

Course Descriptions

HEALTH EDUCATION (HED)

- HED 221 PERSONAL HEALTH (3T) 3 credits**
This course introduces principles and practices of personal and family health. It includes human reproduction, growth and development, psychological dimensions of health, human sexuality, nutrition and fitness, aging, death and dying.
- HED 222 COMMUNITY HEALTH (3T) 3 credits**
This course introduces principles and practices of community health. It includes drug use and abuse, communicable diseases, cardiovascular diseases, cancer, consumer health, health organization, and environmental concerns.
- HED 226 WELLNESS (1-3T) 1-3 credits**
This course provides health-related education to those individuals seeking advancement in the area of personal wellness. This course has 5 major components: (1) fitness and health assessment, (2) physical work capacity, (3) education, (4) reassessment and (5) retesting.
- HED 230 SAFETY AND FIRST AID (3T) 3 credits**
HED 230 is divided into two parts. The first part concerns itself with the development of a safety education program within an organization (i.e. school, office, shop, etc.). The second part deals with physical injuries, emergency care, and treatment of those injuries. CPR certification and Standard Red Cross cards are given upon successful completion of American Red Cross requirements.
- HED 231 FIRST AID (3T) 3 credits**
This course provides instruction to the immediate, temporary care which should be given to the victims of accidents and sudden illnesses. It also includes standard and advanced requirements of the American Red Cross and/or the American Heart Association. CPR training also is included.
- HED 277 CPR RECERTIFICATION (1T) 1 credit**
In this course, instruction and review of up-dated information concerning cardio-pulmonary resuscitation (CPR) is presented. The student must satisfactorily execute skills needed to meet requirements for recertification in Basic Cardiac Life Support (BCLS) as required by the American Heart Association.

HISTORY (HIS)

- HIS 101 WESTERN CIVILIZATION I (3T) 3 credits**
This course is a survey of social, intellectual, economic, and political developments which have molded the modern western world. The course covers the ancient and medieval periods and concludes in the era of the Renaissance and Reformation.
- HIS 102 WESTERN CIVILIZATION II (3T) 3 credits**
This course is a continuation of HIS 101; it surveys development of the modern western world from the

era of the Renaissance and Reformation to the present.

- HIS 111 TECHNOLOGY AND CIVILIZATION I (3T) 3 credits**
This course introduces the interaction between technology and culture in World History from prehistoric times to 1750. While the course provides a basic survey of World History, primary emphasis is placed on technological change and its consequences.
- HIS 112 TECHNOLOGY AND CIVILIZATION II (3T) 3 credits**
This course is a continuation of HIS 111. It surveys technology and culture in World History from 1750 to the present. The course provides a basic survey of modern world history. The course places primary emphasis on technological change and its consequences.
- HIS 121 WORLD HISTORY I (3T) 3 credits**
This course surveys social, intellectual, economic, and political developments which have molded the modern world. Focus is on both non-western and western civilizations from the prehistoric to the early modern era.
- HIS 122 WORLD HISTORY II (3T) 3 credits**
This course is a continuation of HIS 121; it covers world history, both western and non-western, from the early modern era to the present.
- HIS 201 UNITED STATES HISTORY I (3T) 3 credits**
This course surveys United States history during colonial, Revolutionary, early national, and antebellum periods. It concludes with the Civil War and reconstruction.
- HIS 202 UNITED STATES HISTORY II (3T) 3 credits**
This course is a continuation of HIS 201; it surveys United States history from the Reconstruction era to the present.
- HIS 216 HISTORY OF WORLD RELIGIONS (3T) 3 credits**
This course presents a comparison of the major religions of the world from an historical perspective. Emphasis is placed on the origin, development, and social influence of Christianity, Judaism, Islam, Hinduism, Buddhism, and others.
- HIS 220 CONTEMPORARY STUDIES (3T) 3 credits**
This course provides a survey of contemporary problems and issues within an historical context. Topics might include nationalism, the rise of Islam as a powerful influence in the post-Cold War environment, environmental issues, and the impact of colonialism on modern, Third World society.
- HIS 256 AFRICAN-AMERICAN HISTORY (3T) 3 credits**
This course focuses on the experience of African-American people in the Western Hemisphere, particularly in the United States. It surveys the period from the African origins of the slave trade during the period of exploration and colonization to the present. The

course presents a comparison between the African experience in the United States and in Mexico and South America.

HIS 260 ALABAMA HISTORY (3T) 3 credits
This course surveys development of the state of Alabama from its prehistoric times to the present. The course presents material on the discovery, exploration, colonization, territorial period, antebellum Alabama, Reconstruction, and modern history.

HIS 299 DIRECTED STUDIES IN HISTORY (1-3T) 1-3 credits
This course affords students opportunities to study selected topics of a historical nature under the direction of an instructor either as part of class or on an individual basis. Internships with historical and preservation organizations, thesis development, and the analysis of secondary monographs are examples of activities for this course. HIS 299 may be repeated for credit.

HIS 299A HISTORY OF THE ANTEBELLUM SOUTH (1-3T) 1-3 credits
This is a special History section in that it revolves around a 2-day field trip in the Antebellum South. The trip will consist of visiting several antebellum plantations/homes in the South. Two major topics will be addressed in this course and on the trip; (1) Life in/on southern antebellum plantations, and (2) the Jacksonian Era. In the readings for this course, the student will be introduced to a variety of peoples, places, and events that played an integral part in shaping the antebellum south. On the trip, the student will see numerous sites ranging from Rippavilla Plantation to The Hermitage. This trip back through time will, among other things, enable the student to perceive the past as it was experienced by those at the time and acquire both a comprehension of diverse cultures and of shared humanity.

HIS 299B SOUTHERN CIVIL WAR HISTORY (1-3T) 1-3 credits
This is a special History section in that it revolves around a 2-day field trip to southern Civil War locations. The trip will consist of visiting several locations that were important in the South's attempt at independence from the Union. Two major topics will be addressed in this course and on the trip; (1) Life in the south before, during, and after the Civil War, and (2) some of the battles that took place in the South. In the readings for this course, the student will be introduced to a variety of peoples, places, and events that played an integral part in shaping the South's struggle for independence. On the trip, the student will see numerous sites ranging from Carnton House to the Shiloh Battlefield. This trip back through time will, among other things, enable the student to perceive the past as those at the time experienced it and acquire both a comprehension of diverse cultures and of shared humanity.

HIS 299C NATCHEZ TRACE HISTORY (1-3T) 1-3 credits
This is a special History section in that it revolves around a 3-day field trip down the Natchez Trace Parkway. The trip will consist of visiting several loca-

tions that were important in development and growth of the Natchez Trace. Two major topics will be addressed in this course and on the trip; (1) Life and travel along the Old Natchez Trace, and (2) Mounds and Mound Builders along the Old Natchez Trace. In the readings for this course, the student will be introduced to a variety of peoples, and in some cases, specific individuals, who traveled, settled, lived, and died along this historic path. On the trip, the student will see numerous historic markers and sites ranging from pre-Columbian Indian mounds to early 19th century stands. This trip back through time will, among other things, enable the student to perceive the past as those at the time experienced it and acquire both a comprehension of diverse cultures and of shared humanity.

HIS 299D HISTORY THROUGH FILM (1-3T) 1-3 credits
What, if anything, can you learn about history by watching movies? This course looks at critical historical moments and issues of conflict and change, through the vehicle of film. The course is designed to teach students how to use films as historical evidence and how to analyze films as historical documents. This course analyzes relationships between film and history, that is, the ways in which films recreate, distort, interpret, and communicate historic events and personalities. We will look at issues of authenticity and voice, some of the pitfalls of using film to understand history, and the role of cinema in the creation of national and popular memory. Although most of these films have been analyzed on many levels, the emphasis of this particular course will be on content and social or political vision, rather than film theory, technique, or aesthetics. By watching, discussing, and writing about these films, we will examine how motion pictures create a window into society. Students will learn how to read films as cultural texts that help us better understand our history and culture. One of the two weekly class meetings will be a film showing; in addition to required readings, there will sometimes be a second film assigned to watch outside of class.

HIS 299E TWENTIETH-CENTURY AMERICA (1-3T) 1-3 credits
This course looks at critical historical moments and issues in America's twentieth century, such as, the origins and consequences of World War II; the Truman administration and the Fair Deal; the origins of the Cold War; international and domestic issues and conflicts from the 1940s to the 1990s. The twentieth century saw many individuals and events that changed the course of American history with dramatic speed and force. Two World Wars, the presidency of Franklin Roosevelt, the Cold War, Hollywood, Civil Rights, the Kennedy years, the Clinton presidency-the period holds an abundance of themes and topics ripe for historical and investigative support by swathes of textual and experiential evidence.

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HEALTH SCIENCE (HPS)

HPS 100 SAFETY ISSUES FOR CLINICAL PRACTICE (1T) 1 credit
PREREQUISITE: ENG 101, SPH 107, PSY 200, MTH 100 or MTH 112 or MTH 116 (FOR NUR STUDENTS; ONLY) or Permission of instructor.
COREQUISITE: BIO 201, PSY 210, NUR 110, NUR 131, NUR 241 (FOR NUR STUDENTS ONLY).

This course focuses on microbial and physical safety for clinical practice. Emphasis is placed on guidelines established by the Occupational Safety and Health Administration (OSHA) and the Alabama State Department of Public Health: topics include prevention of transmission of blood-borne and air-borne pathogens as well as prevention of injuries during clinical practice. Upon completion of this course, the student should be able to participate in the clinical setting implementing measures which will prevent injuries and using appropriate universal precautions.

HPS 105 MEDICAL TERMINOLOGY (2T, 2E) 3 credits
PREREQUISITE: As required by program.

This course is an application for the language of medicine. Emphasis is placed on terminology associated with health care, spelling, pronunciation, and meanings associated with prefixes, suffixes, and roots as they relate to anatomical body systems. Upon completion of this course, the student should be able to correctly abbreviate medical terms and appropriately use medical terminology in verbal and written communication.

HPS 113 SPANISH FOR HEALTH CARE PROFESSIONALS (3T) 3 credits

This course provides an introduction to Spanish with a focus on the basic communication skills and vocabulary needed by health professionals when a non-English speaking Hispanic enters a health care setting. Topics include soliciting identification information, history taking, performance of physical exam and giving instructions on general care and follow-up.

HPS 114 BASIC PHARMACOLOGY (2T) 2 credits
PREREQUISITE: As required by program.

This course is an introduction to basic pharmacology. Content includes classifications, indications, contraindications, desired effects, and side effects of medications used during diagnostic procedures and the prevention and treatment of common illnesses. Upon completion of the course, the student should be able to relate basic pharmacological concepts to the maintenance of health.

INTERDISCIPLINARY STUDIES (IDS)

IDS 114 INTERDISCIPLINARY SEMINAR: CURRENT TOPICS IN HUMAN CONCERNS (1-2T) 1-2 credits
PREREQUISITE: Permission of the instructor.

This course is a seminar/discussion course designed to provide an opportunity for the student to conduct

an in-depth investigation of selected topics. The particular topic selected will include issues from two or more disciplines and is determined by faculty and student interest. Classroom experiences emphasize and help develop skills in organizing and presenting information as well as explaining and defending ideas and conclusions. An oral seminar presentation is required. IDS 114 may be repeated for credit.

INDUSTRIAL ELECTRONICS TECHNOLOGY (ILT)

ILT 103 INTRODUCTION TO INSTRUMENTATION TECHNOLOGY (1T, 6M) 3 credits
PREREQUISITE: ELT 108 and ELT 109

This course introduces various hand and power tools, basic blueprint reading, basic rigging and basic math that will be used in the electronic, instrumentation and electrical trades. Emphasis is placed on basic hand tool and power tool safety and procedures for selecting, inspecting, using and maintaining these tools. Upon completion, students should be able to identify and use various hand and power tools, read a blueprint and know how to perform basic rigging.

ILT 104 INDUSTRIAL INSTRUMENTATION (3T) 3 credits
PREREQUISITE: ILT 103

This course provides a study of instrumentation circuits/systems. Topics include the use of transducers, detectors, actuators, and/or other devices and equipment in industrial applications. Upon completion, the student should be able to apply principles of instrumentation circuits and systems.

ILT 105 INDUSTRIAL INSTRUMENTATION LAB (6M) 2 credits
COREQUISITE: ILT 104

A companion to ILT 104, this lab includes the use of transducers, detectors, actuators, and/or other devices and equipment in industrial application. Upon completion of the course, the student should be able to apply principles of instrumentation circuits and systems.

ILT 108 INTRODUCTION TO INSTRUMENTS AND PROCESS CONTROL (2T, 3M) 3 credits
PREREQUISITE: ILT 104, ILT 105

This course is an introductory study of the control devices and methods used in industry for the control and transmission of information pertaining to process variables. This study includes an introduction to instrumentation and control mathematics. This course also provides instruction in the fundamental concepts of pressure, force, weight, motion, liquid level, fluid flow and temperature.

ILT 163 DIGITAL FUNDAMENTALS (1T,6M) 3 credits
PREREQUISITE: ELT 108 AND ELT 109
COREQUISITE: ELT 221

This course provides instruction on basic logic gates, flip-flops, registers, counters, microprocessor/com-

puter fundamentals, analog to digital conversion, and digital analog conversion. Emphasis is placed on number systems, Boolean algebra, combination logic circuits, sequential logic circuits, and typical micro-processor data manipulation and storage. This course also has an embedded lab with exercises designed to develop skills required by industry. Upon completion, students should be able to analyze digital circuits, draw timing diagrams, determine output of combinational and sequential logic circuits and diagnose and troubleshoot electronic components as well as demonstrate knowledge of microprocessor and computer circuits.

- ILT 201 INDUSTRIAL ELECTRONICS (3T) 3 credits**
PREREQUISITE: ELT 221
This course covers applications of electronics in the industry with a major emphasis on microprocessors as applied to data acquisitions and machine control. Topics include A/D and D/A conversion, signal conditioning, sensors and transducers, control devices, stepper motors, and microprocessor interfacing. Upon completion of this course, students should be able to describe the operation of various sensors, signal conditioning, A/D and D/A conversion, and control devices, as well as perform necessary calculations.
- ILT 202 INDUSTRIAL ELECTRONICS LAB (6M) 2 credits**
COREQUISITE: ILT 201
This course demonstrates the concepts, devices, and applications of electronics in industrial processes. Upon completion of this course, students should be able to construct, evaluate and calibrate basic industrial sensing and control circuits.
- ILT 214 CONTROL AND TROUBLESHOOTING FLOW, LEVEL, TEMPERATURE, PRESSURE AND LEVEL PROCESSES (2T, 3M) 3 credits**
PREREQUISITE: ELT 221, ELT 231, ELT 232, ILT 163
The student is introduced to analog and digital process control systems. The student is also introduced to process control techniques commonly found in industrial processes used to maintain control process variables. The student gains knowledge and experience in the design and selection of equipment used in troubleshooting control loops on actual equipment in the lab.
- ILT 216 INDUSTRIAL ROBOTICS (3T) 3 credits**
PREREQUISITE : ELT 108 and ELT 109
COREQUISITE: ILT 217
This course covers principles of electro-mechanical devices. Topics include the principles, concepts, and techniques involved in interfacing microcomputers to various electro-mechanical devices to produce geographical movement. Upon completion, students should be able to apply the principles of electro-mechanical devices.

- ILT 217 INDUSTRIAL ROBOTICS LAB (6M) 2 credits**
COREQUISITE: ILT 216
This lab covers the principles, concepts, and techniques involved in interfacing microcomputers to various electro-mechanical devices to produce geographical movement. Upon completion students should be able to apply the principles of electro-mechanical devices.
- ILT 291 COOPERATIVE EDUCATION (15I) 3 credits**
PREREQUISITE: Permission of Instructor
This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.
- ILT 292 COOPERATIVE EDUCATION (15I) 3 credits**
PREREQUISITE: Permission of Instructor
This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.
- ILT 293 COOPERATIVE EDUCATION (15I) 3 credits**
PREREQUISITE: Permission of Instructor
This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

INDUSTRIAL MAINTENANCE TECHNOLOGY (INT)

- INT 112 INDUSTRIAL MAINTENANCE SAFETY PROCEDURES (2T, 3M) 3 credits**
This course is an in-depth study of the health and safety practices required for maintenance of industrial production equipment. Topics include traffic, ladder, electrical, and fire safety, safe work in confined spaces, electrical and mechanical lock-out procedures, emergency procedures, OSHA regulations, MSDS Right-to-Know law, hazardous materials safety, and safety equipment use and care. Upon course completion, students will be able to implement health and safety practices in an industrial setting.
- INT 117 PRINCIPLES OF INDUSTRIAL MECHANICS (1T, 3M) 3 credits**
This course provides instruction in basic physics concepts applicable to mechanics of industrial production equipment. Topics include the basic application of

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mechanical principles with emphasis on power transmission, specific mechanical components, alignment, and tension. Upon completion, students will be able to perform basic troubleshooting, repair and maintenance functions on industrial production equipment.

INT 118 FUNDAMENTALS OF INDUSTRIAL HYDRAULICS & PNEUMATICS (1T, 6M) 3 credits

This course includes the fundamental concepts and theories for the safe operation of hydraulic and pneumatic systems used with industrial production equipment. Topics include the physical concepts, theories, laws, air flow characteristics, actuators, valves, accumulators, symbols, circuitry, filters, servicing safety, and preventive maintenance and the application of these concepts to perform work. Upon completion, students should be able to service and perform preventive maintenance functions on hydraulic and pneumatic systems.

INT 126 PREVENTIVE MAINTENANCE (1T, 6M) 3 credits

This course focuses on the concepts and applications of preventive maintenance. Topics include the introduction of alignment equipment, job safety, tool safety, preventive maintenance concepts, procedures, tasks, and predictive maintenance concepts. Upon course completion, students will demonstrate the ability to apply proper preventive maintenance and explain predictive maintenance concepts.

INT 127 PRINCIPLES OF INDUSTRIAL PUMPS AND PIPING SYSTEMS (2T,3M) 3 credits

This course provides instruction in the fundamental concepts of industrial pumps and piping systems. Topics include pump identification, operation, and installation, maintenance and troubleshooting, and piping systems and their installation. Upon course completion, students will be able to install, maintain, and troubleshoot industrial pumps and piping systems.

INT 234 PRINCIPLES OF INDUSTRIAL MAINTENANCE WELDING AND METAL CUTTING TECHNIQUES (1T, 6M) 3 credits

This course provides instruction in the fundamentals of acetylene cutting and the basics of welding needed for the maintenance and repair of industrial production equipment. Topics include oxy-fuel safety, choice of cutting equipment, proper cutting angles, equipment setup, cutting plate and pipe, hand tools, types of metal welding machines, rod and welding joints, and common welding passes and beads. Upon course completion, students will demonstrate the ability to perform metal welding and cutting techniques necessary for repairing and maintaining industrial equipment.

INT 291 COOPERATIVE EDUCATION (15I) 3 credits
PREREQUISITE: Permission of Instructor

This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

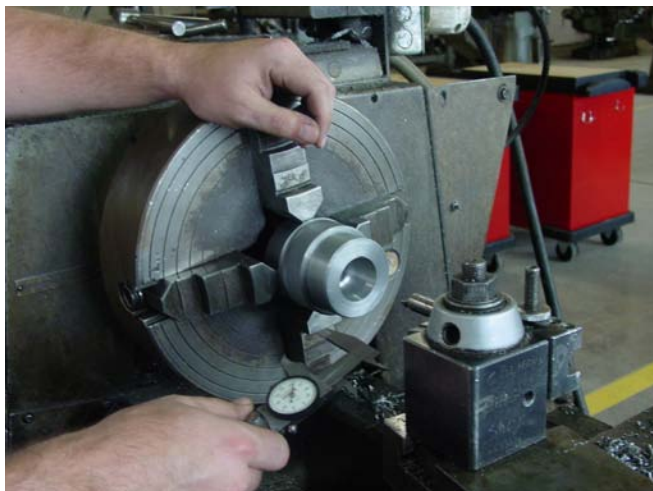
INT 292 COOPERATIVE EDUCATION (15I) 3 credits
PREREQUISITE: Permission of Instructor

This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

INT 293 COOPERATIVE EDUCATION (15I) 3 credits
PREREQUISITE: Permission of Instructor

This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

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MACHINE TOOL TECHNOLOGY (MTT)

MTT 107 MACHINING CALCULATIONS I (3T) 3 credits
PREREQUISITES: MTT 147 and MTT 149 or Permission of Instructor

This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations. This course is aligned with NIMS certification standards.

MTT 108 MACHINIST HANDBOOK FUNCTIONS I (3T) 3 credits
PREREQUISITES: MTT 107 or Permission of Instructor

This course covers the machinist's handbook. Emphasis is placed on formulas, tables, usage and

	related information. Upon completion, students should be able to use the handbook in the calculation and set-up of machine tools. This course is aligned with NIMS certification standards.		
MTT 109	ORIENTATION TO COMPUTER ASSISTED MANUFACTURING (3T) 3 credits PREREQUISITE: MTT 140 and MTT 141 or Permission of Instructor This course serves as an overview and introduction to computer assisted manufacturing (CAM) and prepares students for more advanced CAM courses. Topics covered are basic concepts and terminology, CAM software environments, navigation commands and file management, 2-D geometry, construction modification, and toolpath generation for CAM machining processes.	MTT 134	ENGINE LATHE I (2T,2E) 3 credits PREREQUISITE: MTT 149 AND MTT 150 COREQUISITE: MTT 135 This course includes more advanced lathe practices such as set-up procedures, work planning, inner- and outer-diameter operations, and inspection and process improvement. Additional emphasis is placed on safety procedures. Upon completion, students will be able to apply advanced lathe techniques. This course is aligned with NIMS standards.
MTT 126	BASIC BLUEPRINT READING FOR MACHINISTS (3T) 3 credits PREREQUISITES: Permission of Instructor This course covers the basic principles of blueprint reading and sketching. Topics include multiview drawings; interpretation of conventional lines; and dimensions, notes, and thread notations. Upon completion, students should be able to interpret basic drawings, visualize parts, and make pictorial sketches. This is a CORE course and is aligned with NIMS certification standards.	MTT 135	ENGINE LATHE LAB I (6M) 3 credits FORMERLY MTT 129 PREREQUISITE: MTT 107 COREQUISITE: MTT 134 This course includes more advanced lathe practices such as set-up procedures, work planning, inner- and outer-diameter operations, and inspection and process improvement. Additional emphasis is placed on safety procedures. Upon completion, students will be able to apply advanced lathe techniques. This course is aligned with NIMS standards.
MTT 127	METROLOGY (2T, 2E) 3 credits PREREQUISITES: MTT 126 and MTT 128 This course introduces the use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion, students should be able to demonstrate correct use of measuring instruments. This is a CORE course and is aligned with NIMS certification standards.	MTT 137	MILLING I (2T,2E) 3 credits FORMERLY MTT 136 PREREQUISITE: MTT 149 AND MTT 107 COREQUISITE: MTT 138 This course covers manual milling operations. Emphasis is placed on related safety, types of milling machines and their uses, cutting speed, feed calculations, and set-up and operation procedures. Upon completion, students should be able to apply manual vertical milling techniques to produce machine tool projects. This course is aligned with NIMS certification standards.
MTT 128	GEOMETRIC DIMENSIONING AND TOLERANCING I (3T) 3 credits PREREQUISITES: MTT 126 or Permission of Instructor This course is designed to teach students how to interpret engineering drawings using modern conventions, symbols, datums, datum targets, and projected tolerance zones. Special emphasis is placed upon print reading skills, and industry specifications and standards. This course is aligned with NIMS certification standards.	MTT 138	MILLING I LAB (6M) 3 credits FORMERLY MTT 136 COREQUISITE: MTT 137 This course provides basic knowledge of milling machines. Emphasis is placed on types of milling machines and their uses, cutting speed, feed calculations, and set-up procedures. Upon completion, students should be able to apply milling techniques to produce machine tool projects. This course is aligned with NIMS certification criteria.
MTT 130	MACHINING CALCULATIONS II (3T) 3 credits FORMERLY MTT 142 PREREQUISITE: MTT 107 This course emphasizes advanced calculations common to machining operations. Students use these calculations for advanced applications for machine setup and planning. Specific topics include positive and negative numbers, symbolism, and algebraic expressions and operations. At the conclusion of this course students will be able to apply advanced machine calculations to equipment set-up and planning.	MTT 139	INTRODUCTION TO COMPUTER NUMERICAL CONTROL (2T,2E) 3 credits PREREQUISITES: MTT 135 or Permission of Instructor This course introduces the concepts and capabilities of computer numeric control (CNC) machine tools. Topics include set-up, operation, and basic applications. Upon completion, students should be able to develop a basic CNC program to safely operate a lathe and milling machine. This course is aligned with NIMS certification standards.

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MTT 140	<p>BASIC COMPUTER NUMERICAL CONTROL TURNING PROGRAMMING I (1T,4E) 3 credits PREREQUISITES: MTT 130 AND MTT 135 AND MTT 139 or Permission of Instructor</p> <p>This course covers concepts associated with basic programming of a computer numerical control (CNC) turning center. Topics include basic programming characteristics, motion types, tooling, workholding devices, set-up documentation, tool compensations, and formatting. Upon completion, students should be able to write a basic CNC turning program that will be used to produce a part. This course is aligned with NIMS certification standards.</p>	MTT 149	<p>INTRODUCTION TO MACHINE SHOP II (2T,2E) 3 credits PREREQUISITE: MTT 147 AND MTT 148 OR Permission of Instructor COREQUISITE: MTT 150</p> <p>This course provides additional instruction and practice in the use of measuring tools, lathes, milling machines, and grinders. Emphasis is placed on set-up and operation of machine tools including the selection of work holding devices, speeds, feeds, cutting tools and coolants. Upon completion, students should be able to perform intermediate level procedures of precision grinding, measuring, layout, drilling, sawing, turning, and milling. This is a CORE course and is aligned with NIMS certification standards.</p>
MTT 141	<p>BASIC COMPUTER NUMERICAL CONTROL MILLING PROGRAMMING I (1T,4E) 3 credits PREREQUISITES: MTT 138 AND MTT 139 or Permission of Instructor</p> <p>This course covers concepts associated with basic programming of a computer numerical control (CNC) milling center. Topics include basic programming characteristics, motion types, tooling, workholding devices, setup documentation, tool compensations, and formatting. Upon completion, students should be able to write a basic CNC milling program that will be used to produce a part. This course is aligned with NIMS certification standards.</p>	MTT 150	<p>INTRODUCTION TO MACHINE SHOP II LAB (6E) 3 credits PREREQUISITE: MTT 147 AND MTT 148 or Permission of Instructor COREQUISITE: MTT 149</p> <p>This course provides additional instruction and practice in the use of measuring tools, lathes, milling machines, and grinders. Emphasis is placed on set-up and operation of machine tools including the selection of work holding devices, speeds, feeds, cutting tools and coolants. Upon completion, students should be able to perform intermediate level procedures of precision grinding, measuring, layout, drilling, sawing, turning, and milling. This is a CORE course and is aligned with NIMS certification standards.</p>
MTT 144	<p>ELECTRICAL DISCHARGE MACHINING I (1T,4E) 3 credits PREREQUISITES: MTT 140 AND MTT 141 or Permission of Instructor</p> <p>This course introduces the student to the concepts of Electrical Discharge Machining (EDM) and the importance of EDM in an industrial setting. Emphasis is placed on safety procedures and machinist responsibility in the set-up and operation of EDM machines and electrode selection. Upon completion, students should be able to produce basic machine products using both the wire-type and plunge-type EDM machines. This course is aligned with NIMS certification standards.</p>	MTT 161	<p>PRECISION GRINDING (2T,2E) 3 credits FORMERLY MTT 146 PREREQUISITE: MTT 138 COREQUISITE: MTT 162</p> <p>This course includes more advanced precision grinder practices such as set-up procedures, work planning, surface grinding, cylindrical grinding, tool and cutter grinding, and inspection and process improvement. Additional emphasis is placed on safety procedures. Upon completion, students will be able to apply advanced precision grinding techniques. This course is aligned with NIMS standards.</p>
MTT 147	<p>INTRODUCTION TO MACHINE SHOP I (2T,2E) 3 credits PREREQUISITE: Permission of Instructor COREQUISITE: MTT 148</p> <p>This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, saws, milling machines, bench grinders, and layout instruments. Upon completion, students will be able to perform the basic operations of measuring, layout, drilling, sawing, turning, and milling. This is a CORE course.</p>	MTT 162	<p>PRECISION GRINDING LAB (6M) 3 credits FORMERLY MTT 146 COREQUISITE: MTT 161</p> <p>This course provides practical application of the concepts and principles of precision grinding learned in MTT 161. Topics include set-up procedures, work planning, surface grinding, cylindrical grinding, tool and cutter grinding, and inspection and process improvement. Additional emphasis is placed on safety procedures. Upon completion, students will be able</p>
MTT 148	<p>INTRODUCTION TO MACHINE SHOP I LAB (6E) 3 credits PREREQUISITE: Permission of Instructor COREQUISITE: MTT 147</p> <p>This course provides practical application of the concepts and principles of machining operations learned in MTT 147. Topics include machine shop safety,</p>		

	to apply advanced precision grinding techniques. This course is aligned with NIMS standards.	MTT 235	CNC MILLING LAB I (6E) PREREQUISITE: MTT 141	3 credits
MTT 212	ADVANCED COMPUTER NUMERICAL CONTROL TURNING (1T,4E) PREREQUISITE: MTT 243 This course details the use of canned cycles and sub-programs in computer numerical control (CNC) turning programs. Upon completing this course, the student should be able to write CNC turning programs using canned cycles and subprograms.		This course covers basic (3-axis) computer numeric control (CNC) milling machine setup and operating procedures. Upon completion, the student should be able to load a CNC program and set-up and operate a 3-axis CNC milling machine to produce a specified part. Related safety, inspection, and process adjustment are also covered.	
MTT 213	ADVANCED COMPUTER NUMERICAL CONTROL MILLING (1T, 4E) PREREQUISITE: MTT 235 This course details the use of canned cycles and sub-programs in computer numerical control (CNC) milling programs. Upon completing this course, the student should be able to write CNC milling programs using canned cycles and subprograms.	MTT 236	CNC MILLING LAB II (6E) PREREQUISITES: MTT 213	3 credits
MTT 218	COMPUTER INTEGRATED MANUFACTURING (CIM) (3T) PREREQUISITES: MTT 219 AND MTT 220 This course is a basic introduction to concepts related to the computer integrated manufacturing (CIM) process. Students cover the design requirements associated with such a cell (center), how a center is integrated into the full system, and the technician's role in the process improvement of not only the cell but the full CIM system. Related safety and inspection and process adjustment are also covered.	MTT 243	CNC TURNING LAB I (6E) PREREQUISITE: MTT 140	3 credits
MTT 219	COMPUTER NUMERICAL CONTROL GRAPHICS: TURNING (1T, 4E) PREREQUISITES: MTT 140 AND MTT 149 or Permission of Instructor This course covers techniques involved in writing a program for a multi-axis computerized numeric control (CNC) turning machine using computer assisted manufacturing (CAM) software. In addition, CNC turning machine set-up, programming, and operation are detailed. Upon completion, the student should be able to set-up, program, and operate a 3-axis CNC turning machine to produce a 2-axis part using CAM software. This course is aligned with NIMS certification standards.	MTT 244	CNC TURNING LAB II (6E) PREREQUISITE: MTT 212	3 credits
MTT 220	COMPUTER NUMERICAL CONTROL GRAPHICS: MILLING (1T,4E) PREREQUISITES: MTT 109 AND MTT 141 or Permission of Instructor This course covers techniques involved in writing a program for a multi-axis computerized numeric control (CNC) milling machine using computer assisted manufacturing (CAM) software. In addition, CNC milling machine set-up, programming, and operation are detailed. Upon completion, the student should be able to set-up, program, and operate a 3-axis CNC milling machine to produce a 2-axis part using CAM software. This course is aligned with NIMS certification standards.	MTT 281	SPECIAL TOPICS IN MACHINE TOOL TECHNOLOGY (1T, 4E) PREREQUISITE: MTT 244	3 credits
		MTT 291	COOPERATIVE EDUCATION IN MACHINE TOOL (15I) PREREQUISITE: Permission of Instructor	3 credits
		MTT 292	COOPERATIVE EDUCATION IN MACHINE TOOL TECHNOLOGY (15I) PREREQUISITE: Permission of Instructor	3 credits

Course Descriptions

supervising instructor evaluate students' progress. Upon course completion, students will be able to apply skills and knowledge in an employment setting.

MASS COMMUNICATIONS (MCM)

- MCM 113, 114, 115** **STUDENT PUBLICATIONS (2-4E)** **1-2 credits each**
These courses offer practical experience in journalism skills through working on the staff of the student publications.
- MCM 130** **NEWS REPORTING (3E)** **3 credits**
PREREQUISITE: Typing ability.
This course includes instruction and practice in news-gathering and newswriting techniques including methodology, observation, interviews, and use of sources.
- MCM 213, 214, 215** **STUDENT PUBLICATIONS (2-4E)** **1-2 credits each**
These courses offer practical experience in journalism skills through working on the staff of the student publications.
- MCM 250** **MASS COMMUNICATIONS PRACTICUM (3T)** **3 credits**
This course provides practical experience in media through supervised part or full-time employment with a newspaper, radio or television station, or public relations/advertising agency.

MASSAGE THERAPY (MSG)

- MSG 100** **MASSAGE THERAPY HISTORY AND THEORY (1T)** **1 credit**
In this course students learn the origin of massage as well as the types of massage that have existed throughout the world from inception to the present. Emphasis is placed on the benefits of massage, contraindication, client interviews, and client-therapist relationship. In addition to massage history, students will receive theories and research data that substantiate the efficacy of massage for modern times. Information will be provided explaining the theory and value of such techniques as Swedish massage, deep tissue massage, neuromuscular therapy, somatic re-education, myofascial release and integration.
- MSG 101** **MASSAGE THERAPY LABORATORY I (8E)** **4 credits**
In this course students learn therapeutic massage techniques to the regions of the back, neck and torso. Students learn the variety of joint movements and introduction to sports massage. Sports massage includes principles of health-related fitness, core exercises, pre- and post-event massage, hydrotherapy, body mobilization techniques (BMT) and stretching techniques.

- MSG 102** **MASSAGE THERAPY LABORATORY II (8E)** **4 credits**
PREREQUISITE: MSG 101
In this course students learn various techniques to work soft tissue dysfunction in specific areas of the body, to apply massage to specific muscles, affect the body's fascial sheets, palpate muscles more clearly, work in different directions of the muscle fibers (transversely and longitudinally), and to work different levels of musculature. New techniques include Myofascial release, trigger points, neuromuscular therapy, and deep tissue massage. Students learn therapeutic massage techniques to the regions of the shoulders, arms, hips, legs, feet and hands.

- MSG 111** **ANATOMY AND PHYSIOLOGY (1T, 4E)** **3 credits**
In this course students learn how the body works, from the smallest cells to the largest systems. The course provides a general introduction to epithelial, connective, muscular and nervous tissue as well as to the nervous, endocrine, cardiovascular, immune, respiratory, gastrointestinal, genitourinary and integument systems. Students will also be taught standard first aid measures for common injuries and basic cardio-pulmonary resuscitation (CPR). The instructor uses visual tools as well as hands-on activities to enhance learning. Upon completion of this course, students will have a basic understanding of the various systems of the body and the effects of massage on these systems. Students will also be tested on competencies in standard first aid CPR.

- MSG 112** **MUSCULO-SKELETAL AND KINESIOLOGY I (1T, 4E)** **3 credits**
In this course students learn advance study of the Musculo-skeletal system. They learn basic names and landmarks of the bones and joints as well as the origins, insertions and actions of the major muscles of the body that are important to massage therapy. Students also learn how to demonstrate muscle locations and how to palpate and shorten each of the muscles studied. Topics included specific therapeutic approaches to the regions of the back, torso, neck, examinations of these regions, the movements they produce, and common conditions of the back, torso, and neck. Students will also be able to identify and discuss common pathological conditions related to these areas.

- MSG 113** **MUSCULO-SKELETAL AND KINESIOLOGY II (1T, 4E)** **3 credits**
PREREQUISITE: MSG 112
In this course students learn advance study of the Musculo-skeletal system. Topics include specific therapeutic approaches to the regions of the shoulders, arms, hips and legs, examination of these regions, the movement they produce, and common pathological conditions of the shoulders, arms, hips and legs. Upon completion the students should be able to identify and discuss the regions of the shoulders, arms, hips, lets and the movements they produce and common pathological conditions.

- MSG 114 PATHOLOGY 3 credits**
This course presents baseline information on pathologies which massage therapists may encounter in clinical practice including conditions of the musculoskeletal, neurological, cardiovascular, lymphatic, integumentary, digestive, and immune systems. Content will include etiology, symptomatology, medical approaches to treatment and the potential positive or negative impact of massage.
- MSG 120 MASSAGE THERAPY SUPERVISED CLINICAL I (3C) 1 credit**
PREREQUISITE AND/OR COREQUISITE: MSG 100, MSG 101, MSG 112
In this course students are required to demonstrate competency in specific therapeutic techniques to the back, neck and torso. Students are required to demonstrate core exercises, hydrotherapy and other health related fitness techniques such as BMT and stretching techniques.
- MSG 121 MASSAGE THERAPY SUPERVISED CLINICAL II (3C) 1 credit**
PREREQUISITES OR COREQUISITES: MSG 120
In this course students are required to demonstrate competency in the proper application of specific therapeutic techniques to the whole body.
- MSG 130 SPECIAL POPULATIONS (3T) 3 credits**
In this course students learn to adapt massage sessions to the needs of special populations such as pregnant women, infants, the elderly, terminally ill, survivors of abuse and persons living with HIV/AIDS. Topics include technique variations, length of session, contraindications, cautions, and possible benefits. Upon completion, students should be able to discuss and demonstrate the techniques for special populations.
- MSG 156 CAREER & PERSONAL DEVELOPMENT AND ETHICAL BEHAVIOR (2T) 2 credits**
This course is designed to focus on personal development and career building skills. Emphasis is placed on building and retaining clientele, communication skills, customer services, continuing professional education and setting goals and objectives. Upon completion, the student should be able to list types of communication skills, articulate personal goals and develop a continuing education plan.
- MSG 160 NATIONAL CERTIFICATION EXAM REVIEW (1T) 1 credit**
This course provides a consolidated and intensive review of the basic areas of expertise needed by the entry-level massage therapist. Upon completion, the student should be able to pass a comprehensive exam on information covered in the therapeutic massage program.

MATHEMATICS (MTH)

MATHEMATICS COURSE NUMBERS DO NOT NECESSARILY REFLECT THE DIFFICULTY OF THE COURSE.

- MTH 080 MATHEMATICS LABORATORY (1T) 1 credit**
PREREQUISITE: As required by program
This course is designed to offer supplemental help to students in mathematics. Students work in a laboratory situation under qualified instructors. This course may be repeated as needed. Emphasis is on arithmetic and algebra as determined by the individual need of the students.
- MTH 090 BASIC MATHEMATICS (3T) 3 credits**
PREREQUISITE: None
This is a developmental course reviewing arithmetical principles and computations designed to help the student's mathematical proficiency for selected curriculum entrance.
- MTH 091- MTH 092 DEVELOPMENTAL ALGEBRA I AND II (3T) 3 credits each**
PREREQUISITE: A grade of "C" or better in MTH 090 or appropriate mathematics placement score. (Placement score will determine where student begins in sequence.)
This sequence of developmental courses provides the student with a review of arithmetic and algebraic skills designed to provide sufficient mathematical proficiency necessary for entry into Intermediate College Algebra.
- MTH 098 ELEMENTARY ALGEBRA (4T) 4 credits**
PREREQUISITE: A grade of "C" or better in MTH 090 (Basic Mathematics) or appropriate mathematics placement score
This course is a review of the fundamental arithmetic and algebra operations. The topics include the numbers of ordinary arithmetic and their properties; integers and rational numbers; the solving of equations; polynomials and factoring; and an introduction to systems of equations and graphs.
- MTH 100 INTERMEDIATE COLLEGE ALGEBRA (3T) 3 credits**
PREREQUISITE: A grade of "C" or better in MTH 092 (Developmental Algebra II) or MTH 098 (Elementary Algebra) or appropriate mathematics placement score
This course provides a study of algebraic techniques such as linear equations and inequalities, quadratic equations, systems of equations, and operations with exponents and radicals. Functions and relations are introduced and graphed with special emphasis on linear and quadratic functions. This course does not apply toward the general core requirement for mathematics for AS degrees.
- MTH 103 INTRODUCTION TO TECHNICAL MATHEMATICS (3T) 3 credits**
PREREQUISITE: A grade of "C" or better in MTH 092

Course Descriptions

COURSE DESCRIPTIONS

MUSIC (MUL) (MUP) (MUS)

MUL 192-193A PIANO ENSEMBLE (2-4E) 1 credit
MUL 292-293A PREREQUISITE: Audition and Permission of instructor

This course provides an opportunity for students to participate in a performing ensemble. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Performances are assigned.

MUL 101-02 CLASS PIANO I, II (2E) 1 credit

These courses, to be taken in sequence, present fundamentals of keyboard technique for students with little or no previous training. Emphasis is placed on the rudiments of music, basic performance technique and general musicianship skills. Upon completion of one or a sequence of courses, students should be able to demonstrate a basic proficiency in playing and a knowledge of music fundamentals.

MUL 111-12 CLASS VOICE I, II, III, IV (2E) 1 credit
MUL 211-12

These courses must be taken in sequence. Emphasis is placed on fundamentals of correct breathing, tone production, and diction for students with little or no previous voice training. Literature appropriate for class level is studied. Upon completion of one or a sequence of courses, students should be able to demonstrate a basic proficiency in singing and a knowledge of music fundamentals. A minimum grade of "C" is required to progress to next level.

MUL 161-63 CLASS FRETTED INSTRUMENTS I, II, III (2E) 1 credit

These courses must be taken in sequence. These courses include basic techniques, chords, scales, fingering, rhythm, strumming, and playing simple melodies. They are designed for students with little or no previous training. Emphasis is placed on the rudiments of music, basic performance technique and general musicianship skills. Upon completion of one or a sequence of courses, students should be able to demonstrate a basic proficiency in playing and a knowledge of music fundamentals.

MUL 180-81 CHORALE (2-4E) 1-2 credits
MUL 280-81 PREREQUISITE: Permission of instructor

These courses are selected performing ensembles open to all students. Chorale is required for voice majors and minors. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Performances are assigned.

MUL 182-83 MADRIGAL SINGERS (2-4E) 1-2 credits
MUL 282-83 PREREQUISITE: Permission of instructor and audition

This course provides an opportunity for students to participate in a performing ensemble. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. This course is a select a cappella performing ensemble. Enrollment is limited. Performances are assigned.

MUL 184-85 CONNECTION (2-4E) 1-2 credits
MUL 284-85 PREREQUISITE: Permission of instructor and audition

This course provides an opportunity for students to participate in a performing ensemble. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Upon completion, students should be able to effectively participate in performances presented by ensemble. Performances are assigned.

MUL 192-93B GUITAR ENSEMBLE (2-4E) 1-2 credits
MUL 292-93B PREREQUISITE: Permission of instructor

This course provides ensemble experience for guitar students in playing standard literature and arrangements and transcriptions for classical technique. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Performances are assigned. This course is open to all students and is required for guitar majors.

MUL 196-97 JAZZ BAND (2-4E) 1-2 credits
MUL 296-97 PREREQUISITE: Permission of instructor

This course provides an opportunity for students to participate in a performing ensemble. Emphasis is placed on rehearsing and performing literature appropriate to the mission and goals of the group. Upon completion, students should be able to effectively participate in performances presented by the ensemble. Performances are assigned.

MUP 101 PIANO (2-4E) 1-2 credits
102, 201 PREREQUISITE: MUL 101, 102 or Permission of instructor
202

Individual study, minimum grade of "B" is required to progress to next level. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. Upon completion, students should be able to effectively perform assigned repertoire and technical studies in an appropriate performance evaluation setting. At the conclusion of the last semester of study, a sophomore recital is required.

MUP 103 ORGAN (2-4E) 1-2 credits
104, 203, 204

Individual study, minimum grade of "B" is required to progress to next level. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. Upon completion, students should be able to effectively perform assigned repertoire and technical studies in an appropriate performance evaluation setting. At the conclusion of the last semester of study, a sophomore recital is required.

MUP 111 VOICE (2-4E) 1-2 credits
112, 211 PREREQUISITE: MUL 111

212 Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 133 **GUITAR (2-4E)** **1-2 credits**
134, 233 **PREREQUISITE: MUL 161, 162**
234

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. Minimum grade of "B" is required to progress to the next level.

MUP 141 **FLUTE (2-4E)** **1-2 credits**
142, 241
242

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. Minimum grade of "B" is required to progress to the next level.

MUP 143 **CLARINET (2-4E)** **1-2 credits**
144, 243
244

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 145 **CLARINET (2-4E)** **1-2 credits**
146, 245
246

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 151 **OBOE (2-4E)** **1-2 credits**
152, 251
252

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills

commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 153 **BASSOON (2-4E)** **1-2 credits**
154, 253,
254

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 161 **TRUMPET (2-4E)** **1-2 credits**
162, 261
262

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 163 **FRENCH HORN (2-4E)** **1-2 credits**
164, 263
264

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 171 **TROMBONE (2-4E)** **1-2 credits**
172, 271
272

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

MUP 173 **EUPHONIUM (2-4E)** **1-2 credits**
174, 273
274

Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.

Course Descriptions

MUP 175 176, 275 276	TUBA (2-4E) 1-2 credits Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.	MUS 111 MUSIC THEORY I (3T) 3 credits PREREQUISITE: Minimum grade of "C" in MUS 110 or acceptable score on placement test (75%) COREQUISITE: MUS 113 This course introduces the student to the diatonic harmonic practices in the Common Practice Period. Topics include fundamental musical materials (rhythm, pitch, scales, intervals, diatonic harmonies) and an introduction to the principles of voice leading and harmonic progression. Upon completion, students should be able to demonstrate a basic competency using diatonic harmony through analysis, writing, sight singing, dictation and keyboard skills. Open lab required. Spring; Decatur campus.
MUP 181 182, 281, 282	PERCUSSION (2-4E) 1-2 credits Individual instruction to include the study of standard literature and technique. Emphasis is placed on developing technique, repertoire and performance skills commensurate with the student's educational goals. Students are required to practice a minimum of five hours per week for each credit hour. At the conclusion of the last semester, a sophomore recital is required. A minimum grade of "B" is required to progress to the next level.	MUS 112 MUSIC THEORY II (3T) 3 credits PREREQUISITE: Minimum grade of "C" in MUS 111 COREQUISITE: MUS 114 This course completes the study of diatonic harmonic practices in the Common Practice Period and introduces simple musical forms. Topics include principles of voice leading used in three- and four- part triadic harmony and diatonic seventh chords, non-chord tones, cadences, phrases and periods. Upon completion, students should be able to demonstrate competence using diatonic harmony through analysis, writing, sight singing, dictation and keyboard skills. Open lab required. Fall; Decatur campus.
MUS 101	MUSIC APPRECIATION (3T) 3 credits This course is designed for non-music majors and requires no previous musical experience. It is a survey course that incorporates several modes of instruction including lecture, guided listening, and similar experiences involving music. The course will cover a minimum of three (3) stylistic periods, provide a multi-cultural perspective, and include both vocal and instrumental genres. Upon completion, students should be able to demonstrate a knowledge of music fundamentals, the aesthetic/stylistic characteristics of historical periods, and an aural perception of style and structure in music. This course is offered in a tele-course, self-paced and lecture format.	MUS 113 MUSIC THEORY LAB I (1E) 1 credit PREREQUISITE: MUS 110 or suitable placement score or permission of instructor COREQUISITE: MUS 111 This course provides the practical application of basic musical materials through sight singing; melodic, harmonic and rhythmic dictation; and keyboard harmony. Topics include intervals, simple triads, diatonic stepwise melodies, basic rhythmic patterns in simple and compound meter and four-part triadic progressions in root position. Upon completion, students should be able to write, sing and play intervals, scales, basic rhythmic patterns, diatonic stepwise melodies, simple triads and short four-part progressions in root position. Spring; Decatur campus.
MUS 103	SURVEY OF POPULAR MUSIC (1-2T) 1-2 credits This course provides a study of the origins, development and existing styles of popular music. Topics include ragtime, jazz, rhythm and blues, rock, country and western, folk and world music. Upon completion, students should be able to demonstrate a knowledge, understanding and an aural perception of the stylistic characteristics of popular music. This course is offered in a self-paced and lecture format.	MUS 114 MUSIC THEORY LAB II (1E) 1 credit PREREQUISITE: MUS 113 COREQUISITE: MUS 112 This course continues the practical application of diatonic musical materials through sight singing; melodic, harmonic and rhythmic dictation; and keyboard harmony. Topics include intervals, scales, diatonic melodies with triadic arpeggiations, more complex rhythmic patterns in simple and compound meter and four-part diatonic progressions in all inversions. Upon completion, students should be able to write, sing and play all intervals, rhythmic patterns employing syncopations and beat divisions, diatonic melodies and four-part progressions. Fall; Decatur campus.
MUS 110	BASIC MUSICIANSHIP (3T) 3 credits This course is designed to provide rudimentary music knowledge and skills for the student with a limited music background. Topics include a study of notation, rhythm, scales, keys, intervals, chords and basic sight singing and ear training skills. Upon completion, students should be able to read and understand musical scores and demonstrate basic sight singing and ear training skills for rhythm, melody and harmony. Required for music majors or acceptable score on placement test (75%).	

MUS 211 MUSIC THEORY III (3T) 3 credits
PREREQUISITE: Minimum grade of "C" in MUS 112
COREQUISITE: MUS 213
 This course introduces the student to the chromatic harmonic practices in the Common Practice Period. Topics include secondary functions, modulatory techniques, and binary and ternary forms. Upon completion, students should be able to demonstrate competence using chromatic harmony through analysis, writing, sight singing, dictation and keyboard skills. Open lab required. Spring; Decatur campus.

MUS 213 MUSIC THEORY LAB III (1E) 1 credit
PREREQUISITE: MUS 114
COREQUISITE: MUS 211
 This course provides the practical application of chromatic musical materials through sight singing; melodic, harmonic and rhythmic dictation; and keyboard harmony. Topics include melodies with simple modulations, complex rhythms in simple and compound meter, and secondary function chords. Upon completion, students should be able to write, sing and play modulating melodies, rhythmic patterns with beat subdivisions and four-part chromatic harmony. Spring; Decatur campus.

MUS 251 INTRODUCTION TO CONDUCTING (3T) 3 credits
PREREQUISITE: MUS 110 or acceptable score on placement test (75%)
 This course introduces the fundamentals of conducting choral and/or instrumental ensembles. Topics include a study of simple and compound meters, score reading and techniques for conducting effective rehearsals. Upon completion, students should be able to prepare and conduct a choral and/or instrumental score in a rehearsal or performance setting.

MUS 270 ORGANIZATION OF THE CHURCH MUSIC PROGRAM (2-3T) 2-3 credits
 This course is designed to explore administrative models of a comprehensive church music program. Topics include leadership, administrative structure, music personnel, facilities, equipment, vestments, music library, budgeting, planning, vocal and instrumental ensembles and scheduling for a music program. Upon completion, students should be able to demonstrate how to plan, coordinate and administer a comprehensive church music program.

MUS 271 CHURCH MUSIC LITERATURE (2-3T) 2-3 credits
 This course provides an historic survey of traditional church music from the 17th century to the present and introduces contemporary Christian styles. Topics include criteria for choosing appropriate music for graded church choirs at easy, medium and advanced levels of difficulty, and a survey of publishing resources and cataloging systems. Upon completion, students should be able to demonstrate a knowledge and understanding of church music literature.

MUS 272 THE CHILDREN'S CHOIR (2-3T) 2-3 credits
 This course is designed to provide techniques for working with the child's voice in a choral setting. Topics include working with children's voices, rehearsal techniques, selecting literature, vestments and organizing a graded choir program. Upon completion, students should be able to demonstrate how to plan, coordinate and administer a graded choir program in a church.

MUS 290 INTRODUCTION TO COMMERCIAL MUSIC (2-3T) 2-3 credits
 This course provides an introduction to the commercial music industry and the types of careers in commercial music. Topics include music publishing, recording, contracts, agents and managers, copyrights, unions, music companies and dealers. Upon completion, students should be able to demonstrate a basic knowledge and understanding of the different components of the commercial music industry and the various career options.

MUS 291 MUSICAL ACOUSTICS (2-3T) 2-3 credits
PREREQUISITE: Permission of instructor
 This course is designed to acquaint the student with the nature of musical acoustics and the science of sound. Topics include terminology, symbols, the nature and transmission of sound, vibration, frequency, pitch, intervals, harmonies, resonance, consonance and dissonance. Upon completion, students should be able to demonstrate an understanding of the basic skills and concepts through the successful presentation of an individual project in musical acoustics.

MUS 292 SONG WRITING (3T) 3 credits
PREREQUISITE: As required by program
 This course provides an introduction to song writing and marketing techniques. Topics include lyric writing, song structures, preparing a lead sheet, notation, rhythmic and melodic dictation, key signatures, basic chord structures, recording, basic copyright laws and publishing. Upon completion, students should be able to compose a song, prepare a lead sheet and demo tape, apply for a copyright and market a song.



Course Descriptions

MUSIC INDUSTRY COMMUNICATIONS (MIC)

- MIC 100 INTRODUCTION TO MASS COMMUNICATIONS 3 credits**
This course provides the student with general study of mass communications and journalism. This course includes theory, development, regulation, operation, and effects upon society. Upon completion of this class, students should be able to decide which field of mass communications on which to focus.
- MIC 153 INTRODUCTION TO RECORDING TECHNOLOGY (3T) 3 credits**
This course is designed to acquaint the student with basic recording fundamentals. Emphasis is placed on microphone techniques, recording principals, musician and recording engineers' code. Upon completion, students should be able to do basic analog recordings.
- MIC 201 PUBLISHING FOR THE RECORDING INDUSTRY (3T) 3 credits**
This course is an introduction to the operation and functions of publishing in the recording industry.
- MIC 250 MASS COMMUNICATIONS PRACTICUM (3T) 3 credits**
PREREQUISITE: MIC 153 or instructor approval
This course provides practical experience in media through supervised part- or full-time employment with a newspaper, radio or television station, recording studio, or public relations/advertising agency. Upon completion, students should be able to receive employment based on demonstration of their skills in their subject area.
- MIC 251 RECORDING STUDIO PRODUCTION (3T) 3 credits**
PREREQUISITE: MIC 153 or instructor approval
This course is designed to acquaint the student with the functional roles of the commercial recording studio. Emphasis will be placed on studio production projects, and include a study of contracts, managers, agents, recording rights, copyright laws, unions, publishers, and music companies. Upon completion, students should be able to produce studio quality recordings and have an understanding of the music industry.
- MIC 253 COMPUTER LITERACY FOR THE MUSICIAN I (3T) 3 credits**
This course is designed to teach musicians how to use computers for music writing, ear training, theory, and sequencing. Topics include an introduction to MIDI, sequencing, Master Tracks Pro, Studio 3.1 and 4.0, Cakewalk and Musicator. Upon completion, students should have an understanding of MIDI, Charting and Sequencing on the computer.
- MIC 254 COMPUTER LITERACY FOR THE MUSICIAN II (3T) 3 credits**
PREREQUISITE: MIC 253 or instructor approval
This course is designed to teach advanced computer sequencing techniques. Emphasis is placed on pro-

jects and the use of computer sequencing software and hardware. Students should be able to sequence and perform advanced editing using MIDI.

- MIC 255 DIGITAL RECORDING (3T) 3 credits**
PREREQUISITE: MIC 253 or instructor approval
This course is designed to teach Digital Recording using hard disk wave recording techniques. Emphasis is placed on projects and the use of Digital Recording software and hardware. Upon completion, students should be able to do recordings on the "Special Audio Engine" and other software with masters of digital quality.
- MIC 293 MUSIC NOTATION (3T) 3 credits**
PREREQUISITE: MIC 253 or instructor approval
This course is designed to teach students the music program for charting and writing music. Emphasis will be placed on the use of the software program "FINALE". Upon completion, students should be able to chart and write music using industry standards.

NURSING ASSISTANT (NAS)

- NAS 100 FUNDAMENTALS OF LONG TERM CARE (3T, 3C) 4 credits**
This course fulfills the seventy-five (75) hour Omnibus Budget Reconciliation Act (OBRA) requirements for training of long-term care nursing assistants in preparation for certification through competency evaluation. Emphasis is placed on the development of the knowledge, attitudes, and skills required of the long-term care nursing assistant. Upon completion of this course, the student should demonstrate satisfactory performance on written examinations and clinical skills.

NURSING (ADN/LPN)

- NUR 101 BODY STRUCTURE AND FUNCTION (4T) 4 credits**
PREREQUISITE: Admission to the program.
This course provides students with basic knowledge of the normal structure and function of the human body. Major content focuses on the interrelations among the organ systems and the relationship of each organ system to homeostasis. Medical terminology is integrated throughout course content. Upon completion of this course, students will be able to demonstrate basic knowledge of body systems, their interrelationships and associated medical terminology.
- NUR 102 FUNDAMENTALS OF NURSING (3T, 6S/3C) 6 credits**
PREREQUISITE: As required by program.
This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students learn concepts and theories basic to the art and science of nursing. The role of the nurse as a member of the

healthcare team is emphasized. Students are introduced to the concepts of client needs, safety, communication, teaching/learning, critical thinking, ethical-legal, cultural diversity, nursing history, and the program's philosophy of nursing. Additionally, this course introduces psychomotor nursing skills needed to assist individuals in meeting basic human needs. Skills necessary for maintaining microbial, physical, and psychological safety are introduced along with skills needed in therapeutic interventions. At the conclusion of this course, students demonstrate competency in performing basic nursing skills for individuals with common health alterations.

NUR 103 HEALTH ASSESSMENT (3S) 1 credit
PREREQUISITE: As required by program.

This course is designed to provide students the opportunity to learn and practice history taking and physical examination skills with individuals of all ages, with emphasis on the adult. The focus is on symptom analysis along with physical, psychosocial, and growth and development assessments. Students will be able to utilize critical thinking skills in identifying health alterations, formulating nursing diagnoses and documenting findings appropriate to nursing.

NUR 104 INTRODUCTION TO PHARMACOLOGY (3S) 1 credit
PREREQUISITE: As required by program.

This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. This course introduces students to basic principles of pharmacology and the knowledge necessary to safely administer medication. Course content includes legal implications, pharmacokinetics, pharmacodynamics, calculations of drug dosages, medication administration, and an overview of drug classifications. Students will be able to calculate and administer medications.

NUR 105 ADULT NURSING (5T, 3S/6C) 8 credits
PREREQUISITE: As required by program.

This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Emphasis is placed on providing care to individuals undergoing surgery, fluid and electrolyte imbalance, and common alterations in respiratory, musculoskeletal, gastrointestinal, cardiovascular, endocrine, and integumentary systems. Nutrition, pharmacology, communication, cultural, and community concepts are integrated.

NUR 106 MATERNAL AND CHILD NURSING (4T, 3C) 5 credits
PREREQUISITE: As required by program.

This course focuses on the role of the nurse in meeting the physiological, psychosocial, cultural and developmental needs of the maternal and child client. Course content includes antepartal, intrapartal, and postpartal care, complications of pregnancy, newborn care, human growth and development, pediatric care, and selected pediatric alterations. Nutrition, pharmacology, cultural diversity, use of technology, communication, anatomy and physiology review, medical terminology, critical thinking, and application of the nursing process are integrated throughout this course. Upon completion of this course, students will be able to provide and manage care for maternal and pediatric clients in a variety of settings.

NUR 107 ADULT/CHILD NURSING (5T, 9C) 8 credits
PREREQUISITE: As required by program.

This course provides students with opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process in a variety of settings. Emphasis is placed on providing care to individuals experiencing complex alterations in: sensory/perceptual, reproductive, endocrine, genitourinary, neurological, immune, cardiovascular, and lower gastrointestinal systems. Additional instruction is provided for care for clients experiencing burns, cancer, and emergent conditions. Nutrition, pharmacology, therapeutic communication, community, cultural diversity, health promotion, error prevention, critical thinking, impacts on maternal and child clients are integrated throughout the course.

NUR 108 PSYCHOSOCIAL NURSING (2T, 3C) 3 credits
PREREQUISITE: As required by program.

This course is designed to provide an overview of psychosocial adaptation and coping concepts used when caring for clients with acute and chronic alterations in mental health in a variety of settings. Topics include therapeutic communication skills, normal and abnormal behaviors, treatment modalities, and developmental needs. Upon completion of this course, students will demonstrate the ability to assist clients in maintaining psychosocial integrity through the use of the nursing process.



Course Descriptions

COURSE DESCRIPTIONS

NUR 109	<p>ROLE TRANSITION FOR THE PRACTICAL NURSE (2T, 3S) 3 credits PREREQUISITE: As required by program. This course provides students with opportunities to gain knowledge and skills necessary to transition from student to practicing nurse. Content includes a discussion of current issues in health care, practical nursing leadership and management, professional practice issues, and transition into the workplace. Emphasis is placed on NCLEX-PN test-taking skills, computer-assisted simulations and practice tests, development of a prescriptive plan for remediation, and review of selective content, specific to the practice of practical nursing.</p>	NUR 203	<p>NURSING THROUGH THE LIFESPAN III (4T, 6C) 6 credits PREREQUISITE: As required by program. This course builds upon previous instruction and provides additional opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students manage and provide collaborative care to clients who are experiencing selected alterations in cardiovascular, respiratory, and neurological systems in a variety of settings. Additional instruction is provided in care for selected mental health disorders, selected emergencies, multiple organ dysfunction syndrome and related disorders. Teaching/learning concepts, advanced dosage calculations, nutrition, pharmacology, communication, cultural, and community concepts are integrated.</p>
NUR 200	<p>NURSING CAREER MOBILITY ASSESSMENT (3T, 9S) 6 credits This course is designed to provide LPN mobility students self-directed opportunities to prepare for placement into the third semester of the ADN program. Emphasis is on assessment and validation of selected theory, process, and skills covered in NUR 102, 103, 104, 105, and 106. Upon successful completion of assessments, students are eligible for entry into NUR 201. Students who successfully complete this course are awarded 15 non-traditional hours at the completion of the LPN mobility curriculum.</p>	NUR 204	<p>ROLE TRANSITION FOR THE REGISTERED NURSE (2T, 6C) 4 credits PREREQUISITE: As required by program. This course provides students with opportunities to gain knowledge and skills necessary to transition from student to registered nurse. Content includes current issues in health care, nursing leadership and management, professional practice issues for registered nurses, and transition into the workplace. Additional instruction is provided for preparing for the NCLEX-RN.</p>
NUR 201	<p>NURSING THROUGH THE LIFESPAN (3T, 6C) 5 credits PREREQUISITE: As required by program. This course provides opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students manage and provide collaborative care to clients who are experiencing selected alterations in gastrointestinal, reproductive, sensory, and endocrine systems in a variety of settings. Additional instruction is provided for oncology, mental health, teaching/learning concepts, and advanced dosage calculations, nutrition, pharmacology, communication, cultural, and community concepts are integrated.</p>		
NUR 202	<p>NURSING THROUGH THE LIFESPAN II (3T, 9C) 6 credits PREREQUISITE: As required by program. This course builds upon previous instruction and provides additional opportunities to develop competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner using the nursing process. Students manage and provide collaborative care to clients who are experiencing selected alterations in cardiovascular, hematologic, immune, and genitourinary systems in a variety of settings. Additional instruction is provided for psychiatric disorders and high-risk obstetrics. Teaching/learning concepts, advanced dosage calculations, nutrition, pharmacology, communication, cultural, and community concepts are integrated.</p>		