

Revised Mississippi
Curriculum
Frameworks for
Vocational - Technical Programs

Postsecondary
**EXECUTIVE
SUMMARY**

1998-1999

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1998

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REVISED POSTSECONDARY CURRICULUM FRAMEWORKS
1998-1999 EDITION
EXECUTIVE SUMMARY

In order to survive in today's global economy, businesses and industries have had to adopt new practices and procedures. Total quality management, statistical process control, participatory management, and other concepts of high performance work organizations are practices by which successful companies survive. Employers now expect their employees to be able to read, write, and communicate effectively; solve problems and make decisions; and interact with the technologies that are prevalent in today's workplace. Vocational-technical education programs must also adopt these practices in order to provide graduates who can enter and advance in the changing work world.

The curriculum framework in this document reflects these changes in the workplace and a number of other factors that impact on local vocational-technical programs. Federal and state legislation calls for articulation between high school and community college programs, integration of academic and vocational skills, and the development of sequential courses of study that provide students with the optimum educational path for achieving successful employment. National skills standards, developed by industry groups and sponsored by the U. S. Departments of Education and Labor, provide vocational educators with the expectations of employers across the United States. All of these factors are reflected in the framework found in this document.

Each postsecondary program of instruction consists of a program description and a suggested sequence of courses which focus on the development of occupational competencies. Each vocational-technical course in this sequence has been written using a common format which includes the following components:

- Course Name - A common name that will be used by all community/junior colleges in reporting students.
- Course Abbreviation - A common abbreviation that will be used by all community/junior colleges in reporting students.
- Classification - Courses may be classified as:
 - Vocational-technical core - A required vocational-technical course for all students.
 - Vocational-technical elective - An elective vocational-technical course.
 - Related academic course - An academic course which provides academic skills and knowledge directly related to the program area.
 - Academic core - An academic course which is required as part of the requirements for an Associate degree.

- Description - A short narrative which includes the major purpose(s) of the course and the recommended number of hours of lecture and laboratory activities to be conducted each week during a regular semester.
- Prerequisites - A listing of any prerequisite courses that must be taken prior to or on enrollment in the course.
- Competencies and Suggested Objectives - A listing of the competencies (major concepts and performances) and of the suggested student objectives that will enable students to demonstrate mastery of these competencies.

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75 percent of the time allocated to each course. For example, in a four semester hour course consisting of 30 hours lecture and 120 hours of laboratory activities, approximately 22 hours of lecture and 90 hours of lab should be taken by the competencies and suggested objectives identified in the course framework. The remaining 25 percent of each course should be developed at the local district level and may reflect:
 - Additional competencies and objectives within the course related to topics not found in the State framework, including activities related to specific needs of industries in the community college district.
 - Activities which develop a higher level of mastery on the existing competencies and suggested objectives.
 - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed/revised.
 - Activities which implement components of the Mississippi Tech Prep initiative, including integration of academic and vocational-technical skills and coursework, school-to-work transition activities, and articulation of secondary and postsecondary vocational-technical programs.
 - Individualized learning activities, including worksite learning activities, to better prepare individuals in the courses for their chosen occupational area.
- Sequencing of the course within a program is left to the discretion of the local district. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors.

- Programs that offer an Associate of Applied Science degree must include a minimum 15 semester credit hour academic core. Specific courses to be taken within this core are to be determined by the local district. Minimum academic core courses are as follows:
 - 3 semester credit hours Math/Science Elective
 - 3 semester credit hours Written Communications Elective
 - 3 semester credit hours Oral Communications Elective
 - 3 semester credit hours Humanities/Fine Arts Elective
 - 3 semester credit hours Social/Behavioral Science ElectiveIt is recommended that courses in the academic core be spaced out over the entire length of the program, so that students complete some academic and vocational-technical courses each semester. Each community/junior college has the discretion to select the actual courses that are required to meet this academic core requirement.

- In instances where secondary programs are directly related to community and junior college programs, competencies and suggested objectives from the high school programs are listed as Baseline Competencies. These competencies and objectives reflect skills and knowledge that are directly related to the community and junior college vocational-technical program. In adopting the curriculum framework, each community and junior college is asked to give assurances that:
 - students who can demonstrate mastery of the Baseline Competencies do not receive duplicate instruction, and
 - students who cannot demonstrate mastery of this content will be given the opportunity to do so.

- The roles of the Baseline Competencies are to:
 - Assist community/junior college personnel in developing articulation agreements with high schools, and
 - Ensure that all community and junior college courses provide a higher level of instruction than their secondary counterparts.

- The Baseline Competencies may be taught as special "Introduction" courses for 3-6 semester hours of institutional credit which will not count toward Associate degree requirements. Community and junior colleges may choose to integrate the Baseline Competencies into ongoing courses in lieu of offering the "Introduction" courses or may offer the competencies through special projects or individualized instruction methods.

- Technical elective courses have been included to allow community colleges and students to customize programs to meet the needs of industries and employers in their area.

COMMUNITY/JUNIOR COLLEGE VOCATIONAL-TECHNICAL PROGRAMS
1998 REVISION

Allied Health and Related Technology

Medical Assisting Technology
Occupational Therapy Assistant

Agriculture and Related Technology

Aquaculture Technology

Business and Office Technology

Business and Office and Related Cluster
Accounting Technology
Court Reporting Technology
Medical Office Technology
Computer Network Support Technology

Trade, Industrial, and Related Technology

Construction Materials Testing Technology
Drafting and Design Cluster
Drafting and Design Technology
Geographical Information Systems Technology Options
Environmental Technology
Industrial Maintenance Mechanics
Plastics Technology
Vehicle and Mobile Equipment Mechanics Technology

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PROGRAM DESCRIPTIONS
AND
SUGGESTED COURSE SEQUENCES

MEDICAL ASSISTING TECHNOLOGY

PROGRAM DESCRIPTION

Medical Assisting is a multiskilled allied health profession whose practitioners work primarily in ambulatory settings such as medical offices and clinics. Medical assistants function as members of the health care delivery team and perform administrative and clinical procedures. The business administrative duties include scheduling and receiving patients; obtaining patients' data; maintaining medical records; handling telephone calls, correspondence, reports, and manuscripts; assuming responsibility for office care; and handling insurance matters, office accounts, fees, and collections. The clinical duties may include preparing the patient for examination, obtaining vital signs, taking medical histories, assisting with examinations and treatments, performing routine office laboratory procedures and electrocardiograms, preparing and administering medications and immunizations, sterilizing instruments and equipment for office procedures, and instructing patients in preparation for x-ray and laboratory examinations. Both administrative and clinical duties involve purchasing and maintaining supplies and equipment. A medical assistant may also be responsible for personnel and office management.

CPR-Health Care Provider and first aid certification are prerequisites to the program.

SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Medical Assisting Technology**

FIRST YEAR

3 sch	Written Communications Elective	4 sch	Medical Business Practices (MET 1214)
3 sch	Medical Terminology (MET 1113)	3 sch	Clinical Procedures II (MET 1323)
4 sch	Anatomy and Physiology I (BIO 1514)	3 sch	Medical Law and Ethics (MET 1413)
3 sch	Fundamentals of Microcomputer Applications (CPT 1113) or Microcomputer Applications (BOT 1133)	4 sch	Anatomy and Physiology II (BIO 1524)
3 sch	Clinical Procedures I (MET 1313)	3 sch	Oral Communications Elective
3 sch	Pharmacology for Medical Assistants (MET 1513)	3 sch	Math/Science Elective (MAT 1313)
		<hr/>	
		20 sch	
<hr/>			
19 sch			

SECOND YEAR

4 sch	Computer Concepts for Medical Assistants (MET 2224) (District option elective)	3 sch	Medical Transcription (MET 2243)
4 sch	Medical Laboratory for Medical Assistants (MET 2334)	3 sch	Business Communication (BOT 2813)
4 sch	Medical Insurance (MET 2234)	6 sch	Externship (MET 2716)
3 sch	Business Accounting (BOT 1433), Introduction to Accounting (ACC 1133), or Principles of Accounting I (ACC 1213)	2 sch	Clinical Review (MET 2612)
3 sch	Social/Behavioral Science Elective	3 sch	Humanities/Fine Arts Elective
		<hr/>	
		17 sch	

 14-18 sch

- * Students who lack entry level skills in math, English, science, etc., will be provided related studies.
- ** Baseline competencies are taken from the high school Allied Health program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

OCCUPATIONAL THERAPY ASSISTANT

PROGRAM DESCRIPTION

The Occupational Therapy Assistant curriculum is a two-year program of study that prepares an individual to work under the direction of a certified Occupational Therapist to administer treatment pertinent to restorative, preventive, and maintenance programs. The focus is on the development and maintenance of capacity to perform those tasks essential to productive living and to the mastery of self and the environment. This program prepares the graduate to practice in a variety of health care settings as a member of the health care team. Opportunities for employment are varied and extensive. Admission to the program is selective and competitive.

SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Occupational Therapy Assistant**

FIRST YEAR

SUMMER SESSION

3 sch Foundations of Occupational Therapy (OTA 1113)
 3 sch Medical Terminology (OTA 1123)
 3 sch Pathology of Psychiatric Conditions (OTA 1213)
3 sch Social/Behavioral Science Elective
 12 sch

FALL SEMESTER

3 sch Written Communications
 Elective
 3 sch Math/Science Elective
 3 sch Pathology of Physical Disability
 Conditions (OTA 1223)
 3 sch Pathology of Developmental
 Conditions (OTA 1233)
 3 sch Therapeutic Media (OTA 1413)
3 sch Group Process (OTA 1513)
 18 sch

SPRING SEMESTER

3 sch Level I Fieldwork:
 Psychosocial/Specialty
 (OTA 1913)
 5 sch Kinesiology (OTA 1315)
 4 sch Occupational Therapy Skills
 (OTA 1424)
3 sch Fine Arts/Humanities Elective
 15 sch

SECOND YEAR

SUMMER SEMESTER

6 sch Fieldwork II: Psychosocial Disabilities (OTA 2926)

FALL SEMESTER

3 sch Occupational Therapy
Assessment (OTA 2613)
1 sch Health Care Systems (OTA
2811)
3 sch Concepts in Occupational
Therapy (OTA 2713)
5 sch Fieldwork I: Physical
Dysfunction/Pediatrics (OTA
2935)
3 sch Oral Communication Elective
15 sch

SPRING SEMESTER

6 sch Fieldwork II: Physical
Dysfunction (OTA 2946)
5 sch Fieldwork II:
Pediatric/Specialty (OTA
2955)
1 sch Occupational Therapy
Transitions (OTA 2961)
12 sch

* Students who lack entry level skills in math, English, science, etc., will be provided related studies.

** Baseline competencies are taken from the high school Allied Health program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

AQUACULTURE TECHNOLOGY

PROGRAM DESCRIPTION

Students learn to use all equipment typically found on a traditional fish farm, as well as emerging and experimental aquaculture technology. A wide variety of crops, including catfish, freshwater shrimp, bait minnows, crawfish, and ornamental fish is produced in ponds, raceways, cages, and tanks. Other species are also explored on a limited basis.

Biological and mechanical filtration systems, aquaculture's newest frontier, are studied extensively. In the program, instruction includes ornamental and water gardens and provides a link between aquaculture and horticulture.

CERTIFICATE SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Aquaculture Technology**

FIRST YEAR

3 sch Basic Principles of Aquaculture (AQC 1113) 3 sch Biological Principles of Aquatic Species (AQC 1413) 4 sch Aquaculture Production I (AQC 1424) 4 sch Water Quality Management (AQC 1214) 4 sch Broodstock and Hatchery Management (AQC 1434)	4 sch Aquaculture Production II (AQC 1444) 3 sch Facilities Design and Construction (AQC 1313) 3 sch Facility Maintenance (AQC 1323) 1 sch Professional Development (AQC 1511) 3 sch Aquabusiness (AQC 1613) 2 sch Aquaculture Processing and Marketing (AQC 1622)
18 sch	16 sch

SUMMER

6 sch Special Problem in Aquaculture Technology (AQC 1716)

- * Students who lack entry level skills in math, English, science, etc. will be provided related studies.
- ** Baseline competencies are taken from the high school Aquaculture program. Students who can document attainment of these competencies should not receive duplicate instruction. Students who cannot demonstrate attainment will be required to do so.

AQUACULTURE TECHNOLOGY
ASSOCIATE DEGREE
SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Aquaculture Technology**

FIRST YEAR

3 sch Written Communications Elective	3 sch Oral Communications Elective
3 sch Basic Principles of Aquaculture (AQC 1113)	4 sch Broodstock and Hatchery Management (AQC 1434)
3 sch Biological Principles of Aquatic Species (AQC 1413)	3 sch Aquabusiness (AQC 1613)
4 sch Aquaculture Production I (AQC 1424)	3-4 sch Approved Elective [†]
4 sch Water Quality Management (AQC 1214)	3 sch Math/Science Elective
	—————
	16-17 sch
—————	
17 sch	

SECOND YEAR

3 sch Social/Behavioral Science Elective	3 sch Humanities/Fine Arts Elective
4 sch Aquaculture Production II (AQC 1444)	4 sch Integrated Production Systems (AQC/HLT 2724)
3 sch Facilities Design and Construction (AQC 1313)	3 sch Facility Maintenance (AQC 1323)
1 sch Professional Development (AQC 1511)	6 sch Special Problem in Aquaculture Technology (AQC 1716)
2 sch Aquaculture Processing and Marketing (AQC 1622)	—————
3-4 sch Approved Elective [†]	16 sch
—————	
16-17 sch	

- * Students who lack entry level skills in math, English, science, etc. will be provided related studies.
- ** Baseline competencies are taken from the high school Aquaculture program. Students who can document attainment of these competencies should not receive duplicate instruction. Students who cannot demonstrate attainment will be required to do so.

†Approved Electives:

Business Accounting (BOT 1433)
Computerized Accounting (BOT 2413)
Fundamentals of Microcomputer Applications (CPT 1113)
Supervised Work Experience in Aquaculture Technology [AQC 292(1-4)]
Water Garden Design (AQC/HLT 2734)
Aquarium and Water Garden Production (AQC 2814)
Work-Based Learning [WBL 191(1-4), WBL 192(1-4), WBL 193(104), WBL 291(1-4),
WBL 292(1-4), WBL 293(1-4)]

BUSINESS AND OFFICE CLUSTER

ACCOUNTING TECHNOLOGY

PROGRAM DESCRIPTION

The Business and Office program includes a basic core of courses designed to prepare a student for a variety of entry-level positions through selection of a concentration of 67 to 70 semester credit hours (sch) in the following areas:

- Office Systems Technology
- Accounting Technology
- Medical Office Technology
- Microcomputer Technology

The curriculum is designed to give each student:

- C a broad overview of the entire office function, not only his/her individual position
- C an opportunity to investigate the integration of systems--people and technology
- C an exposure to career options available within the office which involves the coordination of people, equipment, and resources as well as an opportunity to recognize the relationship between worker and supervisor
- C a concentration of skills in a specific area

Business and Office is a two-year program of study which requires courses in the vocational-technical core, designated areas of concentration, and the academic core. The Associate of Applied Science degree is earned upon the successful completion of the Business and Office curriculum. Successful completion of the first year of this program entitles a student to receive an Office Assistant certificate.

ACCOUNTING TECHNOLOGY
SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Business and Office Technology**

FIRST YEAR

3 sch Business Accounting (BOT 1433) 3 sch Applied Business Math (BOT 1313) 3 sch Microcomputer Applications (BOT 1133) 3 sch Document Formatting and Production (BOT 1113) 3 sch Mechanics of Communication (BOT 1423) 2 sch Keyboard Speed Building (BOT 1102) <hr style="width: 10%; margin-left: 0;"/> 17 sch	3 sch Advanced Business Accounting (BOT 1443) 3 sch Business Communication (BOT 2813) 3 sch Word Processing Applications (BOT 1143) 3 sch Accounting Elective*** 3 sch Written Communication Elective 3 sch Electronic Spreadsheet (BOT 1813) <hr style="width: 10%; margin-left: 0;"/> 18 sch
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SECOND YEAR

3 sch Professional Development (BOT 1213) 3 sch Computerized Accounting (BOT 2413) 3 sch Oral Communication Elective 3 sch Math/Natural Science Elective 3 sch Accounting Elective*** 2 sch Operating Systems (BOT 2142) <hr style="width: 10%; margin-left: 0;"/> 17 sch	3 sch Accounting Elective*** 3 sch Advanced Microcomputer Applications (BOT 2713) 3 sch Social/Behavioral Science Elective**** 3 sch Humanities/Fine Arts Elective 3 sch Desktop Publishing (BOT 2133) <hr style="width: 10%; margin-left: 0;"/> 15 sch
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* Students who lack entry level skills in math, English, science, etc., will be provided related studies.

** Baseline competencies are taken from the high school Business and Computer Technology program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

*** The accounting electives will be chosen from Income Tax Accounting (BOT 2423), Payroll Accounting (BOT 2463), Supervised Work Experience (BOT 2913), Principles of Accounting I (ACC 1213), Principles of Accounting II (ACC 1223), or Cost Accounting (BOT 2473)

**** Principles of Economics (ECO 2113) is strongly recommended for this elective.

BUSINESS AND OFFICE - LEGAL CLUSTER

COURT REPORTING TECHNOLOGY

PROGRAM DESCRIPTION

The Court Reporting Technology curriculum is designed to prepare a person for entry-level employment as an appointed and/or freelance court reporter.

Court Reporting Technology is a two-year program of study which requires 12 semester hours of vocational-technical core (same as Paralegal Technology), 15 semester hours of academic core, 39 semester hours in area of concentration, and 3 semester hours of related academic courses. The Associate of Applied Science degree is earned upon successful completion of the Court Reporting Technology curriculum.

SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Business and Office Technology**

FIRST YEAR

3 sch	Professional Development (BOT 1213)	3 sch	Word Processing Applications (BOT 1143)
3 sch	Legal Systems and Terminology (LET 1113)	3 sch	Legal Environment of Business (BAD 2413)
3 sch	Records Management (BOT 1413)	3 sch	Stenotype Machine Shorthand II (LET 1423)
3 sch	Stenotype Machine Shorthand I (LET 1413)	3 sch	Medical Office Terminology I (BOT 1613)
3 sch	Applied Business Math (BOT 1313)	3 sch	Social/Behavioral Science Elective
3 sch	Mechanics of Communication (BOT 1423)	3 sch	Family Law (LET 1513)
<hr/> 18 sch		<hr/> 18 sch	

Summer Session

3 sch Speed Building I (first term) (LET 1813)
3 sch Speed Building II (second term) (LET 1823)

SOPHOMORE YEAR

<p>3 sch Written Communication Elective</p> <p>3 sch Stenotype Machine Shorthand III (LET 2433)</p> <p>3 sch Medical Office Terminology II (BOT 1623)</p> <p>3 sch Court Reporting Procedures (LET 2613)</p> <p>2 sch Court Reporting Technology (LET 2622)</p> <hr style="width: 50px; margin-left: 0;"/> <p>14 sch</p>	<p>3 sch Stenotype Machine Shorthand IV (LET 2443)</p> <p>3 sch Oral Communication Elective</p> <p>3 sch Humanities/Fine Arts Elective</p> <p>3 sch Math/Natural Science Elective</p> <p>1 sch Internship for Court Reporters (LET 2911)</p> <hr style="width: 50px; margin-left: 0;"/> <p>13 sch</p>
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* Students who lack entry level skills in math, English, science, etc., will be provided related studies.

** Baseline competencies are taken from the high school Business and Computer Technology program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

BUSINESS AND OFFICE CLUSTER

MEDICAL OFFICE TECHNOLOGY

PROGRAM DESCRIPTION

The Business and Office program includes a basic core of courses designed to prepare a student for a variety of entry-level positions through selection of a concentration of 67 to 70 semester credit hours (sch) in the following areas:

- Office Systems Technology
- Accounting Technology
- Medical Office Technology
- Microcomputer Technology

The curriculum is designed to give each student:

- C a broad overview of the entire office function, not only his/her individual position
- C an opportunity to investigate the integration of systems--people and technology
- C an exposure to career options available within the office which involves the coordination of people, equipment, and resources as well as an opportunity to recognize the relationship between worker and supervisor
- C a concentration of skills in a specific area

Business and Office is a two-year program of study which requires courses in the vocational-technical core, designated areas of concentration, and the academic core. The Associate of Applied Science degree is earned upon the successful completion of the Business and Office curriculum. Successful completion of the first year of this program entitles a student to receive an Office Assistant certificate.

MEDICAL OFFICE TECHNOLOGY
SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Business and Office Technology**

FIRST YEAR

3 sch Medical Office Terminology I (BOT 1613) 2 sch Keyboard Speed Building (BOT 1102) 3 sch Document Formatting and Production (BOT 1113) 3 sch Applied Business Math (BOT 1313) 3 sch Mechanics of Communication (BOT 1423) 3 sch Microcomputer Applications (BOT 1133) <hr style="width: 100%;"/> 17 sch	3 sch Medical Office Terminology II (BOT 1623) 3 sch Word Processing Applications (BOT 1143) 3 sch Business Accounting (BOT 1433) or Principles of Accounting I (ACC 1213) 3 sch Business Communication (BOT 2813) 3 sch Written Communication Elective 3 sch Technical Elective**** <hr style="width: 100%;"/> 18 sch
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SECOND YEAR

3 sch Transcription Elective*** 3 sch Computerized Accounting (BOT 2413) 3 sch Medical Office Concepts (BOT 2743) 3 sch Math/Natural Science Elective 3 sch Oral Communication Elective 2 sch Operating Systems (BOT 2142) <hr style="width: 100%;"/> 17 sch	3 sch Transcription Elective*** 3 sch Medical Information Management (BOT 2753) 3 sch Advanced Microcomputer Applications (BOT 2713) 3 sch Social/Behavioral Science Elective 3 sch Humanities/Fine Arts Elective <hr style="width: 100%;"/> 15 sch
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* Students who lack entry level skills in math, English, science, etc., will be provided related studies.

** Baseline competencies are taken from the high school Business and Computer Technology program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

*** The Transcription electives will be chosen from Machine Transcription (BOT 1513), Medical Machine Transcription I (BOT 2523), and Medical Machine Transcription II (BOT 2533).

**** The Technical elective will be chosen from Records Management (BOT 1413) or Fundamentals of Medical Insurance Coding (BOT 2763)

COMPUTER NETWORK SUPPORT TECHNOLOGY

PROGRAM DESCRIPTION

Computer Network Support Technology is a two year program which offers training in telecommunications, network administration, and client/server systems. An Associate of Applied Science degree is earned upon successful completion of the Network Support curriculum. Successful completion of the first year entitles a student to a certificate of completion in Network Operations.

SUGGESTED COURSE SEQUENCE

First Year

3 sch	Written Communications Elective	3 sch	Social/Behavioral Science Elective
3 sch	Operating Platforms (CPT 1333)	4 sch	Survey of Microcomputer Applications (CPT 1324)
4 sch	Computer Concepts (CPT 1124)	3 sch	Internet Concepts (CNT 1513)
3 sch	Fundamentals of Data Communications (CNT 1413)	4 sch	Network Operating Systems Elective*
4 sch	Programming Elective^	3 sch	Network Components (CNT 1523)
<hr/>		<hr/>	
17 sch		17 sch	

Second Year

4 sch	Network Operating Systems Elective*	3 sch	Oral Communications Elective
3 sch	Business Communications (BOT 2813)	4 sch	Project Management (CNT 2544)
3 sch	Math/Science Elective	3 sch	Technical Elective
3 sch	System Maintenance (CNT 2423)	3 sch	Elective
2 sch	Network Planning and Design (CNT 2532)	3 sch	Humanities/Fine Arts Elective
<hr/>		<hr/>	
15 sch		16 sch	

- * Network Operating Systems electives should be chosen from the following list:
 - 4 sch Network Administration Using Novell (CNT 1614)
 - 4 sch Advanced Network Administration Using Novell (CNT 2634)
 - 4 sch Network Administration Using Microsoft Windows NT Server (CNT 1624)
 - 4 sch Advanced Network Administration Using Microsoft Windows NT Server (CNT 2644)

- ^ Programming electives should be chosen from the following list:
 - 4 sch Basic Programming Language (CPT 1214)
 - 4 sch RPG Programming Language (CPT 1224)
 - 4 sch COBOL Programming Language (CPT 1234)
 - 4 sch Database Programming (CPT 2244)
 - 4 sch Control Language Programming (CPT 2254)
 - 4 sch Advanced RPG Programming Language (CPT 2264)
 - 4 sch Advanced Cobol Programming Language (CPT 2274)
 - 4 sch C Programming Language (CPT 2284)

- ** Students who lack entry level skills in math, English, science, etc., will be provided related studies.

CONSTRUCTION MATERIALS TESTING TECHNOLOGY

PROGRAM DESCRIPTION

CONSTRUCTION MATERIALS TESTING TECHNOLOGY

This instructional program prepares technicians to apply basic construction principles and technical skills in support of engineers and contractors engaged in designing and developing heavy construction. The program includes instruction in quality control and testing procedures, building site analysis, analysis and repair of paved surfaces, test equipment operation and maintenance, documentation of work, and safety procedures.

SUGGESTED COURSE SEQUENCE*

FIRST YEAR

3 sch	Fundamentals of Soil and Aggregate Systems (CMT 1113)	3 sch	Mix Proportioning of Hot Mix Asphalt (CMT 1123)
3 sch	Written Communications Elective	3 sch	Property of Materials of Construction (CMT 1133)
3 sch	Fundamentals of Microcomputer Applications (CPT 1113)	3 sch	Rigid and Flexible Pavements (CMT 1313)
4 sch	Materials Testing (CMT 1224)	3 sch	Principles of CAD (DDT 1313)
3 sch	Mechanics of Materials (CMT 1213)	3 sch	Math/Science Elective
		<hr/>	15 sch
<hr/>	16 sch		

SECOND YEAR

3 sch	Elementary Surveying (DDT 1413)	3 sch	Humanities/Fine Arts Elective
4 sch	Proportioning of Portland Cement Concrete (CMT 2324)	3 sch	Social/Behavioral Science Elective
3 sch	Oral Communications Elective	3 sch	Quality Control and Inspection (CMT 2343)
7 sch	Technical Electives	3 sch	Maintenance and Repair of Paved Roads (CMT 2443)
		4 sch	Technical Electives
<hr/>	17 sch	<hr/>	16 sch

- * Students who lack entry level skills in math, English, sciences, etc., will be provided related studies.

TECHNICAL ELECTIVES

- 3 sch Science and Technology (ATE 1113)
- 4 sch Fundamentals of Drafting (DDT 1114)
- 3 sch Descriptive Geometry (DDT 1153)
- 3 sch Statics and Strength of Materials (DDT 2253)
- 3 sch Mapping and Topography (DDT 2423)
- 3 sch Highway Drafting (DDT 2533)
- 1-3 sch Special Problem in Construction Materials Testing Technology [CMT 291(1-3)]
- 1-6 sch Supervised Work Experience in Construction Materials Testing Technology [CMT 292(1-6)]
- 1-6 sch Work-Based Learning I, II, III, IV, V, VI [WBL 191(1-6), WBL 192(1-6), WBL 193(1-6), WBL 291(1-6), WBL 292 (1-6), WBL 293 (1-6)]

DRAFTING AND DESIGN CLUSTER
ARCHITECTURAL DRAFTING TECHNOLOGY
PROGRAM DESCRIPTION

The Drafting and Design Technology program of study is designed to provide specialized occupational instruction in all phases of drafting technology in order to prepare students for positions in the drafting field. A combination of classwork and laboratory experience is stressed. Successful completion of a minimum of 64 semester credit hours of coursework in a two-year program leads to an Associate in Applied Science degree. Students who successfully complete a minimum of 46 semester hours in drafting and design technology courses may earn a vocational certificate in general drafting.

The Drafting and Design Technology Concentration allows students to obtain skills and knowledge related to several fields of the drafting and design industry. The Architectural Drafting Technology Concentration provides students with specialized skills in the architectural drafting and design field.

The content of this curriculum framework is based on national standards as developed by the Foundation for Industrial Modernization (1994), National Skill Standards for Computer-Aided Drafting and Design.

DRAFTING AND DESIGN CLUSTER
ARCHITECTURAL DRAFTING TECHNOLOGY
SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Drafting and Design Cluster**

ASSOCIATE DEGREE

FIRST YEAR

4 sch	Fundamentals of Drafting (DDT 1114)	3 sch	Machine Drafting I (DDT 1133)
3 sch	Elementary Surveying (DDT 1413)	3 sch	Intermediate CAD (DDT 1323)
3 sch	Principles of CAD (DDT 1313)	3 sch	Elective
3 sch	Written Communications Elective	3 sch	Oral Communications Elective
3 sch	Math/Science Elective	3 sch	Technical Elective
<hr style="width: 100%;"/>		<hr style="width: 100%;"/>	
16 sch		15 sch	

SECOND YEAR

3 sch	Architectural Design I (DDT 1613)	3 sch	Structural Drafting (DDT 2233)
3 sch	Advanced CAD (DDT 2343)	3 sch	Mapping and Topography (DDT 2423)
6 sch	Technical Electives	3 sch	Architectural Design II (DDT 2623)
3 sch	Social/Behavioral Science Elective	3 sch	Technical/Restrictive Elective***
3 sch	Humanities/Fine Arts Elective	3 sch	Technical Elective
<hr style="width: 100%;"/>		<hr style="width: 100%;"/>	
18 sch		15 sch	

* Students who lack entry level skills in math, English, science, etc. will be provided related studies.

** Baseline competencies are taken from the high school General Drafting program. Students who can document attainment of these competencies should not receive duplicate instruction. Students who cannot demonstrate attainment will be required to do so.

*** Technical/restrictive elective includes math, science, or technology.

TECHNICAL ELECTIVES - ARCHITECTURAL DRAFTING TECHNOLOGY

- 3 sch Science and Technology (ATE 1113)
- 3 sch Database Construction and Maintenance (GIT 2113)
- 3 sch Fundamentals of Geographical Information Systems (GIT 2123)
- 3 sch Principles of Image Processing (GIT 2133)
- 3 sch Advanced Geographical Information Systems (GIT 2263)
- 3 sch Remote Sensing (GIT 2273)
- 3 sch Geometric Dimensioning and Tolerancing (DDT 1143)
- 3 sch Descriptive Geometry (DDT 1153)
- 3 sch Construction Materials (DDT 1213)
- 3 sch Fundamentals of Machining Processes (DDT 1713)
- 3 sch Design for Manufacturing (DDT 1913)
- 3 sch Cost Estimating (DDT 2243)
- 3 sch Statics and Strength of Materials (DDT 2253)
- 3 sch Legal Principles of Surveying (DDT 2433/CIT 2113)
- 3 sch Advanced Surveying (DDT 2443/CIT 2434)
- 3 sch GPS/GIS Surveying (DDT 2453/CIT 2424)
- 3 sch Electronic Drafting (DDT 2513)
- 3 sch Pipe Drafting (DDT 2523)
- 3 sch Highway Drafting (DDT 2533)
- 3 sch Steel Ship Building and Design (DDT 2543)
- 3 sch Fundamentals of Multimedia (DDT 2713)
- 1-3 sch Special Project [DDT 291(1-3)]
- 1-6 sch Supervised Work Experience in Drafting and Design Technology
[DDT 292(1-6)]
- 1-6 sch Work-Based Learning I, II, III, IV, V, and VI [(WBL 191(1-6), WBL 192(1-6),
WBL 193(1-6), WBL 291(1-6), WBL 292(1-6), WBL 293(1-6)]

DRAFTING AND DESIGN CLUSTER
SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Drafting and Design Cluster**

ASSOCIATE DEGREE

FIRST YEAR

4 sch	Fundamentals of Drafting (DDT 1114)	3 sch	Machine Drafting I (DDT 1133)
3 sch	Elementary Surveying (DDT 1413)	3 sch	Intermediate CAD (DDT 1323)
3 sch	Principles of CAD (DDT 1313)	3 sch	Elective
3 sch	Written Communications Elective	3 sch	Oral Communications Elective
3 sch	Math/Science Elective	3 sch	Descriptive Geometry (DDT 1153)
<hr/>		<hr/>	
16 sch		15 sch	

SECOND YEAR

3 sch	Architectural Design I (DDT 1613)	3 sch	Structural Drafting (DDT 2233)
3 sch	Advanced CAD (DDT 2343)	3 sch	Mapping and Topography (DDT 2423)
6 sch	Technical Electives	6 sch	Technical Elective
3 sch	Humanities/Fine Arts Elective	3 sch	Technical/Restrictive Elective***
3 sch	Social/Behavioral Science Elective		
<hr/>		<hr/>	
18 sch		15 sch	

* Students who lack entry level skills in math, English, science, etc. will be provided related studies.

** Baseline competencies are taken from the high school General Drafting program. Students who can document attainment of these competencies should not receive duplicate instruction. Students who cannot demonstrate attainment will be required to do so.

*** Technical/restrictive elective includes math, science, or technology.

TECHNICAL ELECTIVES - DRAFTING AND DESIGN TECHNOLOGY

- 3 sch Science and Technology (ATE 1113)
- 3 sch Database Construction and Maintenance (GIT 2113)
- 3 sch Fundamentals of Geographical Information Systems (GIT 2123)
- 3 sch Principles of Image Processing (GIT 2133)
- 3 sch Advanced Geographical Information Systems (GIT 2263)
- 3 sch Remote Sensing (GIT 2273)
- 3 sch Geometric Dimensioning and Tolerancing (DDT 1143)
- 3 sch Construction Materials (DDT 1213)
- 3 sch Fundamentals of Machining Processes (DDT 1713)
- 3 sch Design for Manufacturing (DDT 1913)
- 3 sch Machine Drafting II (DDT 2163)
- 3 sch Cost Estimating (DDT 2243)
- 3 sch Statics and Strength of Materials (DDT 2253)
- 3 sch Quality Assurance (DDT 2263)
- 3 sch Computer Numerical Control (CNC) Drafting (DDT 2363)
- 3 sch Legal Principles of Surveying (DDT 2433/CIT 2113)
- 3 sch Advanced Surveying (DDT 2443/CIT 2434)
- 3 sch GPS/GIS Surveying (DDT 2453/CIT 2424)
- 3 sch Electronic Drafting (DDT 2513)
- 3 sch Pipe Drafting (DDT 2523)
- 3 sch Highway Drafting (DDT 2533)
- 3 sch Steel Ship Building and Design (DDT 2543)
- 3 sch Architectural Design II (DDT 2623)
- 3 sch Fundamentals of Multimedia (DDT 2713)
- 1-3 sch Special Project [DDT 291(1-3)]
- 1-6 sch Supervised Work Experience in Drafting and Design Technology [DDT 292(1-6)]
- 1-6 sch Work-Based Learning I, II, III, IV, V, and VI [WBL 191(1-6), WBL 192(1-6), WBL 193(1-6), WBL 291(1-6), WBL 292(1-6), WBL 293(1-6)]

DRAFTING AND DESIGN CLUSTER
SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Drafting and Design Cluster**

VOCATIONAL CERTIFICATE

<u>First Semester</u>		<u>Second Semester</u>	
4 sch	Fundamentals of Drafting (DDT 1114)	3 sch	Machine Drafting II (DDT 2163)
3 sch	Principles of CAD (DDT 1313)	3 sch	Architectural Design I (DDT 1613)
3 sch	Machine Drafting I (DDT 1133)	3 sch	Intermediate CAD (DDT 1323)
3 sch	Elementary Surveying (DDT 1413)	3 sch	Mapping and Topography (DDT 2423)
3 sch	Technical Elective	3 sch	Technical Elective
16 sch		15 sch	

<u>Third Semester</u>	
3 sch	Architectural Design II (DDT 2623)
3 sch	Advanced CAD (DDT 2343)
3 sch	Special Project (DDT 2913)
6 sch	Technical Electives
15 sch	

* Students who lack entry level skills in math, English, science, etc., will be provided related studies.

** Baseline competencies are taken from the high school General Drafting program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

TECHNICAL ELECTIVES

- 3 sch Geometric Dimensioning and Tolerancing (DDT 1143)
- 3 sch Descriptive Geometry (DDT 1153)
- 3 sch Construction Materials (DDT 1213)
- 3 sch Fundamentals of Machining Processes (DDT 1713)
- 3 sch Design for Manufacturing (DDT 1913)
- 3 sch Structural Drafting (DDT 2233)
- 3 sch Cost Estimating (DDT 2243)
- 3 sch Statics and Strength of Materials (DDT 2253)
- 3 sch Electronic Drafting (DDT 2513)
- 3 sch Pipe Drafting (DDT 2523)
- 3 sch Highway Drafting (DDT 2533)
- 3 sch Steel Ship Building and Design (DDT 2543)
- 3 sch Fundamentals of Multimedia (DDT 2713)
- 1-6 sch Supervised Work Experience in Drafting and Design Technology
[DDT 292(1-6)]
- 1-6 sch Work-Based Learning I, II, III, IV, V, and VI [(WBL 191(1-6), WBL 192(1-6),
WBL 193(1-6), WBL 291(1-6), WBL 292(1-6), WBL 293(1-6)]

DRAFTING AND DESIGN CLUSTER

GEOGRAPHICAL INFORMATION SYSTEMS TECHNOLOGY

PROGRAM DESCRIPTION

This program prepares a person for entry level positions in the geographical information systems field. Geographical Information Systems (GIS) is an integrated database management system in which geographic or spatial relationships are used to store, organize, retrieve, and analyze resource data for use in the decision making process. The curriculum includes computer-assisted drafting, map making, database management, surveying, and applications of geographical information systems.

GIS technicians work under the supervision of GIS engineers, managers, cartographers, and surveyors to store, organize, retrieve, and analyze resource data for planning and decision making. The need for specialists in this area has become readily apparent with the rapid development and implementation of GIS technology.

A minimum of 64 semester credit hours is required to receive the Associate of Applied Science Degree in Geographical Information Systems Technology. Students who complete a minimum of 34 semester hours in the program may be eligible to receive a certificate in Geographical Information Systems.

DRAFTING AND DESIGN CLUSTER
GEOGRAPHICAL INFORMATION SYSTEMS*

Baseline Competencies for Drafting and Design Cluster**

SUGGESTED COURSE SEQUENCE

CERTIFICATE PROGRAM

A Certificate of Geographical Information Systems may be awarded to a student who successfully completes the 34 semester credit hours of required courses.

FIRST YEAR

3 sch	Elementary Surveying (DDT 1413)		3 sch	Advanced Geographical Information Systems (GIT 2263)
3 sch	Database Construction and Maintenance (GIT 2113)		3 sch	Intermediate CAD (DDT 1323)
4 sch	Fundamentals of Drafting (DDT 1114)		3 sch	Mapping and Topography (DDT 2423)
3 sch	Fundamentals of Geographical Information Systems (GIS) (GIT 2123)		3 sch	Remote Sensing (GIT 2273)
3 sch	Principles of CAD (DDT 1313)		6 sch	Technical Electives [†]
			18 sch	
16 sch				

* Students who lack entry level skills in math, English, science, etc., will be provided related studies.

** Baseline competencies are taken from the high school General Drafting program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

†APPROVED ELECTIVES

- 3 sch Principles of Image Processing (GIT 2133)
- 3 sch Advanced CAD (DDT 2343)
- 3 sch Advanced Surveying (DDT 2443/CIT 2434)
- 3 sch GPS/GIS Surveying (DDT 2453/CIT 2424)
- 1-3 sch Special Problem in Geographical Information Systems Technology [GIT 291(1-3)]
- 1-6 sch Supervised Work Experience in Geographical Information Systems Technology [GIT 292(1-6)]
- 1-6 sch Work-Based Learning I, II, III, IV, V, and VI [WBL 191(1-6), WBL 192(1-6), WBL 193(1-6), WBL 291(1-6), WBL 292(1-6), WBL 293(1-6)]

DRAFTING AND DESIGN CLUSTER

GEOGRAPHICAL INFORMATION SYSTEMS TECHNOLOGY*

Baseline Competencies for Drafting and Design Cluster**

SUGGESTED COURSE SEQUENCE

ASSOCIATE DEGREE PROGRAM

FIRST YEAR

3 sch	Elementary Surveying (DDT 1413)	3 sch	Descriptive Geometry (DDT 1153)
4 sch	Fundamentals of Drafting (DDT 1114)	3 sch	Intermediate CAD (DDT 1323)
3 sch	Principles of CAD (DDT 1313)	3 sch	Technical Elective [†]
3 sch	Math/Science Elective	3 sch	Principles of Geography (GEO 1123)
3 sch	Written Communications Elective	3 sch	Oral Communications Elective
<hr/>		<hr/>	
16 sch		15 sch	

SECOND YEAR

3 sch	Principles of Image Processing (GIT 2133)	3 sch	Advanced Geographical Information Systems (GIT 2263)
3 sch	Mapping and Topography (DDT 2423)	3 sch	Physical Geology (GLY 1113)
3 sch	Database Construction and Maintenance (GIT 2113)	1 sch	Physical Geology Lab (GLY 1111)
3 sch	Fundamentals of Geographical Information Systems (GIS) (GIT 2123)	3 sch	Remote Sensing (GIT 2273)
3 sch	Technical Electives [†]	3 sch	Technical Electives [†]
3 sch	Humanities/Fine Arts Elective	3 sch	Social/Behavioral Science Elective
<hr/>		<hr/>	
18 sch		16 sch	

- * Students who lack entry level skills in math, English, science, etc. will be provided related studies.
- ** Baseline competencies are taken from the high school General Drafting program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

† APPROVED ELECTIVES

- 3 sch Science and Technology (ATE 1113)
- 3 sch Advanced CAD (DDT 2343)
- 3 sch Advanced Surveying (DDT 2443/CIT 2434)
- 3 sch GPS/GIS Surveying (DDT 2453/CIT 2424)
- 3 sch Highway Drafting (DDT 2533)
- 1-3 sch Special Problem in Geographical Information Systems Technology [GIT 291(1-3)]
- 1-6 sch Supervised Work Experience in Geographical Information Systems Technology [GIT 292(1-6)]
- 3 sch Trigonometry (MAT 1323)
- 1-6 sch Work-Based Learning I, II, III, IV, V, and VI [WBL 191(1-6), WBL 192(1-6), WBL 193(1-6), WBL 291(1-6), WBL 292(1-6), WBL 293(1-6)]

ENVIRONMENTAL TECHNOLOGY

PROGRAM DESCRIPTION

The Environmental Technology Program is designed to prepare technicians for employment in the diverse field of environmental protection and hazardous materials management. Individuals currently employed as environmental professionals will enhance their ability to perform their duties in business, industry, and emergency services.

This curriculum leads to an Associate of Applied Science degree. Students completing the program will be prepared for jobs in handling, storing, monitoring, and disposing of hazardous materials, by-products, and wastes. In the program, students learn about air, water and soil pollution; water and wastewater treatment operations, and environment and workplace safety issues. They also learn how to respond to a hazardous material emergency--how to identify the hazard, secure the area, take protective measures, notify the proper authorities, obtain medical assistance, and deal with the media. Through an internship program, students have the opportunity to work in a position related to environmental technology.

SUGGESTED COURSE SEQUENCE*

FIRST YEAR

4 sch	Environmental Science (EVT 1114)	4 sch	Air Quality (EVT 1414)
5 sch	Fundamentals of Hazardous Materials (EVT 1215)	4 sch	Water Treatment Operations (EVT 1514)
3 sch	Math/Science Elective	4 sch	General Chemistry I (CHE 1214)
4 sch	Wastewater Treatment Operations (EVT 1314)	3 sch	Elective**
		<hr/>	
<hr/>		15 sch	
16 sch			

SECOND YEAR

4 sch	Environmental Engineering Technology (EVT 2124)	4 sch	Environmental Safety (EVT 2714)
4 sch	Solid Waste Management (EVT 2614)	4 sch	Hazardous Materials Regulations (EVT 2224)
3 sch	Oral Communications Elective	3 sch	Behavioral/Social Science Elective
3 sch	Elective***	3 sch	Written Communications Elective
3 sch	Humanities/Fine Arts Elective	3 sch	Elective****
<hr/>		<hr/>	
17 sch		17 sch	

* Students who lack entry level skills in math, English, sciences, etc., will be provided related studies.

** Electives

Science and Technology (ATE 1113)
Principles of Chemistry (CHE 1314)
General Chemistry II (CHE 1224)
Chemistry of Hazardous Materials (FFT 2613)

*** Electives

Microcomputers and Business Management (BAD 2533)
Document Formatting and Production (BOT 1113)
Electronic Spreadsheet (BOT 1813)
Fundamentals of Microcomputer Applications (CPT 1113)

**** Electives

Hazardous Materials Emergency Response (EVT 2813)
Supervised Work Experience in Environmental Technology [EVT 292(1-6)]
Special Problem in Environmental Technology [EVT 291(1-3)]
Work-Based Learning I, II, III, IV, V, VI [WBL 191(1-3), WBL 192(1-3), WBL 193(1-3),
WBL 291(1-3), WBL 292(1-3), WBL 293(1-3)]

INDUSTRIAL MAINTENANCE MECHANICS

PROGRAM DESCRIPTION

The Industrial Maintenance Mechanics curriculum is a technical program designed to prepare students for entry-level employment as multi-skilled maintenance workers. Industrial maintenance trade workers are responsible for assembling, installing, and maintaining/repairing machinery used in the manufacturing process. Students receive basic instruction in a wide variety of areas including safety, machinery maintenance and troubleshooting/service, blueprint reading, basic welding and cutting operations, basic machining operations, fundamentals of piping and hydro-testing, and fundamentals of industrial electricity.

Certificate programs in Industrial Maintenance Mechanics require a minimum of 32 semester hours credit. The courses for a vocational certificate may be taught as open entry-open exit courses in which case the courses will be taught as laboratory classes only. The technical program in Industrial Maintenance Mechanics requires a minimum of 65 semester credit hours. Fifteen semester credit hours of academic core courses are included in the technical program.

ASSOCIATE DEGREE

SUGGESTED COURSE SEQUENCE*

<u>First Semester</u>		<u>Second Semester</u>	
1 sch	Industrial Maintenance Safety (IMM 1111)	4 sch	Principles of Hydraulics and Pneumatics (IMM 1314)
2 sch	Industrial Maintenance Math and Measurement (IMM 1122)	5 sch	Pump and Valve Operations (IMM 1415)
2 sch	Industrial Maintenance Blueprint Reading (IMM 1132)	5 sch	Equipment Installation and Alignment (IMM 1515)
3 sch	Industrial Hand Tools and Mechanical Components (IMM 1213)	3 sch	Written Communications Elective
5 sch	Precision Machining Operations (IMM 1235)	<hr/>	17 sch
3 sch	Math/Science Elective		
<hr/>	16 sch		

SECOND YEAR

<u>First Semester</u>		<u>Second Semester</u>	
4 sch	Industrial Electricity (IMM 2124)	4 sch	Industrial Welding and Metals (IMM 2134)
4 sch	Equipment Maintenance, Troubleshooting, and Repair (IMM 2114)	3 sch	Humanities/Fine Arts Elective
		3 sch	Social/Behavioral Science Elective
5 sch	Industrial Piping and Hydro-Testing (IMM 2145)	6 sch	Technical Electives
3 sch	Oral Communications Elective		
2 sch	Technical Elective		
		<hr/>	
		16 sch	
<hr/>			
16 sch			

*Students who lack entry level skills in math, English, science, etc. will be provided related studies.

TECHNICAL ELECTIVES

3 sch	Science and Technology (ATE 1113)
4 sch	Power Tool Applications (IMM 1224)
4 sch	Preventive Maintenance and Service of Equipment (IMM 1524)
3 sch	Methods of Layout (IMM 1713)
3 sch	Structural Repair (IMM 1723)
4 sch	Maintenance Welding and Metals (IMM 1734)
1-3 sch	Special Project in Industrial Maintenance Mechanics [IMM 191(1-3)]
1-6 sch	Supervised Work Experience in Industrial Maintenance Mechanics [IMM 192(1-6)]
1-6 sch	Work-Based Learning I, II, III, IV, V, VI [WBL 191(1-6), WBL 192(1-6), WBL 193(1-6), WBL 291(1-6), WBL 292(1-6), WBL 293(1-6)]

PLASTICS TECHNOLOGY

PROGRAM DESCRIPTION

The Plastics Technology program provides classroom and laboratory instruction in plastics materials and processes. Included are polymer properties, quality control procedures, and operation and troubleshooting of various types of plastics processing equipment.

Students of the Plastics Technology Program completing the first year of the program may receive a Certificate of Plastics Technology. Students who complete the two-year program are eligible to receive the Associate of Applied Science Degree in Plastics Technology. Employment opportunities for graduates of the certificate program may exist as skilled operators. The graduates of the technical program may qualify as technicians or supervisors of processes in the plastics industry. Graduates may expect to enter the plastics manufacturing business in production, maintenance, and technical areas. Employment opportunities include setup technician, process engineer technician, lead person, supervisor, molding and quality control technician, plastics engineering technician, maintenance coordinator, and research and development technician.

SUGGESTED COURSE SEQUENCE

FIRST YEAR

First Semester

3 sch	Introduction to Plastics Materials and Processing (PLT 1213)
3 sch	Injection Molding I (PLT 1313)
7 sch	Power Machinery I (MST 1117)
3 sch	Fundamentals of Microcomputer Applications (CPT 1113)
3 sch	Math/Natural Science Elective

19 sch

Second Semester

3 sch	Plastics Tooling Construction Principles (PLT 2213)
3 sch	Process Control for Injection Molding (PLT 1333)
3 sch	Polymer Material Properties (PLT 1223)
3 sch	Technical Elective
3 sch	Written Communications Elective

15 sch

SECOND YEAR

First Semester

3 sch Plastics Extrusion (PLT 2413)
 4 sch Injection Molding II
 (PLT 2324)
 3 sch Technical Elective
 3 sch Social/Behavioral Science
 Elective
 3 sch Humanities/Fine Arts Elective

 16 sch
Second Semester

4 sch Troubleshooting Plastics
 Processes (PLT 2514)
 4 sch Computer Numerical Control
 Operations I (MST 2714)
 4 sch Plastics Quality Control
 (PLT 2614)
 3 sch Technical Elective
 3 sch Oral Communications Elective

 18 sch

- * Students who lack entry level skills in math, English, science, etc. will be provided related studies.

TECHNICAL ELECTIVES

4 sch DC Circuits (EET 1114)
 3 sch AC Circuits (EET 1123)
 3 sch Blow Molding/Thermoforming (PLT 2713)
 3 sch Blueprint Reading (MST 1413)
 3 sch Science and Technology (ATE 1113)
 4 sch Fundamentals of Drafting (DDT 1114)
 3 sch Human Resource Management (MMT 2233)
 3 sch Industrial Hydraulics (ROT 1213)
 3 sch Fundamentals of Robotics (ROT 1113)
 4 sch Power Machinery II (MST 1127)
 3 sch Principles of Computer Assisted Drafting (CAD) (DDT 1313)
 1-3 sch Special Problem in Plastics Technology [PLT (291(1-3))]
 1-6 sch Supervised Work Experience in Plastics Technology [PLT292(1-6)]
 1-6 sch Work-Based Learning I, II, III, IV, V, VI [WBL 191(1-6), WBL 192(1-6),
 WBL 193(1-6), WBL 291(1-6), WBL 292 (1-6), WBL 293 (1-6)]

VEHICLE AND MOBILE EQUIPMENT MECHANICS TECHNOLOGY

PROGRAM DESCRIPTION

Postsecondary Vehicle and Mobile Equipment Mechanics Technology is an instructional program that provides students with a foundation of skills and knowledge related to the service and repair of vehicles and power equipment. Students who complete the program may enter employment in an entry level position. Students receive instruction in the maintenance and service of a variety of vehicles including small equipment, automobiles, trucks, and tractors/construction equipment. The program of study includes instruction in the foundation skills related to safety, tool and equipment usage, measurement, basic vehicle service, and brake and electrical system service. Also, instruction in the program provides students with foundation skills related to gasoline and diesel engine performance, drive trains, steering and suspension systems, air conditioning/heating, and hydraulic service.

ASSOCIATE DEGREE

SUGGESTED COURSE SEQUENCE*

Baseline Competencies for Vehicle and Mobile Equipment Mechanics Technology**

FIRST YEAR

3 sch	Fundamentals of Equipment Mechanics (VMT 1113)	4 sch	Basic Fuel Systems (VMT 1614)
3 sch	Electrical Systems (VMT 1123)	4 sch	Basic Engine Performance (VMT 1414)
3 sch	Brakes (VMT 1213)	5 sch	Engine Repair (VMT 1715)
5 sch	Power Trains (VMT 1315)	3 sch	Math/Science Elective
3 sch	Written Communications Elective	<hr/>	16 sch
<hr/>	17 sch		

SECOND YEAR

5 sch	Computer Controlled Emission Systems (VMT 2525)	4 sch	Heating and Air Conditioning (VMT 2614)
4 sch	Steering and Suspension Systems (VMT 2334)	3 sch	Wheel Alignment (VMT 2343)
3 sch	Technical Elective	3 sch	Oral Communication Elective
3 sch	Humanities/Fine Arts Elective	3 sch	Technical Elective
		3 sch	Social/Behavioral Science Elective
<hr/>			
15 sch		<hr/>	16 sch

* Students who lack entry level skills in math, English, science, etc. will be provided related studies.

** Baseline competencies are taken from the high school Vehicle and Mobile Equipment Mechanics program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

TECHNICAL ELECTIVES

3 sch	Science and Technology (ATE 1113)
3 sch	Fundamentals of Small Engines (VMT 1133)
5 sch	Automatic Transmissions/Transaxles (VMT 2325)
5 sch	Computerized Engine Controls (VMT 2535)
3 sch	Hydraulics (VMT 1513)
3 sch	Engine Troubleshooting and Tune-Up (VMT 2243)
3 sch	Advanced Brake Systems (Air) (VMT 2623)
1-6 sch	Special Problem in Vehicle and Mobile Equipment Mechanics Technology [VMT 291(1-6)]
1-6 sch	Supervised Work Experience in Vehicle and Mobile Equipment Mechanics Technology [VMT 292(1-6)]
1-6 sch	Work-Based Learning I, II, III, IV, V, VI [WBL 191(1-6), WBL 192(1-6), WBL 193(1-6), WBL 291(1-6), WBL 292 (1-6), WBL 293 (1-6)]

LISTING OF COURSES

ALLIED HEALTH AND RELATED TECHNOLOGY
Medical Assisting Technology
Occupational Therapy Assistant

MEDICAL ASSISTING TECHNOLOGY COURSES



Course Name: Medical Terminology

Course Abbreviation: MET 1113

Classification: Vocational-Technical Core

Description: This course is a study of medical language relating to the various body systems including diseases, physical conditions, procedures, clinical specialties, and abbreviations. Emphasis is placed on correct spelling and pronunciation, and the use of computer assisted software. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Medical Business Practices

Course Abbreviation: MET 1214

Classification: Vocational-Technical Core

Description: This course presents the administrative medical assistant procedures with office management; written and oral communications; management of physician's professional schedule and travel arrangements. Emphasis is placed on billing, collecting, and types of bookkeeping. Its aim is to provide the student with practice situations through the use of simulated office settings, pegboard simulation, and demonstration. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: Fundamentals of Microcomputer Applications (CPT 1113) or equal, Medical Terminology (MET 1113)



Course Name: Clinical Procedures I

Course Abbreviation: MET 1313

Classification: Vocational-Technical Core

Description: The purpose of this course is to introduce the student to clinical skills, emphasizing the importance of being proficient. This course also provides students with opportunities to practice and demonstrate proficiency in simulated settings and checkoffs. (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/Corequisites: Successful completion of Medical Terminology (MET 1113), Pharmacology for Medical Assistants (MET 1513), and CPR-Health Care Provider certification.



Course Name: Clinical Procedures II

Course Abbreviation: MET 1323

Classification: Vocational-Technical Core

Description: This course is a continuation of Clinical Procedures I and will further the student's knowledge of the more complex activities encountered in the physician's office. The clinical duties include maintaining surgical asepsis, instructing patients in preparation for radiologic and sonographic studies, performing EKG's, preparing and administering medications as directed by the physician, and providing mobility assistance. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Clinical Procedures I (MET 1313), Medical Terminology (MET 1113), and Pharmacology for Medical Assistants (MET 1513)



Course Name: Medical Law and Ethics

Course Abbreviation: MET 1413

Classification: Vocational-Technical Core

Description: This course covers medical law, ethics, and acts; legal relationship of physician and patient; legal responsibilities of the medical assistant; and professional liability. (3 sch: 3 hr. lecture)

Prerequisites: None



Course Name: Pharmacology for Medical Assistants

Course Abbreviation: MET 1513

Classification: Vocational-Technical Core

Description: The course reflects basic theory and clinical information related to drugs, including classifications, source, dosages and measurements, regulatory requirements, and basic principles of drug administration. At all times, safety is emphasized for the health professional administering the medication and the patients receiving the medication. Accuracy is stressed. (3 sch: 3 hr. lecture)

Prerequisites: None



Course Name: Computer Concepts for Medical Assistants

Course Abbreviation: MET 2224

Classification: Vocational-Technical Elective

Description: This course will introduce students to the capabilities of a medical practice management software program typical of those currently used in doctors' offices. After completion of this course, the students will have knowledge about working with patient accounts, insurance claim forms, and handling reports dealing with management of the medical practice. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Fundamentals of Microcomputer Applications (CPT 1113) or equal



Course Name: Medical Insurance

Course Abbreviation: MET 2234

Classification: Vocational-Technical Core

Description: The purpose of this course is to acquaint the student with different types of insurance, including disability, Worker's Compensation, Medicare, Medicaid, Medicare-Medicaid group plans such as Blue Cross and Blue Shield, and Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). Practical approach to insurance billing, basic medical and insurance abbreviations, terminology, ICD-9-CM and CPT coding will be presented. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: Medical Terminology (MET 1113)



Course Name: Medical Transcription

Course Abbreviation: MET 2243

Classification: Vocational-Technical Core

Description: This transcription course is designed to provide students with a working knowledge of basic medical reports using the listen, stop, and type method to transcribe the dictation. Proofreading and editing skills are applied and accuracy is stressed. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Medical Terminology (MET 1113), Fundamentals of Microcomputer Applications (CPT 1113) or equal



Course Name: Medical Laboratory for Medical Assistants

Course Abbreviation: MET 2334

Classification: Vocational-Technical Core

Description: This course covers techniques of the clinical laboratory including competent use of the microscope, and understanding the theory and knowledge of the common laboratory tests performed in the physician's office. Develops proficiency in laboratory and quality assurance procedures including collection, preparation and processing of specimens, urinalysis, hematology, and biopsy, as well as accurate reporting of test results commonly performed in a physician's office. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: Anatomy and Physiology I (BIO 1514) and II (BIO 1524), Clinical Procedures I (MET 1313), Clinical Procedures II (MET 1323), and Medical Terminology (MET 1113)



Course Name: Clinical Review

Course Abbreviation: MET 2612

Classification: Vocational-Technical Core

Description: This summary course is designed to review the skills, knowledge, and abilities acquired during the didacticum. This course will serve to assist the student in preparing for the certification exam, with a review of critical clinical skills and professional development issues, as well as first aid and cardiopulmonary resuscitation. (2 sch: 2 hr. lecture)

Prerequisites: Concurrent registration in Externship (MET 2716)



Course Name: Externship

Course Abbreviation: MET 2716

Classification: Vocational-Technical Core

Description: This course includes supervised experience in medical offices to provide the student with a comprehensive application of administrative and clinical skills. This course is designed to give the student an opportunity to discuss, evaluate, and share learning experiences and to strengthen learning situations brought up in a clinical externship. (6 sch: 1 hr. lecture, 15 hr. clinical)

Prerequisites: Successful completion of all freshman and first semester sophomore courses are required.



OCCUPATIONAL THERAPY ASSISTANT



Course Name: Foundations of Occupational Therapy

Course Abbreviation: OTA 1113

Classification: Vocational-Technical Core

Description: This intake course is an introduction to the field of occupational therapy including history, role orientation, professional organizational structure, legal and ethical implications, legislation, specific practice arenas, and the process of service delivery. (3 sch: 3 hr. lecture)

Prerequisites: Admission to Occupational Therapy Assistant Program



Course Name: Medical Terminology

Course Abbreviation: OTA 1123

Classification: Vocational-Technical Core

Description: This intake course is a study of medical language relating to body systems including diseases, physical conditions, abbreviations and symbols as applied to occupational therapy. In addition to term definitions, emphasis is placed on uniform terminology. (3 sch: 3 hr. lecture)

Prerequisites: None



Course Name: Pathology of Psychiatric Conditions

Course Abbreviation: OTA 1213

Classification: Vocational-Technical Core

Description: This intake course provides a basic knowledge of psychiatric disorders encountered in occupation therapy practice. Emphasis is on etiology, prognosis, and management of various psychiatric conditions. The role and function of the OTA in the treatment process is also emphasized. (3 sch: 3 hr. lecture)

Prerequisites: None



Course Name: Pathology of Physical Disability Conditions

Course Abbreviation: OTA 1223

Classification: Vocational-Technical Core

Description: This intake course provides a basic knowledge of selected diseases and conditions encountered in occupational therapy practice. Emphasis is on etiology, prognosis, and management of various pathological physical conditions. The role and function of the OTA in the treatment process is also emphasized. (3 sch: 3 hr. lecture)

Prerequisites: None



Course Name: Pathology of Developmental Conditions

Course Abbreviation: OTA 1233

Classification: Vocational-Technical Core

Description: This intake course provides a basic knowledge of selected diseases and conditions encountered in occupational therapy practice. Emphasis is on etiology, prognosis, and management of various pathological developmental conditions. The student will compare and contrast normal and abnormal developmental patterns. The role and function of the OTA in the treatment process is also emphasized. (3 sch: 3 hr. lecture)

Prerequisites: Foundations of Occupational Therapy (OTA 1113)



Course Name: Kinesiology

Course Abbreviation: OTA 1315

Classification: Vocational-Technical Core

Description: This intake course studies individual muscles and muscle functions, biomechanical principles of joint motion, gait patterns, normal movement patterns, and goniometry. (5 sch: 4 hr. lecture, 2 hr. lab)

Prerequisites: Anatomy and Physiology I (BIO 2514), Anatomy and Physiology II (BIO 2524), and Foundations of Occupational Therapy (OTA 1113)



Course Name: Therapeutic Media

Course Abbreviation: OTA 1413

Classification: Vocational-Technical Core

Description: This manipulation course provides knowledge and use of tools, equipment, and basic techniques of woodworking and craft activities as therapeutic media. Emphasis is given to analyzation and instruction of activities frequently used as occupational therapy media. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Fundamentals of Occupational Therapy (OTA 1113) and Medical Terminology (OTA 1123)

Pre/Corequisites: Pathology of Physical Disability Conditions (OTA 1213) and Pathology of Psychiatric Conditions (OTA 1223)



Course Name: Occupational Therapy Skills

Course Abbreviation: OTA 1424

Classification: Vocational-Technical Core

Description: This intake course provides fundamental knowledge of practice skills used with patients/clients across the lifespan and with various diagnoses.

Fundamentals of effective documentation and observation writing are also included. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Group Process

Course Abbreviation: OTA 1513

Classification: Vocational-Technical Core

Description: This manipulative course introduces theory and research findings explaining group dynamics. The course teaches the student how to facilitate group effectiveness and the skills to apply that knowledge in practical situations. Methods and skills necessary to plan, write, and lead an occupational therapy group will be taught. The course focuses on the importance of group activity intervention primarily with the psychiatric population. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: Pathology of Psychiatric Conditions (OTA 1213)

Pre/Corequisites: Pathology of Physical Disability Conditions (OTA 1223)



Course Name: Fieldwork I: Psychosocial/Specialty

Course Abbreviation: OTA 1913

Classification: Vocational-Technical Core

Description: This application course is designed to provide the student with an opportunity to apply their knowledge of the occupational therapy process in clinical fieldwork. The student will also begin to develop professional work habits. Students are expected to function as participant observers in the occupational therapy evaluation and intervention process. (3 sch: 1 hr. lecture, 6 hr. clinical)

Prerequisites: Admission to the Occupational Therapy Assistant Program.



Course Name: Occupational Therapy Assessment

Course Abbreviation: OTA 2613

Classification: Vocational-Technical Core

Description: This manipulation course provides the student with knowledge of assessment procedures, techniques, and instruments used in the practice of occupational therapy. (3 sch: 3 hr. lecture)

Prerequisites: Foundations of Occupational Therapy (OTA 1113), Pathology of Psychiatric Conditions (OTA 1213), Pathology of Physical Disability Conditions (OTA 1223), Kinesiology (OTA 1315), and Therapeutic Media (OTA 1413)



Course Name: Concepts in Occupational Therapy

Course Abbreviation: OTA 2713

Classification: Vocational-Technical Core

Description: This manipulative course studies the theoretical basis for occupational therapy treatment techniques seen in the rehabilitation setting. (3 sch: 3 hr. lecture)

Prerequisites: Foundations of Occupational Therapy (OTA 1113), Medical Terminology (OTA 1123), Pathology of Physical Disability Conditions (OTA 1223), Therapeutic Media (OTA 1413), Occupational Therapy Skills (OTA 1424), and Group Process (OTA 1513)

Pre/Corequisites: Occupational Therapy Assessment (OTA 2613)



Course Name: Health Care Systems

Course Abbreviation: OTA 2811

Classification: Vocational-Technical Core

Description: This intake course provides the student with a basic knowledge of the health care system: the evolution, problems, costs, reimbursement of services, terminology, and regulatory agencies. It also encompasses role delineation, supervision, and ethical and legal responsibilities of occupational therapy practitioners within the health care system. It will provide the student with information and knowledge concerning current trends and future implications within the health care system and the profession of OT. (1 sch: 1 hr. lecture)

Prerequisites: Fundamentals of Occupational Therapy (OTA 1113)



Course Name: Fieldwork II: Psychosocial Disabilities

Course Abbreviation: OTA 2926

Classification: Vocational-Technical Core

Description: This application course synthesizes previous didactic instruction and clinical experiences obtained in Fieldwork I. The Level II assignments require the student to encounter a variety of psychiatric, physical, and developmental conditions in several selected clinical settings. Students will assume increasing responsibilities for evaluating patients and planning/implementing patient progress under appropriate supervision. (6 sch: 18 hr. clinical)

Prerequisites: All OTA courses



Course Name: Fieldwork I: Physical Dysfunction/Pediatrics

Course Abbreviation: OTA 2935

Classification: Vocational-Technical Core

Description: This application course is designed to provide the student with an opportunity to apply their knowledge of the occupational therapy process in clinical fieldwork. The student will also begin to develop professional work habits. Students are expected to function as participant observers in the occupational therapy evaluation and intervention process. (5 sch: 1 hr. lecture, 12 hr. clinical)

Prerequisites: Admission to the Occupational Therapy Assistant Program.



Course Name: Fieldwork II: Physical Dysfunction

Course Abbreviation: OTA 2946

Classification: Vocational-Technical Core

Description: This application course synthesizes previous didactic instruction and clinical experiences obtained in Fieldwork I. The Level II assignments require the student to encounter a variety of psychiatric, physical, and developmental conditions in several selected clinical settings. Students will assume increasing responsibilities for evaluating patients and planning/implementing patient progress under appropriate supervision. (6 sch: 18 hr. clinical)

Prerequisites: All OTA courses



Course Name: Fieldwork II: Pediatric/Specialty

Course Abbreviation: OTA 2955

Classification: Vocational-Technical Core

Description: This application course synthesizes previous didactic instruction and clinical experiences obtained in Fieldwork I. The Level II assignments require the student to encounter a variety of psychiatric, physical, and developmental conditions in several selected clinical settings. Students will assume increasing responsibilities for evaluating patients and planning/implementing patient progress under appropriate supervision. (5 sch: 15 hr. clinical)

Prerequisites: All OTA courses



Course Name: Occupational Therapy Transitions

Course Abbreviation: OTA 2961

Classification: Vocational-Technical Core

Description: This intake course is designed to develop pre-employment skills, promote awareness of legal aspects of occupational therapy, and prepare for the national certification examination. (1 sch: 1 hr. lecture)

Prerequisite: Three semesters of OTA coursework.



AGRICULTURE AND RELATED TECHNOLOGY
Aquaculture Technology

AQUACULTURE TECHNOLOGY

g g g g g**Course Name:** Basic Principles of Aquaculture**Course Abbreviation:** AQC 1113**Classification:** Vocational-Technical Core**Description:** A study of the history, current status, future prospectus, terminology, sources of information, species of aquaculture importance, and safety related to aquaculture. (3 sch: 1 hr. lecture, 4 hr. lab)**Prerequisite:** None**g g g g g****Course Name:** Water Quality Management**Course Abbreviation:** AQC 1214**Classification:** Vocational-Technical Core**Description:** A study of learning to use and maintain water quality, equipment, the role of plankton, and measurement and manipulation of water quality parameters and aeration. (4 sch: 1 hr. lecture, 6 hr. lab)**Prerequisite:** None**g g g g g****Course Name:** Facilities Design and Construction**Course Abbreviation:** AQC 1313**Classification:** Vocational-Technical Core**Description:** A study of site selection, permits, state and federal regulations, pond layout, construction, future growth, estimating cost, and funding. (3 sch: 1 hr. lecture, 4 hr. lab)**Prerequisite:** None**g g g g g****Course Name:** Facility Maintenance**Course Abbreviation:** AQC 1323**Classification:** Vocational-Technical Core**Description:** A study of safety; use of hand and power tools; identification of fittings, valves, pipes, and sizes; maintenance and fabrication of piping systems; operation, installation, troubleshooting, and minor repairs of electric motors; basic operation of gasoline and diesel engines; basic carpentry; and fiberglass repair. (3 sch: 1 hr. lecture, 4 hr. lab)**Prerequisite:** None

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Course Name: Biological Principles of Aquatic Species

Course Abbreviation: AQC 1413

Classification: Vocational-Technical Core

Description: A study of fish, crustaceans, mollusks, and reptiles including anatomy and physiology, terms and definitions, pond ecology, and aquatic plants related to aquaculture. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisite: None

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Course Name: Aquaculture Production I

Course Abbreviation: AQC 1424

Classification: Vocational-Technical Core

Description: Basic aquaculture principles and specific production techniques for catfish, crawfish, shrimp, baitfish, hybrid striped bass, and other species as an ongoing process. Alternative species and culture methods, minor aquaculture crops, aquariums, ornamental ponds, and pond fertilizers. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisite: None

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Course Name: Broodstock and Hatchery Management

Course Abbreviation: AQC 1434

Classification: Vocational-Technical Core

Description: A study of the selection and care of broodstock, hatching eggs, care and feeding of young, natural and artificial propagation, grading, stocking, and hatchery equipment. (4 sch: 1 hr. lecture, 6 hr. lab)

Prerequisite: None

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Course Name: Aquaculture Production II

Course Abbreviation: AQC 1444

Classification: Vocational-Technical Core

Description: Basic aquaculture principles and specific production techniques for catfish, crawfish, shrimp, baitfish, hybrid striped bass, and other species as an ongoing process. Aquatic nutrition, health and disease, use of aquatic chemicals, transportation of aquaculture products, and management of farm ponds. (4 sch: 1 hr. lecture, 6 hr. lab)

Prerequisite: Aquaculture Production I (AQC 1424)

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Course Name: Professional Development

Course Abbreviation: AQC 1511

Classification: Vocational-Technical Core

Description: Career planning strategies to include employment sources, resumé writing, interview skills, and job ethics. (1 sch: 1 hr. lab)

Prerequisite: None



Course Name: Aquabusiness

Course Abbreviation: AQC 1613

Classification: Vocational-Technical Core

Description: Management skills in planning and operating an aquabusiness including personnel management, supervision, budgeting, scheduling, future planning, record keeping, and financing and purchasing. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisite: None



Course Name: Aquaculture Processing and Marketing

Course Abbreviation: AQC 1622

Classification: Vocational-Technical Core

Description: Techniques and procedures utilized for processing and marketing aquaculture products. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisite: None



Course Name: Special Problem in Aquaculture Technology

Course Abbreviation: AQC 1716

Classification: Vocational-Technical Core

Description: This course will provide students the opportunity to apply skills and knowledge obtained in this program through a supervised work setting, special research project, or other project approved by instructor. (6 sch: 18 hr. externship)

Prerequisite: None



Course Name: Integrated Production Systems

Course Abbreviation: AQC/HLT 2724

Classification: Vocational-Technical Core (Associate Degree Program)

Description: Utilizes basic horticulture practices and aquaculture facilities to provide techniques and procedures to maintain a recirculating hydroponic system. (4 sch: 1 hr. lecture, 6 hr. lab)

Prerequisites: Water Quality Management (AQC 1214) and Plant Materials I (HLT 1114) or by permission of instructor



Course Name: Water Garden Design

Course Abbreviation: AQC/HLT 2734

Classification: Vocational-Technical Elective (Associate Degree Program)

Description: A study of the design and construction of water gardens. (4 sch: 1 hr. lecture, 6 hr. lab.)

Prerequisites: Facilities Design and Construction (AQC 1313); or Plant Materials I (HLT 1114), Plant Materials II (HLT 1124), and Landscape Design I (HLT 1513)



Course Name: Aquarium and Water Garden Production

Course Abbreviation: AQC 2814

Classification: Vocational-Technical Elective (Associate Degree Program)

Description: This course will include basic production of the aquarium trade and water garden trade species. (4 sch: 1 hr. lecture, 6 hr. lab.)

Prerequisite: Aquaculture Production I (AQC 1424)



Course Name: Supervised Work Experience in Aquaculture Technology

Course Abbreviation: AQC 292(1-4)

Classification: Vocational-Technical Elective (Associate Degree Program)

Description: A course which is a cooperative program between industry and education and is designed to integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours. (1-4 sch: 3-12 hr. externship)

Prerequisite: Consent of instructor



BUSINESS AND OFFICE TECHNOLOGY
Business and Office and Related Cluster
Accounting Technology
Court Reporting
Medical Office Technology
Computer Network Support Technology

ACCOUNTING TECHNOLOGY



Course Name: Keyboard Speed Building

Course Abbreviation: BOT 1102

Classification: AOC Core (Accounting; Office Systems; and Medical Office)

Description: This course develops speed and accuracy on the keyboard. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisite: Ability to key straight copy material at a minimum of 40 gwpm



Course Name: Document Formatting and Production

Course Abbreviation: BOT 1113

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course emphasizes formatting and production of mailable letters, forms, reports, and tabulations from rough drafts and straight copy. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Ability to key straight copy material at a minimum of 40 gwpm



Course Name: Microcomputer Applications

Course Abbreviation: BOT 1133

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course will introduce an operating system and word processing, spreadsheet, and database management software applications. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Ability to key straight copy material at a minimum of 40 gwpm.



Course Name: Professional Development

Course Abbreviation: BOT 1213

Classification: AOC Core (Accounting; Office Systems; Microcomputer; and Court Reporting)

Description: This course develops an awareness of interpersonal skills essential for job success. Topics include positive self-image, professional image, work ethics, time and stress management, and human relations skills. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Applied Business Math

Course Abbreviation: BOT 1313

Classification: Vocational-Technical Core (Business and Office Cluster; Legal Cluster)

Description: This course is designed to develop competency in mathematics for business use. Ten-key touch method on the electronic desktop calculators is stressed. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Mechanics of Communication

Course Abbreviation: BOT 1423

Classification: Vocational-Technical Core (Business and Office Cluster); AOC Core (Court Reporting)

Description: This course is designed to develop the basic English competencies necessary for success in the business world. A study of the parts of speech, sentence structure, sentence types, capitalization, punctuation, and spelling is emphasized. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Business Accounting

Course Abbreviation: BOT 1433

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course is designed to develop an understanding of recording, classifying, and summarizing business transactions and events with insight into interpreting and reporting the resulting effects upon the business. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Advanced Business Accounting

Course Abbreviation: BOT 1443

Classification: AOC Core (Accounting)

Description: This course is designed as a continuation of Business Accounting. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Business Accounting (BOT 1433)



Course Name: Electronic Spreadsheet

Course Abbreviation: BOT 1813

Classification: AOC Core (Accounting; Office Systems; and Microcomputer)

Description: This course focuses on advanced applications of the electronic spreadsheet as an aid to management decision making. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Applied Business Math (BOT 1313) and Microcomputer Applications (BOT 1133)



Course Name: Desktop Publishing

Course Abbreviation: BOT 2133

Classification: AOC Core (Accounting; Office Systems; and Microcomputer)

Description: This course presents graphic design techniques, principles of page layout and design, and electronic publishing terminology and applications to create a variety of documents such as flyers, brochures, newsletters, and business cards using industry standard desktop publishing software, graphics, and effective design conventions. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Word Processing Applications (BOT 1143)



Course Name: Operating Systems

Course Abbreviation: BOT 2142

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course will provide training in using the computer to work with disk operating systems and a multi-tasking environment. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisite: Microcomputer Applications (BOT 1133)



Course Name: Computerized Accounting

Course Abbreviation: BOT 2413

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course applies basic accounting principles using a computerized accounting system. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Business Accounting (BOT 1433)



Course Name: Income Tax Accounting

Course Abbreviation: BOT 2423

Classification: Vocational-Technical Elective (Accounting)

Description: This course is designed to be an introductory tax accounting class with insight in federal income tax laws and preparation of reports. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Business Accounting (BOT 1433)



Course Name: Payroll Accounting

Course Abbreviation: BOT 2463

Classification: Vocational-Technical Elective (Accounting)

Description: This course provides an in-depth study of payroll accounting. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Computerized Accounting (BOT 2413)



Course Name: Cost Accounting

Course Abbreviation: BOT 2473

Classification: Vocational-Technical Elective (Accounting)

Description: This course provides an in-depth study of cost accounting for manufacturing business. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Business Accounting (BOT 1433)



Course Name: Advanced Microcomputer Applications

Course Abbreviation: BOT 2713

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course develops the ability to use an operating system to integrate activities using applications software including word processing, database, spreadsheet, graphics, and telecommunications. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Microcomputer Applications (BOT 1133)



Course Name: Business Communication

Course Abbreviation: BOT 2813

Classification: Vocational-Technical Core (Business and Office Cluster); AOC Core (Paralegal)

Description: This course develops communication skills with emphasis on principles of writing business correspondence and reports, and analyzing and summarizing information in a logically written presentation. (3 sch: 3 hr. lecture)

Prerequisite: Mechanics of Communication (BOT 1423) and ability to key straight copy material at a minimum of 40 gwpm; or consent of instructor



Course Name: Supervised Work Experience

Course Abbreviation: BOT 2913

Classification: Vocational-Technical Elective (Accounting)

Description: This course provides related on-the-job training in the accounting area. Employing firm and type of work experience to be approved by the Department of Vocational Business Technology. Must be at least 135 clock hours of on-the-job training. (3 sch: 9 hr. externship)

Prerequisite: Business Accounting (BOT 1433)



COURT REPORTING TECHNOLOGY



Course Name: Word Processing Applications

Course Abbreviation: BOT 1143

Classification: Vocational-Technical Core (Business and Office Cluster; Legal Cluster)

Description: This course focuses on production of complex documents using advanced word processing functions. Production with accuracy is stressed and practice is given through a variety of documents for skill building. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Microcomputer Applications (BOT 1133) and Document Formatting and Production (BOT 1113); or permission of instructor.



Course Name: Professional Development

Course Abbreviation: BOT 1213

Classification: AOC Core (Accounting; Office Systems; Microcomputer; and Court Reporting)

Description: This course develops an awareness of interpersonal skills essential for job success. Topics include positive self-image, professional image, work ethics, time and stress management, and human relations skills. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Applied Business Math

Course Abbreviation: BOT 1313

Classification: Vocational-Technical Core (Business and Office Cluster; Legal Cluster)

Description: This course is designed to develop competency in mathematics for business use. Ten-key touch method on the electronic desktop calculators is stressed. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Records Management

Course Abbreviation: BOT 1413

Classification: AOC Core (Office Systems; Court Reporting) Vocational-Technical Elective (Medical Office)

Description: This course focuses on the systems approach to managing recorded information in any form. Emphasis is placed on the three categories into which records generally fall -- paper, image, and digital -- and the treatment of these categories in proper management, storage, and retrieval. Decision-making, judgment, and other management skills will be applied to case studies. Basic application of filing classification skills will also be taught. (3 sch: 3 hr. lecture)

Prerequisite: None

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Course Name: Mechanics of Communication

Course Abbreviation: BOT 1423

Classification: Vocational-Technical Core (Business and Office Cluster); AOC Core (Court Reporting)

Description: This course is designed to develop the basic English competencies necessary for success in the business world. A study of the parts of speech, sentence structure, sentence types, capitalization, punctuation, and spelling is emphasized. (3 sch: 3 hr. lecture)

Prerequisite: None

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Course Name: Medical Office Terminology I

Course Abbreviation: BOT 1613

Classification: AOC Core (Medical Office; Court Reporting)

Description: This course is a study of medical language relating to the various body systems including diseases, physical conditions, procedures, clinical specialties, and abbreviations. Emphasis is placed on correct spelling and pronunciation. (Same as Medical Terminology (MET 1213) which can be taken in place of this course.) (3 sch: 3 hr. lecture)

Prerequisites: None

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Course Name: Medical Office Terminology II

Course Abbreviation: BOT 1623

Classification: AOC Core (Medical Office; Court Reporting)

Description: This course presents medical terminology pertaining to human anatomy in the context of body systems. The emphasis is directed toward medical terminology as it relates to Medical Office Technology. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None

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Course Name: Legal Systems and Terminology

Course Abbreviation: LET 1113

Classification: Vocational-Technical Core (Legal Cluster)

Description: This course provides an overview of major principles and functions of the state and federal legal systems, introduces various legal fields for professional opportunities, presents legal vocabulary, gives an overview of different areas of law, and presents ethics. (3 sch: 3 hr. lecture)

Prerequisites: Local college requirements



Course Name: Stenotype Machine Shorthand I

Course Abbreviation: LET 1413

Classification: AOC Core (Court Reporting)

Description: This course is designed to instruct the student in stenotype theory. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: None



Course Name: Stenotype Machine Shorthand II

Course Abbreviation: LET 1423

Classification: AOC Core (Court Reporting)

Description: This course is a continuation of Stenotype Machine Shorthand I. Emphasis is placed on keyboard, theory, and speed development. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Stenotype Machine Shorthand I (LET 1413)



Course Name: Family Law

Course Abbreviation: LET 1513

Classification: Vocational-Technical Core (Legal Cluster)

Description: This course is a study of the areas of law pertaining to domestic relations, emphasizing ethics. (3 sch: 3 hr. lecture)

Prerequisites: Local college requirements



Course Name: Speed Building I

Course Abbreviation: LET 1813

Classification: AOC Core (Court Reporting)

Description: This is an initial course for building speed in taking dictation at varying speeds. Mailable transcripts of dictated (courtroom material) stenotype notes are required. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Stenotype Machine Shorthand II (LET 1423)



Course Name: Speed Building II

Course Abbreviation: LET 1823

Classification: AOC Core (Court Reporting)

Description: This is a continuation course for building speed in taking dictation at varying speeds. Mailable transcripts of dictated (courtroom material) stenotype notes are required. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Speed Building I (LET 1813)

g g g g g**Course Name:** Stenotype Machine Shorthand III**Course Abbreviation:** LET 2433**Classification:** AOC Core (Court Reporting)**Description:** This is a continuation course for advanced speed development. Carefully graded and timed practice material is utilized. Writing vocabulary is developed along with speed. (3 sch: 2 hr. lecture, 2 hr. lab)**Prerequisite:** Stenotype Machine Shorthand II (LET 1423), Speed Building I (LET 1813), and Speed Building II (LET 1823)**g g g g g****Course Name:** Stenotype Machine Shorthand IV**Course Abbreviation:** LET 2443**Classification:** AOC Core (Court Reporting)**Description:** This course is a continuation of Stenotype Machine Shorthand III. Practice for court reporters to include reporting abbreviations and phrases and speaker designations for the courtroom and extracts from actual court cases. (3 sch: 2 hr. lecture, 2 hr. lab)**Prerequisite:** Stenotype Machine Shorthand III (LET 2433)**g g g g g****Course Name:** Court Reporting Procedures**Course Abbreviation:** LET 2613**Classification:** AOC Core (Court Reporting)**Description:** This course is a study of the role of the reporter in trials, depositions, and administrative hearings; transcript preparation and format; proofreading; instruction in dictating equipment and writing for a notereader and computer; marking exhibits; indexing and storing notes; reporting techniques; instruction in the proper use of library and reference materials; and instruction in the National Court Reporters Association (NCRA) Code of Professional Responsibility. (3 sch: 2 hr. lecture, 2 hr. lab)**Prerequisites:** Stenotype Machine Shorthand II (LET 1423), Speed Building I (LET 1813), and Speed Building II (LET 1823)**g g g g g****Course Name:** Court Reporting Technology**Course Abbreviation:** LET 2622**Classification:** AOC Core (Court Reporting)**Description:** This course is an overview in reporter-related technology, concepts, and vocabulary. Emphasis is placed on computer-assisted transcription systems and video applications for the court reporter. (2 sch: 1 hr. lecture, 2 hr. lab)**Pre/Corequisite:** Court Reporting Procedures (LET 2613)



Course Name: Internship for Court Reporters

Course Abbreviation: LET 2911

Classification: AOC Core (Court Reporting)

Description: This course provides supervised practical experience in courts or freelance court reporting firms. Provides students the opportunity to apply theory presented in the classroom in a supervised work setting, thus adding meaning to the related school program. Should be taken during final semester. (1 sch: 3 hr. externship)

Prerequisite: Completion of 3 semesters in program area.



MEDICAL OFFICE TECHNOLOGY



Course Name: Keyboard Speed Building

Course Abbreviation: BOT 1102

Classification: AOC Core (Accounting; Office Systems; and Medical Office)

Description: This course develops speed and accuracy on the keyboard. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisite: Ability to key straight copy material at a minimum of 40 gwpm



Course Name: Document Formatting and Production

Course Abbreviation: BOT 1113

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course emphasizes formatting and production of mailable letters, forms, reports, and tabulations from rough drafts and straight copy. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Ability to key straight copy material at a minimum of 40 gwpm



Course Name: Microcomputer Applications

Course Abbreviation: BOT 1133

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course will introduce an operating system and word processing, spreadsheet, and database management software applications. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Ability to key straight copy material at a minimum of 40 gwpm.



Course Name: Word Processing Applications

Course Abbreviation: BOT 1143

Classification: Vocational-Technical Core (Business and Office Cluster; Legal Cluster)

Description: This course focuses on production of complex documents using advanced word processing functions. Production with accuracy is stressed and practice is given through a variety of documents for skill building. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Microcomputer Applications (BOT 1133) and Document Formatting and Production (BOT 1113); or permission of instructor.



Course Name: Applied Business Math

Course Abbreviation: BOT 1313

Classification: Vocational-Technical Core (Business and Office Cluster; Legal Cluster)

Description: This course is designed to develop competency in mathematics for business use. Ten-key touch method on the electronic desktop calculators is stressed. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Records Management

Course Abbreviation: BOT 1413

Classification: AOC Core (Office Systems; Court Reporting) Vocational-Technical Elective (Medical Office)

Description: This course focuses on the systems approach to managing recorded information in any form. Emphasis is placed on the three categories into which records generally fall -- paper, image, and digital -- and the treatment of these categories in proper management, storage, and retrieval. Decision-making, judgment, and other management skills will be applied to case studies. Basic application of filing classification skills will also be taught. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Mechanics of Communication

Course Abbreviation: BOT 1423

Classification: Vocational-Technical Core (Business and Office Cluster); AOC Core (Court Reporting)

Description: This course is designed to develop the basic English competencies necessary for success in the business world. A study of the parts of speech, sentence structure, sentence types, capitalization, punctuation, and spelling is emphasized. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Business Accounting

Course Abbreviation: BOT 1433

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course is designed to develop an understanding of recording, classifying, and summarizing business transactions and events with insight into interpreting and reporting the resulting effects upon the business. (3 sch: 3 hr. lecture)

Prerequisite: None



Course Name: Machine Transcription

Course Abbreviation: BOT 1513

Classification: AOC Core (Office Systems); Vocational -Technical Elective (Medical Office)

Description: This course is designed to teach transcription of a wide variety of business communications from machine dictation. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Document Formatting and Production (BOT 1113) and Mechanics of Communication (BOT 1423)

g g g g g**Course Name:** Medical Office Terminology I**Course Abbreviation:** BOT 1613**Classification:** AOC Core (Medical Office; Court Reporting)**Description:** This course is a study of medical language relating to the various body systems including diseases, physical conditions, procedures, clinical specialties, and abbreviations. Emphasis is placed on correct spelling and pronunciation. (Same as Medical Terminology (MET 1213) which can be taken in place of this course.) (3 sch: 3 hr. lecture)**Prerequisites:** None**g g g g g****Course Name:** Medical Office Terminology II**Course Abbreviation:** BOT 1623**Classification:** AOC Core (Medical Office; Court Reporting)**Description:** This course presents medical terminology pertaining to human anatomy in the context of body systems. The emphasis is directed toward medical terminology as it relates to Medical Office Technology. (3 sch: 2 hr. lecture, 2 hr. lab)**Prerequisite:** None**g g g g g****Course Name:** Operating Systems**Course Abbreviation:** BOT 2142**Classification:** Vocational-Technical Core (Business and Office Cluster)**Description:** This course will provide training in using the computer to work with disk operating systems and a multi-tasking environment. (2 sch: 1 hr. lecture, 2 hr. lab)**Prerequisite:** Microcomputer Applications (BOT 1133)**g g g g g****Course Name:** Computerized Accounting**Course Abbreviation:** BOT 2413**Classification:** Vocational-Technical Core (Business and Office Cluster)**Description:** This course applies basic accounting principles using a computerized accounting system. (3 sch: 2 hr. lecture, 2 hr. lab)**Prerequisite:** Business Accounting (BOT 1433)**g g g g g****Course Name:** Medical Machine Transcription I**Course Abbreviation:** BOT 2523**Classification:** Vocational-Technical Elective (Medical Office)**Description:** This course is designed to teach transcription of various medical documents. (3 sch: 1 hr. lecture, 4 hr. lab)**Prerequisites:** Document Formatting and Production (BOT 1113) and Medical Office Terminology I (BOT 1613)



Course Name: Medical Machine Transcription II

Course Abbreviation: BOT 2533

Classification: Vocational-Technical Elective (Medical Office)

Description: This course is designed to continue teaching transcription of various medical documents including dictation given by doctors with foreign accents and additional medical specialties. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisite: Machine Transcription (1513) or Medical Machine Transcription I (BOT 2523)



Course Name: Advanced Microcomputer Applications

Course Abbreviation: BOT 2713

Classification: Vocational-Technical Core (Business and Office Cluster)

Description: This course develops the ability to use an operating system to integrate activities using applications software including word processing, database, spreadsheet, graphics, and telecommunications. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Microcomputer Applications (BOT 1133)



Course Name: Medical Office Concepts

Course Abbreviation: BOT 2743

Classification: AOC Core (Medical Office)

Description: This course will provide coverage and integration of medical office skills and issues using knowledge of medical terminology. Problem solving will be emphasized. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Medical Office Terminology I (BOT 1613) and/or Medical Office Terminology II (BOT 1623)



Course Name: Medical Information Management

Course Abbreviation: BOT 2753

Classification: AOC Core (Medical Office)

Description: This course will continue coverage of medical office issues with emphasis on health insurance filing. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Medical Office Concepts (BOT 2743)



Course Name: Fundamentals of Medical Insurance Coding

Course Abbreviation: BOT 2763

Classification: Vocational-Technical Elective (Medical Office)

Description: This course is an introduction to major healthcare insurance programs and diagnostic and procedural coding systems.

Prerequisites: Medical Office Terminology I (BOT 1613) and Medical Office Transcription II (BOT 1623); or by permission of instructor



Course Name: Business Communication

Course Abbreviation: BOT 2813

Classification: Vocational-Technical Core (Business and Office Cluster); AOC Core (Paralegal)

Description: This course develops communication skills with emphasis on principles of writing business correspondence and reports, and analyzing and summarizing information in a logically written presentation. (3 sch: 3 hr. lecture)

Prerequisite: Mechanics of Communication (BOT 1423) and ability to key straight copy material at a minimum of 40 gwpm; or consent of instructor



COMPUTER NETWORK SUPPORT TECHNOLOGY



Course Name: Fundamentals of Data Communications

Course Abbreviation: CNT 1413

Classification: Vocational-Technical Core

Description: This course presents basic concepts of telephony, local area networks, wide area networks, data transmission, and topology methods. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Internet Concepts

Course Abbreviation: CNT 1513

Classification: Vocational-Technical Core

Description: This course is an introduction to the Internet and its uses in the world of business. It includes basic and advanced features of the Internet, World Wide Web, gophers, listservers, and creating web pages. Upon completion of this course, students will be able to create a personalized home page and post it on the Internet, download files using a browser and an FTP program, and send e-mail messages. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Fundamentals of Data Communications (CNT 1413) and/or Survey of Microcomputer Applications (CPT 1324)



Course Name: Network Components

Course Abbreviation: CNT 1523

Classification: Vocational-Technical Core

Description: This course presents local area network and wide area network connectivity. It focuses on architectures, topologies, protocols, and transport methods of a network. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Fundamentals of Data Communications (CNT 1413)



Course Name: Network Administration Using Novell

Course Abbreviation: CNT 1614

Classification: Vocational-Technical Elective

Description: This course focuses on the management of a computer network using the Novell network operating system. Emphasis will be placed on daily administrative tasks performed by a network administrator. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Fundamentals of Data Communication (CNT 1413), Operating Platforms (CPT 1333)

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Course Name: Network Administration Using Microsoft Windows NT Server

Course Abbreviation: CNT 1624

Classification: Vocational-Technical Elective

Description: This course focuses on the management of a computer network using the Microsoft Windows NT Server network operating system. Emphasis will be placed on daily administrative tasks performed by a network administrator. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Fundamentals of Data Communication (CNT 1413), Operating Platforms (CPT 1333)

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Course Name: System Maintenance

Course Abbreviation: CNT 2423

Classification: Vocational-Technical Core

Description: This course covers the diagnosis, troubleshooting, and maintenance of computer components. Topics include hardware compatibility, system architecture, memory, input devices, video displays, disk drives, modems, and printers. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Operating Platforms (CPT 1333)

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Course Name: Network Planning and Design

Course Abbreviation: CNT 2532

Classification: Vocational-Technical Core

Description: This course involves applying network concepts in planning and designing a functioning network. Emphasis is placed on recognizing the need for a network, conducting analysis, and designing solution. (2 sch: 1 hr. lecture, 2 hr. lab)

Prerequisites: 1 Network Operating System Elective; Network Components (CNT1523)

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Course Name: Project Management

Course Abbreviation: CNT 2544

Classification: Vocational-Technical Core

Description: This course is the culmination of all concepts learned in the network curriculum. Topics include planning, installation, evaluation, and maintenance of a network solution. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Network Planning and Design (CNT 2532)

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Course Name: Advanced Network Administration Using Novell

Course Abbreviation: CNT 2634

Classification: Vocational-Technical Elective

Description: This course is a continuation of Network Administration Using Novell. Emphasis is placed on installation, configuration, and implementation of a Novell Network. (4 sch: 2 hr. lecture 4 hr. lab)

Prerequisites: Network Administration Using Novell (CNT 1614)



Course Name: Advanced Network Administration Using Microsoft Windows NT Server

Course Abbreviation: CNT 2644

Classification: Vocational-Technical Elective

Description: This course is a continuation of Network Administration Using Microsoft Windows NT Server. Emphasis is placed on installation, configuration, and implementation of a functional NT Server. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Network Administration Using Microsoft Windows NT Server (CNT 1624)



TRADE, INDUSTRIAL, AND RELATED TECHNOLOGY
Construction Materials Testing Technology
Drafting and Design Cluster
Drafting and Design Technology
Geographical Information Systems Technology Options
Environmental Technology
Industrial Maintenance Mechanics
Vehicle and Mobile Equipment Mechanics Technology

CONSTRUCTION MATERIALS TESTING TECHNOLOGY



Course Name: Fundamentals of Soils and Aggregate Systems

Course Abbreviation: CMT 1113

Classification: Vocational-Technical Core

Description: Mechanical and physical properties of soils and aggregates and their relations to engineering considerations, such as soil classification, permeability, shear strength, consolidation, stress distribution, and bearing capacity will be studied. Soil and aggregate systems will be discussed as they relate to pavement structure and their effect upon pavement performance. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Mix Proportioning of Hot Mix Asphalt

Course Abbreviation: CMT 1123

Classification: Vocational-Technical Core

Description: Mix methods will be discussed in detail. Aggregates and hot mix asphalt will be evaluated, and the analyses of test results explained. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Property of Materials of Construction

Course Abbreviation: CMT 1133

Classification: Vocational-Technical Core

Description: Properties of aggregates will be examined including shape, surface texture, particle size, absorption, gradation, and voids. Differences between method-type specifications and end-result-type specifications will be discussed. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Mechanics of Materials

Course Abbreviation: CMT 1213

Classification: Vocational-Technical Core

Description: Study of forces acting on bodies; moment of forces and stress of materials. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Materials Testing

Course Abbreviation: CMT 1224

Classification: Vocational-Technical Core

Description: Basic properties of materials used in construction (concrete, asphalt, and aggregates) will be evaluated. Field control and adjustments will be discussed in addition to quality control of materials, mixes, and construction practices. The weight of base required for wheel and footing loads will be determined. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Rigid and Flexible Pavements

Course Abbreviation: CMT 1313

Classification: Vocational-Technical Core

Description: Rigid and flexible pavements will be identified and the analysis of both pavements will be presented. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Consent of Instructor



Course Name: Proportioning of Portland Cement Concrete

Course Abbreviation: CMT 2324

Classification: Vocational-Technical Core

Description: Properties of aggregates relating to concrete including shape, surface texture, particle size, absorption, gradation, voids, strength, strain, and shear characteristics will be examined. (4 sch: 2 hr. lecture, 4 hr. lab.)

Prerequisites: Materials Testing (CMT 1214)



Course Name: Quality Control and Inspection

Course Abbreviation: CMT 2343

Classification: Vocational-Technical Core

Description: Quality control of the contractor and quality assurance of the governmental agency will be discussed. Equipment and math problems with emphasis on the description of the cause and the solution of the problems as they relate to pavement performance. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Rigid and Flexible Pavements (CMT 1313), Mix Proportioning of Hot Mix Asphalt (CMT 1123), Proportioning of Portland Cement Concrete (CMT 2324), and Property of Materials of Construction (CMT 1133); or consent of instructor.



Course Name: Maintenance and Repair of Paved Roads

Course Abbreviation: CMT 2443

Classification: Vocational-Technical Core

Description: Methods and techniques for maintenance and repair of pavements will be examined. Identification of the types of distress, factors that contribute to the failure, and methods of restoring a distressed pavement to its original design capacity will be discussed. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Proportioning of Portland Cement Concrete (CMT 2324), Mix Proportioning of Hot Mix Asphalt (CMT 1123), and Rigid and Flexible Pavements (CMT 1313); or consent of instructor.



Course Name: Special Problem in Construction Materials Testing Technology

Course Abbreviation: CMT 291(1-3)

Classification: Vocational-Technical Elective

Description: Provides the student with practical application of skills and knowledge gained in the courses. The instructor works closely with the student to insure that the selection of a project will enhance the student's learning experience. (1-3 sch: 2-6 hr. lab)

Prerequisite: Consent of Instructor



Course Name: Supervised Work Experience in Construction Materials Testing Technology

Course Abbreviation: CMT 292(1-6)

Classification: Vocational-Technical Elective

Description: A cooperative program between industry and education and is designed to integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours. (1-6 sch: 3-18 hr. externship)

Prerequisite: Consent of instructor



DRAFTING AND DESIGN CLUSTER

DRAFTING AND DESIGN TECHNOLOGY



Course Name: Fundamentals of Drafting

Course Abbreviation: DDT 1114

Classification: Vocational-Technical Core

Description: Course designed to give drafting majors the background needed for all other drafting courses. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Machine Drafting I

Course Abbreviation: DDT 1133

Classification: Vocational-Technical Core (Architectural Drafting and Drafting and Design Technology Programs)

Description: Emphasizes methods, techniques, and procedures in presenting screws, bolts, rivets, springs, thread types, symbols for welding, materials, finish and heat treatment notation, working order preparation, routing, and other drafting room procedures. (3 sch: 1 hr. lecture, 4 hr. lab)

Pre/corequisites: Fundamentals of Drafting (DDT 1114)



Course Name: Geometric Dimensioning and Tolerancing

Course Abbreviation: DDT 1143

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: A continuation of conventional dimensioning with emphasis on concepts as adopted by the American National Standards Institute (ANSI). A study of international dimensioning symbols used to control tolerances of form, profile, orientation, runout, and location of features on an object. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Machine Drafting I (DDT 1133)



Course Name: Descriptive Geometry

Course Abbreviation: DDT 1153

Classification: Vocational-Technical Elective (Architectural Drafting Associate Degree Program and Drafting and Design Technology Certificate Program); Vocational-Technical Core (Drafting and Design Technology and Geographical Information Systems Technology Associate Degree Programs)

Description: Theory and problems designed to develop the ability to visualize points, lines, and surfaces of space. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Fundamentals of Drafting (DDT 1114)



Course Name: Construction Materials

Course Abbreviation: DDT 1213

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Physical properties of the materials generally used in the erection of a structure, with a brief description of their manufacture. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Principles of CAD

Course Abbreviation: DDT 1313

Classification: Vocational-Technical Core

Description: Basic operating system and how to perform basic drafting skills on the CAD. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Intermediate CAD

Course Abbreviation: DDT 1323

Classification: Vocational-Technical Core

Description: Continuation of Principles of CAD. Subject areas include dimensioning, sectional views, and symbols. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Principles of CAD (DDT 1313)



Course Name: Elementary Surveying

Course Abbreviation: DDT 1413

Classification: Vocational-Technical Core

Description: Basic course dealing with principles of geometry, theory, and use of instruments, mathematical calculations, and the control and reduction of errors. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Blueprint Reading I

Course Abbreviation: DDT 1513

Classification: Service course for masonry and carpentry programs

Description: Terms and definitions used in reading blueprints. Basic sketching, drawing, and dimensioning of objects will be covered. (Enrollment in this course is limited to vocational certificate students in other disciplines.) (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Blueprint Reading II

Course Abbreviation: DDT 1523

Classification: Service course for masonry and carpentry programs

Description: Continuation of Blueprint Reading I with emphasis placed on reading and interpreting blueprints for different types of structures and performing basic calculations. (Enrollment in this course is limited to vocational certificate students in other disciplines.) (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Blueprint Reading I (DDT 1513)



Course Name: Architectural Design I

Course Abbreviation: DDT 1613

Classification: Vocational-Technical Core (Architectural Drafting and Drafting and Design Technology Programs)

Description: Presentation and application of architectural drafting room standards. Also the study of architectural design of a residential structure. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Fundamentals of Drafting (DDT 1114)



Course Name: Fundamentals of Machining Processes

Course Abbreviation: DDT 1713

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Basic machining equipment and safety procedures. Emphasis is placed on measurement techniques, machine technology, machine tools, and applications. (A course for drafting students with no previous machining experience.) (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Design for Manufacturing

Course Abbreviation: DDT 1913

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Instruction in various methods of manufacturing with emphasis on the drafter's role in manufacturing. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Machine Drafting II

Course Abbreviation: DDT 2163

Classification: Vocational-Technical Core (Drafting and Design Certificate Program); Vocational-Technical Elective (Drafting and Design Technology)

Description: A continuation of Machine Drafting I with emphasis on advanced techniques and knowledge employed in the planning of mechanical objects. Includes instruction in the use of tolerancing and dimensioning techniques. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Machine Drafting I (DDT 1133)



Course Name: Structural Drafting

Course Abbreviation: DDT 2233

Classification: Vocational-Technical Core (Architectural Drafting Technology and Drafting and Design Technology Associate Degree Programs); Vocational-Technical Elective (Drafting and Design Technology Certificate Program)

Description: Structural section, terms, and conventional abbreviations and symbols used by structural fabricators and erectors are studied. Knowledge is gained in the use of the A.I.S.C. Handbook. Problems are studied that involve structural designing and drawing of beams, columns, connections, trusses, and bracing (steel, concrete, and wood). (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Fundamentals of Drafting (DDT 1114) and Principles of CAD (DDT 1313)



Course Name: Cost Estimating

Course Abbreviation: DDT 2243

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Preparation of material and labor quantity surveys from actual working drawings and specifications. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Statics and Strength of Materials

Course Abbreviation: DDT 2253

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Study of forces acting on bodies; moments of forces; stress of materials; basic machine design; beams, columns, and connections. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: College Algebra (MAT 1313)



Course Name: Quality Assurance

Course Abbreviation: DDT 2263

Classification: Vocational-Technical Elective (Drafting and Design Technology Associate Degree Program)

Description: The application of statistics and probability theory in quality assurance programs. Various product sampling plans will be studied as well as the development of product charts for defective units. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Advanced CAD

Course Abbreviation: DDT 2343

Classification: Vocational-Technical Core (Architectural Drafting and Drafting and Design Technology Programs); Vocational-Technical Elective (Geographical Information Systems Technology Programs)

Description: A continuation of Intermediate CAD. Emphasis is placed on the user coordinate system and 3D modeling. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Intermediate CAD (DDT 1323)



Course Name: Computer Numerical Control (CNC) Drafting

Course Abbreviation: DDT 2363

Classification: Vocational-Technical Elective (Drafting and Design Technology Associate Degree Program)

Description: Basics of numerical control machines. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Mapping and Topography

Course Abbreviation: DDT 2423

Classification: Vocational-Technical Core

Description: Selected drafting techniques are applied to the problem of making maps, traverses, plot plans, plan drawings, and profile drawings using maps, field survey data, aerial photographs, and related references and materials including symbols, notations, and other applicable standardized materials. (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/corequisites: Elementary Surveying (DDT 1413) and Intermediate CAD (DDT 1323)



Course Name: Legal Principles of Surveying

Course Abbreviation: DDT 2433/CIT 2113

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Associate Degree Programs)

Description: Legal aspects of boundary controls for the survey and resurvey of real property. (3 sch: 2hr. lecture, 2 hr. lab)

Prerequisites: Elementary Surveying (DDT 1413)



Course Name: Advanced Surveying

Course Abbreviation: DDT 2443/CIT 2434

Classification: Vocational-Technical Elective (Architectural Drafting Associate Degree Program, Drafting and Design Technology Associate Degree Program, and Geographical Information Systems Technology Associate Degree and Certificate Programs)

Description: Principles of land surveying, methods of boundary locations, and land description in accordance with original surveys and resurveys. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Elementary Surveying (DDT 1413)



Course Name: GPS/GIS Surveying

Course Abbreviation: DDT 2453/CIT 2424

Classification: Vocational-Technical Elective (Architectural Drafting Associate Degree Program, Drafting and Design Technology Associate Degree Program, and Geographical Information Systems Technology Associate Degree and Certificate Programs)

Description: Principles of surveying utilizing artificial earth orbit satellites and digitizing the information obtained to establish a useful database. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Elementary Surveying (DDT 1413)



Course Name: Electronic Drafting

Course Abbreviation: DDT 2513

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: The study of basic drafting skills necessary to produce block diagrams and schematics of electronic circuits. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Pipe Drafting

Course Abbreviation: DDT 2523

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Instruction in the basic knowledge needed to create process piping drawings using individual piping components. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Fundamentals of Drafting (DDT 1114) and Principles of CAD (DDT 1313)



Course Name: Highway Drafting

Course Abbreviation: DDT 2533

Classification: Vocational-Technical Elective (Architectural Drafting Associate Degree Program, Drafting and Design Technology Certificate and Associate Degree Programs, and Geographical Information Systems Technology Associate Degree Program)

Description: A basic study of highway drafting. Horizontal alignment of route surveys in the plan view, vertical alignment of route surveys in the profile view, typical sections, cross sections, and area calculations and estimation of quantities. (3 sch: 2 hr. lecture, 2 hr. lab.)

Prerequisites: Fundamentals of Drafting (DDT 1114) and Intermediate CAD (DDT 1323)



Course Name: Steel Ship Building and Design

Course Abbreviation: DDT 2543

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Instruction in the basic steel ship building and the process of ship design and planning. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Fundamentals of Drafting (DDT 1114)



Course Name: Architectural Design II

Course Abbreviation: DDT 2623

Classification: Vocational-Technical Core (Architectural Drafting Technology and Drafting and Design Technology Certificate Program); Vocational-Technical Elective (Drafting and Design Technology Associate Degree Program)

Description: Emphasizes standard procedures and working drawings. Details involving architectural, mechanical, electrical, and structural drawings are covered, along with presentation of drawings and computer-aided design assignments. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Architectural Design I (DDT 1613)



Course Name: Fundamentals of Multimedia

Course Abbreviation: DDT 2713

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: A general overview of current issues in multimedia. Study of how multimedia can assist in the work environment; provides a basis for further study in multimedia design and production. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Special Project

Course Abbreviation: DDT 291(1-3)

Classification: Vocational-Technical Core (Drafting and Design Technology Certificate Program); Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Associate Degree Programs)

Description: Practical application of skills and knowledge gained in other drafting courses. The instructor works closely with the student to insure that the selection of a project will enhance the student's learning experience. (1-3 sch: 2-6 hr. lab)

Prerequisites: Consent of instructor



Course Name: Supervised Work Experience in Drafting and Design Technology

Course Abbreviation: DDT 292(1-6)

Classification: Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: Cooperative program between industry and education designed to integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours. (1-6 sch: 3-18 hr. externship)

Prerequisites: Consent of instructor and the completion of at least one semester of advanced coursework in the drafting program.



DRAFTING AND DESIGN CLUSTER

GEOGRAPHICAL INFORMATION SYSTEMS TECHNOLOGY OPTIONS



Course Name: Database Construction and Maintenance

Course Abbreviation: GIT 2113

Classification: Vocational-Technical Core (Geographical Information Systems Technology Programs); Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Programs)

Description: A course designed to introduce database concepts and goals of database management systems, and relational, hierarchical, and network models of data. Included are Structured Query Language (SQL) and methods for organizing and accessing data. (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/corequisite: Principles of CAD (DDT 1313)



Course Name: Fundamentals of Geographical Information Systems (GIS)

Course Abbreviation: GIT 2123

Classification: Vocational-Technical Core (Geographical Information Systems Technology Programs); Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Associate Degree Programs)

Description: This course includes the use of computer mapping and databases in multiple applications. Included are incorporation of imagery and data into a graphical oriented database system. Included are the fundamentals of geographical information systems techniques, approaches, and applications. (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/corequisite: Principles of CAD (DDT 1313)



Course Name: Principles of Image Processing

Course Abbreviation: GIT 2133

Classification: Vocational-Technical Core (Geographical Information Systems Technology Associate Degree Program); Vocational-Technical Elective (Geographical Information Systems Technology Certificate Degree Program; and Architectural Drafting and Drafting and Design Technology Associate Degree Programs)

Description: This course includes fundamentals of map and air photo characteristics including scale, feature identification, and symbolization. Utilized are interpretation techniques of various products, including topographic and thematic maps, aerial photographs, and satellite images. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisite: Principles of CAD (DDT 1313)

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Course Name: Advanced Geographic Information Systems

Course Abbreviation: GIT 2263

Classification: Vocational-Technical Core (Geographical Information Systems Technology Programs); Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Associate Degree Programs)

Description: This is an integrated course that encompasses geographic data inputs, processing, and analyses directed toward objects of scientific investigation. (3 sch: 1 hr. lecture, 4 hr. lab)

Pre/corequisite: Mapping and Topography (DDT 2423) and Database Construction and Maintenance (GIT 2113)

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Course Name: Remote Sensing

Course Abbreviation: GIT 2273

Classification: Vocational-Technical Core (Geographical Information Systems Technology Programs); Vocational-Technical Elective (Architectural Drafting and Drafting and Design Technology Associate Degree Programs)

Description: This course includes remote sensing, interpretation, and application of air photos and other remote sensing images. This course also includes the global positioning system and other remote sensing devices. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisite: None

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Course Name: Special Problem in Geographical Information Systems Technology

Course Abbreviation: GIT 291(1-3)

Classification: Vocational-Technical Elective (Geographical Information Systems Technology Programs)

Description: A course designed to provide the student with practical application of skills and knowledge gained in other Geographical Information Systems courses. The instructor works closely with the student to insure that the selection of a project will enhance the student's learning experience. (1-3 sch: 2-6 hr. lab)

Prerequisites: Minimum of 12 sch Geographical Information Systems Technology related courses



Course Name: Supervised Work Experience in Geographical Information Systems Technology

Course Abbreviation: GIT 292(1-6)

Classification: Vocational-Technical Elective (Geographical Information Systems Technology Programs)

Description: This course is a cooperative program between the industry and education and is designed to integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of 1 semester hour per 45 contact hours. (1-6 sch 3-18 hr. externship)

Prerequisites: Sophomore standing in Geographical Information Systems Technology



ENVIRONMENTAL TECHNOLOGY

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Course Name: Environmental Science**Course Abbreviation:** EVT 1114**Classification:** Vocational-Technical Core**Description:** Basic course covering air, water, and soil resources, ecosystems, energy, pollution, and how pollution affects the local and global environment. (4 sch: 3 hr. lecture, 2 hr. lab)**Prerequisites:** None

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Course Name: Fundamentals of Hazardous Materials**Course Abbreviation:** EVT 1215**Classification:** Vocational-Technical Core**Description:** Basic components of hazardous materials and wastes (HMW), regulations and regulatory agencies, determination and classification of HMW, and handling, storing, monitoring, and disposal of HMW. (5 sch: 4 hr. lecture, 2 hr. lab)**Prerequisites:** None

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Course Name: Wastewater Treatment Operations**Course Abbreviation:** EVT 1314**Classification:** Vocational-Technical Core**Description:** Safe and effective operation and maintenance of municipal and industrial wastewater treatment plants. Preparation for the highest level certification exam administered by the Mississippi Department of Environmental Quality. (4 sch: 3 hr. lecture, 2 hr. lab)**Prerequisites:** None

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Course Name: Air Quality**Course Abbreviation:** EVT 1414**Classification:** Vocational-Technical Core**Description:** Air pollution and its effects on society and the environment with specific emphasis on sources of air pollution, control systems, pollution dynamics, air quality analysis, and regulatory compliance. (4 sch: 3 hr. lecture, 2 hr. lab)**Prerequisites:** None

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Course Name: Water Treatment Operations**Course Abbreviation:** EVT 1514**Classification:** Vocational-Technical Core**Description:** Safe and effective operation and maintenance of drinking water systems and treatment plants. Preparation for the highest level certification exam administered by the Mississippi State Department of Health. (4 sch: 3 hr. lecture, 2 hr. lab)**Prerequisites:** None



Course Name: Environmental Engineering Technology

Course Abbreviation: EVT 2124

Classification: Vocational-Technical Core

Description: Advanced course which utilizes the "systems approach" to environmental problem solving in areas such as hydrology, water quality management, noise pollution, and ionizing radiation. In-depth coverage with emphasis on the mathematical and chemical principles involved. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Hazardous Materials Regulations

Course Abbreviation: EVT 2224

Classification: Vocational-Technical Core

Description: Environmental regulations in three major areas: Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), and Department of Transportation (DOT), as they relate to the storing, handling, and disposal of hazardous materials and wastes. Students will identify, interpret, and apply the regulations through study, research, and composition of a written hazard communication program. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Solid Waste Management

Course Abbreviation: EVT 2614

Classification: Vocational-Technical Core

Description: Engineering principles and practical management issues in an integrated solid waste management system. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Environmental Safety

Course Abbreviation: EVT 2714

Classification: Vocational-Technical Core

Description: Health and safety issues, risk assessment, control strategies, and implementation with hazardous materials. Students will develop a site specific health and safety plan and learn to properly use personal protective equipment. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Hazardous Materials Emergency Response

Course Abbreviation: EVT 2813

Classification: Vocational-Technical Elective

Description: Provides instruction in the management of an emergency. Hazard identification, notification procedures, medical assistance, and media procedures. Live exercise/drill with student participation. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Special Problem in Environmental Technology

Course Abbreviation: EVT 291(1-3)

Classification: Vocational-Technical Elective

Description: A course to provide students with an opportunity to utilize skills and knowledge gained in other Environmental Technology courses. The instructor and student work closely together to select a topic and establish criteria for completion of the project. (1-3 sch: 2-6 hr. lab)

Prerequisites: Consent of Instructor



Course Name: Supervised Work Experience in Environmental Technology

Course Abbreviation: EVT 292(1-6)

Classification: Vocational-Technical Elective

Description: A course which is a cooperative program between industry and education and is designed integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours. (1-6 sch: 3-18 hr. externship)

Prerequisites: Consent of instructor and completion of at least one semester of advanced coursework in Environmental Technology.



INDUSTRIAL MAINTENANCE MECHANICS



Course Name: Industrial Maintenance Safety

Course Abbreviation: IMM 1111

Classification: Vocational-Technical Core

Description: General safety practices, personal safety, electrical safety practices, and power equipment safety. (1 sch: 1 hr. lecture, 1 hr. lab) [May be taught as a 30 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Industrial Maintenance Math and Measurement

Course Abbreviation: IMM 1122

Classification: Vocational-Technical Core

Description: Mathematical and measurement procedures and instruments related to industrial maintenance. (2 sch: 1 hr. lecture, 2 hr. lab) [May be taught as a 60 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Industrial Maintenance Blueprint Reading

Course Abbreviation: IMM 1132

Classification: Vocational-Technical Core

Description: Blueprints, schematics, and plans used in industrial maintenance including instruction in nomenclature, different views, and symbols and notations. (2 sch: 1 hr. lecture, 2 hr. lab) [May be taught as a 60 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Industrial Hand Tools and Mechanical Components

Course Abbreviation: IMM 1213

Classification: Vocational-Technical Core

Description: Safe and proper use of hand tools and mechanical components commonly used by industrial maintenance mechanics and technicians. Includes instruction in the selection, use, and care of common hand tools and in the identification and maintenance of mechanical components such as belts and pulleys, chains and sprockets, and bearings and seals used to transmit mechanical power. (3 sch: 1 hr. lecture, 4 hr. lab) [May be taught as a 90 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Power Tool Applications

Course Abbreviation: IMM 1224

Classification: Vocational-Technical Core (Certificate Program); Vocational-Technical Elective (Associate Degree Program)

Description: Safe and proper use of various hand and stationary power tools. Includes instruction in the use of hand power tools, bench grinders, threading machines, cut-off saws, drill presses, engine lathes, and milling machines. (4 sch: 1 hr. lecture, 6 hr. lab) [May be taught as a 120 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Precision Machining Operations

Course Abbreviation: IMM 1235

Classification: Vocational-Technical Core (Associate Degree Program)

Description: Safe and proper use of various hand and stationary power tools. Includes instruction in the use of hand power tools, bench grinders, threading machines, metal saw, drill presses, engine lathes, and milling machines. (5 sch: 2 hr. lecture, 6 hr. lab)

Prerequisites: None



Course Name: Principles of Hydraulics and Pneumatics

Course Abbreviation: IMM 1314

Classification: Vocational-Technical Core

Description: Instruction in basic principles of hydraulics and pneumatics, and the inspection, maintenance, and repair of hydraulic and pneumatic systems. (4 sch: 1 hr. lecture, 6 hr. lab) [May be taught as a 90 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Pump and Valve Operations

Course Abbreviation: IMM 1415

Classification: Vocational-Technical Core

Description: Instruction on the different types of pumps and valves used in industry and their disassembly, inspection, and repair/replacement. (5 sch: 2 hr. lecture, 6 hr. lab) [May be taught as a 120 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Equipment Installation and Alignment

Course Abbreviation: IMM 1515

Classification: Vocational-Technical Core

Description: Instruction in preinstallation checks, assembly, location and layout of equipment, preparation of foundations and anchoring procedures, rigging and hoisting, and alignment and initial setup of equipment. (5 sch: 2 hr. lecture, 6 hr. lab) [May be taught as a 120 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Preventive Maintenance and Service of Equipment

Course Abbreviation: IMM 1524

Classification: Vocational-Technical Elective (Certificate Program)

Description: Instruction in basic maintenance and troubleshooting techniques, use of technical manuals and test equipment, and inspection/evaluation/repair of equipment. (4 sch: 1 hr. lecture, 6 hr. lab) [May be taught as a 90 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Principles of Piping and Hydro-Testing

Course Abbreviation: IMM 1615

Classification: Vocational-Technical Elective (Certificate Program)

Description: Instruction on basic principles of piping and pipe fitting, basic pipe fitting procedures, and basic hydro-testing of pipe systems. (5 sch: 2 hr. lecture, 6 hr. lab) [May be taught as a 150 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Methods of Layout

Course Abbreviation: IMM 1713

Classification: Vocational-Technical Elective

Description: Layout and development of various sheet metal problems using the principles of parallel line and triangulation development. (3 sch: 6 hr. lab) [May be taught as a 90 contact hour lab in open entry-open exit vocational programs.]

Pre/Corequisites: Industrial Maintenance Math and Measurement (IMM 1122)



Course Name: Structural Repair

Course Abbreviation: IMM 1723

Classification: Vocational-Technical Elective

Description: Estimating and making repairs of wood, metal, and masonry structures. (3 sch: 6 hr. lab) [May be taught as a 90 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Maintenance Welding and Metals

Course Abbreviation: IMM 1734

Classification: Vocational-Technical Elective

Description: Instruction in different metals and their properties, and in basic SMAW welding and oxy-fuel cutting and brazing. (4 sch: 1 hr. lecture, 6 hr. lab) [May be taught as a 120 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Industrial Electricity for Industrial Maintenance Mechanics

Course Abbreviation: IMM 1813

Classification: Vocational-Technical Elective (Certificate Program)

Description: Instruction in terminology and basic principles of electricity, use of test equipment, safety practices for working around and with electricity, and basic electrical procedures. (3 sch: 1 hr. lecture, 4 hr. lab) [May be taught as a 90 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: None



Course Name: Advanced Electricity for Industrial Maintenance Mechanics

Course Abbreviation: IMM 1823

Classification: Vocational-Technical Elective (Certificate Program)

Description: Advanced skills and knowledge associated with electrical systems in an industrial setting. Content includes instruction in the National Electrical Code, electrical circuits, motors, and estimating expenses for a given project. (3 sch: 6 hr. lab) [May be taught as a 90 contact hour lab in open entry-open exit vocational programs.]

Prerequisites: Industrial Electricity for Industrial Maintenance Mechanics (IMM 1813)



Course Name: Special Project in Industrial Maintenance Mechanics

Course Abbreviation: IMM 191(1-3)

Classification: Vocational-Technical Elective

Description: Practical applications of skills and knowledge gained in other Industrial Maintenance Mechanics courses. The instructor works closely with the student to insure that selection of a special project enhances the student's learning experiences. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours. (1-3 sch: 45-135 contact hours)

Prerequisites: Consent of instructor

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Course Name: Supervised Work Experience in Industrial Maintenance Mechanics

Course Abbreviation: IMM 192(1-6)

Classification: Vocational-Technical Elective

Description: A course which is a cooperative program between industry and education and is designed to integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours. (1-6 sch: 3-18 hr. externship)

Prerequisite: Consent of instructor and the completion of at least one semester of advanced coursework in the Industrial Maintenance Mechanics program.

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Course Name: Equipment Maintenance, Troubleshooting, and Repair

Course Abbreviation: IMM 2114

Classification: Vocational-Technical Core (Associate Degree Program); Vocational-Technical Elective (Certificate Program)

Description: Maintenance and troubleshooting techniques, use of technical manuals and test equipment, and inspection/evaluation/repair of equipment. (4 sch: 1 hr. lecture, 6 hr. lab)

Prerequisites: None

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Course Name: Industrial Electricity

Course Abbreviation: IMM 2124

Classification: Vocational-Technical Core (Associate Degree Program)

Description: Terminology and principles of electricity, use of test equipment, safety practices, and electrical procedures. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: None

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Course Name: Industrial Welding and Metals

Course Abbreviation: IMM 2134

Classification: Vocational-Technical Core (Associate Degree Program)

Description: Instruction in different metals and their properties, and in Submerged Metal Arc Welding (SMAW) welding and oxy-fuel cutting and brazing. (4 sch: 1 hr. lecture, 6 hr. lab)

Prerequisites: None

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Course Name: Industrial Piping and Hydro-Testing

Course Abbreviation: IMM 2145

Classification: Vocational-Technical Core (Associate Degree Program)

Description: Principles of piping and pipe fitting, pipe fitting procedures, pipe threading, and basic hydro-testing of pipe systems. (5 sch: 2 hr. lecture, 6 hr. lab)

Prerequisites: None

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PLASTICS TECHNOLOGY



Course Name: Introduction to Plastics Materials and Processing

Course Abbreviation: PLT 1213

Classification: Vocational-Technical Core

Description: This course is designed to introduce the student to the world of plastics. Topics include the history of plastics; basic polymer chemistry; identification of plastics, thermoset, and thermoplastics uses, applications, and manufacturing processes; and health and safety considerations of plastics. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Polymer Material Properties

Course Abbreviation: PLT 1223

Classification: Vocational-Technical Core

Description: Topics included are atomic structure, periodic table, elements, electrons and shell structure, bonds and bonding, hydrocarbons, polymers, copolymers, molecular structure, polymerization, thermoset resins, thermoplastic resins, additives, and polymer physical properties. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Injection Molding I

Course Abbreviation: PLT 1313

Classification: Vocational-Technical Core

Description: This course provides lecture and hands-on experiences in the injection molding process. Areas covered are safety, machine identification, setup procedures, operation, troubleshooting, and machine adjustment. Students are introduced to computer monitoring of the molding process as a quality control method to increase productivity. (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/corequisites: Introduction to Plastics Materials and Processing (PLT 1213) or consent of instructor.



Course Name: Process Control for Injection Molding

Course Abbreviation: PLT 1333

Classification: Vocational-Technical Core

Description: Topics include variables affecting the injection molding process, controlling the structure of molded parts, measures for control of the molding process, operation of automatic process control systems, and problem solving using automatic process control systems. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Injection Molding I (PLT 1313)



Course Name: Plastics Tooling Construction Principles

Course Abbreviation: PLT 2213

Classification: Vocational-Technical Core

Description: Covers construction methods necessary to build tooling for injection molding and blow molding. Includes an introduction to extrusion dies and thermoforming tools. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Power Machinery I (MST 1117)



Course Name: Injection Molding II

Course Abbreviation: PLT 2324

Classification: Vocational-Technical Core

Description: This course is an extension of Injection Molding I (PLT 1313). Subjects include insert molding and accessory equipment associated with injection molding such as drying and pneumatic conveying. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Injection Molding I (PLT 1313)



Course Name: Plastics Extrusion

Course Abbreviation: PLT 2413

Classification: Vocational-Technical Core

Description: This course describes the operating principles of an extruder with emphasis on profile, tubing, and sheet and film extrusion. Also covered are the setup, operation, troubleshooting, and safety aspects of extruder systems. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Introduction to Plastics Materials and Processing (PLT 1213) or consent of instructor.



Course Name: Troubleshooting Plastic Processes

Course Abbreviation: PLT 2514

Classification: Vocational-Technical Core

Description: This course is designed to train plastics technicians in process diagnosis and corrective action. Minor repair procedures of plastics processing equipment is included. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Injection Molding II (PLT 2324) and Plastics Extrusion (PLT 2413)



Course Name: Plastics Quality Control

Course Abbreviation: PLT 2614

Classification: Vocational-Technical Core

Description: This course provides the skills necessary to read and interpret blueprints for inspection purposes of plastic parts. Geometric dimensioning and tolerancing and hands-on setup using modern inspection tools and gages are emphasized. Use of statistical analysis for process control will be introduced. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Injection Molding II (PLT 2324) and Plastics Extrusion (PLT 2413) or consent of instructor.



Course Name: Blow Molding/Thermoforming

Course Abbreviation: PLT 2713

Classification: Vocational-Technical Elective

Description: This course is designed to introduce blow molding and thermoforming processes. Areas covered include safety, troubleshooting, setup procedures, machine operations, machine adjustments, and tooling. During the lab portion of the course, students learn to set up and operate the blow molding and thermoforming equipment to produce defect-free parts. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: Injection Molding I (PLT 1313)



Course Name: Special Problem in Plastics Technology

Course Abbreviation: PLT 291(1-3)

Classification: Vocational-Technical Elective

Description: A course designed to provide the student with practical application of skills and knowledge gained in other Plastics Technology courses. The instructor works closely with the student to insure that the selection of a project will enhance the student's learning experience. (1-3 sch: 2-6 hr. lab)

Prerequisites: Minimum of 12 sch Plastics Technology related courses or consent of instructor.



Course Name: Work-Based Learning in Plastics Technology

Course Abbreviation: PLT 292(1-6)

Classification: Vocational-Technical Elective

Description: This course is a cooperative program between industry and education and is designed to integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of 1 semester hour per 45 contact hours. (1-6 sch variable: 3-18 hr. externship)

Prerequisites: Sophomore standing in Plastics Technology or consent of instructor.



VEHICLE AND MOBILE EQUIPMENT MECHANICS TECHNOLOGY



Course Name: Fundamentals of Equipment Mechanics

Course Abbreviation: VMT 1113

Classification: Vocational-Technical Core

Description: Review and update of student skills and knowledge related to safety procedures; tools and equipment usage; handling, storing, and disposing of hazardous materials; operating principles of diesel engines; and selection of fuels, oils, other lubricants, and coolants. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Electrical Systems

Course Abbreviation: VMT 1123

Classification: Vocational-Technical Core

Description: Advanced skills and knowledge related to all components of the vehicle electrical system including lights, instruments, and charging components. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Fundamentals of Small Engines

Course Abbreviation: VMT 1133

Classification: Vocational-Technical Elective

Description: Principles and operation of the small internal combustion engines used on portable power equipment. Service and repair of the small engines. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Brakes

Course Abbreviation: VMT 1213

Classification: Vocational-Technical Core

Description: Advanced skills and knowledge related to the repair and maintenance of brake systems on vehicles. Instruction and practice in diagnosis of braking systems problems and the repair of brake systems. (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None



Course Name: Power Trains

Course Abbreviation: VMT 1315

Classification: Vocational-Technical Core

Description: Diagnosis, service, maintenance, and repair of power train units. Instruction on clutch, automatic and manual transmissions, drive shafts, and drive axles. (5 sch: 2 hr. lecture, 6 hr. lab)

Prerequisite: None



Course Name: Basic Engine Performance

Course Abbreviation: VMT 1414

Classification: Vocational-Technical Core

Description: Advanced skills and knowledge related to the maintenance and adjustment of gasoline and diesel engines for optimum performance. Instruction and practice in the diagnosis and correction of problems associated with poor performance. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: Electrical Systems (VMT 1123)



Course Name: Hydraulics

Course Abbreviation: VMT 1513

Classification: Vocational-Technical Elective

Description: Instruction and practice in the basic operation and maintenance of hydraulic systems associated with diesel powered equipment. Instruction in safety, system operation, seals and cylinders, and filters. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisite: None



Course Name: Basic Fuel Systems

Course Abbreviation: VMT 1614

Classification: Vocational-Technical Core

Description: Advanced skills and knowledge related to the repair, maintenance, and adjustment of conventional carburetion systems and emission control. Instruction in the diagnosis and repair/adjustment of carburetors, fuel injection systems, and conventional emission control systems. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Engine Repair

Course Abbreviation: VMT 1715

Classification: Vocational-Technical Core

Description: Advanced skills and knowledge related to the repair and rebuilding of automotive-type engines. Instruction and practice in the diagnosis and repair of engine components including valve trains, blocks, pistons and connecting rods, crankshafts, and oil pumps. (5 sch: 2 hr. lecture, 6 hr. lab)

Prerequisites: None



Course Name: Diesel Engine Troubleshooting and Tune-up

Course Abbreviation: VMT 2243

Classification: Vocational-Technical Elective

Description: Advanced skills and knowledge related to the diagnosis of problems in the different systems of the diesel engine. Instruction in general engine diagnosis and tune-up/service. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Engine Repair (VMT 1715)

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Course Name: Automatic Transmissions/Transaxles

Course Abbreviation: VMT 2325

Classification: Vocational-Technical Elective

Description: Technical skills and knowledge related to the diagnosis and repair of automotive-type automatic transmissions and transaxles. Instruction and practice in testing and inspecting these devices and in disassembly, repair, and reassembly. (5 sch: 3 hr. lecture, 4 hr. lab)

Prerequisites: None

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Course Name: Steering and Suspension Systems

Course Abbreviation: VMT 2334

Classification: Vocational-Technical Core (Associate Degree Program); Vocational-Technical Elective (Certificate Program)

Description: Advanced skills and knowledge related to the inspection and repair of steering and suspension systems on automobiles. Instruction and practice in the diagnosis of steering system problems and the repair/replacement of steering systems components. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: None

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Course Name: Wheel Alignment

Course Abbreviation: VMT 2343

Classification: Vocational-Technical Core (Associate Degree Program); Vocational-Technical Elective (Certificate Program)

Description: Technical skills and knowledge related to the alignment of both front and rear wheel on automobiles. It includes instruction and practice in the inspection, detection, and correction of wheel alignment problems. (3 sch: 1 hr. lecture, 4 hr. lab)

Pre/Corequisites: Steering and Suspension Systems (VMT 2334)

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Course Name: Computer Controlled Emission Systems

Course Abbreviation: VMT 2525

Classification: Vocational-Technical Core

Description: Technical skills and knowledge related to the inspection and repair/adjustment of automobile carburetors and emission systems. Instruction and practice in the diagnosis and correction of problems associated with computerized carburetors, emission control systems, and spark timing controls found on newer model fuel systems. (5 sch: 2 hr. lecture, 6 hr. lab)

Prerequisites: Electrical Systems (VMT 1123) and Basic Fuel Systems (VMT 1614)



Course Name: Computerized Engine Controls

Course Abbreviation: VMT 2535

Classification: Vocational-Technical Elective

Description: Technical skills and knowledge associated with computer controls found in newer cars. Instruction and practice in the diagnosis and correction of problems associated with computer controls of the ignition and fuel injection system. (5 sch: 2 hr. lecture, 6 hr. lab)

Prerequisites: Computer Controlled Emission Systems (VMT 2525)



Course Name: Heating and Air Conditioning

Course Abbreviation: VMT 2614

Classification: Vocational-Technical Core (Associate Degree Program); Vocational-Technical Elective (Certificate Program)

Description: Advanced skills and knowledge associated with the maintenance and repair of automotive heating and air conditioning systems. Instruction and practice in the diagnosis and repair of heating and air conditioning system components, and control systems. (4 sch: 2 hr. lecture, 4 hr. lab)

Prerequisites: None



Course Name: Advanced Brake Systems (Air)

Course Abbreviation: VMT 2623

Classification: Vocational-Technical Elective

Description: Instruction and practice in the maintenance and repair of air brake systems commonly used on commercial diesel powered equipment. Includes instruction in maintenance and repair of the air supply system, mechanical system, anti-lock braking system, and traction control system. (3 sch: 1 hr. lecture, 4 hr. lab)

Prerequisites: Brakes (VMT 1213)



Course Name: Special Problem in Vehicle and Mobile Equipment Mechanics Technology

Course Abbreviation: VMT 291(1-6)

Classification: Vocational-Technical Elective (Associate Degree Program)

Description: Provides the student with practical application of skills and knowledge gained in the courses. The instructor works closely with the student to insure that the selection of a project will enhance the student's learning experience. (1-3 sch: 2-6 hr. lab)

Prerequisite: Consent of Instructor



Course Name: Supervised Work Experience in Vehicle and Mobile Equipment
Mechanics Technology

Course Abbreviation: VMT 292(1-6)

Classification: Vocational-Technical Elective (Associate Degree Program)

Description: A cooperative program between industry and education and is designed to integrate the student's technical studies with industrial experience. Variable credit is awarded on the basis of one semester hour per 45 industrial contact hours. (1-6 sch: 3-18 hr. externship)

Prerequisite: Consent of instructor



WORK-BASED LEARNING

WORK-BASED LEARNING



Course Name: Work-Based Learning I, II, III, IV, V, and VI

Course Abbreviation: WBL 191(1-6), WBL 192(1-6), WBL 193(1-6), WBL 291(1-6), WBL 292(1-6), WBL 293(1-6)

Classification: Vocational-Technical Elective

Description: A structured worksite learning experience in which the student, work-based learning coordinator, and worksite supervisor/mentor develop and implement a business/education contract (training agreement). Designed to integrate the student's academic and technical skills into a work environment. Includes regular meetings and seminars with school personnel for supplemental instruction and feedback (progress reviews). (1-6 sch; minimum of 15 contact hours of paid employment per week required)

Pre/corequisite: Concurrent enrollment in vocational-technical program area courses



APPENDIX A:
RELATED ACADEMIC TOPICS

APPENDIX A

RELATED ACADEMIC TOPICS FOR COMMUNICATIONS

- C1 Interpret written material.
- C2 Interpret visual materials (maps, charts, graphs, tables, etc.).
- C3 Listen, comprehend, and take appropriate actions.
- C4 Access, organize, and evaluate information.
- C5 Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.
- C6 Communicate ideas and information effectively using various oral and written forms for a variety of audiences and purposes.

EXPANDED TOPICS FOR COMMUNICATIONS

TOPIC C1: Interpret written material.

- C1.01 Read and follow complex written directions.
- C1.02 Recognize common words and meanings associated with a variety of occupations.
- C1.03 Adjust reading strategy to purpose and type of reading.
- C1.04 Use sections of books and reference sources to obtain information.
- C1.05 Compare information from multiple sources and check validity.
- C1.06 Interpret items and abbreviations used in multiple forms.
- C1.07 Interpret short notes, memos, and letters.
- C1.08 Comprehend technical words and concepts.
- C1.09 Use various reading techniques depending on purpose for reading.
- C1.10 Find, read, understand, and use information from printed matter or electronic sources.

TOPIC C2: Interpret visual materials (maps, charts, graphs, tables, etc.).

- C2.01 Use visuals in written and in oral presentations.
- C2.02 Recognize visual cues to meaning (layout, typography, etc.).
- C2.03 Interpret and apply information using visual materials.

TOPIC C3: Listen, comprehend, and take appropriate action.

- C3.01 Identify and evaluate orally-presented messages according to purpose.
- C3.02 Recognize barriers to effective listening.
- C3.03 Recognize how voice inflection changes meaning.
- C3.04 Identify speaker signals requiring a response and respond accordingly.
- C3.05 Listen attentively and take accurate notes.

- C3.06 Use telephone to receive information.
- C3.07 Analyze and distinguish information from formal and informal oral presentations.

TOPIC C4: Access, organize, and evaluate information.

- C4.01 Distinguish fact from opinion.
- C4.02 Use various print and non-print sources for specialized information.
- C4.03 Interpret and distinguish between literal and figurative meaning.
- C4.04 Interpret written or oral communication in relation to context and writer's point of view.
- C4.05 Use relevant sources to gather information for written or oral communication.

TOPIC C5: Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.

- C5.01 Select appropriate words for communication needs.
- C5.02 Use reading, writing, listening, and speaking skills to solve problems.
- C5.03 Compose inquiries and requests.
- C5.04 Write persuasive letters and memos.
- C5.05 Edit written reports, letters, memos, and short notes for clarity, correct grammar, and effective sentences.
- C5.06 Write logical and understandable statements, phrases, or sentences for filling out forms, for correspondence or reports.
- C5.07 Write directions or summaries of processes, mechanisms, events, or concepts.
- C5.08 Select and use appropriate formats for presenting reports.
- C5.09 Convey information to audiences in writing.
- C5.10 Compose technical reports and correspondence that meet accepted standards for written communications.

TOPIC C6: Communicate ideas and information using oral and written forms for a variety of audiences and purposes.

- C6.01 Give complex oral instructions.
- C6.02 Describe a business or industrial process/mechanism.
- C6.03 Participate effectively in group discussions and decision making.
- C6.04 Produce effective oral messages utilizing different media.
- C6.05 Explore ideas orally with partners.
- C6.06 Participate in conversations by volunteering information when appropriate and asking relevant questions when appropriate.
- C6.07 Restate or paraphrase a conversation to confirm one's own understanding.
- C6.08 Gather and provide information utilizing different media.

- C6.09 Prepare and deliver persuasive, descriptive, and demonstrative oral presentations.

RELATED ACADEMIC TOPICS FOR MATHEMATICS

- M1 Relate number relationships, number systems, and number theory.
- M2 Explore patterns and functions.
- M3 Explore algebraic concepts and processes.
- M4 Explore the concepts of measurement.
- M5 Explore the geometry of one-, two-, and three-dimensions.
- M6 Explore concepts of statistics and probability in real world situations.
- M7 Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

EXPANDED TOPICS FOR MATHEMATICS

TOPIC M1: Relate number relationships, number systems, and number theory.

- M1.01 Understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, and scientific notation) in real world and mathematical problem situations.
- M1.02 Develop number sense for whole numbers, fractions, decimals, integers, and rational numbers.
- M1.03 Understand and apply ratios, proportions, and percents in a wide variety of situations.
- M1.04 Investigate relationships among fractions, decimals, and percents.
- M1.05 Compute with whole numbers, fractions, decimals, integers, and rational numbers.
- M1.06 Develop, analyze, and explain procedures for computation and techniques for estimations.
- M1.07 Select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods.
- M1.08 Use computation, estimation, and proportions to solve problems.
- M1.09 Use estimation to check the reasonableness of results.

TOPIC M2: Explore patterns and functions.

- M2.01 Describe, extend, analyze, and create a wide variety of patterns.
- M2.02 Describe and represent relationships with tables, graphs, and rules.
- M2.03 Analyze functional relationships to explain how a change in one quantity results in a change in another.
- M2.04 Use patterns and functions to represent and solve problems.

- M2.05 Explore problems and describe results using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.
- M2.06 Use a mathematical idea to further their understanding of other mathematical ideas.
- M2.07 Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as art, music, and business.

TOPIC M3: Explore algebraic concepts and processes.

- M3.01 Represent situations and explore the interrelationships of number patterns with tables, graphs, verbal rules, and equations.
- M3.02 Analyze tables and graphs to identify properties and relationships and to interpret expressions and equations.
- M3.03 Apply algebraic methods to solve a variety of real world and mathematical problems.

TOPIC M4: Explore the concepts of measurement.

- M4.01 Estimate, make, and use measurements to describe and compare phenomena.
- M4.02 Select appropriate units and tools to measure to the degree of accuracy required in a particular situation.
- M4.03 Extend understanding of the concepts of perimeter, area, volume, angle measure, capacity, and weight and mass.
- M4.04 Understand and apply reasoning processes, with special attention to spatial reasoning and reasoning with proportions and graphs.

TOPIC M5: Explore the geometry of one-, two-, and three-dimensions.

- M5.01 Identify, describe, compare, and classify geometric figures.
- M5.02 Visualize and represent geometric figures with special attention to developing spatial sense.
- M5.03 Explore transformations of geometric figures.
- M5.04 Understand and apply geometric properties and relationships.
- M5.05 Classify figures in terms of congruence and similarity and apply these relationships.

TOPIC M6: Explore the concepts of statistics and probability in real world situations.

- M6.01 Systematically collect, organize, and describe data.
- M6.02 Construct, read, and interpret tables, charts, and graphs.
- M6.03 Develop an appreciation for statistical methods as powerful means for decision making.

- M6.04 Make predictions that are based on exponential or theoretical probabilities.
- M6.05 Develop an appreciation for the pervasive use of probability in the real world.

TOPIC M7: Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

- M7.01 Use computers and/or calculators to process information for all mathematical situations.
- M7.02 Use problem-solving approaches to investigate and understand mathematical content.
- M7.03 Formulate problems from situations within and outside mathematics.
- M7.04 Generalize solutions and strategies to new problem situations.

RELATED ACADEMIC TOPICS FOR SCIENCE

- S1 Explain the Anatomy and Physiology of the human body.
- S2 Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.
- S3 Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.
- S4 Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.
- S5 Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.
- S6 Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.
- S7 Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance, population genetics, the structure and function of DNA, and current applications of DNA technology.
- S8 Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.

EXPANDED TOPICS FOR SCIENCE

TOPIC S1: Explain the Anatomy and Physiology of the human body.

- S1.01 Recognize common terminology and meanings.
- S1.02 Explore the relationship of the cell to more complex systems within the body.

- S1.03 Summarize the functional anatomy of all the major body systems.
- S1.04 Relate the physiology of the major body systems to its corresponding anatomy.
- S1.05 Compare and contrast disease transmission and treatment within each organ system.
- S1.06 Explore the usage of medical technology as related to human organs and organ systems.
- S1.07 Explain the chemical composition of body tissue.

TOPIC S2: Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.

- S2.01 Identify the major types and structures of plants, viruses, monera, algae protista, and fungi.
- S2.02 Explain sexual and asexual reproduction.
- S2.03 Describe the ecological importance of plants as related to the environment.
- S2.04 Analyze the physical chemical and behavioral process of a plant.

TOPIC S3: Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.

- S3.01 Explain the morphology, anatomy, and physiology of animals.
- S3.02 Describe the characteristics, behaviors, and habitats of selected animals.

TOPIC S4: Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.

- S4.01 Examine minerals and their identification, products of the rock cycle, byproducts of weathering, and the effects of erosion.
- S4.02 Relate the Hydrologic Cycle to include groundwater its zones, movement, and composition; surface water systems, deposits, and runoff.
- S4.03 Consider the effects of weather and climate on the environment.
- S4.04 Examine the composition of seawater; wave, tides, and currents; organisms, environment, and production of food; energy, food and mineral resources of the oceans.

TOPIC S5: Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.

- S5.01 Examine the science of chemistry to include the nature of matter, symbols, formulas and nomenclature, and chemical equations.

- S5.02 Identify chemical reactions including precipitation, acids-bases, and reduction-oxidation.
- S5.03 Explore the fundamentals of chemical bonding and principles of equilibrium.
- S5.04 Relate the behavior of gases.
- S5.05 Investigate the structure, reactions, and uses of organic compounds; and investigate nuclear chemistry and radiochemistry.
- TOPIC S6: Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.
- S6.01 Examine fundamentals of motion of physical bodies and physical dynamics.
- S6.02 Explore the concepts and relationships among work, power, and energy.
- S6.03 Explore principles, characteristics, and properties of electricity, magnetism, light energy, thermal energy, and wave energy.
- S6.04 Identify principles of modern physics related to nuclear physics.
- TOPIC S7: Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance; population genetics, the structure and function of DNA, and current applications of DNA technology.
- S7.01 Examine principles, techniques, and patterns of traits and inheritance in organisms.
- S7.02 Apply the concept of population genetics to both microbial and multicellular organism.
- S7.03 Identify the structure and function of DNA and the uses of DNA technology in science, industry, and society.
- TOPIC S8: Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.
- S8.01 Apply the components of scientific processes and methods in classroom and laboratory investigations.
- S8.02 Observe and practice safe procedures in the classroom and laboratory.
- S8.03 Demonstrate proper use and care for scientific equipment.
- S8.04 Investigate science careers, and advances in technology.
- S8.05 Communicate results of scientific investigations in oral, written, and graphic form.

APPENDIX B:
WORKPLACE SKILLS

APPENDIX B
WORKPLACE SKILLS FOR THE 21ST CENTURY

- WP1 Allocates resources (time, money, materials and facilities, and human resources).
- WP2 Acquires, evaluates, organizes and maintains, and interprets/communicates information, including the use of computers.
- WP3 Practices interpersonal skills related to careers including team member participation, teaching other people, serving clients/customers, exercising leadership, negotiation, and working with culturally diverse.
- WP4 Applies systems concept including basic understanding, monitoring and correction system performance, and designing and improving systems.
- WP5 Selects, applies, and maintains/troubleshoots technology.
- WP6 Employs thinking skills including creative thinking, decision making, problem solving, reasoning, and knowing how to learn.
- WP7 Basic Skills: Employs basic academic skills including reading, writing, arithmetic and mathematics, speaking, and listening.
- WP8 Personal Qualities: Practices work ethics related to individual responsibility, integrity, honesty, and personal management.