequisite: None.

**SSC 205 American Institutions****2 2 3**

This course presents a study of the individual as a citizen in a democratic society; his relationship to the major American social, economic, and political institutions are studied in depth. The individual's role in each of these major areas is studied with respect to how he affects and is affected by these institutions. Background of social, economic, and political concepts is stressed with regard to current local, national, and international problems, thus enabling the individual to see how ideas, beliefs, opinions, and customs developed into the American way of life. Prerequisite: None.





## HEALTH OCCUPATION EDUCATION

### Course Descriptions

	Class Hours	Lab Hours	Quarter Hours Credit
<b>DEN 111 Dental Hygiene I</b>	<b>6</b>	<b>3</b>	<b>7</b>
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. Prerequisite: None.			
<b>DEN 112 Dental Anatomy &amp; Physiology</b>	<b>4</b>	<b>0</b>	<b>4</b>
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. Prerequisite: None.			
<b>DEN 113 Histology &amp; Embryology</b>	<b>2</b>	<b>0</b>	<b>2</b>
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. Prerequisites: None.			
<b>DEN 116 Dental Emergency</b>	<b>2</b>	<b>0</b>	<b>2</b>
A basic course in the principles of emergency aid taught to enable students to prevent and cope with various crises that could arise in the dental office. Included are demonstrations of drugs, methods, and equipment that may be used in treatment. Prerequisite: BIO 106, 107, 108 and NUT 101.			
<b>DEN 121 Dental Hygiene II</b>	<b>2</b>	<b>3</b>	<b>3</b>
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 and 112.			
<b>DEN 122 Head &amp; Neck Anatomy</b>	<b>2</b>	<b>0</b>	<b>2</b>
Study of head and neck anatomy with emphasis on applications to dental hygiene practice. Prerequisite: DEN 112.			
<b>DEN 131 Dental Hygiene III</b>	<b>2</b>	<b>12</b>	<b>6</b>
A complete and thorough oral prophylaxis is performed on each patient. All procedures learned in DEN 111 and 121 are applied in this course. Prerequisite: DEN 121.			



- DEN 133 Radiography** 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. Prerequisite: DEN 122.
- DEN 210 Periodontology I** 2 0 2  
A brief review of basic histology, then the classification of periodontal diseases, etiology, periodontal therapy, and preventive periodontics. Prerequisite: DEN 111, 113, 121 and 133.
- DEN 211 Dental Hygiene IV** 2 16 7  
A complete and thorough oral prophylaxis is performed on each patient. Proper use of the ultrasonic scaling device is expected in this course. Prerequisite: DEN 131.
- DEN 212 Community Dental Health** 4 0 4  
Study of the factual information and methods of instruction employed in the teaching of oral hygiene in dental office, community and school. 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; evaluation of scientific reports and fluoridation. Prerequisite: DEN 112, 113, and 121.
- DEN 213 Oral Pathology & Cariology** 3 0 3  
Study of the basic pathological processes, physical manifestations of selected disease, 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 106, 107, 113, and DEN 113.
- DEN 214 Periodontology II** 2 0 2  
The study of the diseases of the periodontium and methods of treatment of these diseases. Prerequisite: DEN 113, 131 and 210.
- DEN 216 Community Dental Health Seminar** 0 3 1  
Students are responsible for planning and conducting a class community dental health project. The project may either be designated by the instructor or selected by the students. Students' responsibilities include writing behavioral objectives of the project, obtaining materials needed, coordinating activities during implementation of project, and evaluation of their activities. Prerequisite: DEN 212.
- DEN 221 Dental Hygiene V** 2 16 7  
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. Prerequisite: None.

- DEN 223 Dental Pharmacology & Anesthesiology** 2 0 2  
Lecture coverage of professional ethics, laws and regulations related 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. Prerequisite: DEN 211.
- DEN 225 Chairside Assisting** 0 3 1  
This course teaches the hygienist the rudiments of Chairside Assisting to include such things as instruments, instrument transfer, tray set ups, and oral evacuation procedures. It is designed to increase the hygienist's usefulness in the dental office. Prerequisite: DEN 111, 121, 131, 211, 221, and 231.
- DEN 231 Dental Hygiene VI** 1 16 6  
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 Specialties** 2 0 2  
Discussions 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.
- DEN 298 Dental Hygiene Seminar** 2 0 2  
This course helps prepare Dental Hygiene students to take their National Board Examination. Each course the students have taken is carefully and thoroughly reviewed. Prerequisite: Sophomore standing in Dental Hygiene.
- DEN 1001 Introduction to Dental Assisting** 2 0 0 2  
An introduction to the history of dental assisting, the role of the dental assistant in practice and its relationship to other members of the dental health team, dental terminology, and the personal and ethical requirements for safe and effective practice. Prerequisite: None.
- DEN 1002 Dental Materials** 3 4 5 6  
Identification of dental materials, characteristics of each, evaluation of quality, principles and procedures related to manipulation and storage of various dental materials. Prerequisite: None.
- DEN 1003 Preclinical Sciences I** 4 0 0 4  
Basic information from bacteriology, anatomy and physiology, and oral and dental anatomy as related to dental science and the practice of dental assisting. Designed as three units which may be scheduled for either concurrent or sequential teaching. Prerequisite: None.

- DEN 1004 Preclinical Sciences II** 4 0 0 4  
Fundamental information from oral pathology, pharmacology, nutrition, and common emergencies as related to the role of the dental assistant. Designed in four units to permit flexibility in scheduling. Prerequisite: DEN 1003
- DEN 1005 Dental Office Management I** 3 0 0 3  
Fundamentals of accounting, practice in application of principles to various forms commonly used in the dental office. Prerequisite: None.
- DEN 1006 Clinical Procedures I** 3 0 6 5  
Principles and procedures related to dental instruments and equipment, and chairside techniques of dental assisting with emphasis on four-handed dentistry. Prerequisite: DEN 1002.
- DEN 1007 Clinical Procedures II** 4 2 0 5  
Role of the dental assistant in various dental specialties, such as endodontics, prosthodontics, and oral surgery. Prerequisite: DEN 1006.
- DEN 1008 Dental Office Management II** 2 0 3 3  
Principles and procedures related to management of the dental office, includes maintaining inventories and financial records, ordering supplies, making appointments, and establishing patient rapport. Prerequisite: DEN 1005.
- DEN 1009 Dental Office Practice I** 0 2 12 5  
Introduction to practice in the dental office or clinic. Emphasis is on the dental assistant's role in chairside procedures. Prerequisite: DEN 1006, Co-requisite: DEN 1007 and 1008.
- DEN 1010 Dental Office Practice II** 0 0 24 8  
Practice in the dental office or clinic; rotation of assignments to encompass experience in office management, the dental laboratory, and the operator. Emphasis on chairside assisting in a variety of clinical procedures. Prerequisite: DEN 1009.
- DEN 1011 Dental Assistant Seminar** 2 0 0 2  
Study of personal responsibilities as a member of the dental health team, including employee-employer relations, opportunities for continued personal and professional development. Prerequisite: fourth-quarter standing
- DEN 1012 Dental Roentgenology** 2 0 3 3  
Study of principles related to exposing, processing, and mounting dental radiographs. Radiation hazards and safety measures employed for protection of patient and self are stressed. Prerequisite: DEN 1022.
- DEN 1013 Oral Health Education** 1 2 0 2  
Study of the etiology, prevention, and control of dental caries and periodontal disease with emphasis on the dental assistant's role in oral health education. Prerequisite: DEN 1007.
- DEN 1022 Dental Anatomy** 4 0 0 4  
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. Prerequisite: None.

**DEN 1025 Nutrition****2 0 0 2**

Study of the 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. Prerequisite: DEN 1003.

**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. Prerequisite: None.

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

This course increases the student's background in the basic concept of pharmacology and provides a general background in mental and physical health which enables the student to develop increased knowledge and nursing skills to provide nursing care to meet the individual needs of patients. The student is 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, and BIO 106.

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

This course 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 is placed on the major health problems of patients requiring surgical intervention, experiencing nutritional problems, and problems of fluid and electrolyte imbalance. Consideration is given to studying the nature, scope, clinical manifestations and therapeutics of the involved condition as well as emphasizing the patient as a person and the effect of his illness on his personality, his family and the community. Comparison of and experiences in the care of the adult and child is given. Independent study is encouraged through the use of related study guide questions. Prerequisite: NUR 102, BIO 107, and PSY 202.

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

This course 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; Co-requisite: SOC 102.

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

This course 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 are provided with mentally ill patients in the hospital setting and with those persons experiencing behavioral disorders who are being treated on an out-patient level in the community mental health center. Selected clinical experiences include patients whose illnesses result in a change in the individual's body image. Opportunity is provided for the student to initiate teaching plans which 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, and SOC 102.

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

This course 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 continues to evaluate the care he/she has given and utilizes the information gained in revising the plan of care for each patient. Opportunities are 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**

This course 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 gives the student further opportunity for discussion and intelligent decision-making in clarifying the nurses role and the role of others including the family and community in the care of patients. Focus of the course is 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**

This course 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****3 0 3**

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. Prerequisite: None.

**PML 1080 Nursing Procedures****3 2 3 5**

Designed to acquaint the student with the total needs of the patient; physical, social, psychological and spiritual. This includes safe patient care in transporting, positioning, skin preparation, and basic needs through simple nursing care, observation and reporting. Prerequisite: None.

**PML 1085 Pharmacology****3 0 0 3**

This course is to provide a basic foundation and serve as a useful guide to increase the students understanding of drug therapy, toxic reaction, and their implications in the operating room. This includes a study of various types of anesthesia, method of administration and their general or local effects on the body. Prerequisite: Permission of department chairman.

**PML 1090 Principles of Operating Room Technique****2 0 3 3**

A course designed to help the student acquire a basic knowledge of surgical aseptic technique and develop skills in its application in the operating room. It deals with the role of the operative procedure and its relation to other aspects of patient care including ethical, moral and legal responsibilities. It is designed to develop an increased awareness and understanding of the function of each member of the operating team. Prerequisite: None.

**PML 1091 Anatomy and Physiology****2 0 0 4**

This is a study of the structure and function of the general plan of the body and systems. It includes a study of more common disorders and the surgical procedures involving the various systems. Prerequisite: None.

**PML 1092 Microbiology****3 0 3 4**

A course designed to provide the student with a basic understanding of microbiology. Instruction includes a study in bacterial anatomy, physiology, growth requirement, modes of transmission and sterilization. Prerequisite: None.

**PML 1093 Theory of Surgical Procedures****4 4 0 6**

This course includes a thorough study of the most common surgical procedures and why they are performed. Instruction also includes special instruments and equipment as they relate to each procedure. Prerequisite: Permission of department chairman.

**PML 1094 Clinical Practice I****0 0 15 5**

This course is designed to assist the student in improving dexterity, to anticipate the needs of other members of the operating team and to improve organization for economy of time, motion and priority of needs. Prerequisite: Permission of department chairman.

**PML 1095 Clinical Practice II****0 0 24 8**

A continuation of PML 1094. Prerequisite: PML 1094.



**PML 1195 Special Types of Patient Care 2 2 3 4**

A study of simple procedures commonly ordered by the doctor and appropriate to the role of the nurses' assistant, which helps the student develop beginning skill in the performance of nursing procedures related to care of the isolated patient, in carrying out orders for unsterile irrigations and simple therapeutic measures, and in meeting selected needs of the surgical patient. Prerequisite: None.

**PML 1196 Becoming a Hospital Employee 2 2 3 4**

A study of the nurses' assistant as a practitioner, with emphasis on effective job performance and fulfillment of citizenship responsibilities, which helps the student make the transition to a fully responsible employee role, fulfill citizenship responsibilities as a wage-earner, and set personal standards for quality performance as a member of the nursing team. Prerequisite: None.

**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. Prerequisite: None.

**PNE 1101 Vocational Adjustments I 3 0 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. Prerequisite: None.

**PNE 1102 Body Structure & Functions 5 0 0 5**

The course consists of a study of the general plan of the body and the 10 systems: nervous, skeleton, muscular, circulatory, digestive, respiratory, endocrine, integumentary, urinary, male and female reproductive systems—designed for understanding the cooperative functions of the total human body. This course also includes a study of microorganisms and their relationship to diseases. Prerequisite: None.

**PNE 1103 Nursing Skills I 4 4 6 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 coincides with classroom activity at the affiliating hospital in medical and surgical areas. Prerequisite: None.

**PNE 1104 Emergency & Disaster Nursing 2 0 0 2**

This course is designed to acquaint the Practical Nurse Student with measures of first aid and emergencies so she is able to function efficiently until she has completed the course in Medical-Surgical Nursing. Prerequisite: None.



**PNE 1105 Nutrition & Diet Therapy 3 0 0 3**

This course is designed to give the Practical Nurse Student an understanding of good nutrition and some knowledge of diet therapy. He/she learns to apply this understanding to the dietary treatment of the more common diseases. Prerequisite: None.

**PNE 1106 Nursing Skills II 3 4 0 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. Prerequisite: PNE 1103.

**PNE 1107 Medical & Surgical Nursing I 5 0 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 periods deal with nursing care given at the affiliating hospital in the medical and surgical areas with continued depth training. Prerequisite: PNE 1102, and 1103.

**PNE 1108 Nursing Care of Children 3 4 3 6**

The purpose of this course is to consider the patterns of normal growth and development. Insofar as possible, the classroom activity centers around discussions of normal growth and development and certain deviations. This course parallels guided experiences in the care of the pediatric patient, and is designed to help the student recognize the nursing needs of the sick child as well as the needs of the well child. Prerequisite: PNE 1102 and 1106.

**PNE 1109 Nursing Care of the Newborn & Mother 3 4 3 6**

A study of the child-bearing woman, dealing with conception, pregnancy, labor, and the puerperim, and the care of the newborn child with nursing care experience in the obstetrical and nursery areas of the affiliation clinical areas. Prerequisite: PNE 1102 and 1106.

**PNE 1110 Medical & Surgical Nursing II 5 0 0 5**

This course is designed to help the Practical Nurse Student to acquire knowledge for safely caring for the medical and surgical patient. This course deals with diseases of the skeletal, muscle, endocrine, genitourinary, reproductive, and nervous systems; conditions of the eye, ear, and skin. Prerequisite: PNE 1107.

**PNE 1111 Drugs & Administration 3 0 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. Prerequisite: Math 1105.

**PNE 1112 Medical & Surgical Nursing III 0 0 21 7**

This course is designed so the student continues to integrate principles and concepts from all previous courses. The student develops further skills in recognizing and meeting the needs of patients with complex nursing problems, and assists the registered nurse in more complex nursing. Prerequisite: PNE 1106, 1110, and 1111.

**PNE 1113 Geriatrics****3 4 0 5**

This course is designed to give the Practical Nursing Student a general background of information of the geriatric patient upon which may be built with experiences in nursing care. This information may be adapted for use in the home, the hospital, or other agencies. Prerequisite: None.

**PNE 1115 Mental Health****3 0 0 3**

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. Prerequisite: PNE 1110.

**PNE 1116 Vocational Adjustments II****2 0 0 2**

This course is designed to help the Practical Nurse Student 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. Prerequisite: PNE 1101.

**PTH 101 Introduction to Physical Therapy****3 3 4**

Beginning with the historical background of Physical Therapy including the development of formal educational programs for the Physical Therapy Assistant, this course includes the following: concepts of health and disease; overview of total medical spectrum; interprofessional relationships between members of the health care team; modalities used in Physical Therapy; basic principles and techniques used in Physical Therapy; basic principles and techniques of aseptic care, patient handling and vital signs; orientation to clinical service departments and their administration. Prerequisite: None.

**PTH 102 Physical Therapy Procedures I****3 6 5**

An introduction to the principles and techniques of selected physical therapy treatment methods. Includes the development of basic skills in common modalities, body mechanics and transfer techniques; and selected clinical laboratory experience in cooperating health agencies as well as curriculum laboratory. Prerequisite: PTH 101.

**PTH 103 Physical Therapy Procedures II****3 6 5**

A continuation of the study of the physical and physiological principles and techniques of selected physical therapy treatment measures. Additional modalities are introduced that are more complicated such as low frequency currents, short wave and microtherm diathermy, and ultra sound. Previously learned skills are reinforced by combining them with the newly learned skills. Laboratory and classroom practice are followed by assignment to a clinical facility for supervised experience in direct care service. Prerequisite: PTH 102.

**PTH 104 Physical Therapy Procedures III****3 9 6**

A continuation of study of the principles and techniques of selected physical therapy measures. Review and reinforcement of previously offered

procedures. Included in this group are the use of light radiation sources, infra red and ultra violet; paraffin; hydrotherapy measures; use of adaptive equipment and appliances (wheelchairs, braces, splinting). After receiving classroom and laboratory practice, the student is assigned to a clinical facility to practice all learned skills under supervision in direct patient-care service. Prerequisite: PTH 103.

**PTH 105 Physical Therapy Procedures IV 3 12 7**

The course completes a four-quarter sequence of physical and physiological principles and techniques of application of basic physical therapy measures. All previously learned skills are reviewed thoroughly. The student is introduced to home-bound physical therapy provided by a public health or home health agency. Classroom and laboratory practice is continued. Then student is assigned to a clinical facility to practice under supervision in direct patient care service. Prerequisite: PTH 104.

**PTH 106 Seminar in Physical Therapy Procedures 3 0 3**

This course parallels the clinical affiliations. Students present case studies and progress notes on patients treated in their clinical assignments. Rationale for a specific treatment in view of a given diagnosis is discussed as well as problems encountered. Prerequisite: PTH 105.

**PTH 110 Therapeutic Exercise 3 6 5**

Introduction to basic principles of therapeutic exercise; techniques of manual joint range of motion, ambulation activities and activities of daily living as they apply to a variety of pathological conditions; uses of assistive and resistive exercise equipment. A review of joint structure, muscle origins and insertions, innervations, actions and physiology is included. Orientation to highly specialized exercise techniques is offered but competence is required only in the more routine therapeutic exercise and ambulation techniques. Prerequisite: PTH 102.

**PTH 120 First Aid 2 0 2**

A study of theory and practice in giving immediate and temporary aid to a victim of sudden illness or to the victims of accidents. Prerequisite: PTH 102.

**PTH 201 Patho-Physiology for P.T. Assistants 4 0 4**

This survey course is designed to present the cause, disease or trauma processes, and general principles involved in the diagnostic entities most frequently seen and treated with Physical Therapy. In addition, those Physical Therapy procedures that are appropriate and most widely used are discussed in depth for each of the diagnostic categories covered. Prerequisite: PTH 120.

**PTH 210 Psychology of Adjustment (PT) 3 0 3**

Review of basic personality development and characteristics, with emphasis on the psychological implications of interpersonal relationships, especially as it may apply to the health team worker and the patient. Emotional reactions to disease, physical impairment, and/or handicap by persons with varying basic personality characteristics is explored moderately. The health team worker's personal adjustment to the disabled or severely injured patient is discussed. Prerequisite: PTH 201.

<b>PTH 215</b>	<b>Community Health and Welfare</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This survey course identifies and describes the various health and welfare resources within a community and the coordination between these agencies. Distinction is made between the public, voluntary, and private sectors of health and welfare. Future trends in the delivery of services are discussed. Emphasis is placed on the referral system for total patient care. Prerequisite: PTH 104.

<b>PTH 298</b>	<b>Clinical Education</b>	<b>4</b>	<b>30</b>	<b>14</b>
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The student is assigned to a variety of clinical settings for planned learning experience and practice under supervision. All learned skills are reinforced during direct patient care service in a general hospital or private clinical area. Prerequisite: PTH 105 and permission of instructor.

<b>RDT 101</b>	<b>Radiologic Technology I</b>	<b>4</b>	<b>3</b>	<b>5</b>
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The student is given an orientation to the field of radiologic technology. He is taught darkroom chemistry and film processing, the basic principles of radiographic exposure, elementary patient care procedures, and he is introduced to radiographic positioning as applied to the appendicular skeleton. Prerequisite: None.

<b>RDT 102</b>	<b>Radiologic Technology II</b>	<b>4</b>	<b>3</b>	<b>5</b>
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The student is taught the radiographic principles and basic radiographic positioning necessary to perform diagnostic studies of the axial skeleton. Further patient care procedures and medical terminology are included. Prerequisite: RDT 101.

<b>RDT 103</b>	<b>Radiologic Technology III</b>	<b>4</b>	<b>3</b>	<b>5</b>
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The student learns the techniques for basic views of the thoracic and abdominal visceral, soft tissue radiography and fluorography. He is taught how to prepare the patient and the contrast media for these studies. Prerequisite: RDT 102.

<b>RDT 111</b>	<b>Clinical Education I</b>	<b>0</b>	<b>10</b>	<b>3</b>
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**Practical experience in a clinical setting including processing of radiographs, practice in ethical and attitudinal situations during patient contact, patient care and basic patient positioning for studies of upper and lower limbs, shoulder and pelvic girdles. The student also applies some of the simpler principles of radiographic exposure. There are regular sessions of film critique. Prerequisite: None.**

<b>RDT 112</b>	<b>Clinical Education II</b>	<b>0</b>	<b>10</b>	<b>3</b>
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**Practical experience in a clinical setting.** The student continues to improve his basic skills in darkroom technique and patient positioning for routine studies of upper and lower limbs and the shoulder and pelvic girdles. He practices the techniques for roentgenographic studies of the skull and the spine. There are regular sessions of film critique. Prerequisite: RDT 111.

<b>RDT 113</b>	<b>Clinical Education III</b>	<b>0</b>	<b>10</b>	<b>3</b>
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**Practical experience in a clinical setting with emphasis on the preparation and use of contrast media, preparation of the patient for such studies**

and the performance of examinations of the digestive tract, biliary tract, and urinary tract using contrast media. The student works in fluroscopy and makes radiographs of the abdominal and thoracic viscera without the use of contrast media. Soft tissue radiography (exclusive of mannography) and location of foreign bodies are touched upon. Prerequisite: RDT 112.

**RDT 114 Clinical Education IV** 2 36 14

The student spends the entire summer quarter gaining clinical experience and developing skill in the techniques of diagnostic radiography. He reviews all he has learned about film processing and developing, patient positioning and exposure factors. Practice covers radiography of the skeleton, the thoracic and abdominal viscera, and examinations of the abdominal viscera using contrast media and fluoroscopy. Prerequisite: RDT 113.

**RDT 201 Topographic Anatomy** 2 0 2

The course reviews anatomy with emphasis upon landmarks and their relationship to the internal organs within the same anatomic region. The relationships of the internal organs to each other are also studied. Pre-requisite: RDT 103.

**RDT 204 Radiologic Technology IV** 4 3 5

This course is a continuation of the radiologic technology series. The content covered in this quarter concerns radiation protection, equipment maintenance, more advanced work in the radiography of the skeleton and the art of pediatric radiology. Special views and techniques for diagnostic radiology of the skeleton are emphasized. Prerequisite: RDT 103.

**RDT 205 Radiologic Technology V** 4 3 5

The study is confined to special radiographic procedures and the mechanics and uses of photofluorography. The student becomes acquainted with the specialized and highly technical procedures used in these studies, the equipment and the general indications and contraindications for each examination. Prerequisite: RDT 204.

**RDT 206 Radiologic Technology VI** 4 0 4

The student is familiarized with the procedures involved in radiation therapy and nuclear medicine. Office routine is considered. Time is spent reviewing anatomy, positioning, X-ray circuitry and exposure factors in preparation for taking the registry examination. Prerequisite: RDT 205.

**RDT 215 Clinical Education V** 0 24 8

Practical experience in a clinical setting with emphasis on working with children. The student also practices techniques for special views of the skeleton. Radation protection practices and routine equipment maintenance are observed and used. Prerequisite: RDT 114.

**RDT 216 Clinical Education VI** 0 24 8

Practical experience in a clinical setting with emphasis on special radographic procedures; use of photofluorographic unit, if available; cineradiography; and use of a portable X-ray machine. Prerequisite: RDT 215.

**RDT 217 Clinical Education VII** 0 24 8  
 Practical experience in a clinical setting with emphasis on radiation therapy and nuclear medicine. Prerequisite: RDT 216.

**RDT 218 Clinical Education VII** 2 26 14  
 The student spends the summer quarter improving his skills in the techniques of general diagnostic radiography and fluoroscopy with both adults and children. He has the opportunity to work in the areas of radiation therapy and nuclear medicine on a limited basis. Prerequisite: RDT 217.

### PUBLIC SERVICE EDUCATION Course Description

	Class Hours	Lab Hours	Shop Hours	Quarter Credit Hours
<b>COS 1101 Cosmetology Law and Ethics</b>	5	0	8	7
A study of the law as pertains to the practice of Cosmetology in the State of North Carolina, with accent on requirements, examinations, licensing, apprenticeship, sanitation, and the proper conduct and business dealings of cosmetologists in relation to their employer, patrons and co-workers. A course in personal hygiene is also included. Prerequisite: None.				
<b>COS 1102 Hairstyling I</b>	5	0	8	7
The theory and practical application on manikins of basic hairstyling, including use of tools, materials and equipment; parting technique, directional moulding, fingerwaving, and the proper structure of sculpture curls. Basic roller patterns and correct pin placement are stressed. Also a study of bacteriology, sterilization, and sanitation is covered. Prerequisite: None.				
<b>COS 1103 Permanent Waving I</b>	5	0	9	8
An introduction to the various methods of permanent waving, including its history as compared with modern technique. Course covers an in-depth study of chemicals used and their ultimate effect on the hair; safety precautions; basic cutting, sectioning, wrapping, and processing of permanent waves. Chemical hair relaxing, thermal pressing and curling are also covered. Prerequisite: None.				
<b>COS 1104 Permanent Waving II</b>	3	0	12	7
The practical application of permanent waving and hair relaxing on live models including supervised haircutting, wrapping, processing, hair coloring, and the ultimate styling of the hair. Prerequisite: COS 1103.				
<b>COS 1105 Hair Styling II</b>	2	0	12	6
The cutting, styling, and combing of unique hairstyle effects, using various combinations of sculpture curls and roller placements. Included are the studies of facial shapes, special haircuts, various combing techniques, and the care and styling of wigs. Prerequisite: COS 1102.				
<b>COS 1106 Anatomy: Skin-Hair-Nails</b>	4	0	7	6
A basic study of the anatomy of the human body, with special emphasis on the structure, diseases, and care of the skin, hair and nails. Course includes technique in facials, scalp and hair treatments, and manicuring. Superfluous hair removal and facial makeup are covered. Prerequisite: None.				

**COS 1107 Permanent Waving III** 2 0 12 6

The advanced practical application of permanent waving on live models with strong accent on special haircutting, choice of appropriate chemicals and chemical products, advanced wrapping technique, individual processing, and special effects in finished styling. Prerequisite: COS 1104.

**COS 1108 Hair Coloring** 4 0 9 7

An in-depth study of hair structure and the ultimate effect on it of hair coloring chemicals. Course includes hair lightening materials and methods, hair coloring materials and methods, individual allergy, and other safety precautions, as well as the coloring of brows and lashes. Hair coloring is taught in three categories: temporary, semi-permanent and permanent colors. Prerequisite: None.

**COS 1109 Shop Management-Salesmanship** 5 0 8 7

A study of beauty shop management and salesmanship. How to cope with day-to-day problems of the salon, location of the salon, lease, physical layout, check list for structural limitations, color scheme, insurance, business laws, health regulations, customer reception, management, operator relationships, financial control, record keeping, salesmanship and merchandising, advertising, budget, and professional ethnics. Prerequisite: None.

	Hours Class	Hours Lab	Quarter Credit Hours
<b>FSE 101 Introduction to Funeral Service</b>	2	0	2

The principles of funeral service and its history. A study of the ethical obligations and fundamental requirements involving skill, aptitudes, and qualifications of funeral directors. Prerequisite: None.

**FSE 115 Funeral Law** 3 0 3

The State Statutes, rules and regulations and applicable statutes of other agencies regulating the funeral profession. Prerequisite: None.

**FSE 120 Public Health and Sanitation** 2 0 2

Basic principles and practices of public health administration; organization and functions of agencies at federal, state and local levels of government which are engaged in preservation and protection of public health. Role of morticians; regulatory procedures; orientation in responsibilities and relationships with local boards of health and State Department of Health. Prerequisite: None.

**FSE 121 Funeral Service Practices** 1 2 2

The student is helped to develop a knowledge of funeral service procedure of various religions. A study of the customs and funeral practices that are evident in the United States today is presented, along with architectural differences in churches. Military and fraternal services are also stressed. Prerequisite: None.

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**FSE 206 Embalming Chemistry**

**3 2 4**

Fundamentals of organic and biochemistry. Chemical changes in the human body during life, after death, and during chemical preservation, including disinfection, solutions, toxicology, and embalming fluids. Prerequisite: CHM 101.

**FSE 210 Embalming Theory and Practice I**

**3 3 4**

A study of the purpose and need for embalming, history of embalming from 4000 B.C., types of death, signs of death, tests for death, post-mortem change, ethics of embalming laws of decomposition, anatomical limits, and linear guides. Laboratory demonstrations expose the student to the human body in autopsy and routine embalming situations. Prerequisite: None.

**FSE 211 Embalming Theory and Practice II**

**3 3 4**

The topics for study are case analysis in lecture and task analysis in lab. The tasks or goals to be accomplished are sanitizing and positioning remains, positioning features, mixing of chemical solutions, and actual embalming. Prerequisite: FSE 210.

**FSE 214 Restorative Arts I**

**2 4 4**

Aspects of general art as applied to funeral services. Anatomical modeling; expression; familiarization with tools, materials, and techniques of rebuilding human features, color in cosmetics, development of special laboratory skills. Prerequisite: None.

**FSE 215 Restorative Arts II**

**2 4 4**

Terminology of traumatic and pathological conditions frequently restored; recommended sequence for most restorations; legal aspects; the use of photographs; stains and their solvents; materials and techniques used in specific restorations. Prerequisite: FSE 214.

**FSE 224 Funeral Home Operation**

**2 2 3**

Outlines all phases of funeral home operation, including but not limited to: choosing and financing a location; building, remodeling or purchasing a funeral home; recruiting and training of personnel; establishment of management policies; selection room planning; methods of merchandising; and general business procedures of a funeral home. Study of religious customs and conducting various types of funerals. Role of the director in communicating funeral values to the public. Prerequisite: None.

**FSE 225 Research in Funeral Service**

**3 0 3**

Research in a specific area of funeral service with a paper as the objective of the course. Such topics as clergy relations, child and death, medical examiner, vital statistics may be subjects for study. Prerequisite: Permission of department chairman.

**FSE 280 Professional Practicum**

**1 24 9**

Provides experience in funeral service under the direction of a licensed funeral director and college supervisor. The activities involve the normal professional duties performed in the operation of a funeral home. Prerequisite: Permission of department chairman.



- LCJ 101 Introduction to Law Enforcement and Criminal Justice** 5 0 5
- A general course designed to familiarize the student with a philosophy and history of law enforcement-criminal justice, including its legal limitations in a democratic republic, a survey of the primary duties and responsibilities of the various law enforcement-criminal justice agencies, a delineation of the basic processes of justice, and evaluation of law enforcement's current position, and an orientation relative to law enforcement-criminal justice as a profession. Prerequisite: None.
- LCJ 102 Constitutional Law** 5 0 5
- Survey of the important developments relating to judicial review of legislative action, problems of federalism, safeguards to life, liberty and property, and protection of civil and political rights and their relationship to the criminal justice system. Prerequisite: None.
- LCJ 103 Introduction to Criminology** 5 0 5
- A survey of the different crimes; theories and factors attributing to criminal behavior. The student studies some of the penal and correctional procedures which have been used in the past as well as some of the contemporary methods. Prerequisite: SOC 101 and LCJ 101 or permission of instructor.
- LCJ 104 Police Organization & Administration** 5 0 5
- An introduction to the principles of organization and administration including their application to field services such as vice control, traffic patrol, criminal investigation, and juvenile division. A discussion of the service functions: training communications, records, property maintenance and miscellaneous services. Prerequisite: LCJ 101 or consent of instructor.
- LCJ 108 Police Patrol and Field Interrogation** 3 0 3
- The responsibilities, powers and duties of uniformed policemen; patrol procedure, field interrogation; mechanics of arrest; transportation of prisoners; crime prevention functions; training, communications, records, property maintenance and miscellaneous services. Prerequisite: LCJ 101 or consent of instructor.
- LCJ 201 Traffic Planning, Management & Supervision** 4 2 5
- A study which covers the history of the traffic enforcement problems and gives an overview of the problem as it exists today. Attention will be given to the three E's and legislation, the organization of the traffic unit, the responsibilities to the traffic function of the various units within the law enforcement agency, enforcement tactics, evaluation of the traffic program effectiveness, and the allocation of men and materials. Prerequisite: LCJ 101 or permission of instructor.
- LCJ 203 Criminal Law I** 3 0 3
- Designed to present a basic concept of criminal law which creates an appreciation of the rules under which one lives in our system of government. Primary emphasis is placed on North Carolina law. Prerequisite: LCJ 102 or consent of instructor.

**LCJ 204 Criminal Law II****3 0 3**

A continuation of Criminal Law I which presents a basic concept of criminal law and creates an appreciation of the rules under which one lives in our system of government. Primary emphasis is placed on North Carolina law. Prerequisite: LCJ 203 or permission of instructor.

**LCJ 205 Criminal Evidence & Procedure****5 0 5**

A study of the nature and admissibility of evidence, its role in determining guilt or innocence in the prosecution of offenders, the kinds and degrees of evidence, principles of exclusion and selection, and burden of proof. Instruction is given the care, collection, preservation and control of evidence. Prerequisite: LCJ 102 or permission of instructor.

**LCJ 206 Special Problems of Law Enforcement****3 0 3**

An analysis of special problems; causes, prevention, and techniques of handling riots, strikes, and similar disturbances; role of police in civil defense, bomb threats, major disasters and organized crime. Prerequisite: LCJ 211 or permission of instructor.

**LCJ 207 Interview & Interrogation—Confessions and Admissions****3 0 3**

Instruction is given in the various sources of information available to law enforcement agencies and in the techniques used in interviewing and interrogating. Prerequisite: LCJ 101 or permission of instructor.

**LCJ 208 Identification Techniques****4 2 5**

The student studies various identification methods and how they evolved into the present day systems. Techniques for lifting latent prints and taking rolled impressions are developed through lab practice. Instruction is given in the more popular ten finger and single print classification systems. An introduction is given to the process of comparing latent lifts and rolled impressions and in preparing them for courtroom impressions and in preparing them for courtroom presentation. Instruction is also given in other methods of identification such as dental, voice, personal habits, physical characteristics, and modus operandi. Prerequisite: LCJ 210 or permission of instructor.

**LCJ 209 Juvenile Justice Planning and Administration****5 0 5**

An introduction to the cause and treatment of juvenile delinquency. The organization, functions, and jurisdictions of juvenile agencies; the processing and detention of juveniles, juvenile case disposition, juvenile status and court procedures. Evaluation of methods in delinquency control. Special attention is given to forms of family, church and community resources bearing on juvenile adjustment and preventive measures. Prerequisite: LCJ 103 or permission of instructor.

**LCJ 210 Criminal Investigations I****4 2 5**

This course introduces the student to the fundamentals of investigation: scene search; recording, collection and preservation of evidence; case preparation and court presentation, and the investigation of specific offenses such as arson, narcotics, sex, larceny, burglary, robbery and homicide. Prerequisite: LCJ 101 or permission of instructor.

**LCJ 211 Police Community Relations****2 4 4**

A course designed to create an awareness of the need for good police and community relations; problems confronting police personnel in achieving this goal: solutions to these problems, including a survey of non-police agencies dealing with police problems and how they can best work together to achieve their common goals. A community related project is initiated and completed during the period of this course. Prerequisite: LCJ 101 or permission of instructor.

**LCJ 212 Corrections and Rehabilitations****3 0 3**

Corrections and rehabilitation as a functional aspect of the Criminal Justice System. Historical perspectives, contemporary philosophies and the treatment of offenders in all elements of a modern correction system. Prerequisite: LCJ 103 or permission of instructor.

**LCJ 213 Fire Arms and Defense Tactics****4 2 5**

The course is designed to help the student develop an understanding of the need, use, and respect for all types of fire arms. Range practice is given in the familiarization and use of the hand gun, rifle, and shotgun, with a special emphasis on the development of proficiency in the use of service revolvers. Instruction is also given in riot control use of non-lethal weapons and defensive methods used in handling arrested persons. Prerequisite: Permission of instructor.

**LCJ 214 Criminal Investigations II****4 2 5**

A general survey of the methods and techniques used in modern scientific investigation of crime with emphasis upon the practical use of these methods by the students. Laboratory techniques are demonstrated and the student participates in actual use of the scientific equipment. Prerequisite: LCJ 210.

**LCJ 215 Law Enforcement Photography****3 2 4**

A study of photographic equipment and its applications to the field of law enforcement. Instruction is given in all phases of the photographic process including crime scene, surveillance, macro- and micro-photography, including the development of negatives and prints. The student develops techniques in the use of different kinds of cameras and other photographic equipment through lab practice. Prerequisite: LCJ 210.

**LCJ 216 Police Supervision****3 0 3**

A continuation of LCJ 104 with emphasis on developing supervisory and management techniques employed at the various levels of police work. Prerequisite: LCJ 104 or permission of instructor.

**LCJ 217 Current Law Studies****3 0 3**

An advanced study of criminal law with primary emphasis placed on those laws currently being used most frequently by law enforcement and criminal justice officials. The content of the course is flexible and is determined by the current needs. Prerequisite: LCJ 204.

**LCJ 218 Vice Control and Investigation** 3 0 3  
 Code and case law dealing with vice; detection and suppression; apprehension and prosecution of violators; special consideration of laws dealing with gambling, prostitution, liquor, narcotics, and sex crimes. Prerequisite: LCJ 102 and 210.

**LCJ 219 Introduction to Criminalistics** 4 2 5  
 A survey of the various sciences and their application to the field of law enforcement. A study of the theory and techniques used in the more common forensic applications, such as blood grouping, blood alcohol, luminol, drug analysis, flammable accelerants, explosives, serial number restoration, firearms, and primer residue test. Prerequisite: LCJ 214.

**LCJ 220 Crime Prevention and Control** 3 0 3  
 A comprehensive survey of specific programs of practical crime prevention programs in communities of all sizes. Programs to prevent unlawful behavior from occurring or minimizing such behavior in both adult and juvenile circles are analyzed in depth relative to evaluating their success in minimizing police intervention. Prerequisite: LCJ 209 or permission of instructor.

**LEG 103 Techniques of Investigation I** 3 3 4  
 A study of how to interview witnesses, obtain medical and other official records, and photographs are studied. Sketching and diagraming are taught as they relate to explaining and clarifying a situation or presentation. How to assess property damage, personal injury, and land evaluation are studied. Prerequisite: None.

**LEG 104 Techniques of Investigation II** 3 3 4  
 A continuation of LEG 103. Prerequisite: LEG 103.

**LEG 132 Legal Bibliography & Library Management** 3 2 4  
 This course includes the methods of legal research, proper citation of authority, acquaintance with legal treaties, text, and reporters, shepardizing cases, synthesis or decisions. Also, the course includes the study of organizing and maintaining a current law library: selecting, ordering, cataloging, filing and locating current literature and publications are emphasized. Prerequisite: None.

**LEG 135 N.C. Legal Systems I** 3 0 3  
 Study and review of the N.C. Legal System from the Magistrate Court to the State Supreme. This includes the study of the N.C. Constitution, plus the statutes effecting the various courts. Included in this study is a review of the Federal judiciary within the State. Prerequisite: None.

**LEG 136 N.C. Legal Systems II**  
**(Functions of Clerk of Court)** 3 0 3  
 Continuation of LEG 135, plus the functions of the Office of the Clerk of Court. Prerequisite: LEG 135.

**LEG 212 Investigation of Criminal Cases I** 3 0 3

In depth study of investigating criminal cases, interviews, taking statements, collecting data, and the orderly assemblage for the attorney's use. This course includes a general examination of criminal laws and the definition and classification of criminal offenses; criminal responsibility including necessary elements for criminal activity. The following subjects are covered with reference to criminal procedure: motions, writs, orders for bail, preparation of bail bonds and execution of bail bonds and procedures; a background study of the historical and legal principles applicable to the criminal cases found in legal records of a law library. Prerequisite: None.

**LEG 213 Law and the Family** 3 0 3

The legal obligations in a marriage contract, its rights and privileges upon the contracting parties; defenses to divorce actions; the statutory grounds for divorce; elements of a legal separation by a court order or by mutual consent are studied; drafting of pleadings and contractual agreements, study of family problems, and juvenile courts. Prerequisite: None.

**LEG 214 Mechanics of Property**

**Transactions & Title Abstracting** 3 3 4

Includes the study of the preparation of simple contracts for sale of real estate; ordering title search; examination of title and preparing simple titles; ordering title insurance; preparation of deeds, bonds, notes, mortgages, and affidavits of title; preparation of settlements sheets and holding the closing conference. Also, a study is made of the applicable statutory and common law principles, including the form and adequate execution of documents; the functions of judgments and estates in the determination of whether a title to real estate is marketable; the study and function of various documents, indices and files on public records in various county offices. Forms for abstracting title information from public records and summaries thereof and various typical problems and errors which may render a title unmarketable are included. Prerequisite: None.

**LEG 223 Investigation of Civil & Real Property**

**Condemnation Cases** 2 3 3

Provides an in depth study of investigating civil claims involving interviews, taking statements, collection of data, and the orderly assemblage for the attorney's use. This course also provides a study of the law of real property and an in-depth survey of the more common types of real estate transactions and conveyances. Emphasis is placed on case histories as they are recorded in condemnation files of N.C. Legal Cases, and rural, urban and city condemnation files of N.C. Legal Cases. Prerequisite: LEG 135 or permission of instructor.

**LEG 225 Law Office Management** 3 3 4

This course includes the study of organization of the law office, office forms and legal forms, filing equipment and systems, accounting systems, accounting for lawyer's time, fees, billing, client relations, office operating procedures, lawyer's professional liability insurance, and other insurance programs for lawyers. Prerequisite: LEG 135 or permission of instructor.

**LEG 231 Investigation of Criminal Cases II** 3 0 3

A continuation of LEG 212. Prerequisite: LEG 212.

**LEG 235 Litigation Preparation** 3 0 3

This course teaches the paralegal how a lawyer prepares his briefs prior to entering court proceedings. The student is taught how to review a file, prepare subpoenas ready for the lawyer's signature, prepare exhibits for court, file pleadings, index interrogatories, dispositions, admissions, pleadings, and prepares the student to interview witnesses and record statements in writing and on tape. Prerequisite: LEG 104.

**LEG 290 Internship** 1 18 7

This course is designed to provide on-the-job experience for graduating paralegal students. Working within an office provides experience which the student is unable to acquire in the classroom. The course provides an opportunity for the student and the employer alike to share their interest in each other to the extent that it might provide employment opportunities. Prerequisite: LEG 104, 136, and 231.

### VOCATIONAL EDUCATION Course Descriptions

	Class Hours	Lab Hours	Shop Hours	Quarter Credit Hours
<b>AHR 95 Shop Practice: Air Conditioning</b>	2	4	0	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. Prerequisite: None.

**AHR 1121 Fundamentals of Refrigeration I** 5 0 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. Prerequisite: None.

**AHR 1122 Domestic & Commercial Refrigeration** 4 2 3 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** 3 2 0 4

Review of refrigerant cycle and characteristics of mechanical cooling equipment; sensible and latent heat loads; air mixtures and dehumidifications; system capacity and air distribution; pipe schematics and component symbols. Prerequisite: AHR 1145.

**AHR 1129 Air Conditioning Shop Practice I 3 0 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, 1141, and 1146.

**AHR 1130 Heat Pumps 3 0 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 and 1146.

**AHR 1132 Chilled Water & Absorption Systems 3 0 3 4**

Principles of water chilling, chiller components, chiller application; basic absorption cycle, absorption controls, and application. Prerequisite: AHR 1125 and 1146.

**AHR 1133 Air Conditioning Shop Practice II 3 0 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; strengthen all manipulative skills through practice. Prerequisite: AHR 1129.

**AHR 1136 Sheet Metal Layout & Fabrication II 2 0 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. Prerequisite: None.

**ARR 1136 Sheet Metal Layout & Fabrication II 2 0 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 0 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. Prerequisite: None.

**AHR 1140 Oil Burner Service 3 0 3 4**

Pot burners, low and high pressure gun burners, domestic and commercial equipment, electric controls; service procedures; efficiency tests; burner application and safety. Prerequisite: None.

**AHR 1141 Control Systems I 2 0 3 3**

Review of basic electricity and simple circuitry for controls; system components for special applications; thermostats, solenoid valves, pressure switches, oil failure controls, and installation and service practices. Prerequisite: AHR 1145.

**AHR 1142 Control Systems II** 3 0 3 4

A continuation of the study of controls for automatic operation of mechanical systems; motor controllers and starters; motorized dampers and valves; and electronic and pneumatic operations. Prerequisite: AHR 1141.

**AHR 1145 Heating Systems I** 5 4 3 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. Prerequisite: AHR 1122.

**AHR 1146 Heating Systems II** 4 0 6 6

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

**AHR 1148 Estimating & Contracting** 5 2 0 6

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

**AHR 1199 Cooperative Training** 0 0 15 5

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences are 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 motivation to the student and realism to his academic and technical program of studies. Prerequisite: AHR 1148 and permission of faculty advisor.

**ARC 1112 Architectural Estimating** 3 0 0 3

The study of estimating tasks involved in architectural construction including approximate and detailed estimates. Instruction is 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 1121 Interior Design** 1 5 0 3

Basic concepts of Interior Design incorporating historical styles, current manufactured products, coordinations of color, furniture, floor coverings, fabrics, wall paper, drapery and accessories. Prerequisite: None.

**ARC 1145 Specifications & Contracts** 3 0 0 3

A study of building codes and their effect in relation to specifications and drawings. The purpose and writing of specifications is studied along with their legal and practical application to working drawings. Contract documents are analyzed and studied for the purpose of client-architect-contractor responsibilities, duties and mutual protection. Prerequisite: None.



<b>ARC 1226 Graphic Communications I</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
The study of systems of graphic communications including orthographic projection and including the pictorial group; axonometric, oblique and perspective. Instruction is also given in methods of graphic reproduction. Prerequisite: None.				
<b>ARC 1227 Graphic Communications II</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
A continuation of ARC 1226. Prerequisite: ARC 1226.				
<b>ARC 1228 Graphic Communications III</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
A continuation of ARC 1227. Prerequisite: ARC 1227.				
<b>ARC 1230 History of Architecture</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
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. Prerequisite: None.				
<b>ARC 1231 Architectural Drafting and Design I</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
The study of methods of drafting architectural working drawings; the design process and their relationship to each other. Also instruction is given in drafting room organization and operation in conjunction with the architectural office. Prerequisite: None.				
<b>ARC 1232 Architectural Drafting and Design II</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>3</b>
A continuation of ARC 1231. Prerequisite: ARC 1231.				
<b>ARC 1233 Architectural Drafting and Design III</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>
A continuation of ARC 1232. Prerequisite: ARC 1232.				
<b>ARC 1234 Architectural Drafting and Design IV</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>5</b>
A continuation of ARC 1233. Prerequisite: ARC 1233.				
<b>ARC 1235 Architectural Drafting and Design V</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>5</b>
A continuation of ARC 1234. Prerequisite: ARC 1234.				
<b>ARC 1236 Architectural Drafting and Design VI</b>	<b>5</b>	<b>3</b>	<b>6</b>	<b>8</b>
A continuation of ARC 1235. Prerequisite: ARC 1235.				
<b>ARC 1238 Architectural Environmental Systems I</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>4</b>
The study of architectural environmental systems with emphasis upon a comparison of different types of heating, air conditioning and electrical systems, their implications for architectural drafting room production of mechanical drawings. Prerequisite: ARC 1265.				
<b>ARC 1239 Architectural Environmental Systems II</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>4</b>
A continuation of ARC 1238. Prerequisite: ARC 1238.				
<b>ARC 1241 Architectural Presentation I</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
The study of methods of production of architectural presentations. Instruction is given in architectural delineation and architectural models. Prerequisite: None.				

<b>ARC 1242 Architectural Presentations II</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
A continuation of ARC 1241. Prerequisite: ARC 1241.				
<b>ARC 1243 Architectural Presentations III</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
A continuation of ARC 1242. Prerequisite: ARC 1242.				
<b>ARS 1244 Architectural Presentations IV</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
A continuation of ARC 1243. Prerequisite: ARC 1243.				
<b>ARC 1245 Architectural Presentations V</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
A continuation of ARC 1244. Prerequisite: ARC 1244.				
<b>ARC 1246 Architectural Presentations VI</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>
A continuation of ARC 1245. Prerequisite: ARC 1245.				
<b>ARC 1250 Site Surveying &amp; Site Development</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>5</b>
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. Prerequisite: None.				
<b>ARC 1251 Structural Systems</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>4</b>
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.				
<b>ARC 1264 Materials and Methods of Architectural Construction I</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>
Materials used in architectural construction are studied. Their limitations as effected by the nature of the material, economic values, and codes are stressed. Instruction is also given in methods of residential and commercial construction. Prerequisite: None.				
<b>ARC 1265 Materials and Methods of Architectural Construction II</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>5</b>
A continuation of ARC 1264. Prerequisite: ARC 1264.				
<b>BMS 1133 Building Codes and Laws</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>4</b>
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. Prerequisite: None.				
<b>CAR 1101 Carpentry</b>	<b>3</b>	<b>0</b>	<b>18</b>	<b>9</b>
A brief history of carpentry and present trends of the construction industry. The course involves operation, care, and safe use of the carpenter's handtools and power tools in cutting, shaping and joining construction materials used by the carpenter. Major topics include theoretical and practical applications involving materials and methods of construction, building layout, preparation of site, footings and foundation, wall construction including form construction and erection. Prerequisite: None.				

- CAR 1102 Carpentry: Framing** 3 0 18 9  
 Instruction is given in the principles and practices of frame construction beginning with the foundation sills including floor joist, subfloor, wall studs, ceiling joist, rafters, bridging, bracing, and sheathing and interior wall partition; roof construction including the layout and construction methods of common types of roofs using standard rafter construction included the layout and construction methods of common types of roofs using standard rafter construction, truss construction, and post and beam construction. Application and selection of sheathing and roofing is included. Consideration is given to the coordination of carpentry work with installation of the mechanical equipment such as: electrical, air conditioning, heating, and plumbing. Prerequisite: CAR 1101 and DFT 1111.
- CAR 1103 Carpentry: Millwork and Cabinetmaking** 3 0 18 9  
 Cabinet making and millwork as performed by the general carpenter for building construction. Use of shop tools and equipment are emphasized in learning methods of construction of millwork and cabinetry. Practical applications 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 also are studied. Prerequisite: CAR 1101 and DFT 1110.
- CAR 1104 Carpentry: Finishing** 3 0 18 9  
 Exterior and interior trim and finish carpentry completes the general carpentry program. Included are 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. Prerequisite: CAR 1103 and DFT 1111.
- CAR 1113 Carpentry: Estimating** 3 3 0 4  
 This is a practical course in quantity "take off" from prints of jobs performed by the carpenter after figuring the quantities of materials needed and costs of building various components and structures. Prerequisite: DFT 1111 and MAT 1112.
- CAR 1114 Building Codes** 3 0 0 3  
 A study is made of building codes and the minimum requirements for local, county, and State construction regulations. This involves safety, sanitation, mechanical equipment and materials. Also, a review is made of the minimum property requirements of the Federal Housing Administration and the North Carolina State Code. Prerequisite: CAR 1103, Corequisite: CAR 1104.
- DFT 1104 Blueprint Reading: Mechanical** 0 3 0 1  
 Interpretation and reading of blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures, and pictorial sketches. Prerequisite: None.
- DFT 1110 Blueprint Reading: Building Trades** 0 3 0 1  
 Principles of interpreting blueprints and specifications common to the building trades. Development of proficiency in making three view and pictorial sketches. Prerequisite: None.

**DFT 1111 Blueprint Reading and Sketching** 0 3 0 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 0 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 are part of this course. Prerequisite: DFT 1110.

**DFT 1114 Blueprint Reading & Sketching** 0 3 0 1

Designed to develop abilities in reading complex drawings in the masonry field. Blueprints of residential and commercial buildings are 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 0 1

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

**DFT 1117 Blueprint Reading: Welding** 0 3 0 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 0 3

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

**DFT 1125 Descriptive Geometry** 2 3 0 3

Graphic analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Included are problems dealing with solid geometry theorems. Where applicable, each graphical solution is accompanied by the analytical solution. Prerequisite: DFT 1170.

**DFT 1170 Basic Drafting** 1 2 3 3

An introduction to drafting and the study of drafting practices. Instruction is given in the selection, use and care of instruments; single-stroke lettering, applied geometry, freehand sketching consisting of orthographic and pictorial drawings. Orthographic projection, reading and instrument drawing of principal views, single auxiliary views (primary),

and double (oblique) auxiliary views are emphasized. Dimensioning and practices are studied with reference to the American Standards Association practices. Methods of reproducing drawings are included at the appropriate time. Prerequisite: None.

**DFT 1171 Drafting—Working Drawings** 1 2 3 3

Drafting instruction and experience in interpretation and drawings of detail and assembly drawings used in shop production. Since the working drawing is the terminal drawing with all information regarding shape, size, material and manufacturing specification, the student studies drafting in relation to: lines and symbols, basic dimensioning, standard features and their dimensions, basic shop terms and processes, precision and tolerances, basic industrial practices and procedures, and introduction to metric units and applications. Prerequisite: DFT 1170.

**DFT 1172 Technical Sketching** 1 1 3 3

Study and practice in freehand sketching of machine parts with pencil. Sketchings are made in orthographic, isometric, and oblique projection as well as in true perspective. Dimensioning and shading of sketches are included. Prerequisite: DFT 1171.

**DFT 1173 Mechanical Drafting I** 1 0 6 3

The trainee will study simple and successive resolutions and their applications to practical problems. Sections are studied and both detail and assembly sections are drawn. Intersections and developments are studied by relating the drawing to the sheet metal trades. Models of the assigned drawings are made from construction paper, cardboard, or similar materials as a proof of the solution to the problems drawn. Basic pipe drafting is introduced. Prerequisite: DFT 1170.

**DFT 1180 Trade Drafting I** 2 4 0 4

Fundamental drafting principles with instruction and practice in lettering, orthographic projection, working drawings; introduction of 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. Prerequisite: None.

**DFT 1181 Trade Drafting II** 2 3 0 3

Continuation of the study of projection theory with assembly drawings, sections, auxiliaries, and screw threads introduced. The major portion of the student's time is spent in the preparation of working drawings for use in the shop. Included are working drawings of: gears, cams, pulleys, sprockets and other machine elements. Commercial standards are introduced as well as the drawing of elementary jigs, fixtures, and other tool design drawings. Prerequisite: DFT 1180.

**DFT 1182 Blueprint Reading and Shop Sketching** 3 0 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 of ideas, information and processes. Prerequisite: DFT 1181.

**DFT 1190 Mechanical Drafting II** 1 0 6 3

An introduction to mechanical drafting beginning with problems concerning precision and limit dimensioning. Methods of fastening materials, and fasteners; keys, rivets, springs, and welding. Symbols are studied and drawings are made involving these items. Principles of design are introduced with the study of basic mechanisms of motion transfer; gears, cams, power trains, pulleys, belting and methods of specifying and calculating dimensions are studied. Drawings are made involving these mechanisms. The plant layout drawing is introduced. Prerequisite: DFT 1173.

**DFT 1191 Machine and Tool Drafting** 1 0 6 3

Introduction to tool drafting as it relates to manufacturing processes and machine tools. Basic drafting and design problems involving jigs and fixtures. Also covered are standard parts, and an introduction to the construction and function of punches and dies. Prerequisite: DFT 1173.

**DFT 1192 Manufacturing Processes and Tolerancing** 2 0 3 3

Advanced machine operations involving production operations such as staddle milling, indexing, special fixtures, grinders, grinding, automation, transfer and special machines; demonstrations on numerical control applications; gaging, measuring, and inspection; selected other manufacturing processes such as casting, metal fabrication, welding and related processes are covered by demonstration, films and other media. An analysis of dimensioning practices, for complete and precise specifications of functional features, required for a component or an assembly. Standards are studied and explained. Applications, in the form of drawings of components or assembly. Standards are studied and explained, as are applications, in the form of drawings of components and gages. Application of metric units is included. Prerequisite: MEC 1113.

**DFT 1193 Mechanical Drafting III** 1 0 6 3

Principles of design sketching, design drawings, layout drafting, detailing from layout drawings, production drawings and simplified drafting practices are areas of study. Forging and casting drawings are made from layouts. Specifications, parts lists, and bills of materials are emphasized in this course. The student develops a complete set of working drawings of a tool, jig, fixture or simple machine and learns principles of design, and handbook and manual usage. Prerequisite: DFT 1173.

**DFT 1194 Design Drafting** 1 0 6 3

A drawing board approach is used to develop and strengthen design skills that distinguish an engineering draftsman from a basic scientist. Emphasis include not only the creative and economic considerations, but involves practical drawing-board solutions similar to those found in industry. Every effort is made to make all drafting work conform to industrial practices and procedures. Steel fabrication drafting and drawings of welded parts is introduced. Prerequisite: DFT 1173.

**DFT 1195 Steel Fabrication Drafting** 1 3 0 2

Introduction to shop drawings related to the welding, riveting, bolting, or other joining methods of steel plates, bars and structural shapes. Emphasis is upon student preparation of working drawings for shop purpose. Prerequisite: DFT 1170 and/or DFT 1172.

**DFT 1281 Jig and Fixture Design****2 4 0 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 are included. Prerequisite: DFT 1181.

**ELC 1112 Direct and Alternating Current****5 0 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 Kirchhoff'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 0 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. Prerequisite: ELC 1112 and MAT 1115.

**ELC 1124 Residential Wiring****5 0 9 8**

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

**ELC 1125 Commercial and Industrial Wiring****5 4 6 9**

Layout, planning, and installation of wiring systems in commercial and industrial complexes with emphasis on 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. Prerequisite: ELC 1124 and ELN 1118.

**ELC 1180 Basic Electricity****3 0 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 is placed on connecting arc welding, and electric motors. Prerequisite: None.

**ELC 1181 Power Wiring for Air Conditioning****1 2 0 2**

Electrical code interpretations, motors characteristics, motor controls and protection, service entrance equipment, wire and wire sizing fuses and circuit breakers, wire protection, and single and three phase current applications. Prerequisite: None.

**ELN 1118 Industrial Electronics I****3 0 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 diodes, and other basic applications. Prerequisite: ELC 1112, 1125 and MAT 1115.

**ELN 1119 Industrial Electronics II****3 0 6 5**

Basic industrial electronic systems such as: motor controls, alarm systems, heating systems and controls, magnetic amplifier controls, welding control systems using thyatron tubes, and other basic types of systems commonly found in most industries. Prerequisite: ELC 1112, 1125, ELN 1118, and MAT 1115.

**ELN 1128 TV Circuits and Service I****2 0 12 6**

This course is designed to provide students with basic knowledge, understanding, and appreciation in the various areas of the TV servicing field. Within the framework of this seventy-hour course the student is provided a foundation for future courses or on-the-job training through employment in the TV servicing field. The student acquires a basic understanding of both color and black & white television receiver theory and develops knowledge and a reasoning process to enable him to employ standard tools, test equipment, and progressive trouble-shooting procedures to pinpoint and correct defective circuits in a minimum of time. Prerequisite: None.

**ENV 1100 Biology-Microbiology****2 3 0 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. Prerequisite: None.

**ENV 1101 Water Laboratory Control****2 0 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 stressed. Prerequisite: CHM 93 or equivalent.

**ENV 1102 Water Plant Operations****3 2 0 4**

Construction features and operational techniques of water purification 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. Prerequisite: None.

**ENV 1103 Waste Laboratory Control****2 0 6 4**

Theory and laboratory technique for control tests in wastewater treatment plant operation as follows: solid, dissolved oxygen, oxygen consumed, hydrogenion concentration, physical tests and bacterial enumeration. Interpretation and application of test results are stressed. Prerequisite: CHM 93 or equivalent.



- ENV 1104 Waste Plant Operations** 3 2 0 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. Prerequisite: None.
- ENV 1105 Maintenance** 2 3 0 3
- Preventive maintenance procedures and records for basic and specialized equipment in water and waste water plant. Equipment nomenclature is covered in the classroom and with actual experience in local plants. Prerequisite: None.
- ENV 1107 Stream Studies** 2 0 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. Prerequisite: None.
- ENV 1108 Control Systems** 3 0 3 4
- Application and operation of hydraulic, pneumatic, mechanical, electrical and electronic control systems utilized in water and waste water treatment plants. Calibration and limitations of various types of equipment are presented. Prerequisite: None.
- ENV 1109 Water and Waste Distribution** 3 0 3 4
- Methods of sizing, maintaining and constructing collection systems for waste water and distribution systems for potable water supplies. Purposes and construction details of appurtenances and special structures are included in the instructions. Prerequisite: None.
- ENV 1110 Introduction to Ecology** 2 3 0 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. Prerequisite: None.
- ENV 1111 Industrial Wastes** 2 0 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. Prerequisite: None.
- MAS 1101 Bricklaying I** 5 0 15 10
- The history of the bricklaying industry; clay and shell brick, mortar, laying foundations, laying bricks to a line, bonding, and tools and their uses; laboratory work provides training in the basic manipulative skills. Prerequisite: None.

**MAS 1102 Bricklaying II** 5 0 15 10

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

**MAS 1103 General Masonry I** 5 0 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 0 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 is involved in building some major residential or commercial structure. Prerequisite: MAS 1103.

**MAS 1113 Masonry Estimating** 3 0 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 are included. Prerequisite: MAS 1103.

**MEC 1101 Theory and Practice I** 3 0 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 are introduced both in theory and in practice. Prerequisite: None.

**MEC 1102 Theory and Practice II** 3 2 6 6

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinders, milling machine and shaper. The student is introduced to the basic operations on the cylindrical grinder and selects projects encompassing all the operations, tools and procedures thus far used and those stressed throughout the program. Prerequisite: MEC 1101.

**MEC 1103 Theory and Practice III** 3 2 6 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 uses precision tools and measuring instruments such as vernier height gauges, protractors and comparators. Basic exercises are given on the turret lathe and on the tool and cutter grinder. Prerequisite: MEC 1102.

**MEC 1104 Structure of Metals** 3 2 0 4

Elementary and practical approach to metals, their structures, markings, classifications and uses. Interpretation of properties and specifications of steels by use of manuals, catalogs and charts. Prerequisite: PHY 1101.

**MEC 1105 Theory and Practice IV** 3 9 9 6

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, and advanced milling machine operations. Following procedures faithfully and establishing good work habits and attitudes acceptable to the industry are stressed. Prerequisite: MEC 1103.

**MEC 1106 Heat Treating Practices** 2 0 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 are given the opportunity to acquaint themselves with the equipment and processes of heat treating. Prerequisite: MEC 1104.

**MEC 1107 Numerical Control in Manufacturing** 2 0 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. Prerequisite: MEC 1103.

**MEC 1108 Basic Metallurgy** 3 0 3 4

Fundamentals of Metallurgy, grain size, effect of carbon content, and hardness testing devices; analysis of the structure of metals and alloys; interpretation of properties, specifications, and uses. Selected laboratory exercises related to test and lectures are utilized. Prerequisite: PHY 1101.

**MEC 1110 Machine Processes I** 1 0 6 3

An introduction to basic Machine Shop operations in relation to manufacturing processes and drafting. Lectures and shop practice with hand tools, measuring and terminology; engine lathe work, basic milling machine operations are introduced with student lab exercises relating to lectures and textbook study. Prerequisite: None.

**MEC 1111 Machine Processes II** 2 0 3 3

Grinding, gages, and their uses in production; gears, types of gears and methods of manufacture, milling operations, metal finishing for accuracy and surface finish. The lectures are followed by laboratory exercises that stress the principles involved in metal cutting. Prerequisite: MEC 1110.

**MEC 1112 Machine Shop Processes: Welding** 1 0 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. Prerequisite: None.

**MEC 1151 Tool Making: Jigs and Fixtures 1 0 6 3**

This course is designed to help the student become more proficient in working to very close tolerances. The student learns 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. Prerequisite: Four quarters of Machine Shop or equivalent.

**MEC 1152 Gages and Special Tools 2 2 0 3**

A study of precision gages is made. Special tools and their application to production is studied. The student has practice in making plug gages, ring gages and snap gages. The student has product work in the making of special slide tools, form tools, and fly cutters. Prerequisite: Four quarters of Machine Shop or equivalent.

**MEC 1153 Advanced Tool Making 4 0 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 is given in form grinding and form dressing procedures, surface finishes, precision tolerances, and general tool making practices. Prerequisite: MEC 1151 and 1152.

**MEC 1154 Die Making I 2 0 6 4**

This course is designed to introduce the student to the principles of dies and die making. Simple piercing and blanking dies are studied and the student becomes acquainted with terminology common to the trade. Accuracy, surface finish, importance of clearances, radii and the press cycle are studied. Students build and set up for production a simple die, working from blue prints and maintaining specified accuracy. Prerequisite: Four quarters of Machine Shop or equivalent.

**MEC 1155 Die Making II 2 0 9 5**

A continuation of the study of dies, the dangers of insufficient and excessive cutting clearances, and the methods of providing angular clearances. Factors effecting stripping force are discussed along with bending stresses, deformation due to bending and the bend allowance curve. Student builds form and bending die. Development of correct working habits and close tolerance machining is stressed. Prerequisite: MEC 1154.

**MEC 1156 Die Making III 2 0 9 5**

The theory and design of progressive dies is studied. The student is given instruction in the location of pilots, the progressive cam stages, grinding operations, and blank development. The student machines, assembles, and sets up a conventional progressive die involving three or more stages. Further theory and practice is given in plastics molds. Prerequisite: MEC 1155.

**MEC 1158 Introduction to Plastic Molding 2 0 9 5**

This course includes the types, uses, and the behavior of plastics; the injection molding machine, the standard mold base, nomenclature common to the trade, and the design and machining of mold components. Prerequisite: Four Quarters of Machine Shop or equivalent.



- MEC 1170 Mold Making I** 2 0 9 5  
 The technique of producing optical finishes, gating runner systems, ejection methods, venting and cooling, and procedures of final assembly of the mold are the intent of this course. Prerequisite: MEC 1158.
- MEC 1171 Mold Making II** 2 0 6 4  
 This course encompasses the molds, materials, and methods for molding thermoset plastics. Primary emphasis is on compression and transfer molding, but includes innovations now in practice. Prerequisite: MEC 1170.
- MEC 1179 Materials Testing** 2 0 3 3  
 Basic properties of selected engineering materials are studied. Course also involves operating principles of testing equipment. Determination of mechanical properties of materials, chemical analysis of metals, and a limited number of other industrial materials are covered. Elements of heat treating, testing procedures, interpretation of test results and report writing are included. Prerequisite: MEC 1104.
- MEC 1180 Industrial Specifications** 3 0 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. Prerequisite: None.
- MEC 1181 Precision Machines** 3 0 9 6  
 To develop skills and understanding of machining precision parts by use of cylindrical grinder, of magnetic sine table in conjunction with surface grinder, of optical measuring equipment and precision end rods on machines so equipped; methods and procedures of checking and inspecting precision parts, maintaining good housekeeping and safe working habits in all phases are stressed. Prerequisite: MEC 1105.
- MEC 1182 Jig and Fixture Making** 3 0 9 6  
 The student develops understanding of principle and work of jigs and fixtures, fabricates simple jigs and fixtures used on course projects; stimulates thinking concerning simplicity and safety features of the job and/or fixture while emphasizing accuracy of parts produced; develops self-confidence and pride in doing highly skilled work. Prerequisite: MEC 1181.
- MEC 1183 Machine Repair** 2 0 4 3  
 The student is acquainted with the basic fundamentals of repairing machine tools, emphasis is placed on the machine maintaining its original accuracy. Primary phases of this course consists of hand scraping, of ways and use of precision straight edge, adjustment and tolerances of headstock bearing fitting, and adjustment of gibs, methods of checking for squareness and correct center line distances. Good work habits and workmanship are maintained throughout. Prerequisite: MEC 1181.
- MEC 1184 Advanced Machine Processes** 3 0 6 5  
 To further acquaint the student with advanced set-ups and operation of machines for mass production, instruction is given on the turret lathe, milling machine, cylindrical grinder and other production machines to motivate the student to apply himself in finding ways and means of improving methods of production and manufacturing processes. Prerequisite: MEC 1181.

**MEC 1198 Automotive Machine Shop 2 0 6 4**

Review of the proper use of the basic machines is taught; boring bar, honing machine, valve grinder and hydraulic press. 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. Prerequisite: None.

**MEC 1199 Cooperative Training 0 0 15 5**

Provides the student with an opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences are 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 give motivation to the student and realism to his academic and technical program of studies. Prerequisite: Permission of faculty advisor.

**PLU 1105 Plumbing Maintenance 1 0 5 2**

The course introduces the student to the plumbing trade and to the use of tools and materials necessary to repair or replace fixtures and piping. Planning new additions is also stressed. Prerequisite: None.

**PLU 1110 Plumbing Pipework 5 0 15 10**

This course introduces students to the tools, fittings, and small equipment used by plumbers. Most of the time is spent in the shop, where the student can learn how to handle these materials correctly. The student performs operations such as threading, cutting, caulking, and sweating of the various kinds of pipe and tubing used in the trade. Prerequisite: None.

**PLU 1111 Domestic Water Systems 2 0 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 are studied. Plumbing installations are made to provide practical applications. Heating devices, and the storage and circulation of hot water are studied. Private and public sewage and drainage systems, including their ventilation, is part of this course. Field trips are taken to study various types of installations. Prerequisite: PLU 1110.

**PLU 1112 Installation of Plumbing Fixtures 3 0 9 6**

The differences in materials and styles of lavatories, bathtubs and sinks, and the many ways that these fixtures can be installed form the basis of this course. The proper use of traps is included. The student gets actual practice by making installations. Prerequisite: PLU 1111.

**PLU 1120 Low Pressure Steam Systems 2 0 6 4**

The student becomes acquainted with types of low pressure steam boilers, and the principles of boiler operation. Boiler accessories such as connectors, fittings, and insulation are included. Low pressure steam systems, their layout, and component parts are studied and installed. Equipment used in heat transmission, such as radiators, coils, and connectors are included. Prerequisite: PLU 1110.

**PLU 1121 High Pressure Steam Systems 3 0 9 6**

Applications of low pressure steam equipment is continued. Principles involved in industrial applications of both low-pressure and high-pressure steam equipment, commercial and industrial blueprints are studied utilizing low and high pressure equipment. High pressure boilers and the installations of high pressure systems is emphasized. Prerequisite: PLU 1120.

**PLU 1123 Hot Water and Panel Heating 3 0 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 is studied, including apparatuses for radiant heating and panel heating. Methods of "sizing" equipment for various installations are included. Practical application is provided in installing this equipment. Prerequisite: PLU 1111 and 1120.

**PLU 1125 Industrial Piping 3 0 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 is the major emphasis of this course. Prerequisite: PLU 1112 and WLD 1101.

**PLU 1126 Hydraulic Systems Plumbing 2 0 3 3**

Plumbing applications in hydraulic systems; hydraulic principles, circuits, control valves, actuators, pumps, fluids and various accessories that complete hydraulic systems are studied. Installation and servicing methods of these systems is undertaken. Prerequisite: PLU 1110.

**PME 1101 Automotive: Basic Engines 3 0 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. Prerequisite: None.

**PME 1102 Electrical & Fuel Systems 3 0 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 1111 Auto Body Repair 3 0 18 9**

To introduce the student to the basic fundamentals of auto body repair and teach the basic skills of Auto Body refinishing. Prerequisite: None.

**PME 1120 Automotive Servicing I 2 0 4 3**

This course is designed to give the student an opportunity to get more practice using tools, equipment, shop manuals and shop procedure which were emphasised during the first three quarters. Also, the student uses more on-the-job experiences before going into the second year. This course

fits the student to take a full-time job during the remainder of the summer in more satisfactory competition with older and more experienced mechanics which raises the students earning ability as well as increasing his assurance of being able to function as a mechanic. Prerequisite: PME 1124, and 1180.

**PME 1123 Chassis & Suspension 6 0 9 9**

Principles and functions of the components of automotive chassis; practical job instruction in the adjustment and repair of suspension, steering and braking systems; units to be studied are shock absorbers, springs, steering systems, steering linkage, front end, types and servicing of brakes. Prerequisite: PME 1102.

**PME 1124 Power Train Systems 3 0 9 6**

Principles and functions of the components of automotive chassis; practical job instruction in the adjustment and repair of suspension, steering and braking systems. Units to be studied are shock absorbers, springs, steering systems, steering linkage, front end, types and servicing of brakes. Prerequisite: PME 1102.

**PME 1125 Automotive: Servicing 3 0 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 0 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 operations, and control; proper handling of refrigerants in charging the system. Prerequisite: PHY 1102.

**PME 1150 Motorcycle Engines 2 0 12 6**

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in motorcycle repair work. Study of construction and operation of components of motorcycle engines. Testing of engine performance; servicing and maintenance of piston, valves, cam, and crankshafts, fuel and exhaust systems, cooling systems; proper lubrication; and methods of testing, diagnosing and repairing. Prerequisite: None.

**PME 1170 Power Plant Trouble Shooting 3 0 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. Prerequisite: PME 1181.

**PME 1180 Automotive Electronics 2 0 0 2**

This course supplements 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. Prerequisite: PME 1102.



- PME 1181 Automotive: Tune Up** 3 0 6 5  
 This practical course helps the student increase his work experience with the more technical aspects of engine tune-ups and develops his knowledge on the Tuneup Tester. The student is 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 0 6 8  
 This special course is incorporated to give greater depth in the understanding of automatic transmissions. With 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 develops the student's skill in servicing and repairing most of the popular types of automatic transmissions. Prerequisite: PME 1124.
- PME 1183 Power Accessories** 5 0 4 6  
 This course is designed to acquaint the student with the operation, service and repair of power operated seats, windows, tops, windshield wipers, and radio antennas. It insures the development of the student's ability to understand and trace the circuits of the electrical accessories and to enhance his skill in diagnosing troubles and repairing damaged circuits. He applies his knowledge in drawing and reading schematic diagrams of electrical circuits. Prerequisite: PME 1180.
- PME 1185 Automotive Front-End and Brakes** 3 0 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 are thoroughly studied. Much emphasis is placed on the practical aspects of service and repair procedures in this course. Prerequisite: PME 1123.
- PME 1188 Small Gasoline Engines** 3 0 3 4  
 Develops basic skills and knowledge in the principles and techniques involved in the operation, maintenance and repair of small gasoline engines. Safe work habits are emphasized and quality workmanship is developed. Prerequisite: None.
- PME 1199 Cooperative Training** 0 0 15 5  
 Provides the student with the opportunity to pursue, under staff supervision, work experience in a specialized field. Periodic conferences are 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 motivation to the student and realism to his academic and technical program of studies. Prerequisite: Satisfactory completion of all first year requirements, and the approval of the instructor.

**WLD 95 Shop Practices: Welding**

**2 0 4 4**

A practical course in sheet metal and welding which gives the student an overview of how all craftsmen need a basic knowledge of processes used in these areas. Lectures, demonstrations and practice covering oxyacetylene, arc-welding and soldering; proper layout procedures and fabrication of sheet metal in the shop. Prerequisite: None.

**WLD 1112 Mechanical Testing and Inspection**

**1      2      3      3**

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 tests which 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 magnaflux. Prerequisite: WLD 1121.

**WLD 1120    Oxyacetylene Welding & Cutting**

**3      0      12      7**

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. Prerequisite: None.

**WLD 1121    Arc Welding**

**3      0      15      8**

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 so the student may detect any 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 0 9 3 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 inspections. Prerequisite: WLD 1124.

**WLD 1123 Inert Gas Welding**

**1      0      3      2**

Introduction and practical operations in the use of inert-gas-shield arc welding. A study is 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, wire, process variations and applications, manual and automatic welding. Prerequisite: WLD 1121.

**WLD 1124 Pipe Welding****4 0 14 9**

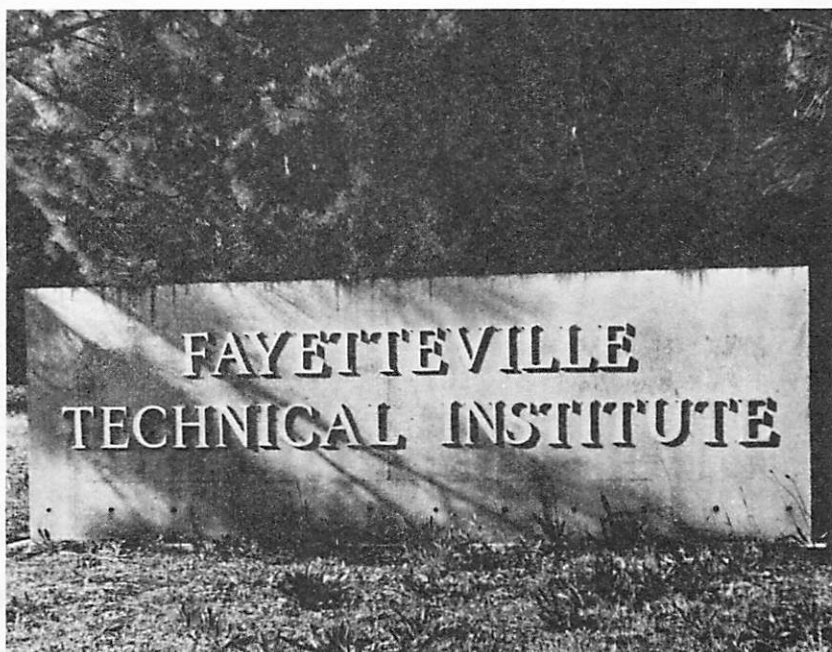
Provides practice in the welding of pressure piping in the horizontal, and the vertical fixed position using shielded metal arc welding processes according to Sections VIII and IX of the ASME code. Prerequisite: WLD 1121.

**WLD 1125 Certification Practices****3 0 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 1112, 1120, 1123, and 1124.

**WLD 1180 Basic Welding****2 0 4 3**

A short course in welding, both oxyacetylene and electric, designed as a helping course for Automotive Mechanics, Air Conditioning and Refrigeration Trade, Drafting, Sheet Metal and Machine Shop students. This course cover a minimum of technical facts, and is designed to teach the student to weld in the flat position only with electric arc and oxyacetylene. Prerequisite: None.



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JUNE 19
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