Central Ohio Technical College
Course Description Listing
2004-2005 Academic Year

HEALTH TECHNOLOGIES COURSES: 4000

4003 Microbiology for the Health Professions

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in high school chemistry (or 1223/1225 or 1227) ***and in a general College biology course or in 4012/4019***. Open to any student not enrolled in Nursing or Allied Health programs on a space available basis. For students enrolled in Nursing Technology programs, this course must be taken prior to or concurrently with first second level health alterations course. Course is graded A-E.

A survey of the microbial world including types of microbes, microbial metabolism, microbial genetics, microbial growth, host/microbe interactions, immunology, and infectious diseases of the body systems. The laboratory portion of this course enhances the theories and concepts presented in the didactic portion of the course.

4004 Elementary Microbiology

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in high school chemistry (or 1223/1225 or 1227) or completion of 4081 with a C grade (2.00) or better. Not open to students with credit for 4003. Course is graded A-E.

Introduction to microbiology, surveying the basic types of microscopic organisms. Classification, structure, culturing, transmission, microbial control, and selected diseases are studied.

4005 Introduction to Human Biology

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Not open to students with credit for 4012/4019, 4012/4019 or 4081. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded A-E.

This course is designed for the student planning to enter a technology requiring an understanding of human structure and function or familiarity with anatomical and physiological terminology. It is a basic introduction to biology through the study of the human body..

4007 Ethics: Introduction and Application in Modern Medicine

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: Enrolled in Nursing Technology or Allied Health Technologies courses; Honors status [3.5 GPA or membership in Phi Theta Kappa]. This course is offered every other year. Course is graded A-E.

This course will cover both general ethical theory, and discussion of difficult issues in modern medicine, questions at the frontiers of modern society. Special emphasis will be placed on ethical matters involved in reproduction, informed consent, genetic engineering, experimentation with children, experimentation with fetuses and death with dignity. The reading material will consist of essays by philosophers on ethical theory and practice, essays of physicians on moral problems, and case studies. After the section of the course devoted to theory, the class will be divided into groups, with each group responsible for presenting one of the issues.

4012 Human Anatomy and Physiology I

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: Biology and Chemistry as follows: Biology: High School Biology or 4005; Chemistry: High School Chemistry and 1227 or both 1223 and 1225. All prerequisite courses must have a grade of "C" (2.00) or better. This course is open to any student not enrolled in the Health Technologies programs on a space available basis. Concurrent enrollment in 4019 is required. Course is graded A-E.

Introduction to the study of the anatomy and physiology of the human, including standard terminology, chemistry review, cells and tissues, with the structure and function of the integumentary system, skeletal system, muscular system, nervous system, excretory system, and reproductive system.

4015 Basic Health Care Skills

5 credit hours, 8 contact hours (3 hours lecture, 3 hours lab and 2 hours clinical). Prerequisite: Must be 16 years of age or older to enroll. Course is graded A-E.

This course prepares a basic health care worker with skills required by the Training and Competency Evaluation Program (TCEP) prior to gaining eligibility to become a State Tested Nurse Aide (STNA) and/or to employment as a home health aide. Content includes communication, infection control, safety and emergency procedures, promoting residents'/clients' independence, respecting residents'/clients' rights, basic nursing skills, personal care skills, providing care in a home setting, mental health and social service needs and basic restorative services. College lab permits development of various basic nursing skills. These skills are then implemented during a 20 hour clinical experience in a local health care facility.

4019 Human Anatomy and Physiology Lab I

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Concurrent enrollment in 4012 is required. Course is graded A-E.

Utilizing human cadavers and laboratory models, the anatomy and physiology laboratory course will introduce the study of standard terminology, cells and tissues, with the structure and function of the integumentary system, skeletal system, muscular system, nervous system, excretory system, and reproductive system.

4022 Human Anatomy and Physiology II

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4012 and 4019 or equivalent. Concurrent enrollment in 4029 is required. Course is graded A-E.

This course is the continued study of the anatomy and physiology of the human including the structure and function of the receptors, gastrointestinal system, cardiovascular system, lymphatic system, respiratory system, endocrine system, genetics and embryology.

4029 Human Anatomy and Physiology Lab II

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Concurrent enrollment in 4022 is required. Course is graded A-E.

Utilizing human cadavers and laboratory models, the anatomy and physiology laboratory course will continue the study of the anatomy and physiology of the human including the structure and function of the receptors, gastrointestinal system, cardiovascular system, lymphatic system, respiratory system, endocrine system, genetics and embryology.

4036 Nutrition

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: None. Course is graded A-E.

Students will learn about the fundamental principles and practices that are essential in nutritional care to maintain health, to prevent illness, and to provide support and therapy during illness. The focus will be on the composition and function of foods; the nutritional needs during the life cycle; and the ways in which variations in caloric content, consistency, and nutrient composition may be employed to meet individual diet requirements.

4039 Medical Terminology

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Student must have knowledge of computer applications and access to a computer. Course is graded A-E. *THIS COURSE IS NOT OPEN TO NURSING TECHNOLOGY STUDENTS; 4039 WILL NOT SUBSTITUTE FOR THE MEDICAL TERMINOLOGY PORTION OF 4226.*

This web-based on-line course is designed to introduce the student to the basic elements of medical terminology. The material presented will give the student the ability to combine root elements with prefixes, suffices, and combining vowels to decipher and understand medical terms.

4044 Patient Care in Allied Health

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Must be enrolled in Diagnostic Medical Sonography Technology; C grade [2.00] or better in the following: 4012/4019 and 4022/4029, and concurrent enrollment in 4511. Course is graded A-E.

During this course, the Allied Health Student is introduced to the basic aspects of patient care in the health care setting. Students are acquainted with the different types of patient care situations they may encounter while working in a health care facility. Topics include evaluating and meeting the physical needs of patients, infection control practices, assisting with the administration of medication, medications and their administration, dealing with acute situations and special care unit patients.

4045 Human Development

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: 1384 or 1386. Course is graded A-E.

Students study human development as a dynamic, multi-dimensional process from conception through death. Emphasis is placed on the inter-relationship of the many biopsychosocial factors influencing human development, general principles of growth and development, major developmental tasks encompassing each stage of the life cycle, and health and development problems common to each stage. Course requirements include a project focusing on the application of human development theories, concepts, principles, and tasks.

4046 Current Issues in Allied Health

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Second Year status in Diagnostic Medical Sonography Technology or Radiographic Technology. Course is graded A-E.

This course presents current issues relevant to imaging departments and personnel. During the course topics such as ethics, professionalism, death and dying, organ and tissue donation/transplantation, medical research, and new techniques and procedures will be reviewed.

4048 Pathophysiology I

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 4012/4019 or its equivalent. Course is graded A-E.

Study of pathological imbalances including cellular adaptation and injury, fluid compartment exchanges with edema and dehydration, electrolyte functions, control and imbalances, acidosis and alkalosis, nervous system injuries and responses, sensory imbalances, skeletal system injury and repair, soft tissue injury and repair, and muscle injury and dysfunction.

4049 Pathophysiology II

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 4022/4029 (or equivalent) and 4048 (or equivalent). Course is graded A-E.

Study of pathological imbalances including blood pressure, homeostasis, shock, cardiac malfunction, respiratory malfunction, hematopoiesis with anemias and leukemias, gastrointestinal imbalances, liver malfunction, renal failure, bladder injury and control, and endocrine hypersecretions and hyposecretions.

4052 First Aid

2 credit hours, 4 contact hours (1 hour lecture and 3 hours lab). Prerequisite: None. This course is not open to students with credit for 4042, 5140, 5205, or 5267. Course is graded A-E.

This course is designed to help the student make appropriate decisions regarding first aid care and to act on those decisions. Students will recognize when an emergency has occurred and the plan of action needed for the emergency until professional medical help arrives.

4061 Environmental Science

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: None. Course is graded A-E.

This course is an introduction to environmental science with an emphasis on the complexity and interrelatedness of environmental issues, concerns, problems, and economics. The impact of humans on ecosystems, resources, energy and the environment are presented. Special reference is made to the significance of toxic materials. The roles of business, industry, and government as related to the environment will also be addressed. The laboratory portion of this course enhances the theories and concepts presented in the lecture.

4070 General Biology

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: High School Science with a grade of "C" (2.00) or better or 4005 with a grade of "C" or better. Recommended strongly as preparation for the student who must take 4012/4019 Human Anatomy and Physiology I and 4022/4029 Human Anatomy and Physiology II. Course is graded A-E.

General Biology introduces the major concepts and principles of biology, emphasizing inorganic, organic and biochemistry processes and concepts, cell structure and function, DNA function and technology, genetics, diversity of all living organisms, and ecology. The laboratory portion of this course enhances the theories and concepts presented in lecture.

4081 Human Biology

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: High school science with a grade of "C" (2.00) or better or 4005 with a grade of "C" (2.00) or better. May not be taken concurrently with 4005. Course is graded A-E.

This course is designed for the student planning to enter a technology requiring a basic understanding of human structure and function or familiarity with anatomical and physiological terminology. This course ***does not*** substitute for credit for 4012/4019 Human Anatomy and Physiology I or 4022/4029 Human Anatomy and Physiology II, both of which are required for students in Diagnostic Medical Sonography Technology, Nursing Technology, Radiographic Technology and Surgical Technology. The laboratory portion of this course enhances the theories and concepts presented in lecture through the use of human cadavers and laboratory models.

4102 RT Anatomy and Procedures II

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: Must be enrolled in the Radiographic Technology program. C grade (2.00) or better in 4012/4019 and 4103. Course is graded A-E.

This course covers radiographic imaging of the bony thorax, vertebral column, digestive and urinary systems and cranium. Emphasis is on the anatomy, routine positioning, common pathologies, and contrast media utilized.

4103 Anatomy and Positioning I

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: Admittance to Radiographic Technology and concurrent enrollment in 4130. Course is graded A-E

The student will be introduced to the basic radiographic positioning principles and terminology. This course also covers radiographic imaging of the chest, abdomen, and upper and lower extremities. Emphasis is on the anatomy, routine positioning and common pathologies demonstrated.

4126 Departmental Administration

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Must be enrolled in Radiographic Technology or Diagnostic Medical Sonography Technology. (Concurrent enrollment in 4183) or (C grade [2.00] or better in the following: 4544 or 4562 and concurrent enrollment in 4546 or 4563). Course is graded A-E.

This course is designed to introduce the student to basic principles of hospital administration and organization and relates those principles to the management of the radiology department. Students will have the opportunity to review the concepts of hospital organization, financing, employment practices and quality control. Upon completion of this course, students gain an insight into the overall administration of hospitals and departments within the hospital. This course provides basic management skills and knowledge for those students interested in pursuing a supervisory position in the radiology department.

4130 Clinical Radiology I

1 credit hour, 3 contact hours (0 hours lecture and 3 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and concurrent enrollment in 4101. Course is graded S/U.

This course provides an orientation to the clinical environment. Topics covered are designed to prepare the student for safe practice in the clinical setting. Topics include radiation safety, OSHA standards, policies and procedures, code of ethics, departmental organization, and the health care team. This course will be taught as a term course (contact hours will be doubled over a five week period). This course is graded on a Satisfactory/Unsatisfactory basis.

4139 Radiobiology and Radiation Protection

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: Enrollment in Radiographic Technology. C grade (2.00) or better in 4184 or permission of the instructor. Course is graded A-E.

This radiographic technology course presents the study of radiobiology, radiation protection and safety and methods of minimizing radiation exposure to occupational workers and patients. The radiobiology portion of the course includes the following topics: molecular and cellular radiobiology, early and late effects of radiation exposure and theories related to the effect of ionizing radiation on humans. During the radiation protection and safety segment students will be introduced to state and federal regulations and discuss various methods of minimizing radiation exposure.

4140 Clinical Radiology II

1 credit hour, 8.5 contact hours (.50 hour lecture and 0 hours lab, 8 hours clinical). Prerequisite: Enrollment in the Radiographic Technology program and a grade of Satisfactory in 4130. Course is graded S/U.

This is an introductory experience into the clinical setting in which students have the opportunity to observe concepts and techniques related to radiographic imaging and patient care. Students will function under the supervision of qualified radiographers or physicians. This course will meet for one hour weekly on campus with the program faculty. The course will be taught as a term course (contact hours will be doubled over a five week period). This course is graded on a Satisfactory/Unsatisfactory basis.

4146 Clinical Radiology III

2 credit hours, 17 contact hours (1 hour lecture and 0 hours lab, 16 hours clinical). Course is repeatable up to a maximum of 4 credit hours. Prerequisite: Enrollment in the Radiographic Technology program and a grade of Satisfactory in 4140. Course is graded S/U.

During this clinical experience students will gain practical experience and begin to apply cognitive, psychomotor, and affective skills in the clinical setting. Students will function under the supervision of qualified radiographers or physicians. This course will meet for one hour weekly on campus with the program faculty. This course is graded on Satisfactory/Unsatisfactory basis.

4148 Clinical Radiology V

2 credit hours, 17 contact hours (1 hour lecture and 0 hours lab, 16 hours clinical). Course is repeatable up to a maximum of 6 credit hours. Prerequisite: Enrollment in the Radiographic Technology program and a grade of Satisfactory in 4159. Course is graded S/U.

This course provides advanced experience in the clinical setting. It is designed to allow students to apply previously learned theories and techniques for radiographic imaging. Students will have the opportunity to observe angiography and specialized procedures. Student radiographers will function under the supervision and guidance of the clinical radiographers and physicians in the health care setting. Hospital computer systems will be discussed. This course will meet for one hour weekly on campus with the program faculty. This course is graded on Satisfactory/Unsatisfactory basis.

4149 Clinical Radiology VI

2 credit hours, 16 contact hours (0 hours lecture and 0 hours lab, 16 hours clinical). Prerequisite: Enrollment in the Radiographic Technology program and a grade of satisfactory in 4148. Course is graded A-E.

This final clinical experience emphasizes mastery of skills in all areas of radiographic technology. The course is designed to challenge students to function independently within the supervised environment of the clinical setting. Students will have the opportunity to observe several imaging modalities. This course will be taught as a term course (contact hours will be doubled over a five week period).

4152 Special Radiographic Procedures

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4182 and a grade of Satisfactory in 4159. Course is graded A-E.

This Radiographic Technology course is the study of advanced radiographic procedures, angiography and interventional radiology. Topics to be covered include equipment requirements, anatomy visualized, radiographers role, indications, contraindications, pre and post procedural care and pathologies demonstrated.

4154 Radiographic Seminar I

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4158 and 4184 and a grade of Satisfactory in 4146. Course is graded A-E.

This course provides the student with the opportunity to discuss the principles of radiographic imaging. Application of previously learned concepts will be discussed relative to the clinical setting.

4155 Radiographic Seminar II

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4185 and a grade of Satisfactory in 4148. Course is graded A-E.

This course provides the correlation between previously learned radiographic concepts and clinical application. It is designed to aid in the transition from student to entry level radiographer. General topics of discussion include: radiation protection, equipment operation, image production and evaluation, radiographic positioning, and patient care procedures. Requirements for ethical and legal practice of radiography in Ohio are discussed. This course will be taught as a term course (contact hours will be doubled over a five week period).

4157 Radiation Physics I

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and a grade of Satisfactory in 4140. Course is graded A-E.

This course discusses the principles of physics as they relate to radiation. Topics to be covered include electromagnetic and particulate radiation, electrodynamics and electrostatics, magnetism and electromagnetism.

4158 Radiation Physics II

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4157. Course is graded A-E.

This course is a continuation of 4157 Radiation Physics I. The student will apply knowledge to the construction and use of the radiographic equipment. Special emphasis will be placed on the effects on radiographic techniques and image formation.

4159 Clinical Radiology IV

4 credit hours, 32 contact hours (1 hour lecture and 0 hours lab, 31 hours clinical). Prerequisite: Enrollment in the Radiographic Technology program and a grade of Satisfactory in 4146. Course is graded S/U.

This course is designed to provide students with extensive clinical experience in all areas of the radiology department. Students will develop individual techniques and skills in radiographic procedures under the supervision of qualified radiographers or physicians. This course will meet for one hour weekly on campus with the program faculty. This course is graded on Satisfactory/Unsatisfactory basis.

4160 Principles of Pathology for Radiographers

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and a C grade (2.00) or better in 4152. Course is graded A-E.

This course discusses the principles of human pathophysiology, the signs, symptoms, diagnosis and treatment of numerous pathological processes. Topics will include the imaging implications and methods to best demonstrate various pathologies.

4164 Patient Care in Radiology I

0.5 credit hours, 1 contact hour (0 hours lecture and 1 hour lab). Prerequisite: Enrollment in the Radiographic Technology program and a grade of Satisfactory in 4130. Course is graded A-E.

During this introductory course to the Patient Care sequence, the student is introduced to universal precautions, patient transfers and body mechanics, fire safety, and guest relations. Students will also learn basic patient assessment procedures and policies and study the communication process as it applies to patients and the health care team. This course will be taught as a term course (contact hours will be doubled over a five week period).

4165 Patient Care in Radiology II

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Enrollment in the Radiographic Technology program, a C grade (2.00) or better in 4164. Course is graded A-E.

During this second course in the Patient Care sequence, the student is introduced to surgical and medical asepsis, patient advocacy, contrast and oxygen administration, general pharmacological principles, and medico-legal aspects of radiography. Principles of conflict management and the impact of values and beliefs on patient communication will be discussed.

4166 Patient Care in Radiology III

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4165. Course is graded A-E.

During this Patient Care course, the student is introduced to the principles of mobile, surgical, and trauma radiology. Special patient situations encountered with critical care, orthopedic and geriatric patients will also be discussed. The student will also evaluate his/her listening skills relative to patient care.

4167 Patient Care in Radiology IV

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4166. Course is graded A-E.

During this Patient Care course the student will study basic pharmacology and radiopharmaceuticals. Recognition and acute care in specific emergency situations will be discussed. Other topics include special needs of the pediatric and disabled patients and patient education techniques.

4168 Patient Care in Radiology V

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4167. Course is graded A-E.

The final course in the Patient Care sequence is designed to provide the student with knowledge of Electrocardiograms and monitor indications, common laboratory procedures, patient record keeping, and forensic radiology. Phlebotomy techniques will be discussed and practiced.

4180 Mammography and Breast Health

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: Enrollment in Radiographic Technology. C grade (2.00) or better in the following: 4152 and 4185, or proof of registration with the ARRT, or permission of the instructor. Course is graded on an A-E or Pass/Non-Pass basis.

This course provides a complete overview of breast health, and the theory and practice of diagnosing and treating the patient with breast disease. Topics to be covered include the following: pathology, mammographic positioning, patient education, diagnostic intervention. Students will have the opportunity to apply classroom theory in the laboratory setting. The assurance of quality and the selection of radiation parameters will also be discussed.

4182 Imaging Modalities I

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4158. Course is graded A-E.

This course will discuss the basic principles of fluoroscopy, tomography, and image intensification. Digital imaging and computed radiography and other advancements in related technology will be discussed.

4183 Imaging Modalities II

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4182. Course is graded A-E.

This course is an overview of the imaging modalities of Computed Tomography, Magnetic Resonance Imaging, Ultrasonography, Radiation Therapy and Nuclear Medicine. Emphasis will be on general operating principles of the modality, image production and its integration into patient diagnosis.

4184 Principles of Radiographic Exposure

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4157. Course is graded A-E.

This course is the study of the science of determining diagnostic radiographic exposure factors. Topics to be covered include: film processing, intensifying screens and cassettes, grids, scatter radiation, contrast, density, detail, distortion, and human pathology influence.

4185 Advanced Exposure and Quality Assurance

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and C grade (2.00) or better in 4158 and 4184. Course is graded A-E.

The importance of quality assurance programs in the radiography department is discussed in this course. Students will be introduced to basic testing procedures of x-ray equipment. Students will analyze the finished radiograph and identify all factors which alter quality.

4196 Bone Densitometry

1.5 credit hours, 1.5 contact hours (1,5 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Radiographic Technology program and a C grade (2.00) or better in 4185 or proof of registration with the ARRT or permission of the instructor or the Academic Director. Course is graded A-E.

This course provides the basic principles of bone densitometry. Topics to be covered include, examination objectives, patient preparation, examination procedures and protocols, data analysis, patient education and the pathophysiology of osteoporosis. Various types of equipment, methods of data collection and radiation protection procedures will be discussed. The student will become knowledgeable about dietary and pharmacological procedures for prevention, treatment and maintenance of the disease.

4203 Family Health and Health Alterations

7 credit hours, 13 contact hours (4 hours lecture and 3 hours lab, 6 hours clinical). Prerequisite: C grade (2.00) or better in the following: 4022/4029, 4045 (or concurrent enrollment in 4045), 4218, 4220 and 4226. Course is graded A-E.

The student will utilize the nursing process as a framework of care for clients across the life span groups experiencing the need for health care related to sexuality or the reproductive system. Principles of communication, interpersonal skills, biopsychosocial and pathophysiological and caring concepts are integrated during clinical experience. The student will have some clinical experiences, which will include clients exhibiting gynecological and male reproductive health alterations. Clinical experiences with obstetrical clients and the family are also included. These concepts will be applied while adhering to the legal and ethical standards of the profession. Emphasis is placed on the functional health patterns of health management, nutrition, role identity, sexuality, coping and value. Childhood illnesses and immunization schedules are included.

4205 Health Alterations I

8 credit hours, 16 contact hours (4 hours lecture and 2 hours lab, 10 hours clinical). Prerequisite: C grade (2.00) or better in the following: 4003 (or concurrent enrollment in 4003), 4022/4029, 4049 (or concurrent enrollment in 4049), 4203 and 4220 (or 4221 for LPN to AD Plan of Study). Course is graded A-E.

This course is designed to provide the student with opportunities to develop concepts, skills, and communication techniques necessary for providing therapeutic are to the mentally, physically, and cognitively impaired geriatric client as well as the client experiencing alterations in psychosocial, neurological and/or musculoskeletal functioning. Students will utilize the nursing process in writing, with emphasis on implementing and evaluating individualized plans of care for clients of all ages alterations in the following health patterns: cognitive-perceptual, coping and activity. While caring for the client in psychiatric, extended care and acute facilities, the student will demonstrate accountability, serve as a client advocate, be culturally informed and sensitive, and adhere to the legal and ethical standards of the nursing profession. Availability for clinical experience assignment is required.

4206 Health Alterations II

8 credit hours, 16 contact hours (4 hours lecture and 2 hours lab, 10 hours clinical). Prerequisite: C grade (2.00) or better in the following: 4003 (or concurrent enrollment in 4003), 4022/4029, 4049 (or concurrent enrollment in 4049), 4203 and 4220 (or 4221 for LPN to AD Plan of Study). Course is graded A-E.

This course is designed to provide the student with opportunities to develop concepts, skills, and communication techniques necessary for providing therapeutic care to culturally diverse clients of all age groups. Emphasis will be placed on clients experiencing common recurring health alterations related to the functional health patterns of nutrition, elimination, and metabolism affecting circulation, oxygenation, fluid and electrolyte homeostasis, and excretion. Students will utilize the nursing process in writing and implementing and evaluating individualized plans of care for clients. While interacting with clients in acute care outpatient settings, the student will demonstrate caring behaviors, accountability, serve as client advocate, and adhere to the legal and ethical standards of the nursing profession. Availability for clinical experience assignment is required.

4207 Health Alterations III

8 credit hours, 16 contact hours (4 hours lecture and 2 hours lab, 10 hours clinical). Prerequisite: C grade (2.00) or better in the following: 4003 (or concurrent enrollment in 4003), 4022/4029, 4049 (or concurrent enrollment in 4049), 4203 and 4220 (or 4221 for LPN to AD Plan of Study). Course is graded A-E.

This course is designed to provide the student opportunities to develop concepts, skills, and communication techniques necessary for providing therapeutic care to culturally diverse clients of all age groups. Emphasis will be placed on common recurring health alterations related to metabolism, digestion, elimination, and aberrations of cellular growth that will affect the client's functional health patterns. Students will utilize the nursing process in writing and implementing, and evaluating individualized plans of care for clients. While interacting with clients in acute care settings, the student will demonstrate caring behaviors, accountability, serve as client advocate, and adhere to the legal and ethical standards of the nursing profession. Availability for clinical experience assignment is required.

4209 Transition to Practice

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4205, 4206 and 4207. Course is graded A-E.

This course focuses on role transition from nursing student to beginning associate degree graduate. Emphasis is on the role which includes caring behaviors, functions, and responsibilities of the nurse, legal regulations, management of client care, conflict resolutions, assertiveness, and professional responsibilities. Organizational principles, time management, and decision-making skills are also stressed. Different modalities of delivering health care in a structured environment will also be discussed.

4210 Applied Principles of Practice

4 credit hours, 13 contact hours (1 hour lecture [seminar] and 12 hours lab). (NOTE: The clinical portion of this course is offered in 5 week segments; therefore the clinical contact hours will be 24 hours lab per week for 5 weeks). Prerequisite: C grade (2.00) or better in 4205, 4206, 4207 and 4209 (or concurrent enrollment in 4209). Course is graded S/U.

This course promotes utilization of nursing process when meeting self-care needs of diverse clients with common and recurring health problems affecting their self-care ability. Nursing management for these clients creates opportunities for the student to practice complex psychomotor skills in a caring and culturally sensitive manner. The student will examine issues regarding transition into practice and demonstrates knowledge of organizational principles and time-management techniques for client care. The course provides the student the opportunity to function in a variety of nursing roles; provider and manager of client care, communicator, and teacher. Availability for clinical experience assignment is required. This course is graded on a Satisfactory/Unsatisfactory basis.

4215 Nursing Informatics

0.5 credit hours, 1 contact hour, (0 hours lecture and 1 hour lab). Prerequisite: Admission into the Associate Degree Nursing Technology program. Course is graded S/U.

This course introduces the student to computer technology and common uses for computers in nursing. The purpose of this course is to familiarize the student with the types of computers, basic computer terminology, some basic computer programs, hospital information systems, and the Internet as they relate to nursing. The student will be able to use word processing. The student will utilize the Internet as a source of information and tool for communication. The student will also be knowledgeable about ethical issues involved in the use of computers. This course is graded on a Satisfactory/Unsatisfactory basis.

4217 Introduction to Nursing

3.5 credit hours, 6.5 contact hours (2 hours lecture, 3 hours lab, and 1.5 clinical). Clinical hours will be held 3 hours per week the second term of the quarter. Prerequisite: Admission into the Associate Degree Nursing Technology Program and concurrent enrollment in 1506 (unless taken prior to admission to program) and 4226. Course is graded A-E.

This course introduces the student to the philosophy and conceptual framework of the nursing program. The past, present, and future roles of nursing are explored by viewing the roles and functions of the nurse as influenced by historical and sociological factors. Concepts of caring, Orem's theoretical framework, ethical and legal responsibilities, nursing process, functional health patterns, communication techniques, and holistic care across the lifespan are introduced. Emphasis is placed on the functional health patterns of health perception-health management, activity-exercise, sleep-rest patterns, and elimination. The student is introduced to the principles of surgical asepsis. The student will apply the nursing process while caring for clients with needs for hygiene, rest and sleep, elimination and activity. The student is expected to demonstrate characteristics of personal responsibility and legal/ethical standards of the profession.

4218 Fundamentals of Nursing

5 credit hours, 9 contact hours (3 hours lecture and 3 hours lab, 3 hours clinical). Prerequisite: C grade (2.00) or better in the following: 4217, 4226, and 4012/4019. Course is graded A-E.

In this course the student continues to gain an understanding about the concepts of Orem's Theoretical framework, caring, wellness and illness which were first introduced into the first nursing course. The student will apply the nursing process while caring for clients with needs for hygiene, rest and sleep, and activity, and will develop the basic technical and communication skills to provide safe care. The student builds on content presented in the first quarter and begins practicing the principles of surgical asepsis and perioperative care of the client. Emphasis is placed on the functional health patterns of coping/stress, cognitive/perceptual, nutrition/metabolic and elimination. The student is expected to demonstrate personal responsibility and ethical/legal standards of the profession.

4220 Pharmacology for Nursing

4 credit hours, 6.5 contact hours (2.5 hours lecture, 3 hours lab, and 0.5 hours clinical). Prerequisite: C grade (2.00) or better in the following: 4012/4019, 4217 and 4226. Clinical hours will be held as two 5 hours clinical sessions. Course is graded A-E.

The student will be introduced to the role of the Registered Nurse and the Practical Nurse in drug therapy for clients of all ages. Drug control laws, methods of administration, calculation of dosage, measurements, and abbreviations will be presented. This course is also designed to introduce the student to the classification of drugs and the utilization of the nursing process in identifying expected actions, common side effects, normal dosage and routes of administration. Prototype examples will be used in each classification. Relevant assessments and teaching of clients will be included. Upon satisfactory completion of this course, the student should be able to utilize the nursing process to administer medications to a client in a safe, effective, and caring manner. In addition, each student shall satisfactorily administer medications to a group of clients.

4221 Applied Pharmacology for LPN to AD Students

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Acceptance into the LPN to AD Plan of Study. Course is graded A-E.

The student will review the role of the Registered Nurse in intravenous therapy for clients of all ages. Methods of administration, calculation of dosage, measurements, and abbreviations will be presented. This course is designed to discuss the intravenous administration of those drugs frequently administered via the intravenous route. Relevant assessments will be included. Upon satisfactory completion of this course, the student should be able to utilize the nursing process to administer intravenous medications to a client in a safe, effective, and caring manner.

4226 Physical Assessment/Data Collection Across the Lifespan

3 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: Admission into the Associate Degree Nursing Technology program. Associate Degree Nursing students must concurrently enroll in 4012/4019 (unless previously completed with a grade of 'C' or better) and 4217. Course is graded A-E.

This physical assessment course introduces the student to the process of data collection, verification, analysis, and communication. The purpose of this course is for the student to develop the physical assessment and data collection skills used to determine the level of the client's wellness, health practices, past illnesses, related experiences, and health care goals as influenced by cultural and spiritual practices. Students will learn a step-by-step approach to body system observation, how to differentiate normal from abnormal findings, and recognize and support patterns of self-care which promote health for clients across the life span. The roles of the Registered Nurse and the Licensed Practical Nurse in physical assessment/data collection will be discussed and differentiated. This course will introduce the student to the language of medical terminology. The student will be expected to utilize such language, and appropriate medical abbreviations in the classroom, laboratory, and health care settings. The student is expected to obtain and maintain personal responsibility and legal/ethical standards of the profession.

4286 Basic Cardiac Arrhythmia Interpretation

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is designed to provide students with ECG monitoring skills. Importance is placed on understanding heart anatomy and electrophysiology, as well as learning the importance of identification of arrhythmias from the atrial, junctional, and ventricle heart sites. Heart blocks and paced rhythms will also be emphasized. Students will be able to differentiate normal, abnormal, and life-threatening arrhythmias.

4288 Trauma Nursing: Resuscitation to Rehabilitation

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4205, 4206, and 4207 (May be concurrently enrolled in the third Health Alteration course). Course is graded A-E.

This course will present the unique challenges of caring for the trauma patient from initial resuscitation, through the continuum of care, to the patient's rehabilitation and follow-up in a Trauma Clinic. The nursing process will be applied to the trauma patient with particular emphasis on head injuries, spinal cord injuries, orthopedic injuries, shock, cardiothoracic trauma and abdominal trauma. Special topics discussed will be mechanism of injury, field stabilization, the trauma room, levels of care, trauma systems, economics and administrative issues in trauma care, legal and ethical concerns in trauma nursing, multi-system organ failure and other complications of trauma, organ donation, and trauma prevention.

4289 Maternal/Child Nursing Review

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Level 2 Nursing Student or a Registered Nurse. Open to any registered nurse who wants to review Maternal-Child Nursing. Course is graded S/U.

This course is designed as a review of Maternal/Child Nursing for both current students and practicing nurses who desire to update their knowledge in this field. Maternal-newborn content includes fetal development, nursing assessment and care during pregnancy, birth, and post-partum and newborn care. The course focuses on the normal maternal cycle as well as the commonly recurring complications. This course also focuses on commonly recurring deviations during the neonatal period. This course is graded on a Satisfactory/Unsatisfactory basis.

4291 Health Data Collection

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: STNA, 4015, 4025 and MST. Not open to students with credit for 4226. Course is graded A-E.

The student begins to identify data collection as it relates to health care. Concepts introduced include health and wellness, functional areas important to observe, the ability to implement safe observations, and specialized aspects of data collection. The importance of prevention in health care is also explored as it relates to an optimum level of health for individuals.

4293 Phlebotomy for Health Workers

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: Licensure as a registered nurse or a licensed practical nurse, completion of 4015 or working in health care. Course is graded A-E.

This course is intended for health care workers, particularly nurses needing additional skills in phlebotomy. As nursing's focus broadens, more preparation in skills becomes necessary to meet new challenges. Phlebotomy will focus on being familiar with obtaining, preparing, labeling, and sending all specimens for analysis. Normal ranges of routine laboratory testing will be discussed and reviewed. Universal precautions as a necessity for future health will be stressed.

4295 Advanced Intravenous Therapy

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: Level 2 Nursing Student concurrently enrolled in a level 2 required technical nursing course or Registered Nurse. Course is graded A-E.

This elective course is designed to provide the learner with advanced skills in the care of the client receiving intravenous therapy. Information regarding special intravenous therapies utilized in institutional and home care environment will be presented. The student will be introduced to administration techniques via central venous access devices (Central Venous Catheters, PICC lines, Infusaports, etc.).

4296 Cardiac Arrhythmia Interpretation

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4012/4019 and 4022/4029. Course is graded A-E.

This course is designed to provide students with ECG monitoring skills, providing a more advanced level of cardiac care to clients of all ages and cultural groups. Importance is placed on understanding of heart anatomy and electrophysiology, as well as learning about the identification of arrhythmias at the atrial, junctional, and ventricle heart sites. Heart blocks and paced rhythms will also be emphasized. Students will be able to differentiate normal, abnormal, and life-threatening arrhythmias, and by the process of critical thinking, determine the correct treatment for each.

4297 Case Management for the Nursing Professional

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Course is open to registered nurses, licensed practical nurses, graduate nurses, student nurses concurrently enrolled in a level 2 required technical nursing course from Level II of the COTC curriculum, student nurses from other programs as space is available. Course is graded A-E.

This course is designed to provide the student nurse/RN with the concepts and skills needed to function as a case/care manager. The origin and definition of case management will be discussed. Emphasis will be placed on development and use of case management techniques and use of critical pathways. Case management implementation in acute, long term, and community settings will be explored.

4298 Role Socialization

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Admission as an articulation/transfer/LPN to RN student into the COTC Nursing Technology program. 4298 will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded S/U.

A course designed for the LPN/transfer student who is admitted to the Nursing Technology program with advanced placement. This orientation program will introduce the transfer student or LPN to the Registered Nurse program of learning and to the role of the registered nurse. The nursing process will be explained and clarified. Charting responsibilities will be discussed. A review/update of selected psychomotor skills will be included. Opportunity will be provided to discuss role overload/stress management. The student is expected to demonstrate characteristics of personal responsibility and ethical/legal standards of the profession. This course is graded on a Satisfactory/Unsatisfactory basis and credit for 4298 will count neither for elective credit nor toward meeting minimum credit hours for graduation.

4299 NCLEX RN Preparation

1 credit hour, 7 contact hours (Miscellaneous Applications Course--1 credit hour awarded per 7 contact hours of work per week). Prerequisite: Successful completion of all of the Nursing Technology program with the exception of 4209 and 4210. May be concurrently enrolled in 4209 or 4210. Course is graded S/U.

Students will utilize the nursing process as a framework for review of care for clients across the lifespan experiencing the need for health care. Principles of communication, interpersonal skills, biopsychosocial, spiritual, and pathophysiological and caring concepts will be reviewed. Emphasis will be placed on the functional health patterns and management of health alterations. This course is graded on a Satisfactory/Unsatisfactory basis.

4327 EMT-Basic

6 credit hours, 10 contact hours (4 hours lecture and 6 hours lab). Prerequisite: CPR Certification. Course is graded A-E.

This basic course covers all aspects of emergency medical care in the field, including equipment, controlling the situation, anatomy and physiology, medical and trauma emergencies, and advanced airway control. This course at its successful completion allows the student to take the national registry exam to become certified at the EMT-Basic Level.

4328 EMS Intermediate I

7 credit hours, 10 contact hours (5 hours lecture and 5 hours lab). Prerequisite: Must be a State Certified EMT-Basic and pass compass reading and pre-algebra testing. This course must be taken concurrently with 4329. Course is graded A-E.

The EMS Intermediate I course will present the medical practice act, roles and responsibilities of the EMT-Intermediate. The course builds upon the skills and knowledge of the EMT-Basic by adding advanced airway management, intravenous fluid therapy, and an introduction to cardiac monitoring, interpretation of electrocardiograms and manual defibrillation.

4329 EMS Intermediate I - Practicum

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Concurrent enrollment in 4328. Course is graded A-E.

This course is designed to provide practical experience in combined clinical experience and pre-hospital experience. The student will work in a clinical setting and pre-hospital services where he/she will learn agency procedures and demonstrate the required emergency medical techniques to meet all EMS standards for EMS Intermediate.

4330 Nationally Registered First-Responder

2 credit hours, 4 contact hours (1 hour lecture and 3 hours lab). Prerequisite: None. Course is graded A-E.

The student will study the emergency techniques utilized by first responders to an accident or other medical emergencies. The program is to allow the student to become a Nationally Registered First Responder and a State of Ohio Certified First Responder.

4334 EMS Paramedic I

6 credit hours, 8 contact hours (4 hours lecture and 4 hours lab). Prerequisite: : Acceptance into the EMS-Paramedic program. Course is graded A-E.

The student will study the roles, responsibilities, and duties of an EMS-Paramedic including professional ethics and behavior. The preparatory stages relative to the functioning of an EMS-Paramedic will be presented. The course will include instruction in the management of endocrine emergencies, allergies, anaphylaxis, gastrointestinal emergencies and respiratory emergencies.

4351 EMS Paramedic I

8.5 credit hours, 9.5 contact hours (7.5 hours lecture and 2 hours lab). Prerequisite: Acceptance into the EMS-Paramedic program and concurrent enrollment in 4352. Course is graded A-E.

The student will study the roles, responsibilities, and duties of an EMS-Paramedic including professional ethics and behavior. The preparatory stages relative to the functioning of an EMS-Paramedic will be presented. The course will include instruction in the management and care of trauma emergencies, burns, and respiratory emergencies.

4352 EMS Paramedic Practicum I

2 credit hours, 10.5 contact hours (1 hour lecture, 0 hours lab, and 9.5 hours practicum). Prerequisite: Acceptance into EMS-Paramedic program and concurrent enrollment in 4351 or a C grade (2.00) or better in 4351. Course is graded A-E.

This course is designed to provide practical experience in combined clinical and prehospital settings where the student will learn agency protocols and procedures. During these practical experiences the student will demonstrate the required emergency medical techniques associated with trauma emergencies, burns, and respiratory emergencies that meet the EMS standards of the State of Ohio for the EMS-Paramedic.

4353 EMS Paramedic II

8 credit hours, 9 contact hours (7 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 4351 and 4352 and concurrent enrollment in 4354. Course is graded A-E.

This course will provide instruction in the recognition, management and care of cardiovascular emergencies. The anatomy and physiology of the cardiovascular system, recognition of dysrhythmias, assessment of the cardiac patient, and the pathophysiology of cardiovascular disease will be presented.

4354 EMS Paramedic Practicum II

2 credit hours, 10.5 contact hours (1 hour lecture, 0 hours lab and 9.5 hours practicum). Prerequisite: C grade (2.00) or better in 4351 and 4352 and concurrent enrollment in 4353. Course is graded A-E.

As a continuation practicum experience in combined clinical and prehospital settings, the student will continue to learn agency protocols and procedures. During these practical experiences the student will demonstrate the required emergency medical techniques that meet all EMS standards of the State of Ohio for the EMS Paramedic with emphasis on cardiovascular emergencies. The student will continue to broaden his/her experiences with trauma emergencies, burns and respiratory emergencies.

4355 EMS Paramedic III

8 credit hours, 9.25 contact hours (7.25 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 4353 and 4354 and concurrent enrollment in 4356. Course is graded A-E.

The course will provide instruction in the recognition, management, and care of endocrine and metabolic emergencies, nervous system emergencies, gastrointestinal system emergencies, genitourinary system emergencies, reproductive system emergencies, anaphylaxis, toxicology and substance abuse, infectious diseases, environmental emergencies, obstetrical and gynecological emergencies, neonatal emergencies, and behavioral and psychiatric emergencies. Emergency management and care of the elderly patient, the pediatric patient, the neonatal patient, and the psychiatric and behavioral patient will be presented.

4356 EMS Paramedic Practicum III

2 credit hours, 10.5 contact hours (1 hour lecture, 0 hours lab and 9.5 hours practicum). Prerequisite: C grade (2.00) or better in 4353 and 4354 and concurrent enrollment in 4355. Course is graded A-E.

As the final practical experience in the combined clinical and prehospital settings, the student will continue to learn agency protocols and procedures. During these practical experiences the student will demonstrate the required emergency medical techniques that meet all EMS standards of the State of Ohio for the EMS Paramedic. The student will continue to perfect his/her abilities in responding to trauma emergencies, burns, medical emergencies, obstetrical and gynelogical emergencies, psychiatric emergencies, and in providing care to a diverse population.

4390 Epinephrine Administration and Cardiac Emergencies

1.5 credit hours, 2 contact hours (1 hour lecture and 1 hour lab). Prerequisite: State certified EMS-Basic which is current at the time of enrollment. Course is graded A-E.

The EMS Intermediate will present the medical practice act, rules and responsibilities of the EMS Intermediate. The course builds upon the skills and knowledge of the EMS Basic by adding advanced airway management, intravenous fluid therapy, and an introduction to cardiac monitoring, interpretation of electrocardiograms and manual defibrillation.

4507 Gynecological Sonography

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Must be accepted to the Diagnostic Medical Sonography Technology program and must maintain a C grade (2.00) or better in all technology courses. C grade (2.00) or better in the following: 4012/4019, 4022/4029 and 4511, or concurrent enrollment in 4505, 4515 and 4542. Course is graded A-E.

This course emphasizes the fundamental principles of sonographic imaging of the female pelvis. Anatomy, physiology, pathology, interpretation of clinical data, differential diagnosis and sonographic techniques relative to the gynecological patient are presented.

4509 Sonography Seminar

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4546 and concurrent enrollment in 4549, or permission of the instructor. Course is graded A-E.

This course provides correlation between previously learned sonographic concepts and clinical application. It is designed to aid the transition to entry-level sonographer and ARDMS preparation. The student must successfully complete comprehensive examinations.

4511 Cross Sectional Anatomy

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology or the Radiographic Technology programs. C grade (2.00) or better in the following: 4012/4019, 4022/4029 and 4039 (or equivalent), or permission of the instructor. Course is graded A-E.

This course is designed to provide the student with specific knowledge of relational and sectional anatomy of the head, thorax, abdomen, pelvis, and extremities. The college laboratory sessions are utilized to study human material and to correlate with radiologic and/or sonographic images.

4512 Neurosonography

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Current enrollment in the Diagnostic Medical Sonography Technology program as a One-Year Certificate student or a second year Associate Degree student, RDMS, RDMS registry eligibility, or permission of the instructor. Course is graded A-E.

This course provides the advanced sonographer a study of embryology, anatomy, physiology, and sonographic appearance of the nervous system. Specific protocols for neonatal neurosonography are included. Intraoperative and spinal sonography will also be discussed.

4514 Principles of Diagnostic Sonography

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: Must be accepted in the Diagnostic Medical Sonography Technology program and must maintain a C grade (2.00) or better in all technology courses or permission of the instructor. Course is graded A-E.

This is the introductory course to the Diagnostic Medical Sonography sequence. Topics included in the course are the health care delivery system, professional communication and conduct, organizations, history of ultrasound, the sonographer's role and basic scanning protocols.

4515 Sonographic Physics and Instrumentation I

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: Must be accepted in the Diagnostic Medical Sonography Technology program and must maintain a C grade (2.00) or better in all technology courses. C grade (2.00) or better in 1210 (or equivalent) and concurrent enrollment in (4505, 4507 and 4542) or (4561, 4565 and 4567). Course is graded A-E.

This course deals with the fundamental principles of sonographic physics. Topics such as the nature of waves, wave properties, interactions of ultrasound with tissue, ultrasonic beam parameters and basic Doppler principles are covered. Students will have an opportunity to apply these principles in the college laboratory setting.

4517 Sonographic Physics and Instrumentation III

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Must be enrolled in the Diagnostic Medical Sonography Technology program and must maintain a C grade (2.00) or better in 4519 and concurrent enrollment in (4546 or 4563) or permission of the instructor. Course is graded A-E.

This course concludes the sonographic physics instrumentation sequence. Topics such as artifacts, storage devices, biological effects of ultrasound, and quality assurance testing will be discussed.

4518 Doppler Physics and Instrumentation

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Permission of the instructor. Course is graded A-E.

This course deals with the fundamental principles of Doppler physics and instrumentation. Topics such as hemodynamics, pulsed wave Doppler, continuous wave Doppler, spectral analysis, color Doppler, power Doppler, Doppler instrumentation, and artifacts will be discussed. This course is designed for the sonography student not completing the 4515, 4516 and 4517 Sonographic Physics and Instrumentation sequence.

4519 Sonographic Physics and Instrumentation II

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Must be enrolled in the Diagnostic Medical Sonography program and must maintain a C grade (2.00) or better in 4515 and concurrent enrollment in (4504, 4510 and 4544) or (4562, 4566 and 4568) or permission of the instructor. Course is graded A-E.

This course applies the fundamental principles of sonographic physics of specific ultrasound instrumentation. Topics such as transducer design, equipment controls and instrumentation for static, real-time and Doppler systems will be discussed. The student will have the opportunity to apply these principles in the clinical laboratory setting.

4527 Obstetrical Ultrasound I

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4507 and concurrent enrollment in 4519, 4537 and 4544, or permission of the instructor. Course is graded A-E.

This course provides an extensive study of the anatomy, physiology, pathology, and sonographic appearance of the developing fetus with emphasis placed on the first trimester. Specific sonographic protocols for obstetrical ultrasound are included. Clinical presentations of maternal complications associated with pregnancy are also emphasized.

4528 Obstetrical Ultrasound II

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 4527 and concurrent enrollment in 4517 and 4546. Course is graded A-E.

This course provides an extensive study of the anatomy, physiology, pathology, and sonographic appearance of the developing fetus. Specific sonographic protocols for obstetrical ultrasound are included. Clinical presentations of maternal complications, second and third trimester development, as well as various anomalies associated with pregnancy are emphasized.

4536 Abdominal Sonography I

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Acceptance into the DMS program, concurrent enrollment in 4507, 4515 and 4543, and a C grade (2.00) or better in: 4022/4029 and 4511. Course is graded A-E.

This course covers sonographic and related imaging techniques of the liver, gallbladder, biliary tree, pancreas, abdominal vascular system. Emphasis is on anatomy, physiology, pathology, interpretation of clinical data, differential diagnosis, and ultrasound techniques relative to the abdomen.

4537 Abdominal Sonography II

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4536 and concurrent enrollment in 4519, 4527, and 4544. Course is graded A-E.

This course covers sonographic and related imaging techniques of the kidneys, adrenal glands, spleen, lymph nodes, peritoneal cavity and GI tract. Emphasis is on anatomy, physiology, pathology, interpretation of clinical data, differential diagnosis, and ultrasound techniques relative to the abdomen.

4538 Superficial Structures

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4537 and concurrent enrollment in 4517, 4528, 4546 and 4580, or permission of the instructor.

This course discusses sonographic imaging of the thyroid, scrotum, popliteal fossa, prostate, eye, peripheral vascular system, neonatal head and musculoskeletal system. Emphasis is on anatomy, physiology, pathology, interpretation of clinical data, differential diagnosis and ultrasound techniques relative to superficial small parts.

4539 Sonography Scan Lab

2 credit hours, 4 contact hours (0 hours lecture and 4 hours lab). Prerequisite: Must be enrolled in the General Diagnostic Medical Sonography program. Course is graded A-E.

This course will introduce basic sonography scanning techniques. The student will learn basic protocols for liver, gallbladder, pancreas, kidney, aorta, thyroid and transabdominal pelvic sonograms. The student will have the opportunity to practice these techniques in a college laboratory setting.

4541 Principles of Clinical Sonography

2 credit hours, 9 contact hours (1 hour lecture and 0 hours lab, 8 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in the following: 4022/4029, 4044, 4511 and 4514 and a valid CPR card. Course is graded A-E.

An introductory experience to the clinical setting in which students have an opportunity to observe concepts and techniques related to sonographic imaging and patient care. Students will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4543 Clinical Sonography I

4 credit hours, 25 contact hours (1 hour lecture, 0 hours lab, and 24 hours clinical). Prerequisite: C grade (2.00) or better in 4539 and 4541 and concurrent enrollment in 4507, 4515, and 4536, and a valid CPR card. Course is graded A-E.

The initial scanning experience in the clinical setting provides the student with the opportunity to apply learned concepts and techniques related to sonographic imaging. The student will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4544 Clinical Sonography II

4 credit hours, 25 contact hours (1 hour lecture and 0 hours lab, 24 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4542, concurrent enrollment in 4504, 4510 and 4516 and a valid CPR card. Course is graded A-E.

During this clinical course, students will gain practical experience and develop individual scanning techniques related to sonographic imaging. Students will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4546 Clinical Sonography III

4 credit hours, 25 contact hours (1 hour lecture and 0 hours lab, 24 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4544 and a valid CPR card. Course is graded A-E.

This course provides more advanced experience in the clinical setting in which the student will improve upon previously learned skills and techniques related to sonographic imaging. Students will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4549 Clinical Sonography IV

6 credit hours, 33 contact hours (1 hour lecture and 0 hours lab, 32 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4546, concurrent enrollment in 4509 and a valid CPR card. Course is graded A-E.

This final clinical experience emphasizes mastery of skills in all areas of medical sonography. The course is designed to challenge the student to function independently within the supervised clinical setting, tailoring each examination according to the specific guidelines of each case. A weekly one hour seminar focusing on specific case studies will be conducted.

4550 Cardiovascular Sonography Scan Lab

2 credit hours, 4 contact hours (0 hours lecture and 4 hours lab). Prerequisite: Must be enrolled in the Cardiovascular Diagnostic Medical Sonography program. Course is graded A-E.

This course will introduce basic cardiovascular sonography scanning techniques. The student will learn basic protocols for adult echocardiography, cerebrovascular and lower extremity venous sonograms. The student will have the opportunity to practice these techniques in a college laboratory setting.

4551 Cardiovascular Clinical I

4 credit hours, 25 contact hours (1 hour lecture, 0 hours lab, and 24 hours clinical). Prerequisite: C grade (2.00) or better in 4550 and 4560, concurrent enrollment in 4515, 4571 and 4577, and a valid CPR card.

The initial scanning experience in the clinical setting provides the student with the opportunity to apply learned concepts and techniques related to cardiovascular imaging. The student will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4560 Principles of Cardiovascular Clinical

2 credit hours, 9 contact hours (1 hour lecture and 0 hours lab, and 8 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4012/4019, 4022/4029, 4044, 4511 and 4514 and a valid CPR card. Course is graded A-E.

An introductory experience to the cardiovascular clinical setting in which students have an opportunity to observe concepts and techniques related to cardiovascular imaging and patient care. Students will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4562 Cardiovascular Clinical II

4 credit hours, 25 contact hours (1 hour lecture and 0 hours lab, 24 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4561, concurrent enrollment in 4516, 4566 and 4568 and a valid CPR card. Course is graded A-E.

During this clinical course, students will gain practical experience and develop individual scanning techniques related to cardiovascular imaging. Students will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4563 Cardiovascular Clinical III

4 credit hours, 25 contact hours (1 hour lecture and 0 hours lab, 24 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4562, concurrent enrollment in 4041, 4126 and 4517, and a valid CPR card. Course is graded A-E.

This course provides more advanced experience in the clinical setting in which the student will improve upon previously learned skills and techniques related to cardiovascular imaging. Students will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4564 Cardiovascular Clinical IV

6 credit hours, 33 contact hours (1 hour lecture and 0 hours lab, 32 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4563, concurrent enrollment in 4569 and a valid CPR card. Course is graded A-E.

This final clinical experience emphasizes mastery of skills in cardiovascular sonographic imaging. The course is designed to challenge the student to function independently within the supervised clinical setting, tailoring each examination according to the specific guidelines of each case. A weekly one hour seminar focusing on specific case studies will be conducted.

4569 Cardiovascular Seminar

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4563 and concurrent enrollment in 4564. Course is graded A-E.

This course provides correlation between previously learned sonographic concepts and clinical application. It is designed to aid the transition to entry-level sonographer and ARDMS preparation. The student must successfully complete a comprehensive examination.

4570 Introduction to Pediatric Echocardiography

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4565 and 4566 and concurrent enrollment in 4517 and 4563 or permission of the instructor. Course is graded A-E.

This course covers the sonographic imaging of the pediatric heart with emphasis on embryology, anatomy, pathology, physiology, interpretation of clinical data, differential diagnosis and sonographic techniques relative to the pediatric cardiac patient in an adult cardiac facility. Topics such as congenital pathology, acquired pathology, surgical repair of congenital heart disease and fetal echocardiography will be discussed.

4571 Echocardiography I

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Must be accepted in the DMS program and concurrent enrollment in 4515, 4551 and 4577, or permission of the instructor. Course is graded A-E.

This course will review cardiac anatomy and physiology. B-mode, M-mode, and Doppler testing in the detection of Mitral Valve disease will be discussed. EKG and Holter monitoring will also be studied.

4572 Echocardiography II

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4571 and concurrent enrollment in 4519, 4562 and 4578, or permission of the instructor. Course is graded A-E.

This course will continue the sonographic evaluation of aortic valve, tricuspid valve, and pulmonic valve disease. Ischemic and pericardial heart disease, and cardiomyopathies will also be discussed.

4573 Echocardiography III

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4572 and concurrent enrollment in 4517, 4563 and 4579, or permission of the instructor. Course is graded A-E.

This course will continue the sonographic evaluation of cardiac pathophysiology including the specialty examinations of transesophageal, stress, and contrast studies.

4577 Vascular Sonography I

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4022/4029, 4511, acceptance in the DMS program, and concurrent enrollment in 4515, 4551 and 4571. Course is graded A-E.

This course emphasizes the sonographic evaluation of the peripheral vascular system. Non-invasive testing of the upper and lower extremity vessels and disease processes will be studied. Plethysmography, duplex, pulsed and continuous wave Doppler testing will be introduced.

4578 Vascular Sonography II

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4577, and concurrent enrollment in 4519, 4562 and 4572, or permission of the instructor. Course is graded A-E.

This course emphasizes the principles and procedures involved in transcranial and extracranial sonography as well as abdominal vascular sonography. Spectral analysis, color Doppler, pulsed and continuous wave Doppler will be discussed. The disease mechanisms of the cerebrovascular and abdominal areas will be discussed and contrasted with normal anatomy.

4579 Vascular Sonography III

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4578, and concurrent enrollment in 4517, 4563, 4570 and 4573, or permission of the instructor. Course is graded A-E.

This course discusses miscellaneous vascular pathologies and advanced imaging techniques. Test validation and statistical comparisons will be introduced with an effort to establish a quality assurance program. A brief summary of vascular laboratory accreditation will also be discussed.

4581 Breast Sonography

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: C grade or better in 4535 (or 4504) and 4505 and concurrent enrollment in 4517, 4520 and 4546, or permission of the instructor. Course is graded A-E.

This course will cover the normal anatomy, physiology and pathology of the breast. Sonographic appearance of the normal breast, benign breast disease and malignancies will be introduced. Various invasive and related imaging techniques will also be discussed. Emphasis is on correlation of clinical data, related imaging techniques and sonographic appearance to determine differential diagnosis.

4590 Special Topics in Clinical Sonography

2 credit hours, 6 contact hours (1 hour lecture and 5 hours lab). Prerequisite: Acceptance into the Diagnostic Medical Sonography Technology One-Year program; must be a graduate of the COTC Radiographic Technology program and hold a valid CPR card. Course is graded A-E.

A unique experience in various clinical settings in which students have an opportunity to observe concepts and techniques related to ultrasound imaging and patient care. Students will function under the close supervision of qualified sonographers or physicians in hospitals and other health related facilities. A weekly one hour seminar focusing on specific case studies will be conducted.

4591 Current Issues in Sonography

0.5 credit hours, 6 contact hours (0 hours lecture, 0 hours lab, and 6 hours directed practice). Prerequisite: Second Year Status in DMS. Only open to individuals who have college credit for a general course in Current Issues in Healthcare or have not taken a current issues course within the past five years. Course is graded A-E.

This course deals with current issues relevant to sonographic imaging departments and personnel. During the course topics specific to Diagnostic Medical Sonography such as lab accreditation, new techniques in sonography, and the profile of a professional sonographer will be reviewed.

4601 Pharmacology for Surgical Assisting

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade or better (2.00) in 4012/4019 and 4022/4029. Course is graded A-E.

The student will be introduced to the study of pharmacology for patients of all ages. The role of the surgical assistant, drug control laws, methods of preparation, and abbreviations will be presented. This course is designed to introduce the student to the classifications of drugs, identification of expected actions and uses, common adverse effects, normal dosage ranges, and routes of administration. Prototype examples will be used in each classification. Relevant assessments of patients will be included. Upon satisfactory completion of this course the student should be able to understand and prepare medications for the safe administration to patients.

4631 Fundamentals of Surgical Technology

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Admittance into the Surgical Technology program and concurrent enrollment in 4632. Course is graded A-E.

This course is an introduction to surgical technology. Different types of health care facilities, the roles of the different surgical team members and aspects of the physical environment of the surgical suite are studied. The history of the development of surgery as well as ethical, moral, and legal responsibilities are discussed. In this course the student will also discuss communication skills, interpersonal and interdepartmental relationship skills needed.

4632 Fundamentals of Surgical Technology Laboratory

2 credit hours, 4 contact hours (0 hours lecture and 4 hours lab). Prerequisite: Admittance into the Surgical Technology program and concurrent enrollment in 4631. Course is graded S/U.

During the laboratory exercise the students will practice sterile techniques, be introduced to surgical instrumentation, operating room equipment and creating a sterile field. Included in this course will be an opportunity to shadow a surgical technologist in surgery. This course is graded on a Satisfactory/Unsatisfactory basis.

4633 Patient Care Concepts

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in high school biology or equivalent and concurrent enrollment in 4634. Course is graded A-E.

The student will be introduced to the layout of the operating room suite, sterile and sub-sterile area. The importance of skin preparation, transportation, positioning and anesthesia of surgical patients will be present. The student will also be introduced to aseptic technique, care of specimen, use of thermoregulatory devices, vital signs, handling of blood replacement components, urinary catheterization, and emergency procedures.

4634 Patient Care Concepts Laboratory

2 credit hours, 4 contact hours (0 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in high school biology or equivalent and concurrent enrollment in 4633. Course is graded S/U.

This course is designed to enable the student to become skilled in assisting with the preparation, transportation, positioning, and anesthesia of the surgical patient. Skills included in this course are: aseptic technique, positioning, skin preparation, care of specimens, use of thermoregulatory devices, vital signs, handling of blood replacement components, urinary catheterization and emergency procedures. This course is graded on a Satisfactory/Unsatisfactory basis.

4635 Basic Case Preparation

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4633 and concurrent enrollment in 4636. Course is graded A-E.

This course builds on the previously acquired knowledge of human anatomy and physiology, introduction to surgical technology, basic instrumentation, surgical equipment and supplies; sutures and stapling devices will be discussed and demonstrated. The student will learn the proper care, handling, use and assembly of instruments and equipment. Also discussed during this course will be draping techniques and maintenance of the sterile field.

4636 Basic Case Preparation Laboratory

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: 4633 and concurrent enrollment in 4635. Course is graded S/U.

This laboratory course is designed to build on the student's knowledge of basic surgical technology skills, professionalism, and ethics. The role of the surgical technologist is developed and applied in laboratory procedures. This course is graded on a Satisfactory/Unsatisfactory basis.

4637 Surgical Procedures I

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4633 and concurrent enrollment in 4638. Course is graded A-E.

This course is designed to acquaint the student with the operating room procedures and techniques necessary to function as an assistant in the Operating Room. Discussed during this course will be the relevant anatomy, indications for surgery, special equipment and supplies, purpose and expected outcome and possible complications for procedures in the following surgical specialties: General and Gastrointestinal, Obstetric and Gynecologic, and Orthopedic. The student will have clinical experiences in the above areas, functioning as a second scrub, first scrub or assistant circulator under the supervision of a certified surgical technologist or registered nurse.

4638 Surgical Procedures I: Clinical

3 credit hours, 15 contact hours (0 hours lecture, 0 hours lab, and 15 hours clinical). Prerequisite: 4633 and concurrent enrollment in 4637. Course is graded S/U.

This course is designed to build on the student's knowledge of basic surgical techniques, professionalism, and ethics. The role of the surgical technologist is developed and applied in basic surgical procedures. The principles of asepsis and patient care concepts of positioning, prepping, draping, and procedural techniques are applied directly to the investigation of General, Gastrointestinal, Obstetrics, Gynecological and Orthopedical surgical procedures. Maintaining the integrity, safety, and efficiency of the sterile and non-sterile areas throughout surgical procedures will be emphasized. This course is graded on a Satisfactory/Unsatisfactory basis.

4639 Surgical Procedures II

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4638 and concurrent enrollment in 4640. Course is graded A-E.

This course is an extension of Surgical Procedures I. Discussed during this course will be the relevant anatomy, indications for surgery, special equipment and supplies, purpose and expected outcome and possible complications for procedures in the following surgical specialties: ophthalmic, ear/nose/throat, dental/oral/maxillofacial, plastic and reconstructive and neurological surgery.

4640 Surgical Procedures II: Clinical

3 credit hours, 15 contact hours (0 hours lecture, 0 hours lab, and 15 hours clinical). Prerequisite: 4638 and concurrent enrollment in 4639. Course is graded S/U.

This course is designed to build on the student's knowledge of surgical technology with emphasis on clinical surgical applications in ophthalmic, ear/nose/throat, dental/oral/maxillofacial, plastic and reconstructive and neurological surgical procedures. Emphasis is on further development of surgical skills. This course is graded on a Satisfactory/Unsatisfactory basis.

4641 Surgical Procedures III

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4639 and concurrent enrollment in 4642. Course is graded A-E.

This course is an extension of Surgical Procedures II. Discussed during this course will be the relevant anatomy, indications of surgery, special equipment and supplies, purpose and expected outcome and possible complications for procedures in the following surgical specialties: thoracic, cardiovascular, peripheral vascular, and urologic. The student will have clinical experience in the above areas, functioning as a second scrub, first scrub, or assist circulator under the supervision of a certified surgical technologist or registered nurse.

4642 Surgical Procedures III: Clinical

3 credit hours, 15 contact hours (0 hours lecture, 0 hours lab, and 15 hours clinical). Prerequisite: 4639 and concurrent enrollment in 4641. Course is graded S/U.

This course is designed to build on the student's knowledge of surgical technology with emphasis on clinical surgical applications in thoracic, cardiovascular, peripheral vascular, and urologic surgical procedures. Emphasis is on further development of surgical skills. This course is graded on a Satisfactory/Unsatisfactory basis.

4643 Pediatric Surgery

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4639 and concurrent enrollment in 4644. Course is graded A-E.

This course is designed to acquaint the student with pediatric patients and a variety of surgical procedures unique to the pediatric patients.

4644 Pediatric Surgery: Clinical

1 credit hour, 5 contact hours (0 hours lecture, 0 hours lab, and 5 hours clinical). Prerequisite: 4639 and concurrent enrollment in 4644. Course is graded S/U.

This course is designed to build on the student's knowledge of surgical technology with emphasis on clinical surgical applications. Clinical experiences will emphasize adapting pediatric concepts in the surgical setting. Students will be given the opportunity to scrub in these pediatric specialty surgeries: General Surgery, Urology, Orthopedic, Neurosurgery, Thoracic surgery, Cardiovascular surgery, Ophthalmology, Plastic surgery, and ENT surgery. This course is graded on a Satisfactory/Unsatisfactory basis.

4645 Advanced Surgical Technology Practicum

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4644 and concurrent enrollment in 4646. Course is graded A-E.

This course focuses on continuing surgical theory. It provides study of special problems that correlate with the individual needs and interests of the student during clinical practice. Clinical supervised practice is an integral part of this course.

4646 Advanced Surgical Technology Practicum: Clinical

3 credit hours, 15 contact hours (0 hours lecture, 0 hours lab, and 15 hours clinical). Prerequisite: 4644 and concurrent enrollment in 4645. Course is graded S/U.

This course is designed to build on the student's knowledge of surgical technology with emphasis on clinical surgical applications. The student is expected to work with one preceptor during this course, and are expected to perform in the

clinical practice with minimal assistance. This course is graded on a Satisfactory/Unsatisfactory basis.

4647 Professional Trends and Issues in Surgical Technology

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 4644. Course is graded A-E.

This course is designed to prepare the student for the workplace. Topics discussed will be: factors that affect the student's personal life, professional relations and organizations, preparation for the national certification examination, type of health care delivery agencies, accrediting agencies and job seeking skills.

4649 Surgical Technology Seminar

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4647. Course is graded A-E.

This course is designed to provide the correlation between previously learned concepts and clinical application. It is designed to aid in transition from surgical technology student to entry level Surgical Technologist. Topics discussed in this course include General, OB/GYN, Vascular, GU, Cardiothoracic, Plastic and Opthalmology surgeries. Requirements for ethical and legal practice as defined by the National Association of Surgical Technologists will be reviewed and discussed.

4651 Specialty Surgical Practice

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 4647 and concurrent enrollment in 4652. Course is graded A-E.

This course is a continuation of Professional Trends and Issues in Surgical Technology with additional surgical specialties presented. For example: Transplant surgery, trauma, ophthalmology, cardiac surgery, orthopedic, plastic, and neurology surgery are covered. The student will select two specialty areas and specialize in those areas. The student will be expected to transfer and build on previous content and experiences.

4652 Specialty Surgical Practice: Clinical

3 credit hours, 15 contact hours (0 lecture hours, 0 hours lab, and 15 clinical hours). Prerequisite: 4647 and concurrent enrollment in 4651. Course is graded S/U.

This course is designed to build on the student's knowledge of surgical technology with emphasis on two specialty clinical surgical applications. The student is expected to select two specialty areas and focus on those surgical areas. This course is graded on a Satisfactory/Unsatisfactory basis.

4741 MR Physics and Image Formation

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Proof of registration with the ARRT, or permission of the instructor. Course is graded A-E.

This course discusses the physics of magnetic resonance imaging and has been developed to provide individuals with backgrounds in radiology and MRI an in-depth understanding of MRI. The course covers the physics of MR image formation, data acquisition, and MRI Safety. This course is intended to serve as preparation for certification in the MRI field.

4742 MR Pulse Sequence and Image Optimization

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Current ARRT card and C grade (2.00) or better in 4173 or permission of the instructor. Course is graded A-E.

This is the second course in the MRI physics sequence. This course discusses different pulse sequences in MRI, and their clinical image applications. Topics include: Spin Echo pulse sequences (FSE, FSEIR, IR and EPI), Gradient Echo Pulse sequences (MPGR, GRASS, SPGR, FGRE and MRA), and Cardiac MRI. The manipulation of scan parameters, such as TR, TE, NEX, matrix size, FOV and bandwidth, and their effect on image quality and scan time will be discussed. Image artifacts, their causes, and prevention will be identified.

4743 Anatomy and MR Imaging

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: ARRT registered or permission of instructor. Course is graded A-E.

This course covers human anatomy as demonstrated with MRI. Recognition of normal anatomy on MR images will be stressed as well as imaging parameters and protocols.

4744 MR Pathology

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: Successful completion of 4743 or permission of instructor. Course is graded A-E.

Utilizing selected MR cases and didactic lecture, the course addresses the common and advanced pathology demonstrated on MR images and where appropriate correlates the pathology with images produced in the other imaging modalities. The pediatric variances are reviewed including the differences between children and adults relative to anatomy, tissue characteristics and pathology.

4745 Patient Relations and Safety Management in MRI

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: ARRT registered, concurrent enrollment in 4741 or permission of instructor. Course is graded A-E.

This course presents the basic principles of patient scheduling, patient and visitor comfort, education and safety precautions in an MRI facility. This course also reviews venipuncture techniques, and patient emergencies while in the scanner.

4746 Introduction to MR Imaging

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: ARRT registered, concurrent enrollment in 4741 or permission of instructor. Course is graded A-E.

This course provides an overview of the theories of resonance properties and their founders. The historical development of MR and the fundamental principles of nuclear magnetic resonance will be discussed. Terminology and basic concepts of pulse sequencing, image parameters and artifact reduction techniques will be introduced.

4747 Development and Management of an MRI Facility

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Successful completion of 4145 or permission of instructor. Course is graded A-E.

Through selected clinical visits and didactic lectures, this course provides an introduction to site selection, facility design, governmental regulations, image system selection, ancillary equipment needs, maintenance and quality assurance of imaging equipment, staffing decisions and educational needs of facility personnel.

4748 MRI Seminar

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: Successful completion of 4742 and 4744 or permission of instructor. Course is graded A-E.

This course provides for the correlation of MRI imaging concepts including clinical applications. Further, ethical and legal practice of MR is presented.

4749 Advanced Application in MR Imaging

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Successful completion of 4741 and 4742 or permission of instructor. Course is graded A-E.

This course presents advanced diagnostic applications of Magnetic Imaging. Topics to be covered include, cardiac, runoff, stereotactic, spectroscopy, functional studies and emerging advanced applications.

4750 Clinical Education in MRI I

1 credit hour, 8 contact hours (0 hours lecture, 0 hours lab, 8 hours clinical). Prerequisite: Current ARRT care and concurrent enrollment in 4741 and 4743 or permission of the instructor. Course is graded S/U. This course is repeatable up to 3 credit hours.

This course provides MRI experience in the clinical setting. It is designed to allow the student to apply the previously learned theories and techniques of MR imaging. The student will function under the supervision and guidance of a clinical MR technologist and radiologist. This course is graded Satisfactory/Unsatisfactory and is repeatable up to 3 credit hours.

4751 Clinical Education in MRI II

3 credit hours, 24 contact hours (0 hours lecture, 0 hours lab, 24 hours clinical). Prerequisite: Current ARRT card, 4741 and 4750 or permission of the instructor. Course is graded S/U. Course is repeatable up to a maximum of 9 hours.

This course provides MRI experience in the clinical setting. It is designed to allow the student to apply the previously learned theories and techniques of MR imaging. The student will function under the supervision and guidance of a clinical MR technologist and radiologist. Course is graded Satisfactory/Unsatisfactory and is repeatable up to 9 credit hours.

4752 Case Studies in Magnetic Resonance Imaging

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: Successful completion of 4742 and 4744 or permission of instructor. Course is graded A-E.

Utilizing case studies, this course will cover image quality and diagnosis. Application of imaging principles and MR appearance of disease processes will be discussed to determine appropriate diagnostic imaging protocols.

4809 Trends and Issues for the Practical Nurse

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: Concurrent enrollment in 4824 and 4825. Course is graded A-E.

The purpose of this course is to introduce the PN nursing student to current concepts, trends, and issues in patient care management. as: career development, trends in patient care management Societal influences that affect the development of PN practice and delineate the PN's scope of practice will be the major focus of this course. The image of the PN in today's society will be explored, as will the media's influence on the health care consumer's opinion of nursing in today's society. Professional socialization of the PN student will occur through emphasis on such topics, role transition to the workplace, licensure issues in the State of Ohio, management of ancillary personnel, nurse's rights at work, legal and ethical implications of patient care delivery, approaches to patient care delivery, channels of communication, quality improvement in health care, the organizational process, the role of the PN leader, critical thinking strategies, and how to make the work environment work for you. The PN student builds on previously learned concepts and develops additional learning within the Licensed Practical Nurse scope of practice.

4817 Introduction to Nursing for the Practical Nursing Student

4 credit hours, 7 contact hours (2.5 hours lecture, 3 hours lab, and 1.5 hours clinical). Prerequisite: Admission into the Practical Nursing sequence and concurrent enrollment in 1506 and 4081 unless previously completed with a grade of 'C' or better and concurrent enrollment in 4826. Course is graded A-E.

This course introduces the student to the philosophy and conceptual framework of the nursing program. The past, present, and future roles of nursing are explored by viewing the roles and functions of the nurse as influenced by historical and sociological factors. Concepts of caring, Orem's theoretical framework, Gordon's Functional Health Patterns, ethical and legal responsibilities, contribution by the PN to the nursing process, communication techniques, and holistic care across the lifespan are introduced. Emphasis is placed on the functional health patterns of health perception-health management, activity-exercise, rest-sleep patterns, nutrition-metabolic and elimination. The student is introduced to the principles of surgical asepsis. The student will contribute to the nursing process while caring for clients with needs for hygiene, rest, sleep activity, nutrition-metabolic (skin integrity and asepsis content), and elimination. The student is expected to demonstrate characteristics of personal responsibility and legal/ethical standards of the profession.

4818 Fundamentals of Nursing for the Practical Nursing Students

4 credit hours, 8 contact hours (2 hours lecture, 3 hours lab, and 3 hours clinical). Prerequisite: C grade (2.00) or better in 4817, 4826 and (4012/4019 or 4081), concurrent enrollment in 1384 unless previously completed with a grade of 'C' or better and concurrent enrollment in 4820. Course is graded A-E.

In this course the student continues to gain an understanding about the concepts of Orem's theoretical framework, caring, wellness and illness, which were introduced in the first nursing course. The student will contribute to the nursing process while caring for clients with needs for hygiene, rest and sleep, and activity and will develop the basic technical and communications skills to provide safe care. The student builds on content presented in the first quarter and begins practicing the principles of surgical asepsis and perioperative care of the client. Emphasis is placed on the functional health patterns of coping/stress, cognitive/perceptual, nutrition/metabolic and elimination. The student is expected to demonstrate personal responsibility and ethical/legal standards of the profession.

4820 Pharmacology I for the Practical Nursing Students

4 credit hours, 6.5 contact hours (2.5 hours lecture, 3 hours lab, and 1 hour clinical). Prerequisite: C grade (2.00) or better in 4817 and C grade (2.00) or better in one of the following: 4012/4019 or 4081, concurrent enrollment in 1384 unless previously completed with a grade of 'C' or better and concurrent enrollment in 4818 and concurrent enrollment in 4818. Course is graded A-E.

The student will be introduced to the role of the Licensed Practical Nurse in drug therapy for clients of all ages. Drug control laws, methods of administration, calculation of dosage, measurements, and abbreviations will be presented. Methods of administration emphasized during this course include: enteral, topical, inhalant, and the parenteral routes of intradermal, subcutaneous, and intramuscular. This course is also designed to introduce the student to the classifications of drugs and the utililization of the nursing process in identifying expected actions, common side effects, normal dosage and routes of administration. Prototype examples will be used in each classification. Relevant data collections and teaching of clients will be included. Upon satisfactory completion of this course, the student should be able to utilize the nursing process to administer medications to a client in a safe, effective and caring manner. In addition, each student shall satisfactorily administer medications to a group of clients.

4821 Pharmacology II for the Practical Nursing Students

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 4818 and 4820 and C grade (2.00) or better in one of the following: 4022/4029 or 4081 and concurrent enrollment in 4823. Course is graded A-E.

The role of the Licensed Practical Nurse in drug therapy for clients of all ages continues in this course. Methods of administration and calculation of dosage for intravenous administration of medications will be presented. This course continues to introduce the student to further classifications of drugs and the utilization of the nursing process in identifying expected actions, common side effects, normal dosage and routes of administration. Prototype examples will be used in each classification. Relevant data collection and teaching of clients will be included. Upon satisfactory completion of this course the student should be able to utilize the nursing process to administer medications to a client in a safe, effective, and caring manner. In addition, each student shall satisfactorily administer medications to a group of clients.

4823 Health Alterations I for the Practical Nursing Students

6 credit hours, 12 contact hours (3 hours lecture, 3 hours lab and 6 hours clinical). Prerequisite: Enrollment in the Practical Nursing Program and C grade (2.00) or better in 4818 and 4820 and concurrent enrollment in 4004, 4045 unless previously completed with a grade of 'C' or better and 4821. Course is graded A-E.

This course is designed to provide the Practical Nursing student with concepts, skills, communication techniques necessary for providing caring, therapeutic care to culturally diverse clients of adult age groups. Emphasis will be placed on clients experiencing common recurring health alterations related to gastrointestinal, integumentary, immunology, sensory, and endocrine functioning as well as alterations in cellular growth and in mental health. While interacting with clients in acute and long term care facilities, the student will recognize self-care deficits, demonstrate caring behaviors, administer safe care, be accountable, and adhere to the legal and ethical standards of practical nursing practice.

4824 Maternal/Child Nursing for the Practical Nursing Students

6 credit hours, 9 contact hours (5.5 hours lecture, 1.5 hours lab and 3 hours clinical). Prerequisite: Enrollment in the Practical Nursing program and C grade (2.00) or better in 4045, 4821 and 4823 and concurrent enrollment in 4825 and 4809 . Course is graded A-E.

This course provides the opportunity for the student to explore and develop concepts basic to meeting the health care needs of the childbearing family. Utilizing the framework of Maslow's Hierarchy of Basic Human Needs and Orem's theoretical framework as well as Gordon's functional health patterns as the biological, psychosocial, and cultural components of human sexuality through pregnancy, birth, and childbearing are introduced. The family is viewed in terms of life span development. The concept of the role of the practical nurse in the promotion of wellness for the families at all stages of development is stressed. Guidelines for the establishment of therapeutic communication as it relates to the concepts of caring will be reviewed and specific methods for communication with parents and children will be presented. In the clinical setting, emphasis is placed on the practical nurse's contribution to the nursing process as it relates to the care of families in pregnancy, childbirth and parenting. Included is the adaptation of basic nursing skills in meeting the needs of both the parents and the child in promoting, maintaining, and restoring health. The effects of illness and hospitalization on the developing family are explored. Opportunity is provided for observation in a variety of community settings serving the health care and developmental needs of the family. Scientific principles, concepts, and skills development relating to both maternal and child care will be presented. The student is expected to demonstrate characteristics of personal responsibility and legal and ethical standards of the profession.

4825 Health Alterations II for the Practical Nursing Students

6 credit hours, 13.5 contact hours (3 hours lecture, 3 hours lab and 7.5 hours clinical). Prerequisite: Enrollment in the Practical Nursing program and C grade (2.00) or better in 4821 and 4823 and concurrent enrollment in 4824 and 4809. Course is graded A-E.

This course is designed to provide the PN student with concepts, skills, and communication techniques, necessary for providing caring, therapeutic care to culturally diverse clients of adult age groups. Emphasis will be placed on clients experiencing common recurring health alterations related to cardiac, respiratory, musculoskeletal, renal and male reproductive as well as neurological functioning. While interacting with clients in acute and long term care facilities, the student will recognize self-care deficits, demonstrate caring behaviors, administer safe care, be accountable, and adhere to the legal and ethical standards of practical nursing practice.

4826 Data Collection for Practical Nursing Students

3 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: Admission into the Practical Nursing sequence, concurrent enrollment in 1506 and 4081 unless previously completed with a grade of 'C' or better and concurrent enrollment in 4817. Course is graded A-E.

This course introduces the student to the process of data collection, verification, and communication. The purpose of this course is for the student to develop the data collection skills used to determine the level of the client's wellness, health practices, past illnesses, related experiences, and health care goals as influenced by cultural and spiritual practices. The student will learn a step-by-step approach to body system observation, how to differentiate normal from abnormal findings, and recognize and support patterns of self-care which promote health for clients across the life span. The role of the Licensed Practical Nurse in data collection will be discussed and differentiated from the role of the Registered Nurse. This course will introduce the student to the language of medical terminology. The student will be expected to utilize such language and appropriate medical abbreviations in classroom, laboratory, and health care settings. The student is expected to obtain and maintain personal responsibility and legal/ethical standards of the profession.

4890 Independent Study in Practical Nursing Theory and Application

2 credit hours, 8 contact hours (1 hour lecture, 0 hours lab, and 7 hours directed practice). Prerequisite: Enrollment in the Practical Nursing Program and permission of the Academic Director. Course is graded A-E.

This course provides the student with the opportunity to study topics within the practical nursing technology. Students will utilize biopsychosocial, spiritual, and nursing concepts, skills and communications techniques as a framework for review of care for culturally diverse clients of all age groups experiencing the need for health care. Emphasis will be placed on the recognition of self-care deficits, caring behaviors, administration of safe nursing care, accountability and responsibility. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation and/or certificate completion.

4899 NCLEX PN Preparation

2 credit hours, 16 contact hours (Miscellaneous Applications Course--1 credit hour awarded per 7 contact hours of work per week). Prerequisite: Successful completion of the Practical Nursing Technology program. Course is graded S/U.

Students will utilize biopsychosocial, spiritual, and nursing concepts, skills and communications techniques as a framework for review of care for culturally diverse clients of all age groups experiencing the need for health care. Emphasis will be placed on the recognition of self-care deficits, caring behaviors, administration of safe nursing care, accountability and responsibility. This course does not apply credit toward graduation and is graded on a Satisfactory/Unsatisfactory basis.

49XX Special Topics in Allied Health

1-5 credit hours, contact hours to be determined. Prerequisite: Approval of Academic Director. Course is graded A-E.

This course will provide the student an opportunity to work on special topics within the field of Allied Health under the direct supervision of a faculty member. A faculty member and student must obtain approval from the Academic Director prior to initiating this course. Enrollment in this course must be approved by the Academic Director.