

**Central Ohio Technical College  
Course Description Listing  
2003-2004 Academic Year**

**GENERAL EDUCATION COURSES: 1000**

**ALL STUDENTS MUST TAKE PLACEMENT TESTS PRIOR TO SCHEDULING THE FIRST COMMUNICATIONS OR MATHEMATICS COURSE.**

**1005 Student Career Development and Leadership Training**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is Graded S/U.

This course will provide an overview of the theory and skills necessary for the practice of effective leadership as an integral component of a student's career and life plan. The course will be graded Satisfactory/Unsatisfactory.

**1006 Critical Thinking**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 1506. Course is graded A-E.

This course, an introduction to logic, teaches students to analyze the media, advertising, and everyday problems -- career, academic, and personal. It aims at equipping students with the basic skills and discipline necessary to make valid judgments.

**1007 Career Explorations**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Career Explorations provides opportunities for students to build confidence and to develop self-reliance while they relate their educational experience to the importance of career planning. The course focuses on self-awareness, job market research, career services and options at COTC, and team building. Students will experience contact with working professionals, class and team discussions, lectures, videos, handouts, readings, on-site visitations, and individual reports.

**1008 Ethics**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 1506. Course is graded A-E.

This course studies basic ethical theories. The course balances theory and practice, using case studies and open discussion, and intends to afford students with the necessary knowledge, attitudes, and processes to make appropriate moral decisions.

**1011 Career Planning I**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: 1007, or documented enrollment in a technology program, or permission of the Academic Director, or current employment. Course is graded A-E.

This course develops the student's ability to prepare resumes, cover letters, and employment applications. Students examine authentic job materials with emphasis on writing job objectives, using action words, as well as focusing on the benefit factor. Professional appearance of documents is stressed.

### **1012 Career Planning II**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: 1007, or 1011, or documented enrollment in a technology program, or permission of the Academic Director, or current employment. Course is graded A-E.

Technology Career Planning II prepares the student for the three stages of the interview process: pre-interview planning, interview management, and post-interview follow-up. Specific topics include: 1) company research; 2) interview questions and responses; 3) employer evaluation criterion; 4) positive image; 5) skill reinforcement; and 6) interview reassessment. Emphasis is given to professionalism and persuasive communication. This course is taught through employer contacts, role-play, small group discussion, lectures, videos, and videotaped interviews.

### **1017 Service Learning**

1-5 credit hours, Variable contact hours (based upon credit hours). Prerequisite: None. Course is graded S/U.

The purpose of the community service class is to identify a broad variety of students from the campus community who have demonstrated an interest in assuming greater leadership and service roles; to educate them through programs that broaden and deepen their knowledge of the area's challenges and service opportunities; and to inspire them to commit their future volunteer activities individually and/or collectively to areas that will result in advancing the welfare of the people of our community. This course is graded on a Satisfactory/Unsatisfactory basis.

### **1200 Basic Mathematics**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: None. Not open to students with credit for 3000 or 3002. Course is required for all students scoring below 41 on the ASSET numerical skills test or below 44 on the COMPASS numerical skills test. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded A-E.

Basic Mathematics is designed to develop the student's potential to succeed in other college mathematics courses. The basic arithmetic skills involving whole numbers, fractions, and decimals are reviewed. Also covered are signed numbers, percents, dimension analysis, and the rudiments of algebra.

### **1203 Introduction to Geometry**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1200, or score of at least 41 on ASSET Numerical Skills test, or score of at least 44 on COMPASS Pre-Algebra/Numerical Skills test. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded A-E.

This course is an introduction to elementary geometric concepts. It includes the study of lines, angles, triangles, polygons, circles and solids. Right triangle trigonometry and classic geometric constructions are also explored. This course is problem-solving oriented rather than proof-oriented.

### **1204 Business Math**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1200, or score of at least 41 on ASSET numerical skills test or score of at least 44 on COMPASS pre-Algebra/Numerical Skills Test. Course is graded A-E. This course is not open to students with credit for 1201 or 1202.

This course is a study of basic business arithmetic. It presents the concepts and applications of percentages, payroll, insurance, consumer interest, loans, and other common business computations.

### **1205 Introduction to Algebra**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1200, or score of at least 41 on ASSET Numerical Skills test, or score of at least 44 on COMPASS Pre-Algebra/Numerical Skills test. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. This course is not open to students with credit for 1210. Course is graded A-E.

This course is an introduction to elementary algebraic concepts. It includes operations with real numbers, exponents and radicals, variable expressions, first degree equations, word problems, formulas and graphing. The student will develop the ability to use a scientific calculator efficiently.

### **1208 Elementary Statistics**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1205 or a score of at least 43 on the COMPASS Elementary Algebra Test or score of at least 10 on the COTC Algebra Skills Test. This course is not open to students with credit for 1224, 1230 or 2030. Course is graded A-E.

This is an introductory course in descriptive and inferential statistics. Topics covered include summarizing data with frequency tables; pictures of data; measures of center, variation and position; exploratory data analysis; probability; probability distributions; normal probability distributions; estimates and sample sites; hypothesis testing; inferences from two samples; correlation and regression. Concepts are explained intuitively and supported by examples. The applications are general in nature, and the exercises include problems from agriculture, biology, business, economics, education, environmental studies, psychology, engineering, medicine, sociology, and computer science.

### **1210 College Algebra**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1205, or score of at least 10 on COTC Algebra Skills test, or score of at least 43 on COMPASS Elementary Algebra test. This course is not open to students with credit for 3010. Course is graded A-E.

This course is a study of intermediate algebraic operations. It includes solving equations and inequalities, factoring, rational expressions, radicals, systems of equations, and graphing.

### **1223 Basic Chemistry**

6 credit hours, 7 contact hours (5 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 1205 or 1210, or score of at least 10 on COTC Algebra Skills test, or score of at least 43 on COMPASS Elementary Algebra test. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded A-E.

An introduction to the basic concepts of chemistry designed to serve as a foundation (or refresher) for the student about to enter the study of allied health sciences.

The course includes the following topic areas: metrics; elements, compounds and mixtures; atomic structure; bonding; chemical reactions, energy of reactions; oxidation-reduction; gas laws, solids and liquids; liquid mixtures; acids, bases and salts; and a brief look at fluid-electrolyte balance.

### **1225 General Chemistry**

6 credit hours, 7 contact hours (5 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 1205 or equivalent, and high school chemistry or 1223. Course is graded A-E.

This course will help to prepare the student for further courses in advanced chemistry. The student will study states of matter, solutions, kinetics, acids, bases, and chemical equilibrium with problem solving. The student will also study basics of organic chemistry. The student will have the opportunity to apply these principles learned through lecture in a lab setting.

### **1226 Trigonometry**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: 1210 or a score of at least 76 on the COMPASS Elementary Algebra test. Course is graded A-E.

Exponential and logarithmic functions and concepts of trigonometry, including the graphing of trigonometric functions, are discussed.

### **1227 Chemistry Fundamentals**

6 credit hours, 7 contact hours (5 hours lecture and 2 hours lab). Prerequisite: High School Algebra or 1205 or equivalent and High School Chemistry. All prerequisite courses must have a grade of "C" (2.00) or better. Course is graded A-E.

An introduction to the basic concepts of chemistry designed to serve as a foundation (or refresher) for the student about to enter the study of allied health sciences. The course includes the following topic areas: metrics, elements, compounds, mixtures, atomic structure, bonding, chemical reactions, energy of reactions, oxidation-reduction, gas laws, solids and liquids, liquid mixtures, acids, bases, salts, and a brief look at fluid-electrolyte balance.

### **1231 Calculus**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 1226 (or 3020) or a score of at least 46 on the COMPASS Trigonometry test. Course is graded A-E.

An introduction to the principles of Analytic Geometry to develop an understanding of graphic functions. These concepts are expanded to the calculus or rate of change expressed through algebraic functions, derivatives, maximum and minimum velocity, temperature, costs and the applications of the integral in areas, volumes, pressure, power, electrical charge, and work; with the emphasis on their application as related to the engineering technician.

### **1381 Sociology**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. This course is not open to students with credit for 1380, 1387, 1390 or 1391. Course is graded A-E.

Sociology is the study of social groups and social issues with emphasis on their effects on modern workers. Topics will be presented through lectures, films, and classroom discussion. This course is not open to students with credit for 1380 or 1390.

### **1384 Psychology for Nurses**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Enrollment in General Preparatory for Nursing, or acceptance into the COTC Nursing Technology plus an ACT score of 22 or higher, an ASSET score of 44 or higher, or a COMPASS score of 85 or higher, or satisfactory completion of 1423. Course is graded A-E.

This course will provide an introduction to basic research methods in psychology, theoretical systems, principles of learning, information processing, intelligence and intelligence testing, motivation and emotion, personality theories, and social psychology. This course will not be accepted as a substitute for 1386 General Psychology in other technologies.

### **1385 Organizational Psychology**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Organizational Psychology is an introduction to the application of the methods, facts, and principles of psychology of human behavior within work organizations. Topics include history and use of applied psychology, causation and purpose in behavior, leadership, group problem solving and group leadership, evaluating individual abilities, motivating workers for optimum performance, job fatigue, and counseling skills for managers. Course objectives are achieved through lecture and discussion, role-playing exercises, and written projects.

### **1386 General Psychology**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: ASSET score of 44 or higher or COMPASS score of 85 or higher and satisfactory completion of 1023 or permission of the instructor or Academic Director. This course is not open to students with credit for 1395 or 1396. Course is graded A-E.

General Psychology provides an introduction to the areas of basic theoretical constructs, nervous system functioning, perception, learning, memory, emotion, cognition, intelligence, personality theories, stress, social psychology and psychology.

### **1389 Cultural Diversity**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: None. This course is not open to students with credit for 1392 or 1399. Course is graded A-E.

This course focuses on the differences and similarities among racial, ethnic, and other diverse populations in the United States and includes historical, religious, and socio-cultural issues and current conflicts.

### **1393 Psychology of Personal Growth and Adjustment**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. This course is not open to students with credit for 1394. Course is graded A-E.

The course deals with a number of issues pertinent to personal growth and adjustment. Among these are the conflicting views of human behavior offered by psychoanalytic, trait, learning, and phenomenological theories; scientific methodology; self-perception; attraction and love; marriage; contemporary sexual behavior; adjustment problems; stress; handling fear, depression, and anger; and substance abuse. Course goals are achieved through lectures/class discussions, class activities and films.

### **1397 Abnormal Psychology**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 1393 or 1386 (or permission of the instructor). Course is graded A-E.

Abnormal psychology is the study of maladaptive behaviors with emphasis on etiology, classification and symptom recognition. Major areas of study include general theoretical perspectives, anxiety disorders, sexual variations and dysfunctions, personality disorders, schizophrenia and substance-use disorders. Topics will be presented through lecture/class discussion, structured class activities and films.

### **1398 International Relations**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 1506. Course is graded A-E.

International Relations is the study of the geography, history, culture, religion, and political and economic processes of significant modern nations. Topics will be presented through lectures, films, classroom discussion and individual research.

### **1399 Cultural Diversity for Law Enforcement**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: Open to Criminal Justice students only. This course is not open to students with credit for 1389 or 1392. Course is graded A-E.

This course focuses on the differences and similarities among racial, ethnic, and other diverse populations in the United States and includes historical, religious, and sociocultural issues and current conflicts.

### **1400 Basic Writing Skills**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: None. However, 1400 is required of all students scoring below 75 on the COMPASS writing skills test or below 42 on the ASSET writing skills test. Course is not open to students with credit for 1110, 1500, 1501 or 1510. This course will count neither for elective credit nor toward meeting minimum credit hour requirements for graduation. Course is graded A-E.

This course provides the opportunity to strengthen written language skills with emphasis on the writing process, sentence structure, unified paragraphs, word usage, capitalization, punctuation, and spelling.

### **1406 Basic Reasoning Skills**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: None. However, this course is required of all students placing in two or more Pre-College Communications courses. 1406 may be taken in place of 1006 Critical Thinking. Course is graded A-E.

1406 Basic Reasoning Skills will develop the critical thinking skills needed to analyze situations in personal, academic, and career life. Skills developed include analyzing facts, determining valid lines of reasoning, recognizing assumptions, making decisions, constructing arguments and opening one's mind to other options.

### **1413 Basic College Success Skills**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. This course is required of all students scoring below 85 on Compass Reading Skills or below 44 on ASSET Reading Skills. Course is not open to students with credit for 1013 or 1015. This course will count neither for elective credit nor toward meeting the minimum credit hour requirements for graduation. Course is graded A-E.

College success skills are those skills that the student must master in order to function and succeed within the structure of college life. Many of these skills will carry over into the world of work. Skills developed in this course include basic organizational techniques such as time management, memory and concentration, prioritizing tasks, and goal setting. Academic skills include identifying individual learning styles, note taking, and test taking skills.

### **1423 Basic Reading Skills**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: None; however, this course is required of all students scoring below 85 on the COMPASS reading skills test or below 44 on the ASSET reading skills test. Course is graded A-E. This course is not open to students with credit for 1023.

Critical reading skills necessary for successful use of college level reading materials are the focus of this course. Critical reading and vocabulary building skills covered include: features of textbooks, interpreting graphics, identifying main ideas and supporting details, textbook marking and annotating, vocabulary building, dictionary usage, and reading systems. This course may be taken concurrently with College Success Skills.

### **1504 Public Speaking**

3 credit hours, 4 contact hours (2 lecture and 2 lab). Prerequisite: 1507 or 1514 or equivalent. This course is not open to students with credit for 1112, 1509, 1509.1, 1512, or 1521. Course is graded A-E.

This course emphasizes instruction and practical experience in public speaking. Students learn to analyze audiences, select topics, apply research learned, organize, and present a series of extemporaneous speeches. This course introduces other interpersonal and intrapersonal communications skills, including listening, non-verbal communications, and small group communications.

### **1506 Composition I**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: : C grade (2.00) or better in 1400 (or a score of at least 75 on the COMPASS writing skills test or a score of at least 42 on the ASSET writing skills test); C grade (2.00) or better in 1413 and a grade of Satisfactory in 1423 (or a score of at least 85 on the COMPASS reading skills test or a score of at least 44 on the ASSET reading skills test). This course is not open to students with credit for 1111, 1502, 1508, 1511 or 1520. Course is graded A-E.

Composition I introduces the student to college writing. The student will practice the writing process, including pre-writing, draft writing, editing and group revision. The course reviews spelling, grammar and punctuation, sentence and paragraph development, and introduces basic research skills. The student will read and write narrative, descriptive reports.

### **1507 Composition II**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: 1506. This course is not open to students with credit for 1111, 1503, 1508, 1511, 1520, or 1521. Course is graded A-E.

Composition II continues development of skills practiced in Composition I, including improvement of spelling, grammar and punctuation, as well as sentence, paragraph, and essay development. The student will read and write expository and argumentative reports and essays with an emphasis on research.

### **1514 Contemporary Fiction**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: 1502 or equivalent. 1514 may be taken in place of 1503. Course is graded A-E.

This course acquaints the student with various pieces of contemporary fiction. The student reads noteworthy novels and short stories and writes essays demonstrating his/her analysis and understanding of these texts.

### **1516 English as a Second Language (ESL) I**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: TOFEL score of 450. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded S/U.

English as a Second Language (ESL) I focuses on basic sentence structure and the writing process, developing a reflective writing portfolio, and basic reading comprehensive skills. ESL I is a technology-assisted instruction course that utilizes a constructivist humanistic methodology in developing basic English skills required for successful entry into college level technology courses. This course is graded Satisfactory/Unsatisfactory.

### **1517 English as a Second Language (ESL) II**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: TOFEL score of 500 or successful completion of 1516. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded S/U.

ESL II builds upon ESL I in developing greater depth in writing and reading skills. Academic reading and writing is emphasized. The writing process is linked to the critical reading process necessary for success in college-level courses. ESL II is a technology-assisted instruction course using a constructive humanist methodology in developing basic English skills. This course is graded Satisfactory/Unsatisfactory.

### **1518 Communications Seminar**

1-3 credit hours, 1-3 contact hours (1 to 3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Possible areas of study include vocabulary development, current technical literature, public speaking, the large conference, specific grammar studies, and local business/industrial communication problems. Course content is subject to change in response to student need and may be individualized in nature.

### **1523 Small Group Communications**

3 credit hours, 3 contact hours (3 lecture and 0 lab). Prerequisite: 1507 or 1514 or equivalent. Course is not open to students with credit for 1115 or 1515. Course is graded A-E.

Students practice the techniques of defining, researching, planning, and group decision making in a series of five conferences, stressing leadership, participation, and responsibility.

### **1525 Technical Writing**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 1507. Course is graded A-E. This course is not open to students with credit for 1113, 1505, 1513, or 1522.

Training in writing techniques used in business, industry, and public service is stressed. The student prepares, edits, and submits memoranda, letters, reports, and resumes.



### **1531 National Issues**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 1506. This course is not open to students with credit for 1530. Course is graded A-E.

The course explores the economical, historical and geo-political nature and ramification of several current issues facing the people of the United States. Each issue will be studied in depth. It requires synthesis and fine-tuning of the basic communicative skills--thinking, listening, speaking, reading, and writing. Frequent oral and written reports are required.

### **1600 Principles of Computing**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: None. S/U Graded Course. Course is not open to students with credit for 2921,2900, 2500, or 3012.

Principles of Computing introduces the student to basic computer uses. The course includes an understanding of computers and how they function. The student will identify and use hardware and software. Both operating systems and application software will be introduced. The student will become familiar with common application programs including word processing, data base, spreadsheet, graphics, presentation, web authoring, and email accounts. The course is graded Satisfactory/Unsatisfactory.

### **1800 Foundation Art 2D**

5 credit hours, 10 contact hours (0 hours lecture and 10 hours lab). Prerequisite: None. Course is graded A-E.

This is a beginning studio course in two-dimensional art, dealing with line, form, composition, and color with exploration in several media.

### **1900 Digital Foundations**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: None. Course is graded A-E.

This is an overview course covering the background of digital media, operation of digital media hardware, and introduction to digital media software tools. This course should be taken before any advanced course requiring the use of digital software.

### **1990 Community Service**

1-3 credit hours depending upon the amount of work experience per week (1 credit hour per 5 hours work experience). Prerequisite: Permission of the Academic Director. Course is graded S/U.

Students perform non-paid work (five hours a week per credit hour of directed practice in a real-world problem) for an organization and be involved in a seminar with others pursuing this experience. A directed practice hour is one during which a student receives individual instruction and then is observed and critiqued by the instructor. Assignments will be with organizations having a working agreement with the College. Appropriate health insurance must be obtained by the student. The coordinating faculty member, with employer input, will be responsible for grading on a satisfactory/unsatisfactory basis.

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**BUSINESS TECHNOLOGIES COURSES: 2000**

**2000 Business Law I**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This survey course presents the student with the legal framework of business. Topics of study will include an examination of constitutional law, environmental law, international law, corporate law, securities regulation, and the international legal environment. The student will also be exposed to the social forces of the law, torts, and crimes that relate to business, as well as business ethics and the law.

**2014 Principles of Business**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This introductory course presents the principles, terminology and concepts necessary for understanding our business system. It covers such key topics as business formation and ownership decisions, management and organization, the various functional Divisions within the business and the interaction of business and society.

**2016 Business Law II**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 2000 for all technologies except Accounting Technology; Accounting Technology student's prerequisite: None. Course is graded A-E.

The course encompasses common and statutory law as it applies to the business world. Topics of study include the environment of business, factors influencing the legality of contracts, and the various kinds of contracts. The course also includes a study of sales, bailments, agency, commercial paper, partnerships and corporations.

**2017 Team Building**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course allows students to discover group development. Students will learn group-process skills vital to effective teamwork, including communication, decision making, problem solving, and conflict resolution. An understanding of the effect of individual behavior on group productivity will also be explored.

**2018 Project Management**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is designed to examine the key elements in the project management process. This process will include: characteristics of a well-defined project; successful project organization; managing the project team; planning; scheduling; and controlling. Effective project planning will include gathering budget information and scheduling data. Techniques for scheduling projects will include GNATT chart schedules and reports.

**2019 Strategic Management**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Strategies an organization pursues have a major impact upon its performance relative to that of competitors. This class identifies and describes the various strategies a company can pursue to achieve superior performance. Strategies apply to all types of organizations. A thorough understanding of the analytical techniques and skills necessary by managers to identify and exploit strategies successfully will be applied.

### **2020 International Business**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course explains the how and why of world countries and how they differ with a thorough review of economics and politics involving international trade and investment. This involves learning the functions and forms of the global monetary system. There is also emphasis on the strategies and structures of international businesses.

### **2021 Principles of Management**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

The basic functions of management are planning, organizing, leading/motivating and controlling. The course examines these four functions in considerable detail, and attempts to give the student insight and perspective on management in action. There is an emphasis on current case material so the student can relate principles to real world management problems.

### **2022 Principles of Marketing**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is designed to introduce the student to the field of marketing in its broadest concepts, from the viewpoint of both the seller and the buyer. The student will be exposed to the various careers in marketing and will learn how managers manipulate the four variables of marketing (price, product, distribution, promotion) to achieve organizational goals.

### **2025 Micro Economics**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Dealing with fundamentals of micro-economics, this course is designed to give the student a basic understanding of individual firms and how they allocate their resources, price goods and services and the factors of production in our economic system; how individual firms organize themselves and meet the competition; behaviors of customers and suppliers as well as the government relative to supply and demand the appropriate schedules that apply. Elasticity and substitutions, along with total revenue, total costs, marginal revenue, and marginal costs and profit analysis are researched.

### **2027 Document Production I**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: Basic keyboarding, 1600, knowledge of windows (intro to windows). Course is graded A-E.

This course develops the ability and knowledge of the student of basic document production techniques for business correspondence and other business documents. Course instruction in proper formatting, including but not limited to, using margins and tab settings and various printing and editing techniques. Some emphasis is placed on production timelines.

### **2028 Document Production II**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2027 and knowledge of windows. Course is graded A-E.

A continuation of 2027 Document Production I. Emphasis is placed on development of advanced document production skills. This includes formatting of business correspondence, forms and reports, collaboration for document creation and version control. Some emphasis is placed on production speed.

### **2037 Spreadsheet Applications I**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: Basic keyboarding, 1600, knowledge of windows (intro to windows). Course is graded A-E.

This course provides the student the instruction for developing the skills necessary to create and efficiently use spreadsheets. It is designed to take the student step by step through the features of industry standard spreadsheet software. Numerous practical in-depth spreadsheets should be completed.

### **2038 Spreadsheet Applications II**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2037. Course is graded A-E.

This course is a continuation of 2037 Spreadsheet Applications I. The course covers formatting worksheets using advanced techniques; working with templates and workbooks; using advanced spreadsheet functions; working with lists and analysis tools; managing and auditing worksheets; and collaborating with work groups.

### **2067 Database Concepts and Applications I**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: Basic keyboarding, 1600, knowledge of windows (intro to windows). Course is graded A-E.

This course is the study of the principles and procedures of record creation, storage and retrieval using professional, industry standard relational database software. The student will gain an understanding of the basics of database design and the relationships.

### **2068 Database Concepts and Applications II**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2067. Course is graded A-E.

This course continues the study of the principles and procedures of record creation, storage, retrieval and management as may be facilitated by any professional, industry standard relational database software. Advanced topics are covered.

### **2070 Managerial Skills**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is designed to assess and develop a broad range of managerial skills that are often required to become an effective manager and leader. The student will develop usable managerial skills in the areas of: leadership, conflict management, ethics, diversity, and change management. The course will utilize a combination of internet research and in-class contact as appropriate.

### **2113 Principles of Accounting I--Financial**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

The meaning, purpose and function of accounting in business are presented through studying the concepts and theories of accounting. Basic accounting procedures covered in this course include journalizing transactions, posting, trial balances, adjusting and closing entries and preparation of financial statements. Other topics of study include the preparation and use of working papers, internal control, special journals, and the voucher system. The course focuses on the sole proprietorship form of business organization for both service and merchandising operations.

### **2123 Principles of Accounting II--Financial**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: Accounting Majors: C grade (2.00) or better in 2113; Other Majors: 2113. Course is graded A-E.

Continuing the study of the concepts and theories presented in Accounting 2113. Topics of study include inventory methods, plant and equipment and depreciation, payroll accounting, generally accepted accounting principles, formation and operation of partnership, formation and operation of a corporation.

### **2132 Principles of Finance**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 2123. Course is graded A-E.

This course begins with an examination of the goals and functions of financial management. In addition, the course covers the following topics: financial analysis and planning, financial forecasting, operating and financial leveraging, working capital management, the time value of money and how it relates to the valuation process, the cost of capital, and the capital budgeting process.

### **2133 Principles of Accounting III--Managerial**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 2123. Course is graded A-E.

This course continues development of the techniques presented in Accounting 2113 and 2123. The topics introduced include consolidated financial statements, statement of cash flows, analysis and interpretation of financial statements, accounting for manufacturing operations, and cost accounting systems.

### **2134 Accounting Information Systems**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 2123. Course is graded A-E.

This course focuses on the integration of skills related to designing and using accounting information systems. Topics covered include documentation of information systems, data management technologies, implementation of internal controls in advanced technology environments, business processes and system development. The accountant's role in relation to the current environment for the accounting information system is emphasized.

### **2136 Computer Aided Accounting**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 2113 and 2123. Course is graded A-E.

This course utilizes one or more "accounting software packages" with text-workbooks to provide experience to the student in operating computerized, integrated accounting systems. The student will work with the general ledgers, accounts receivable systems, accounts payable systems, financial statement analysis, depreciation, and payroll systems individually, and then as an integrated whole. The student will work with all steps in the accounting cycle of a business. In this way, the student's knowledge of accounting principles and the accounting procedures learned in previous courses will be reinforced and given a practical focus.

### **2137 Introduction to Data Mining**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 2067. Course is graded A-E.

This course examines the use of data mining to analyze large datasets to discover business information and relationships. The student will gain an understanding of designing and building an organizational data warehouse. Other topics of study include data visualization, online analytical processing, and executive information systems, machine learning systems and artificial neural networks.

### **2138 Introduction to XBRL**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 2113 and 2123. Course is graded A-E.

The student is provided with a basic introduction to the Extensible Business Reporting Language (XBRL). The course will examine the use of XBRL in financial and business reporting, techniques of using XBRL to extract and analyze financial information, the use of XBRL in regulatory reporting and SBRL and digital information trends.

### **2139 Accounting for Not-for-Profit Organizations**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 2123. Course is graded A-E.

This course will introduce students to fund accounting and the accounting practices of not-for-profit organizations. The basic accounting and recording procedures for governmental units and other not-for-profit organizations will be discussed. Specific topics introduced include: development and use of budgetary data, accounting for general fund operations, other funds and account groups, interfund relationships and combined financial statements, federal government accounting, accounting for other organizations, and interpreting non-profit organization financial statements.

### **2140 Auditing**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 2173. Course is graded A-E.

This course covers the theory and processes of auditing. Areas of study include: generally accepted auditing standards, reports on audited statements, audit work papers, audit planning, internal control evaluation, audit sampling, and fraud awareness auditing. Audit applications will be discussed relating to the revenue and collection cycle and the acquisition and expenditure cycle.

### **2149 Cost Management: A Contemporary Approach to Decision Making**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2133 or C grade (2.00) or better in 2123 and permission of the instructor. Course is graded A-E.

This course takes a proactive contemporary approach to cost accounting that focuses on cost management. While the traditional approach is presented, a contemporary proactive approach is emphasized up front, and an integrated perspective of cost management is presented. This approach to cost management focuses on the impact of managers' decisions on cost drivers, costs, and profits. Although procedures will be presented, the topic will be discussed in a decision-making context. The focus in this course is clearly on providing leadership for management decisions.

Topics, tools, and techniques that will be scrutinized, evaluated, and investigated in this course include: the role of cost management, cost and managerial accounting versus financial accounting, the use of activity-based costing systems, implementation of activity-based management, standard costing, variance analysis, flexible budgets, and other current leading edge cost management tools and practices.

### **2150 Computer Aided Accounting I**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2113 and 2123.

This course uses a general ledger software program to solve selected accounting problems. The program demonstrates the immediate effects of each transaction and helps students understand the use of computers in a real world accounting environment. The student will journalize transactions, prepare adjusting entries, close temporary accounts, prepare classified financial statements, prepare a bank reconciliation, prepare perpetual system inventory records, journalize payroll transactions, and work with partnership accounting entries.

### **2153 Accounting for Not-for-Profit Organizations**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 2123.

This course will introduce students to fund accounting and the accounting practices of not-for-profit organizations. The basic accounting and recording procedures for governmental units and other not-for-profit organizations will be discussed. Specific topics introduced include: development and use of budgetary data, accounting for general fund operations, other funds and account groups, interfund relationships and combined financial statements, federal government accounting, accounting for other organizations, and interpreting non-profit organization financial statements.

### **2160 Computer Aided Accounting II**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2123.

This course utilizes an accounting package to provide experience to the student in operating a computerized, integrated accounting system. The student will work with the general ledger, accounts receivable system, accounts payable system, financial statement analysis, inventory system, and payroll system individually, and then as an integrated whole. In this way, the student's knowledge of accounting principles and the accounting cycle learned in previous courses will be reinforced and given a practical focus.

### **2161 Auditing**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 2173.

This course covers the theory and processes of auditing. Areas of study include: generally accepted auditing standards, reports on audited statements, audit work papers, audit planning, internal control evaluation, audit sampling, and fraud awareness auditing. Audit applications will be discussed relating to the revenue and collection cycle and the acquisition and expenditure cycle.

### **2172 Intermediate Accounting I**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2123. Completion of 2133 is recommended but not required before taking 2172. Course is graded A-E.

This course continues development of the theory and processes of accounting. Accounting functions emphasized include: balance sheets; income and retained earnings statements; analysis of working capital; and methods of valuations.

### **2173 Intermediate Accounting II**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2172. Course is graded A-E.

This course is a continuation of 2172 Intermediate Accounting II and presents in-depth study in the following areas of the balance sheet: inventories, cost measurement, flow assumptions, and special valuation issues: acquisition, disposal, depreciation and depletion of property, plant and equipment; intangibles; and investments.

### **2174 Intermediate Accounting III**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2173. Course is graded A-E.

This course is a continuation of 2173 Intermediate Accounting II and concludes the in-depth study of the balance sheet in the following areas: current liabilities and contingencies; long-term liabilities and receivables; contributed capital; earnings per share and retained earnings; accounting for leases. In addition, the statement of cash flows will be explored.

### **2175 Taxation I**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2123. Course is graded A-E.

This course covers the theory and practice of federal income taxation and presents an in-depth study of gross income inclusions and exclusions, deductions and losses, business expenses, depreciation and cost recovery, and employee expenses.

### **2176 Taxation II**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 2175. Course is graded A-E.

This course is a continuation of 2175 Taxation I and presents the study of itemized deductions, passive activity losses, tax credits and withholding treatment of gains/losses, taxation of partnerships and corporations; state and city income tax returns for individuals; corporate franchise tax; personal property tax; and city business income tax returns.

### **2178 Accounting Problems, Issues and Cases**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 2149 and 2173; also C grade (2.00) or better in one of the following: 2132, 2140, or 2175. Course is graded A-E.

This capstone course is designed to equip accounting students with the analysis skills necessary to compete in the accounting field. Comprehensive cases requiring critical thinking, communications skills, analysis, interpretation and decision making will be utilized. Students will apply skills acquired in prior coursework to solve accounting problems involving practical applications.



### **2179 E-Commerce and Business**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 2113. Course is graded A-E.

This course is designed to provide an introduction to electronic commerce and a survey of business transactions on the Internet. Although subject to change, topics could include: the cottage industries of electronic commerce, e-cash, web sites of professional business associations, Internet security, and the Edgar Database of Corporate Information maintained by the Securities and Exchange Commission.

### **2205 PowerPoint I**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 1600. Students with no Windows experience should register for 2936 prior to enrollment in this course. Course is graded A-E.

This Microsoft PowerPoint course is designed to teach students to prepare a PowerPoint presentation and use various methods for editing and formatting a presentation. Students gain experience in adding animation, using WordArt, creating organizational charts for use in presentations, as well as ways in which PowerPoint interacts with Windows and the Internet. Students need some prior computer experience and familiarity using Windows.

### **2210 Medical Information Coding**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 2294 and 4039. Course is graded A-E.

This medical coding course is designed to teach students how to find, use, and apply the codes of the ICD-9-CM (International Classification of Diseases) in order to classify medical documents efficiently, accurately, and effectively to optimize reimbursements of medical practices or medical facilities.

### **2294 Patient Billing**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 2113, 2028 and 4039. Course is graded A-E.

This course will help prepare the student to master many of the medical billing skills that are highly regarded and sought after in the health care profession. The student will learn how to use Medisoft (a widely used patient accounting program) to perform the following tasks: add new billing codes, input patient information, process patient transactions, produce various reports, print statements and insurance forms, and process claims.

### **2407 Mass Media Communication**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course approaches advertising and promotion from an integrated marketing communication perspective that integrates theory with planning, management, and strategy. The course is designed to acquaint the student with the real world of advertising -- A telling it the way it is -- not just for the 100 leading advertisers, but for the hundreds of thousands of retailers, regional manufacturers, and small business persons. The student will gain experience in copyrighting, preparing radio and TV commercials, producing direct mail pieces, designing outdoor advertising, and preparing other sales promotion materials.

### **2416 Management Analysis and Control I**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 2113. Course is graded A-E.

In this last of the first year sequence of accounting courses, the Business Management student is introduced to a variety of managerial accounting techniques used by businesses to analyze and control their operations. The course begins with an analysis of cost behavior from a managerial standpoint, and covers topics such as break-even analysis and leverage, analysis and control of decentralized business operations, business uses of standard costing and variance analysis. The emphasis throughout will be on analyzing and problem solving.

### **2417 Management Analysis and Control II**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 2113. Course is graded A-E.

This course is a continuation of 2416 Managerial Accounting I and begins with coverage of additional areas in managerial accounting: pricing of products and services, relevant costs and financial statement analysis techniques. Several topics in financial management are then discussed (working capital management and financing, time value of money, valuation and rates of return, cost of capital and capital budgeting).

### **2464 Personal Computer Applications in Business**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is designed to give students standardized, progressive, detailed, hands-on instruction in the most popular personal computer software used today by business and industry. The student will demonstrate the ability to integrate word processing, spreadsheets, and graphic design through group projects. The course combines demonstration and self-paced instruction. Students will be tested and the course will be graded.

### **2553 Mathematics for Programming**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: High school algebra (or equivalent) or 1204 or 1210. Course is graded A-E.

Areas of study include numeration systems, matrix and Boolean algebra, probability, mathematics of finance, and other mathematical topics used in programming.

### **2576 Visual Basic**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2596. Course is graded A-E.

The student will learn the essential aspects of creating a graphical user interface and its corresponding event-driven programming code in Visual Basic. The student learns the fundamental aspects of coding a Visual Basic program, along with error handling and data validation techniques. The student utilizes a hands-on lab environment to design projects that use Visual Basic forms and controls, solve business problems, use variables, perform calculations, incorporate conditions and reach decisions in the VB environment. Programs are run on minicomputers using the Windows operating system.

### **2577 RPG Programming**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2516 and 2596. Course is graded A-E.

This course introduces the student to RPG programming concepts and techniques through a series of programs illustrating typical business applications. The student will use the RPG programming language on an IBM AS/400 computer to write and execute their programs.

**2580 Visual Basic II**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2576. Course is graded A-E.

This course expands on the fundamentals of database access, manipulation, report generating, and design. Preference will be given to current commercial methods, engines, and components. PC, Mainframe, Internet, and Intranet database solutions will be covered. The course also covers the fundamentals of graphing and charting techniques; communications via high speed RS ports and Internet Winsock ports; advanced programming techniques such as API calling procedures, Windows registry and NT services, OLE and DDE implementation, classing and sub classing, and application deployment.

**2581 Internet Programming and Design**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2586. Course is graded A-E.

This course is an introduction to Web page design and development with static and dynamic contents. The student will be introduced to HTML, CGI programming, and a scripting language such as Java, JavaScript or VBScript. The course includes communication mechanisms.

**2582 Database with RPG**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2578. Course is graded A-E.

An introduction to database development with an emphasis in creating, loading, modifying, and querying the database. Data structure and various file structures supporting direct and relational experience by programming the high-level language, RPG, utilizing a relational database.

**2583 Database and Integration with Micros**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2576. Course is graded A-E.

This course will introduce the student to the concepts, terminology, and consideration of database development. The student will use database tools to create, populate, extract, update, and report integrated data. The student will learn to develop customized screen displays and formatted reports. This course will provide the basic in programming with ANSI SQL as well as an introduction of VBA and integration tools.

**2585 Data Communications**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 1600. Course is graded A-E.

This course introduces the principles, design approaches, and standards involved in computer data communications. Networking considerations, communication architecture, data encoding and transmission, switching, network access protocols, and transport protocols will be emphasized as well as an overview of the concepts of Integrated Services Digital Network. Lab work will involve hands-on experiences dealing with communications software and hardware.

### **2586 Object Oriented Programming with C++**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2596. Course is graded A-E.

This course offers a basic introduction o Object-Oriented concepts and programming techniques. Issues such as declaring, defining, and using classes, declaring and defining objects and functions in the context of classes are covered. The concepts and techniques of Object class hierarchy and inheritance are applied. Using pointers as a means of creating dynamic arrays and for using strings is covered. The process of building Object algorithms is also emphasized.

### **2587 Advanced C++**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2586. Course is graded A-E.

This course is a continuation of 2586 Object Oriented C++. The course provides hands-on experience in the design and writing of more complex business oriented programs.

### **2591 Internet Programming and Design II**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 2581. Course is graded A-E.

This course is a continuation of 2581 Internet Programming and Design I. The course will continue to emphasize hard coding of the HTML markup language and scripting languages. The course focuses on using the Common Gateway Interface (CGI) and Active Server Pages (ASP) to create dynamic, interactive web content. Practical, real-world lab exercises provide students with hands-on experience. The course includes the use of web tools and web servers, and introduces the student to XML, XHTML, and E-commerce.

### **2593 Systems Analysis and Design**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: C grade or better in 2576 or 2577 or 2586. Course is graded A-E.

This course is an overview of the systems development methodology and its use in the implementation of new computer systems. The student plays a role as a systems analyst using data modeling, process modeling, feasibility analysis, information system modeling, and input and output design. The student will learn and apply normalization, use various modeling structures and examine the pros and cons of conventional file systems in comparison to a distributed database. The student will learn and analyze various client/server architectures.

### **2594 Database II**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: NEEDED. Course is graded A-E.

This course provides the student with the necessary skills and knowledge to identify and perform the tasks in implementing and managing databases using Structured Query Language (SQL). In a hands-on, computer lab environment, the student will use SQL to store and retrieve data from a relational database management system. The student will learn how to use Select statements, arithmetic and comparison operators, build-in functions, and sub-queries.

### **2595 Directed Studies in Computers**

5 credit hours, 8 contact hours (2 hours lecture and 6 hours lab). Prerequisite: C grade (2.00) or better in 2593 and 2594. Course graded A-E.

This course involves the application of computer programming using a relational database and system development concepts, principles and practices to a comprehensive system development project. The students are required to analyze, design, program, test and document realistic systems on a microcomputer using a specified current database technology. The student will work on an independent-study basis with the guidance of faculty.

### **2596 Principles of Computer Programming**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: None. Course is graded A-E.

This course introduces the student to the logic of computer programming. Through the use of flowcharts, pseudocode, and a procedural programming language such as RPG, COBOL, or C++, the student will develop algorithms for solutions to business related programming problems. Hands-on lab exercises allow the student to apply the algorithms to real computer programs.

### **2700 Introduction to Entrepreneurship**

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

This course introduces the various skills involved in running a successful business. It also examines various methods of starting a small business, including franchising.

### **2701 Small Business Market Research**

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

It is imperative that the small business entrepreneur knows his/her market and be able to accurately target that market. The Market Research course examines various techniques of conducting market research. Also covered are the topics of copyright, patent, or trademark protection.

### **2702 Small Business Market Planning**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course introduces the student to the marketing considerations surrounding product and price for the small business person. During this course the student will commence the development of a marketing plan, which shall be completed in Small Business Marketing Mix.

### **2703 Small Business Marketing Mix**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

As a continuation of 2702 Small Business Market Planning, the course examines the marketing considerations of place, packaging, and promotion. The student will also continue and complete the marketing plan started in 2702.

**2704 Money and Finance in Small Business**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

One of the major reasons for the failure of any small business is adequate financial planning. In order to prepare the student to better deal with these concerns, this course examines various techniques of financial forecasting and various methods of financing new ventures.

**2705 Small Business Record Keeping/Budgeting**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course identifies and discusses the fundamentals of financial record keeping as applied to a new venture. This course also focuses upon the development of various budgets for the new venture.

**2706 Small Business Operations**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None.

Course is graded A-E.

This course discusses various operational concepts, such as purchasing, inventory management, taxation, and insurance as they apply to a small business.

**2707 Human Resource Management in a Small Business**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Specifically addressed in this course are the concerns of recruiting, selection, and training as they apply to the small business. Also examined are the record keeping requirements in these areas.

**2708 Supervision in Small Business**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course examines and discusses the issues of leadership and supervision as they apply to the small business.

**2709 Development of a Business Plan**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 2701, 2702, 2703, 2704 and 2705. Course is graded A-E.

As the culmination of the offerings in Small Business and Entrepreneurship, the student will develop a Business Plan for the new venture.

**2728 Productivity and Quality**

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

This workshop course will explore the fundamentals of Total Quality Management. Course objectives will include the goals for quality and increasing internal and external satisfaction.

### **2846 Compensation and Benefits**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course will provide an in-depth study of the history, principles, and theory of both monetary and non-monetary compensation. The course will also examine the laws governing compensation, and the processes and methods used to develop compensation and benefit packages, and policies.

### **2850 Employee Relations**

4 credit hours, 4 contact hours (4 hours lecture, 0 hours lab). Prerequisite: None. Course is graded A-E.

The course deals with both the traditional areas of labor relations (history of the labor movement, labor legislation, collective bargaining, contract administration) and with issues that arise in today's white collar, service oriented workforce and economy. Students will simulate actual collective bargaining, grievance procedures and arbitration cases. Emphasis is placed on negotiation objectives, strategy and tactics, and students will develop skills suitable for advancing the objectives of either management or of a labor union.

### **2855 Problem Solving and Managerial Decision Making**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 2021, 2022, and (2416 or 2417). Course is graded A-E.

This course will provide an opportunity for the student to integrate knowledge and skills gained in previous courses in management, marketing, human resources, and finance. Emphasis is placed upon familiarization with the types of decisions that managers must make and the development of skills necessary to make them.

### **2859 Introduction to Human Resource Management**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is designed to familiarize the student with the vital roles of human resource management in determining the success of an organization. Students will develop an awareness of the complexity of the issues surrounding the management of today's employee. Employee rights, employee responsibilities, Equal Employment Opportunities, right-to-work laws benefits, legal environments, performance appraisal, and the training and development of employees will be explored.

### **2860 Personnel Interviewing**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course will examine the six types of personnel interviews (selection, performance, appraisal, counseling, career development, disciplinary and exit). Legal aspects of interviewing will be studied to provide the student insights into the personnel functions. There will be an emphasis on developing usable interviewing techniques and skills from the management and employees or probable employee prospective.

### **2865 Customer Service**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course helps the student understand customer expectations and develop skills necessary to provide any and all types of quality service. Customer service skills will focus on change, communication, data usage, negotiations, perception, problem-solving, and teamwork toward action plans for continuous improvement.

### **2870 Health, Safety and Security**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Employees are every business's most important asset and resource. Therefore, businesses have a vested interest in a safe and healthy work environment economically, physically and mentally. Health connotes a state of well being free of illness or disease. Health management focuses on the well being of employees. Safety relates to freedom from danger, risk injury, and programs focusing on prevention. Security is the reduction or elimination of risks or losses pertaining to the organizational assets.

### **2875 Training and Development**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

Training and Development work to support organizational goals and to solve performance problems throughout an entire organization. This incorporates assuming a number of roles with a full range of competencies. The Training and Development roles include needs analyst, program designer, instructional writer, media specialist, instructor, facilitator, change agent, program administrator and evaluator. In assuming these roles, especially in society today, one must be able to do more using fewer resources. In addition, due to developing technology and growing work requirements, organizations have to invest in the retraining and reassignment of existing as well as new employees.

### **2926 Introduction to the Internet**

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: None. Course is graded S/U.

This course covers the skills and concepts needed to effectively use Internet resources. Concepts covered: Internet fundamentals, connecting to the Internet, browsing the Internet, Hypertext Links, Bookmarks, News and Discussion Groups, e-mail, downloading from FTP sites, Telnet, Web search engines, the World Wide Web, Netscape Navigator. This course is graded on a Satisfactory/Unsatisfactory basis.

### **2927 Introduction to Networking**

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: None. Course is graded S/U.

This course introduces the student to Networking fundamentals. Concepts covered: LAN fundamentals, connecting LANS to other computing resources, token rings, Ethernet, installing a typical application, managing network printing, providing network access and maintaining security, shared resources, server utilities, workstation utilities, administrative tools. This course is graded on a Satisfactory/Unsatisfactory basis.

### **2936 Introduction to Windows**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: None. Software Version: 4.0 or higher. Course is graded S/U.

This course covers the skills and concepts a student would need to know to use Windows based programs effectively and efficiently. This course starts with the basics of how to name files, use the mouse, and understand the desktop. Then the course introduces running applications, My Computer, Explorer, Control Panel, and some multimedia features. This course is graded Satisfactory/Unsatisfactory.



**2937 Advanced Windows**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2936. Software version: 4.0 or higher. Course is graded S/U.

This course continues concepts introduced in 2936 by covering them in more detail. Procedures and troubleshooting techniques are introduced for adding and removing software and hardware from a Windows Operating system. This course is graded Satisfactory/Unsatisfactory.

**2945 MS Word I**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2936. Software Version: 6 for Windows. S/U Graded Course.

This course covers the basic, Student Level, skills necessary for using a Windows-based word processor. Concepts covered: spell-checking, using a thesaurus, using a grammar checker, margins, line spacing, special characters, saving, retrieving, printing, and using templates. This course is graded Satisfactory/Unsatisfactory.

**2946 MS Word II**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2945. Software Version: 6 for Windows. S/U Graded Course.

This course covers the intermediate, Business Level, skills necessary for using a Windows-based word processor. Concepts covered: paragraph formatting, page layout, tables, graphics, and columns. This course is graded Satisfactory/Unsatisfactory.

**2956 MS EXCEL I**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2936. Software Version: 5 for Windows. S/U Graded Course.

This course covers the basic, Student Level, skills necessary for using a Windows-based spreadsheet package. Concepts covered: open/save/print, typing data, copy/move/format data, simple formulas, data entry skills, uses for spreadsheets. This course is graded Satisfactory/Unsatisfactory.

**2957 MS EXCEL II**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2956. Software Version: 5 for Windows. S/U Graded Course.

This course covers the intermediate, Business Level, skills necessary for using a Windows-based spreadsheet package. Concepts covered: column/row operations, graphics, charting, database features, macro buttons, spell checking, data importing and exporting, and additional more complex formulas. This course is graded Satisfactory/Unsatisfactory.

**2963 PowerPoint I**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2936. Software Version: 4 for Windows. Course is graded S/U.

This course covers the basic, Student Level, skills necessary for a Windows-based graphics package. Concepts covered: create/edit different types of charts (bar, pie, text, area) add symbols (clip art) to charts, create simple slide shows, spell- checking, chart outlining. This course is graded Satisfactory/Unsatisfactory.

**2964 PowerPoint II**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2963. Software Version: 4 for Windows. Course is graded S/U.

This course covers the intermediate, Business Level, skills necessary for using a Windows-based graphics package. Concepts covered: documenting charts, page layouts, adding graphs/tables to charts, creating professional video presentations. This course is graded Satisfactory/Unsatisfactory.

**2965 MS ACCESS I**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2936. Software Version: 2 for Windows. S/U Graded Course.

This course covers the basic, Student Level, skills necessary for using a Windows-based database package. Concepts covered: creating a table/database of information, database information entry, terminologies used, creating queries and forms and reports, sorting data in a database. This course is graded Satisfactory/Unsatisfactory.

**2966 MS ACCESS II**

1 credit hour, 10 total contact hours (1 hour lecture and 0 hours lab). Prerequisite: 2965. Software Version: 2 for Windows. S/U Graded Course.

This course covers the intermediate, Business Level, skills necessary for using a Windows-based database package. Concepts covered: more complex queries and forms, filters, searching crosstabs, customizing forms and reports, graphics and graphs, and macro basics. This course is graded Satisfactory/Unsatisfactory.

**2990 Field Experience - Business**

1-3 credit hours depending on the amount of work experience per week (1 credit hour per 12 hours work experience). Repeatable up to 12 credit hours. Prerequisite: Permission of Academic Director upon recommendation of academic advisor. Course is graded S/U.

This flexible course offering is composed of a paid work experience coordinated by the student's advisor. The work experience must be related to the student's academic program. Technical or basic elective credit is awarded on a Satisfactory/Unsatisfactory basis.

**29XX Special Topics in Business**

1-5 credit hours for 7 contact hours per week per credit hour Independent Study [Miscellaneous Applications Course]. Prerequisite: Permission of the Academic Director.

Special topic study is designed to provide a student with the opportunity to work on special topics within the field of business under the directive of the Business faculty. This course may be substituted for a business technical elective if the course is applicable. The course may be repeated.

**Central Ohio Technical College  
Course Description Listing  
2003-2004 Academic Year**

**ENGINEERING TECHNOLOGIES COURSES: 3000**

**3013 Drafting I**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: None. Course is graded A-E.

This is the first course of a series introducing the principles, techniques, and terminology of drafting. Emphasis is on the development of sketching techniques, multi-view drawings, dimensioning, sections, and blueprint reading.

**3017 Circuits I**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: 1210 or a score of at least 76 on the COMPASS Elementary Algebra test. Course is graded A-E.

This introductory course presents the terminology and concepts necessary for understanding electrical units and laws and circuit analysis. Topics of study include direct current sources, series and parallel circuits, Ohm's law, Kirchoff's Laws, resistance, power, capacitance and inductance. Laboratory sessions include experiments verifying the lecture material through the proper use of voltmeters, ammeters, ohmmeters, and dc power supplies.

**3018 PC Hardware: Troubleshooting and Maintenance**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: 1600. Course is graded A-E.

This course offers a detailed study of microcomputer systems hardware modules. Combining theory and practice the course will cover module level maintenance, repair, replace, and retrofit and upgrading trade-off decision parameters; and introductory troubleshooting, with a focus on software troubleshooting. Students will remove and replace defective modules, perform hardware upgrades, and install software with attendant hardware boards. Students will gain experience in the assembly and disassembly of microcomputer stems.

**3019 Electronic Drafting and Fabrication**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: None. Course is graded A-E.

This is a basic course that introduces electronic components, schematics symbols and basic drafting skills to Electronic Engineering/Electromechanical Engineering Technologies students. Fundamental orthographic and isometric drawing concepts are covered. The student is introduced to software used for drawing schematics, circuit simulation and PCB design. By assembling a small electronic instrument, the student will learn planning and design, component identification, breadboarding, printed circuit board technology, soldering, chassis assembly, troubleshooting approaches, calibration and meter use.

**3025 Physics--Mechanics**

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: 1226, or concurrent enrollment in 1226, or a score of at least 46 on the COMPASS Trigonometry test. Course is graded A-E.

Introduces the fundamental concepts of force, motion, statics, dynamics, and gravity. The study of energy, work, and power, with applications to basic machines and the practical effects of friction are included.

### **3026 General Physics**

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 1210. Course is graded A-E.

This course will prepare the student for more complex courses in Forensic Science. The student will learn fundamental ideas of measurements, motion, energy, electricity, magnetism and heat. The student will be introduced to atomic and nuclear physics including basic protection. The student will apply these principles in a lab setting.

### **3027 Circuits II**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: 3017 and 1226 (or a score of at least 46 on the COMPASS Trigonometry test). Course is graded A-E.

The concepts introduced in 3017 are reviewed and applied to AC circuits. New concepts introduced include AC phasers, series and parallel AC networks, impedance, resonance, transformers, and 3 phase power. Laboratory experience emphasizes constructing circuits, troubleshooting, and using the oscilloscope to verify lecture material.

### **3032 Physics of Heat, Light, Sound**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 3025. Course is graded A-E.

Fundamental concepts of matter including the properties of solids, liquids and gases. Temperature scales and the effect of heat on matter. The gas laws and change of state. Simple harmonic motion and the nature of sound. The nature of light and illumination, including applications of light: reflection, refraction, and dispersion.

### **3101 Multimedia I**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: Completion of the Network Certificate or permission of the Academic Director. Course is graded A-E.

This course covers the architectural concepts of a multimedia system. Specifically, the student will learn such things as effective placement of microphones, speakers, cameras, video displays, projection systems, and proper lighting and acoustics. The lecture material will be augmented by hands-on laboratory exercises.

### **3102 Multimedia II**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 3101. Course is graded A-E.

This course covers the operational and maintenance aspects of a multimedia system. Specifically, the student will learn such things as the operation and maintenance of lighting systems, projection systems, and image capture systems, and various communication media, including traditional cabling arrangements and wireless configurations. The lecture material will be augmented by hands-on laboratory exercises.

### **3103 Systems Troubleshooting**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 3102. Course is graded A-E.

This course covers troubleshooting of complete systems, including the hardware, software, and networking components. Specifically, the student will learn how to isolate system troubles and implement appropriate solutions and fixes. The lecture material will be augmented by hands-on laboratory exercises.

**3131 Electronics**

5 credit hours, 8 contact hours (3 hours lecture and 5 hours lab). Prerequisite: 3027. Course is graded A-E.

Includes the theory and the operation of semiconductor diodes and transistor circuit configurations. Equivalent circuits, large and small signal analysis, and biasing circuits are also discussed. Laboratory sessions emphasize the use of the transistor as an audio amplifier.

**3132 Communications Electronics I**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: 3131. Course is graded A-E.

Includes the theory and operation of power supplies, oscillators, AF and RF amplifiers, AM Transmitters and Receivers, SSB, Testing and Alignment, and Troubleshooting of Communication Systems. Laboratory experiences consist of construction of basic circuits, test and repair of commercial units, and the use of specialized test equipment.

**3144 Linear Integrated Circuits**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: 1231 and 3131. Course is graded A-E.

Includes semi-conductor devices and circuits, junction field effect transistors, MOSFET, linear integrated circuits, operational amplifiers and optoelectronic devices.

**3152 Communications Electronics II**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: 3132. Course is graded A-E.

Continues the concepts presented in 3132 and introduces AM-FM broadcasting, stereo, wave propagation, antennas, directional antennas, transmission lines and special communication techniques, satellite, fiber optic, microwave and data communications. The laboratory work consists of testing and troubleshooting existing equipment and systems.

**3154 Digital Electronics I**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: 1600 (or concurrent enrollment in 1600) or permission of the instructor or the Academic Director. Course is graded A-E.

Students pursue the study of digital logic elements such as logic gates, flip-flops, counters and shift registers. The study of math as used in digital circuits is covered in laboratory and lecture.

**3164 Digital Electronics II**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: 1600 and 3154 or equivalent. Course is graded A-E.

The architecture of a microprocessor is studied in this course. The buss architecture of several common busses will be discussed. The programming of a microprocessor in both machine and assembly language will be introduced.

### **3167 Digital Electronics III**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: 3164. Course is graded A-E.

The study of circuit elements used in microprocessor systems. Includes the study of microprocessor busses, memory devices, series and parallel output devices and programmable peripheral interface devices. Laboratory projects focus on the application of these devices and the associated control software.

### **3185 EET Capstone Design Course**

3 credit hours, 6 contact hours (0 hours lecture and 6 hours lab). Prerequisite: 3132, 3144, and (3316 or 3326), or permission of the instructor. Course is graded A-E.

The student will work in small groups to design and build an operational electronic project that demonstrates the knowledge acquired during the completion of their EET degree. During these projects, the student is expected to contribute to each aspect of the project, to participate in group planning, to participate in the final demonstration, and to use the lab time efficiently.

### **3243 Hydraulics and Pneumatics**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 3025 or 3027. Course is graded A-E.

This course covers hydraulic and pneumatic fluid power systems. First, basic principles and laws and their influence are described. Types of pressure, flow, and directional control valves are presented and analyzed. Students learn to select and size pumps and actuators for specific applications. Complete circuits are studied and analyzed, and basic electrical control of fluid power circuits is introduced.

### **3244 Industrial Power**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: 3027. Course is graded A-E.

This course covers the use and control of industrial electronic power. Control of AC loads with semiconductor devices used in conjunction with phase-shift, timing, and opto-electronics is explored and reinforced with laboratory experiments. Types of DC and AC single and three phase motors and their operating characteristics are studied. Basic motor control devices and circuits as well as current electronic motor control technology are studied and then used in the lab. During these laboratory experiences, students will also learn wiring practices and how to select and apply proper protection devices.

### **3252 Programmable Logic Controllers**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 3027 and 3154. Course is graded A-E.

This course includes electrical control of Fluid Power/Electrical systems with relay ladder diagrams, but concentrates mainly on PLC's and their use for control of on/off electrical devices. Sensing devices such as limit and temperature switches and control switches and their use in ladder circuits are reviewed. Timing and counting devices as well as event-driven and time-driven sequencing schemes are studied. Architecture, use, and programming of PLC's are covered and reinforced in practically oriented laboratory projects.

### **3253 Mechanical Components and Mechanisms**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 3025. Course is graded A-E.

Mechanical elements of power transmission including gears, levers, chains, belts, and pulleys are introduced and the student will learn basic design rules for these elements. The course also includes analysis of simple power trains and linkage devices, and the study of the nature of gear tooth contact.

### **3257 Statics and Strength of Materials I**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 1226 (or a score of at least 46 on the COMPASS Trigonometry test) and 3025. Course is graded A-E.

Includes the study of static forces and equilibrium and the resultant stress, strain, deformation, failure and strength requirements in straight-line tension structures, compression and bearing members, shear elements, torsion elements, and angled structures.

### **3258 Statics and Strengths of Materials II**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 3257. Course is graded A-E.

Includes the study of static forces and equilibrium and the resultant stress, strain, shear and bending considerations in the design and selection of trusses, rectangular beams, built up beams, and standard structural members.

### **3261 Electromechanical Systems**

5 credit hours, 9 contact hours (3 hours lecture and 6 hours lab). Prerequisite: 3252. Course is graded A-E.

Concepts and applications of sensors, controllers, actuators, and industrial processes used in closed loop process control are studied in this course. System stability and controller tuning are explored. The use of PLC's for analog process control is also covered. For laboratory activities, the student will make use of material from previous courses to complete capstone design projects typical of industrial process control applications.

### **3262 Industrial Instrumentation**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 3017 and 3032. Course is graded A-E.

Students will measure various physical quantities by using industrial sensors. Specifications and suitable applications as well as calibration procedures for different types of sensors will be discussed. Process and Instrumentation Drawings (P&ID) are introduced.

### **3303 Project and Certification**

2 credit hours, 4 contact hours (0 hours lecture and 4 hours lab). Prerequisites: Second year standing in Electronic Engineering Technology. Course is graded A-E.

This course is divided into two components; the first consists of information on various technician certification and licensing, application for testing and practice testing. The second component is the preparation and planning for the TET project. The project should involve original research, if possible, or design of a circuit or process to satisfy a data communication problem.

**3304 Video Systems**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 3152. Course is graded A-E

This course emphasizes modern aspects of electronic communication systems and an in depth study of fiber optics, television systems, microwave equipment, satellite receiver equipment, CATV, DBS, HOTV, and systems design and analysis.

**3306 Local Area Networks**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: 1600 (or equivalent computer operation experience). Course is graded A-E

This course is an introduction to local area networking with personal computers in small environments such as offices. Subjects covered include planning a LAN, selecting hardware and software, net management, installation, troubleshooting, and Internet working. Laboratory exercises involve constructing and operating a LAN. No knowledge of electronics is necessary, but familiarity with personal computer operation would be helpful, particularly the IBM PC and DOS.

**3308 Telecommunications Capstone Course**

1 credit hour, 3 contact hours (0 hours lecture and 3 hours lab). Prerequisite: 3303. Course is graded A-E

This course follows 3303 and is the implementation of the plan developed there. The student will construct, perfect, and demonstrate the project to the faculty and students and will submit a final report.

**3316 Local Area Networks - Novel**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: 3306. Course is graded A-E

This course teaches the student to set up and maintain Novel networks. The student will install a Novel network and set up the working environment. The student will also learn how to detect and correct software and hardware errors associated with the network components.

**3320 Data Communications**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: 3167 and 3306 or permission of the instructor. Course is graded A-E

This course introduces basic fundamentals related to data communication: analog and digital communication, multiplexing telephone systems, codes and formats, and error detection and correction.

**3326 Local Area Networks - NT**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: 3306. Course is graded A-E.

This course teaches the student to set up and maintain Microsoft NT networks. The student will install a NT network and set up the working environment. The student will also learn how to detect and correct software and hardware errors associated with the network components and applications.



### **3413 Production Planning and Control**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 3414. Course is graded A-E.

Production planning and control is one of four major management functions within the production activity of manufacturing. It is involved with the systems and controls within the manufacturing environment that provides the efficient transformation of raw materials into a form that can be sold.

### **3414 Production Management**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: 3702 and 3712. Course is graded A-E.

Manufacturing is a managed, human, productive activity. The goal of manufacturing is to efficiently change a raw material into a form that can be sold. Management is the sum of the practices that see that manufacturing efficiently moves the material through the various stages to the final sale. There are five major areas of activity in management: 1) Research and Development; 2) Marketing; 3) Production; 4) Industrial Relations; and 5) Financials. This course will review the importance of these five major activities as they relate to manufacturing. The production activity, which involves manufacturing engineering, production planning and control, manufacturing and quality control, will be studied in depth.

### **3415 Statistical Process Control**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 1210 (or a score of at least 76 on the COMPASS Elementary Algebra test). Course is graded A-E.

Quality control is one of four major functions of the production activity within the manufacturing environment. The concern for quality production has led to a "building it right the first time" philosophy of manufacturing. Developing a product that meets quality standards now requires several activities: 1) designing for quality; 2) implementing quality processes; and 3) manufacturing for quality. This course will present an overview of the quality management system in today's manufacturing environment. The student will study the basic statistical methods and applications of Statistical Process Control within the production function of manufacturing.

### **3417 Forming Processes**

3 credit hours, 6 contact hours (1 hour lecture and 5 hours lab). Prerequisite: 3754. Course is graded A-E.

This course covers forming processes used in industry. In the plastics area injection molding, extrusion, blow molding, thermoforming, and spray-up are studied. Students also study metal casting, bending and stamping processes.

### **3444 Building Mechanical Systems**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: 3766 or permission of instructor. Course is graded A-E.

Mechanical systems for residential buildings are the focus for this course. Topics covered include plumbing supply and drain, waste, vent design, heat loss and gain calculations, furnace and air conditioner sizing using the psychometric chart, and electric distribution including placement of service entrance, outlets, switches, and lighting. Students are also introduced to standard drawing symbols by adding these systems to house plans and reading sample prints.

### **3701 Civil Cad**

2 Credit Hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 3708 and 3733 or permission by instructor. Course is graded A-E.

This course will introduce the student to the use of CAD in preparation of civil drawings and calculations. Includes subdivision layout, contours, profiles, highway layout, and earthwork.

### **3702 CAD/Drawing for Engineering Technology**

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

This is a beginning course in learning techniques to develop and document ideas through freehand drawing and CAD. Emphasis is on the development of sketching techniques, multi-view and isometric drawings, dimensioning, and blueprint reading. Principles learned will be reinforced through the use of CAD software.

### **3704 3-D Design and Animation**

2 credit hours, 3 contact hours (1 hours lecture and 2 hours lab). Prerequisite: 1600, 1900, and (3702 or 3706). Course is graded A-E.

An introduction to the construction of three-dimensional forms and environments with scripted movement through those environments by digital methods.

### **3705 Basic Web Site Construction**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 1600 or concurrent enrollment in 1600. Course is graded A-E.

In this course the student will learn the skills necessary to construct a basic Internet website for personal or business use. Hyper Text Mark-Up Language (HTML) coding fundamentals are described and each student will be able to explore these concepts by creating a site with their own material. Topics include: Introduction to the Internet; Text and Heading Formatting; Lists; Linking Documents and Other Objects; Using Backgrounds, Images and Animation and Sound; Tables; Frames; and Site Management.

### **3706 Introduction to CAD**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: Previous drafting experience preferred. Course is graded A-E.

This is the first course in a series of Computer Aided Drafting courses. The students will gain familiarity with the system hardware, peripherals and software. They will learn to construct a basic dimensioned orthographic drawing with the CAD system.

### **3707 Intermediate CAD**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 3702 or (3013 and 3706). Course is graded A-E.

This is the second in a series of CAD courses building on a foundation of Introduction to CAD. Advanced concepts in CAD will be explored including symbol libraries, isometric and 3D constructions, using the block commands, creation of bill of materials and MS-DOS usage.

**3708 Advanced CAD**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 3707 within the last year (or a passing grade on the pre-test). Course is graded A-E.

This course, the third in a series, builds on the concepts established in the first two CAD courses in which the student uses LISP routines to create custom menus, and to manipulate system variables. The concepts of 3-D drawing are taught include wire-frames, surfaced models, solid models, and rendering.

**3709 Solid Modeling with CAD**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 3708 or equivalent experience, and 3728 or equivalent experience. Course is graded A-E.

This course covers the development of 3-dimensional solid models using specialized software. The student will create individual parts and assemblies. Rendering and Finite Element Analysis will also be covered.

**3717 Materials for Engineering Technicians**

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

This course provides an overview of the fundamental characteristics of the materials used in heavy construction. Classification and proper use of materials, as well as, construction methods are investigated.

**3718 Architecture History Survey**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course provides a survey of architectural traditions from early civilization to the modern architecture of the 20<sup>th</sup> Century, including buildings, landscape and planning.

**3719 Advanced AEC CAD**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: 3708. Course is graded A-E.

This advanced computer-aided drafting course is the fourth in the COTC CAD sequence, structured for students in the Drafting and Design Technology program. The student will use specialized CAD software for architecture and civil engineering applications. These applications include, but are not limited to, the following: 2D and 3D plans, details, schedules, roof forms, elevation drawings, equipment layouts, subdivision layouts, highway layouts, contours, profiles, and earthwork.

### **3728 Drafting II**

3 credit hours, 6 contact hours (0 hours lecture and 6 hours lab). Prerequisite: 3702. Course is graded A-E.

Developing the techniques learned in 3702, continues the study of drafting with the main emphasis on orthographic projection, sectioning, isometric drawings, perspectives, geometric constructions, auxiliary views, and lettering. Correct use of drafting instruments in the production of these types of drawings is stressed.

### **3731 Introduction to Civil Drafting/Design**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: 1210 (or concurrent enrollment in 1210) and (3702, or 3013, or concurrent enrollment in 3702). Course is graded A-E.

This course is an introduction to the methods and practices of civil drafting. Includes surveying fundamentals, mapping, plot plans, contours, profiles, and highway layouts.

### **3733 Civil Drafting/Design II**

4 credit hours, 7 contact hours (2 hours lecture and 5 hours lab). Prerequisite: 3717. Course is graded A-E.

This course, the second in a series of three civil drafting and design courses, focuses on site grading/earthwork and storm and wastewater systems.

### **3736 Civil Drafting/Design III**

4 credit hours, 7 contact hours (2 hours lecture and 5 hours lab). Prerequisite: 3701 and 3733. Course is graded A-E.

This course, the third in a series of three civil drafting and design courses, focuses on transportation systems and subdivision design. Topics covered include highways, urban roadways and railroads, and survey controls used in the design and layout of subdivision plats.

### **3739 Drafting III**

3 credit hours, 6 contact hours (0 hours lecture and 6 hours lab). Prerequisite: (3702, or 3013 and 3706) and 3728 (or concurrent enrollment in 3728). Course is graded A-E.

This is the third in a series of drafting courses using both manual and CAD drafting methods. This course develops concepts in geometric dimensioning and tolerancing, threaded fastener designation and use. Also covered is welding symbols and joint design, structural steel detailing and piping layout.

### **3743 Mechanical Design I**

5 credit hours, 10 contact hours (0 hours lecture and 10 hours lab). Prerequisite: C grade or better in 3707, 3728 and 3754 (or concurrent enrollment in 3754). Course is graded A-E.

The second in the series of Mechanical Design courses, this course specializes in mechanical design involving the principles of production, fasteners, with an emphasis on tolerances in the design and detail drawings of basic machines. Computer Aided Design is introduced in this course and its use is carried through all the mechanical design courses.

**3746 Mechanical Material Forming**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: 3754. Course is graded A-E.

This is a beginning course in the theory and practice of forming metal and plastic materials for manufacturing purposes. Topics include machining, extrusion, casting, and stamping. Emphasis is on good design practices.

**3748 Materials of Construction**

5 credit hours, 6 contact hours (4 hours lecture and 2 hours lab). Prerequisite: 1210 (or a score of at least 76 on the COMPASS Elementary Algebra test) and 3757. Course is graded A-E.

An overview of the fundamental characteristics of the most frequently used materials in modern construction is presented. Proper use of materials, construction methods, and detailing practices are investigated.

**3752 Mechanical Design II**

5 credit hours, 10 contact hours (0 hours lecture and 10 hours lab). Prerequisite: 3257, 3708 and 3743. Course is graded A-E.

This course includes an introduction to the calculation and design of dies, jigs, fixtures, and the study of gauges for dimensional control. The design of a major machine project is required of each student.

**3754 Materials for Mechanical Design**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: None.

This course covers common materials used in modern manufacturing. Topics include environmental impact of the manufacture and use of ferrous, non-ferrous metals, plastic and composite materials. Also included is material specification, testing and best use in the manufactured product.

**3757 Architectural Design I**

4 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: 3702 and 3728. Course is graded A-E.

This course, the first in the Architectural Design series, presents the theories and practices used in architectural drafting and design. Emphasis is placed on developing skills required in architectural drafting and design. Design theories, drafting, surveying, basic structural design, and cost estimating are introduced.

**3762 Mechanical Design IV**

5 credit hours, 10 contact hours (0 hours lecture and 10 hours lab). Prerequisite: 3752. Course is graded A-E.

This is the final course in a series. This course includes product designs, solution of vector and rotational forces, linkage and joint design, and bearing selection, through a format of real life projects.

### **3766 Architectural Design II**

4 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: (3702 or 3706) and 3757. Course is graded A-E.

In this course, the second in the Architectural Design series, the student is given a sequence of drafting and design projects involved in residential construction. Both manual and CAD drafting are used to produce a set of working drawings for a residence. Concepts introduced in other courses are further explored along with an introduction to design techniques and model building.

### **3771 Structural Steel and Concrete**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: 3707 and 3728. Course is graded A-E.

This course covers the fundamentals of structural steel and reinforced concrete designing and drafting. Topics covered include practices and methods used in the graphical representation of structural steel and reinforced concrete structures. Basic stress calculations and design concepts are studied for use in simplified design and detailing.

### **3776 Architectural Design III**

4 credit hours, 7 contact hours (1 hour lecture and 6 hours lab). Prerequisite: 3707 and 3766. Course is graded A-E.

The focus of this course, the third in the Architectural Design sequence, is on commercial construction. CAD drafting is employed to produce a series of working drawings representative of types drawn for a commercial building. Topics in design, building type study and code review are also included as they relate to the specific project.

### **3786 Drafting and Design Capstone Course**

5 credit hours, 8 contact hours (2 hours lecture and 6 hours lab). Prerequisite: 3736 or 3776 or 3752. Course is graded A-E.

This is a capstone course structured to give the student experience in real world drafting, designing and engineering problems. The student should apply skills and theories learned in previous course work to complete team projects. This class is structured to simulate a real world office.

### **3790 Graphic Design Capstone**

2 credit hours, 4 contact hours (1 hour lecture and 3 hours lab). Prerequisite: 1800, 1900, and 20 design credit hours. Course is graded A-E.

This course is an application course in which the student will complete several real world projects in graphic design.

### **3820 Design Fundamentals**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: None. Course is graded A-E.

Orientation to the visual communications and printing industries, including principles and practices of visual design through the studies of historic and contemporary sales communication.

### **3821 Desktop Publishing I**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 1600 and 1900 or permission of the instructor or the Academic Director. Course is graded A-E.

This is the first in a series of two desktop publishing courses. This course focuses on the effective use of industry standard page layout software. The student will learn the most common commands.

### **3822 Photography for Communications**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: 1900 or permission of the instructor or the Academic Director. Course is graded A-E.

An introduction to the techniques and theories of photography to achieve design effects. Photographic shooting, processing, and printing and the composition are stressed. Students to supply their own cameras (35mm, 120), film and paper. Digital imaging will be introduced.

### **3823 Desktop Publishing II**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 3821. Course is graded A-E.

The second in a series of two desktop publishing courses, this course focuses on the effective use of industry standard photo-editing and illustration software.

### **3824 Color Theory and Practice**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: (1800 and 1900) or 3820.

An introduction to the theory of color and color perception, color separation, calibration, and registration, emphasizing CYMK and RGB color.

### **3825 Photography II**

2 credit hours, 4 contact hours (1 hour lecture and 3 hours lab). Prerequisite: 3822. Course is graded A-E.

Continuing the exploration of darkroom techniques from 3822 Photography for Communications, the student will further develop techniques of developing interesting viable images utilizing traditional photography methods as well as digital techniques. Solarization, montages, and camera manipulation will be emphasized with traditional photography, while collages, color manipulation and image enhancement techniques will be emphasized with digital photography.

### **3826 Typography**

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

An introduction to the history, use and skills of typographical design and its functional, aesthetic applications.

### **3827 Web Page Construction II**

2 credit hours (4 contact hours (1 hour lecture and 3 hours lab). Prerequisite: 3705. Course is graded A-E.

Building on the concepts and skills from 3705 Basic Web Site Construction, the student will learn new methods of building websites including utilizing frames, integrating java scripts, building web animations, and site marketing skills. Combining lecture and lab time, the student will receive a balance of real world experience, critical evaluations of created work, and portfolio building skills valuable to future employers.

### **3828 Digital Video/Audio Production**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: 1600, 1900 and 3820. Course is graded A-E.

An introduction to the creation, editing, and production of digital video and audio sequences.

### **3829 Digital Video Production II**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: 3828. Course is graded A-E.

This course continues the exploration of digital video production and the focus of this course is on non-linear editing and special effects. Topics covered include audio, video, and transitional effects, 2-D animation and compositing, and video compression for digital media.

### **3830 Design Applications**

4 credit hours, 6 contact hours (2 hours lecture and 4 hours lab). Prerequisite: 1800, 3820, 3822 and 3824. Course is graded A-E.

A studio course in which students will apply skills learned from previous courses to solve real world problems from the community. Projects may include signage, corporate identity, brochures, or ad campaigns.

### **3832 Multimedia Production**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: 1600, 1900 and 3820. Course is graded A-E.

This course is an exploration into the integration of multiple media in the creation of a production, meant to inform or persuade.

### **3833 Multimedia Production II**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: 3832. Course is graded A-E.

This course continues the exploration of interactive media, integrating audio, video, text, graphics and animation into a single program under interactive control. Topics covered include interactive databases and integration with web technology.

### **3834 3-D Animation II**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: 3704. Course is graded A-E.

This course continues the design of 3-D models in software and the course expands on advanced rendering techniques such as radiosity and advanced animation, including inverse kinematics and procedural animation.

### **3835 Digital Media Design Project**

3 credit hours, 5 contact hours (1 hour lecture and 4 hours lab). Prerequisite: 3704, 3821, 3822, 3823, 3824, 3825, 3828, and 3832. Course is graded A-E.

This Digital Media Design course completes the study of digital media design with a quarter long project focusing on the digital media specialty of the student's choice. The student will choose a project, preferably in partnership with community businesses, to produce production quality work. The student is expected to work closely with the instructor, the project sponsor, and the community.



**3910 Cooperative Work Experience/Architectural**

5 credit hours, 20 contact hours (0 hours lecture and 0 hours lab, 20 hours co-op directed practice). Prerequisite: 3702 (or 3013 and 3706), 3728, 3757 (3756 or 3755 or concurrent enrollment in 3757), a grade point average of 2.75 or greater, and permission of faculty advisor. Course is graded A-E.

This course, to be taken toward the end of the two-year Drafting and Design Technology, Architectural Major curriculum, is designed to give the student a real-world, office, work experience which uses the skills acquired earlier in the program. The course acts as a capstone, tying the concepts of the technology together and giving the student valuable job experience before graduation.

**3930 Electronic Testing and Troubleshooting**

1-3 credit hours, 5 hours per week per credit hour (1 hour lecture, 0 hours lab, and 4 hours directed practice). Prerequisite: Second year status in Electronic Engineering or Electromechanical Engineering Technologies. Course is graded A-E.

This course is designed to allow electronics students to develop skills in testing and troubleshooting of electronic equipment. The student will work closely with an Electronics faculty member in evaluating, testing, diagnosing, and repair of various types of laboratory, classroom, or other electronic or electromechanical equipment.

**3990 Field Experience - Engineering**

1-3 credit hours depending on the amount of work experience per week (1 credit hour per 12 hours work experience). Repeatable up to 12 credit hours. Prerequisite: 1505, 45 credit hours completed, and permission of Academic Director. Course is graded S/U.

This flexible course offering is composed of a paid work experience coordinated by the student's advisor. The work experience must be related to the student's academic program. Elective credit is awarded on a satisfactory/unsatisfactory basis.

**39XX Special Topics in Engineering**

1-5 credit hours. Prerequisite: Permission of instructor and Academic Director. Course is graded A-E.

Special topic study is designed to provide a student with the opportunity to work on special topics within the field of engineering under the directive of the Engineering faculty. This course may be substituted for an engineering technical elective course if it is applicable. The course may be repeated.

**Central Ohio Technical College  
Course Description Listing  
2003-2004 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. 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.

A basic introduction to biology through study of the human body. The course is designed for students planning entry into a technology requiring an understanding of human structure and function or familiarity with anatomical and physiological terminology.

**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. 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 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, suffixes, 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 or by permission of the Academic Director or instructor. 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 sustainability and the problems of pollution, waste management, and hazardous and toxic materials. The roles of business, industry, and government related to the environment will be addressed.

### **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 cell structure and function, heredity, plant and animal organization, taxonomy, and ecology.

### **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.

An introduction to biology through the study of the human body. Laboratory studies use human cadavers. The course is designed for students planning entry into 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, and Radiographic Technology.

### **4101 RT Anatomy and Procedures I**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: Must be accepted into the Radiographic Technology program. 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.

### **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 4101. 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.

### **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, 5 contact hours (0 hours lecture and 5 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 contact hours (1 hour lecture and 0 hours lab, 7 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 A-E.

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.

### **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 C grade (2.00) or better in 4159. Course is graded A-E.

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.

### **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 C grade (2.00) or better 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 4159 and 4182. 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 4146, 4158, and 4184. 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 4148 and 4185. 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 C grade (2.00) or better in 4146. Course is graded A-E.

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.



### **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.

### **4169 MRI Pulse Sequences and Image Quality 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.

### **4173 MRI Image Formation and Physics**

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.

### **4175 Imaging Procedures**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 4174 or permission of the instructor. Course is graded A-E.

This course will cover the anatomy, physiology and tissue characteristics of the head and neck, spine, thorax, abdomen, and pelvis, as well as the musculoskeletal and vascular systems. Patient positioning and contrast media considerations will be discussed. The student will identify common pathologies diagnosed on MRI images. The application of pulse sequences and data manipulation will be introduced.

### **4176 Clinical Education in MRI**

2 credit hours, 16 contact hours (0 hours lecture, 0 hours lab, and 16 hours directed practice). Prerequisites: 4174 and 4175 or permission of the instructor. This course is repeatable for a maximum of 6 hours. Course is graded A-E.

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.

### **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: 4045 (or concurrent enrollment in 4045), 4219 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: 4022/4029, 4049 (or concurrent enrollment in 4049), 4203 and 4220 (or 4221 for LPN to RN 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 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: 4022/4029, 4049 (or concurrent enrollment in 4049), 4203 and 4220 (or 4221 for LPN to RN 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: 4022/4029, 4049 (or concurrent enrollment in 4049), 4203 and 4220 (or 4221 for LPN to RN 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 (may be concurrent enrollment in the third Health Alteration course). 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 AD-RN or PN Nursing Program or special permission. 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.

### **4216 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 AD-RN or PN Nursing Program or special permission. 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: 1506 (or concurrent enrollment in 1506) and a C grade (2.00) or better in the following: 4216, 4226, and (4012/4019 or 4081). 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 or 4081) and 4216. 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 RN Students**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: Acceptance into the LPN to RN 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 a Nursing (Registered Nursing or Practical Nursing) Technology program. 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.

**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 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 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 Health Care Provider Certification and college placement testing.

This 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.

**4330 Nationally Registered First Responder**

2 credit hours, 4 contact hours (1 hour lecture and 3 hours lab). Prerequisite: None.

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.

**4345 EMS Intermediate**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: Current State of Ohio Certification as an EMT-Basic; Asset or Compass scores (reading, writing and mathematics) for placement into college level courses; Selective Admission based upon highest scores on COTC Assessment Tests of EMT-Basic knowledge and skills (written and practical tests) and personal interview. Course is graded A-E.

The EMS Intermediate course 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.

**4346 EMS Intermediate Practicum**

1 credit hours, 5 contact hours (1 hour lecture and 0 hours lab, 4 hours practicum). Prerequisite: B grade (3.00) or better in 4345 (or concurrent enrollment in 4345). Course is graded A-E.

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

**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 gynecological 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.

### **4470 Kinesiology for Personal Fitness Training**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 4081, 4476, admission to the Personal Fitness Training program, and/or permission. Course is graded A-E.

This course is designed to teach human kinesiology to the student interested in personal fitness training. The course will emphasize the function of muscles and joints in human performance and stress both open and closed chain concepts in training. Each major muscle group will be analyzed and the basics of kinesiology will be explained as it relates to correct performance. Through lecture, discussion and lab sessions the student will learn to apply biomechanical principles to function.

### **4471 Strength and Conditioning**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 4081, 4470, 4476 and admission to the Personal Fitness Training program and/or permission. Course is graded A-E.

This course teaches safe, effective principles in muscular strength and conditioning of the human body. Aerobic conditioning, strength endurance, and agility training principles will be covered in both lecture and lab sessions. The student will have hands-on experience in techniques, procedures, and guidelines of weight training, cardiovascular training, endurance training and agility training. The emphasis will be safety and problem solving approaches to successful training. Specific nutrition topics will be covered in depth as they relate to the personal fitness scope of practice.

### **4472 Assessment and Development of the Training Plan**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4081, 4470, 4476 and admission to the Personal Fitness Training program and/or permission. Course is graded A-E.

This course is designed to introduce the student to the principle of assessing clients, developing a personal training plan, executing the plan, and revising the plan as the client achieves the goals. It stresses safe, functional training technique application to the specific client populations. Aerobic training regimens, strength and conditioning regimens, and endurance regimens are applied to real client situations and are chosen based on the assessment process. The plan design will include nutrition, appropriate practice scope as it relates to other professions as well. The student will be able to design an assessment tool and execute a plan at the conclusion of the class.

### **4473 Personal Training Special Problems**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4081, 4470, 4471, 4472, 4476 and admission to the Personal Fitness Training program and/or permission. Course is graded A-E.

The student will learn to adapt training programs to a variety of conditions including chronic diseases, post surgery or rehab, birth injuries, amputations, neurological disorders, etc. Principles learned in anatomy, kinesiology, and training courses will be applied to clients with physical compromises. The lecture and lab format will allow the student to have hands-on practice with adaptive devices, equipment adaptations for special conditions and other situations. The student will learn to prepare a fitness plan for clients that involves assessment and appropriate referral of clients given the results of the assessment.

### **4474 Practical Problems in Training**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4081, 4470, 4471, 4472, 4476 and admission to the Personal Fitness Training program and/or permission. Course is graded A-E.

Under the supervision of a personal trainer, the student will develop specific training programs for clients in an on site situation. The on site experiences will allow the student to apply previously learned principles to actual client situations. Classroom activities will focus on time management, interpersonal communications, conflict resolution, experience with patient scheduling, appropriate referral and understanding of the scope of practice and use of resources.

#### **4475 Business and Planning for Personal Fitness Training**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4081, 4470, 4471, 4472, 4476 and admission to the Personal Fitness Training program and/or permission. Course is graded A-E.

This course is a lecture format that educates the student in the business of personal training. It stresses salesmanship, business plan development, advertising and marketing as they apply specifically to the personal training business. Specific interview skills, interpersonal skill application to client relationships, ethics and business development will be discussed.

#### **4476 Anatomy for Personal Fitness Training**

5 credit hours, 7 contact hours (3 hours lecture and 4 hours lab). Prerequisite: C grade (2.00) or better in 4081 and/or permission. Course is graded A-E.

This course is designed to teach human anatomy to the student interested in personal training. The course will emphasize the function of muscles and joints in human performance and stress hands-on practice with cadavers and models. Each major muscle group, nerve complex, and circulatory complex will be studied in detail. Through lecture and lab sessions the student will learn human musculoskeletal anatomy in detail.

#### **4505 Abdominal Sonography**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: Must be accepted in the Diagnostic Medical Sonography Technology program and must maintain a C grade 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 4507, 4515 and 4542. Course is graded A-E.

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

#### **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.

### **4510 Obstetrical Sonography**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4507 and concurrent enrollment in 4504, 4516 and 4544. 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 sonography are included. Clinical presentation and maternal complications associated with pregnancy are also emphasized.

### **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.

### **4520 Obstetrical Sonography Lab**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 4510 or permission of the instructor. Course is graded A-E.

This is a continuation course in the study of anatomy, physiology, pathology and sonographic appearance of the developing fetus. The emphasis will be on hands-on application. A variety of media tools will be used to correlate didactic findings with sonographic views.

### **4535 Superficial Small Parts**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 4505 and concurrent enrollment in 4510, 4519 and 4544, or permission of the instructor. Course is graded A-E.

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.

### **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.

### **4542 Clinical Sonography I**

3 credit hours, 17 contact hours (1 hour lecture and 0 hours lab, 16 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. (C grade (2.00) or better in 4541) or (acceptance into the one-year DMS program), concurrent enrollment in 4505, 4507 and 4515 and a valid CPR card. Course is graded A-E.

This initial scanning experience in the clinical setting provides the students with the opportunity to apply learned concepts 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.

### **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.



**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.

**4561 Cardiovascular Clinical I**

3 credit hours, 17 contact hours (1 hour lecture and 0 hours lab, 16 hours clinical). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. (C grade [2.00] or better in 4560) or (acceptance into the One-Year Cardiovascular DMS program and concurrent enrollment in 4515, 4565 and 4567) and a valid CPR card. Course is graded A-E.

This initial scanning experience in the clinical setting provides the students with the opportunity to apply learned concepts 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.

**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.

### **4565 Echocardiography I**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Must be accepted in the DMS 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) and (concurrent enrollment in 4515, 4567 and 4561) 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 valvular, pericardial and ischemic heart disease will be discussed. EKG and Holter monitoring will also be studied.

### **4566 Echocardiography II**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4565, concurrent enrollment in 4516, 4562 and 4568, 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. An introduction to fetal and pediatric echocardiography will also be discussed.

### **4567 Vascular Sonography I**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Must be accepted in the DMS 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) and (concurrent enrollment in 4515, 4561 and 4565) or permission of the instructor. 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.

### **4568 Vascular Sonography II**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Enrollment in the Diagnostic Medical Sonography Technology program. C grade (2.00) or better in 4567, concurrent enrollment in 4516, 4562 and 4566, or permission of the instructor. Course is graded A-E.

This course continues the sonographic evaluation of vascular disease including the intracranial and extracranial vascular systems. A comprehensive approach to sonographic technique including transcranial scanning will be studied.

### **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.

### **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 Ophthalmology 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.

#### **4801 Health Alterations for Practical Nursing Students**

11 credit hours, 21 contact hours (6 hours lecture, 3 hours lab and 12 hours clinical). Prerequisite: C grade (2.00) or better in 4203 and 4220. Course is graded A-E.

This course is designed to provide the PN student with concepts, skills, communication techniques necessary for providing caring, therapeutic care to culturally diverse clients of all age groups. Emphasis will be placed on clients experiencing common recurring health alterations related to circulation, oxygenation, gastrointestinal, musculoskeletal, neurological, renal and endocrine functioning as well as alterations 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.

#### **4804 Pharmacology II for Practical Nursing Students**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab) [which includes 20 hours of clinical lab]. Prerequisite: Successful matriculation through the COTC Practical Nursing Plan of Study, C grade (2.00) or better in 4203 and 4220, and concurrent enrollment in 4801. Course is graded A-E.

The student continues the learning begun in 4220 about the role of the nurse in drug therapy for clients of all ages. An emphasis on the role of the Licensed Practical Nurse (LPN) in medication administration will be emphasized. Calculation of dosage, measurements, and abbreviations will continue to be an important component. Selected classifications of drugs and 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, organizational skills required to administer medications to a group of patients will be developed.

#### **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 4801. 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.



### **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.

### **4993 Independent Studies in Pathophysiology**

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. Enrollment only by permission. 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.

### **4995 Independent Study: Application of Pathophysiology**

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: Enrollment in Radiographic Technology or Diagnostic Medical Sonography Technology and permission of the instructor. Course is graded A-E.

This course is designed to introduce the Allied Health student to the principles of human pathophysiology. The signs and symptoms, diagnosis and treatment of selected pathological processes are discussed in detail.

### **4998 Independent Studies in Human Anatomy and Physiology**

1 credit hour, 1 contact hour (1 hour lecture and 0 hours lab). Prerequisite: high school biology or equivalent and high school chemistry or equivalent. Course is graded A-E.

Course is intended for the student who has successfully taken all but one or two units of study covered by the 4012/4019 or 4022/4029 course at another college, and who needs to complete the missing units for transfer of this course.

**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.

**Central Ohio Technical College  
Course Description Listing  
2003-2004 Academic Year**

**PUBLIC SERVICE TECHNOLOGIES COURSES: 5000**

**5010 Basic Police Academy - Administration**

2.5 credit hours, 2.5 contact hours (2.5 hours lecture and 0 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will learn the basics regarding the role of the American Peace Officer, the structure of the CJ system and methods of dealing with the citizens they will serve, both ethically and professionally. This course defines Community Policing and establishes guidelines for developing community policing programs.

**5011 Basic Police Academy - Criminal Law I**

1 credit hour, 3 contact hours (0.5 hours lecture, 0 hours lab, and 2.5 hours directed practice). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will develop an understanding of the Ohio Revised Code. The criminal code will be studied as it relates to criminal justice substantive and procedural law. The student will apply appropriate statutes to violations through scenarios created by the faculty.

**5012 Basic Police Academy - Criminal Law II**

2.5 credit hours, 4.5 contact hours (2 hours lecture, 0 hours lab, and 2.5 hours directed practice). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will learn when they may arrest with or without a warrant, search with or without a warrant, apply knowledge of the law when conducting an interrogation, understand liability issues with the use of force, and demonstrate how to testify in court.

**5013 Basic Police Academy - Human Relations**

4 credit hours, 5 contact hours (3 hours lecture, 0 hours lab, and 2 hours directed practice). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will learn the techniques necessary for responding to situations regarding people with specific problems. This area of study also includes handling of special needs populations, domestic violence, missing and abused children, and crisis intervention. The student will understand victim's rights, the juvenile justice system, and crime prevention.

**5014 Basic Police Academy - Cultural Diversity**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

This course focuses on the differences and similarities among racial, ethnic, and other diverse populations in the United States and includes historical, religious, and sociocultural issues and current conflicts.

**5015 Basic Police Academy - Patrol**

3.5 credit hours, 6.5 contact hours (2 hours lecture, 2 hours lab and 2.5 hours directed practice). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

This course is designed to familiarize the student with the police patrol function. The subjects that are covered provide the basic knowledge to enable the student to safely conduct the required tasks. Areas of instruction include patrol, traffic, civil disorders, and prisoner booking.

**5017 Basic Police Academy - Investigations**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The emphasis of this course will deal with basic investigative techniques and procedures. The student will study the fundamentals of obtaining evidence from crime scene searches and from witnesses. During mock crime scenes the student will establish corpus delicti and prepare the necessary reports, crime scene sketches and photography.

**5018 Basic Police Academy - Physical Conditioning I**

0.5 credit hours, 1.5 contact hours (0 hours lecture and 1.5 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will participate in a physical conditioning program that will increase their strength, physical endurance, and tone the muscle groups of the body as required by the Ohio Peace Officer Training Commission. The student will also learn good nutrition habits.

**5019 Basic Police Academy - Physical Conditioning II**

0.5 credit hours, 1.5 contact hours (0 hours lecture and 1.5 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will participate in a physical conditioning program that will increase their strength, physical endurance, and tone the muscle groups of the body. The student will also learn good nutrition habits. This is a continuation of Skills I.

**5020 Basic Police Academy - First Aid**

1 credit hours, 1.5 contact hours (0.5 hours lecture, 1 hour lab, and 1.5 hours directed practice). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

This course is designed to teach the student the basic first aid and life saving skills.

**5022 Basic Police Academy - Firearms**

2 credit hours, 6 contact hours (1 hour lecture, 0 hours lab, and 5 hours directed practice). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will learn the fundamentals of weapon craft with both handguns and shotguns. The student will fire both semi-auto pistols and revolvers. The student will fire assorted shotgun ammo as used by police agencies.

**5023 Basic Police Academy - Defensive Driving**

1.5 credit hours, 2.5 contact hours (0.5 hours lecture and 2 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will learn defensive and pursuit driving techniques as well as safety issues and laws regarding the use of police vehicles.

**5024 Basic Police Academy - Subject Control**

2 credit hours, 5 contact hours (.50 hour lecture and 4.5 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will learn and practice the basic skills for survival. Subject areas include self-defense, both with and without the use of self-defense equipment.

**5025 Basic Police Academy - Traffic Enforcement**

5 credit hours, 9 contact hours (3 hours lecture and 6 hours lab). Prerequisite: Admittance into the COTC Basic Police Academy. Course is graded A-E.

The student will study the traffic enforcement responsibilities of peace officers and the purpose of traffic enforcement. This course includes the study of traffic laws, accident investigation, alcohol detection and apprehension, and enforcement with speed measuring devices.

**5163 CA Skills I**

4 credit hours, 10 contact hours (1 hour lecture and 9 hours lab). Prerequisite: Admittance into the College Police Academy. Course is graded A-E.

The student will learn and practice the basic skills for survival. Subject areas covered include self-defense, first aid, and physical conditioning. This course is partial fulfillment of the OPOTC Certificate Program.

**5164 CA Criminal Investigations**

4 credit hours, 8 contact hours (2 hours lecture and 6 hours lab). Prerequisite: Enrolled in the College Police Academy in the second year or permission of the instructor. Course is graded A-E.

The emphasis of this course will deal with basic investigative techniques and procedures. The student will study the fundamentals of obtaining evidence from crime scene searches and from witnesses. During mock crime scenes the student will establish corpus delicti and the preparation of necessary reports, crime scene sketches, and photography.

**5165 Traffic Enforcement**

6 credit hours, 12 contact hours (3 hours lecture and 9 hours lab). Prerequisite: Admittance into the College Police Academy or Basic Police Academy only by faculty. Course is graded A-E.

The student will study the traffic enforcement responsibilities of a peace officer and the purposes of traffic enforcement. This course includes the laws of motor vehicle offenses, commercial vehicle offenses and traffic accident investigation. Alcohol detection, apprehension, and prosecution are included as part of this course.

### **5197 CA Criminal Law**

3 credit hours, 8 contact hours (2 hours lecture, 0 hours lab and 6 hours directed practice). Prerequisite: Admittance to the College Police Academy. Course is graded A-E.

The student will develop an understanding of the Ohio Revised Code. The student will study the criminal code as it pertains to criminal justice procedures. The student will be able to recognize violations of the law and appropriate statutes pertaining to these violations and apply the procedures through practical application. Included in this course are guidelines to laws of arrest, search and seizure.

### **5198 Community Based Corrections**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: 5209. Course is graded A-E.

Community Based Corrections is the general term used to refer to a variety of sanctions and non-institutional correctional programs for criminal offenders. These include: 1) efforts designed to divert accused offenders from the criminal justice system or jail prior to prosecution; 2) sentences and programs that impose restrictions on convicted offenders while maintaining them in the community; and 3) efforts designed to assist in the transition of inmates from prison back to the community. This course will explore these efforts and these options in the continuum of Community Based Corrections.

### **5209 Principles of Criminal Justice**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

During this introductory course students will examine the criminal justice system, including the role of the police, the courts, and the correctional system. An analysis of the agencies involved and the process of administration of criminal justice are also discussed.

### **5210 Criminal Law and Procedure**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5235. Course is graded A-E.

The student will learn the Ohio Revised Code. The student will study the criminal code and pre-trial, trial, and post-trial procedures used in the law. The student will be able to recognize violations of the law, the appropriate statutes pertaining to these violations, and apply the procedures used in trials through a Mock Trial.

### **5215 Basic Investigation**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: 1200 (or score of at least 41 on ASSET Numerical Skills test, or score of at least 44 on COMPASS Pre-Algebra/Numerical Skills test) and for Criminal Justice Students only C grade (2.00) or better in all previous CJT courses. Course is graded A-E.

The emphasis of this course will deal with basic investigative techniques and procedures. The student will learn the fundamentals of obtaining evidence from witnesses and crime scene searches. The student will establish corpus delicti and how to prepare the necessary reports associated with the crime scene.

**5223 Public Service Practicum**

2 credit hours, 14 contact hours (14 hour per week in a practicum setting). Prerequisite: Second year standing in the Criminal Justice Technology with C grade (2.00) or better in all Criminal Justice technical courses. Course is graded S/U.

Pre-service students gain valuable experience and insight into the practical operations of a public service related agency through work assignments. A seminar (discussion time) will be arranged throughout the quarter to discuss the activity in which the students are participating. This course is recommended to all pre-service students and is offered on a satisfactory/unsatisfactory basis.

**5233 Adult/Juvenile Corrections**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5230 or permission of the instructor. Course is graded A-E.

This course will cover the various views of corrections prevailing in different parts of the country and among the different specialties within the field. Students will discuss the divergent interpretations of correctional objectives and the means by which those objectives should be achieved and implemented.

**5235 Constitutional Law and Evidence**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5209 and 5262. Course is graded A-E.

This course will provide the student with an understanding of the U.S. Constitution. The focus will be on the Bill of Rights and the Constitutional Law cases that are affected by the Bill of Rights. The Laws of Evidence will also be presented and discussed. The relationship the Bill of Rights has with the Laws of Evidence will enable the student to prepare cases for prosecution while protecting the rights of the accused. This course will assist the student in understanding the different kinds of evidence that may be collected from various sources.

**5237 Basic Jail Training I**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5210 or permission of the instructor. Course is graded A-E.

Students will receive the standardized form of jail training for full-service facilities. This first course includes study of the legal issues, role of the corrections officer, facility security and booking, handling and cell searches.

**5238 Basic Jail Training II**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5237. Course is graded A-E.

This is the second part of the Basic Jail Training course. This is part of the standardized form of correctional officer basic training for the State of Ohio. In this phase students will study interpersonal communications, jail security and emergency procedures.

**5239 Human Relations in Criminal Justice**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5209 or permission of the instructor. Course is graded A-E.

Good human relations are an integral part of any Law Enforcement or Correctional agency. The purpose of this course is to provide the student with an understanding of what human relations are, how to improve human relations through self-development, and how to apply those skills in dealing with domestic disputes and crisis through role-playing scenarios.

**5240 CA Criminalistics**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: Acceptance into the College Police Academy Program. Course is graded A-E.

The student will be involved in the study and application of scientific crime detection techniques with emphasis on ballistics, fingerprints, blood tracing, and other on-the-scene forensics techniques. This course includes photography as applied to investigation with emphasis on techniques and darkroom processing.

**5258 Public Service Seminar**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Final quarter Criminal Justice Technology students only with C grade (2.00) or better in all Criminal Justice technical courses or by permission of the instructor. Course is graded A-E.

This last quarter course will center on the current events that have a significant impact on the Criminal Justice System. The students will take part in discussing the most current events that have changed the way the system works.

**5259 Law Enforcement Seminar**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Final quarter Criminal Justice Technology, Law Enforcement Option students only; students must have successfully completed 5267, 5272 and 5273 with a C grade (2.00) or better. Course is graded A-E.

This course is to be taken in the final quarter of the program. The student will discuss and perform previously learned techniques as recommended for a peace officer in the State of Ohio. At the completion of this course the state examination will be given.

**5262 Government and Courts**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

The first quarter Criminal Justice course will examine the federal, state, and local governments and their respective courts. Students will become familiar with the purpose and functions of our governments and the courts. This course will prepare the student for future courses in law enforcement and corrections.

**5263 Criminology**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5209 or permission of the instructor. Course is graded A-E.

This course involves the study of crime and criminal behavior. The student will study the nature and causes of crime and the theories dealing with criminal behavior and delinquency.



### **5264 Crime Prevention**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

The student will be introduced to the preventive as opposed to the reactive methods of criminal interception through exposure to a variety of programs applicable to crime prevention. Statistical analysis of crime patterns are interpreted and methods for involving citizens and others to become involved are developed in this program.

### **5266 Juvenile Process**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

The Juvenile System is somewhat similar to the Adult system, yet the study of the system is unique to those who work in the Criminal Justice System. For every similarity between the two systems, there are as many differences. This course will enhance the student's understanding of these differences. Juvenile criminal behavior will be discussed as it relates to the theories of criminal behavior. This course will focus on these theories of criminal behavior, the classifications of juvenile offenders, laws that pertain to juvenile offenders, the court process, and the types of juvenile correctional institutions and diversion programs.

### **5267 Medical First-Responders**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: Criminal Justice Technology students only with C grade (2.00) or better in Criminal Justice technical courses or permission of the instructor. Course is graded A-E.

Students will study the emergency techniques utilized by first responders to an accident or other medical emergencies. The program is recognized by public safety agencies in the State of Ohio.

### **5268 Victimology**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

The student will look at the growing concern for the plight of crime victims and the exploitation of the victimization experience. This course will also cover the losses that burden victims of business and various kinds of street crime.

### **5273 CA Skills II**

3 credit hours, 9 contact hours (1 hour lecture and 0 hours lab, 8 hours directed practice). Prerequisite: Acceptance into the OPOTC/COTC College Police Academy Program. Course is graded A-E.

The student will learn the fundamentals of weapon craft with the handgun and shotgun and qualify with each weapon. Also, the course includes defensive driving, pursuit and maneuverability. This course is partial fulfillment of the Ohio Peace Officers Training Council's Certificate Program.

### **5277 Human Relations in Law Enforcement**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: Admittance to the College Police Academy Criminal Justice Technology program only by faculty. Course is graded A-E.

The student will learn the techniques in responding to situations regarding people with specific problems. This area of study includes handling of special needs population, domestic violence, missing and abused children. Also, the student will learn crisis intervention, victim rights, juvenile justice and crime prevention techniques.

### **5278 CA Patrol**

4 credit hours, 10 contact hours (2 hours lecture, 1 hour lab, and 7 hours directed practice). Prerequisite: Admittance to the College Police Academy Criminal Justice Technology program only by faculty. Course is graded A-E.

This course is designed to familiarize the student with the police patrol function. The subjects that are covered provide the basic knowledge to enable the student to safely conduct the required tasks. Areas of instruction include patrol, traffic, civil disorders and prisoner booking.

### **5279 CA Administration**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Admitted to the College Police Academy Criminal Justice Technology program upon completion of required documentation and approved by faculty. Course is graded A-E.

The student will learn the basics regarding the role of the American Peace Officer, the structure of the system and methods of dealing with the citizens they serve, both ethically and professionally. This course defines Community Policing and establishes guidelines for developing community policing programs.

### **5280 Principles of Social Work**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

In this course students are acquainted with the field of human services, social work, and related professions, including history and development, legal and ethical issues, and various settings in which services are provided. The roles and functions of the skilled helper in the field of human services will also be examined.

### **5281 Interpersonal Skills**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: None. Course is graded A-E.

This course presents basic interpersonal and interviewing skills, with special emphasis on techniques relevant to diverse populations and a multicultural society. Topics include rapport building, active listening, and verbal and non-verbal communication skills utilized in helping relationships. Techniques will be practiced through videotaped role-playing.

### **5282 Counseling Theories**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1386 or by permission of the Academic Director or instructor. Course is graded A-E.

This course presents the major concepts and techniques associated with various counseling theories. Emphasis is on the practical application of techniques, including the advantages and disadvantages of each and the impact on the client-helper relationship.

### **5284 Group Dynamics in Human Services**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5281 or by permission of Academic Director or instructor. Course is graded A-E.

This course presents the basic principles of therapeutic group dynamics utilized in the field of human services. Topics include group formation, process, stages of development, leadership skills, and conflict resolution. Students are provided with an experiential awareness of group dynamics and practice of interpersonal skills through participation as a group member in the laboratory setting. Students also practice group leadership skills in this group laboratory setting.

### **5285 Human Services Seminar**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Criminal Justice students only with a C grade (2.00) or better in Criminal Justice technical courses or by permission of the Academic Director or instructor. Course is graded A-E.

This last quarter course will center on the current events and public policy issues that have a significant impact on the human services system. Students will be provided the opportunity to discuss personal experiences in the human services field and will be required to develop a personal assessment portfolio.

### **5286 Case Management - Human Services**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: None. Course is graded A-E.

This course provides the student with basic knowledge and beginning skills in case management. Topics introduced include observation, data collection, documentation, and reporting of client behaviors, as well as identification and referral to appropriate services.

### **5288 Counseling Skills**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5281 or permission of the Academic Director or instructor. Course is graded A-E.

This course builds on the basic interpersonal and interviewing skills learned in the previous course, with special emphasis on learning advanced skills that are appropriate in a helper/helpee relationship. Topics include techniques related to confrontation, focusing, influencing strategies, skill integration, and determining personal style. Techniques will be practiced through videotaped role-playing.

### **5289 Human Services Practicum I**

4 credit hours, 18 contact hours (2 hours lecture and 0 hours lab, 0 hours lab, 16 hours practicum). Prerequisite: Must be enrolled in Human Services program; must have completed a minimum of 50 quarter hours from the Plan of Study; must have received a C grade (2.00) or better in the following: 1386, 1506, 1507, 4052, 5280, 5281, 5284, 5286, 5288, 5300 and (5302 or Social Services Option Technical Elective); and must have permission of the Program Director or Practicum Coordinator. The student must meet with the Program Director or Practicum Coordinator NO LATER THAN the FOURTH week of the quarter PRIOR to when he/she wishes to begin a Practicum. Certain conditions, including but not limited to the following, could result in dismissal from the Human Services program and/or failure to qualify for Practicum placement: felony conviction (within last 2 years) and/or pending charges; current relapse from drug and/or alcohol recovery (within last 12 months); conviction and/or pending charges related to child endangerment; falsification of any documents. Course is graded A-E.

This course is designed to provide 160 clock hours of practical experience in the field of human services. Students will be placed in a human service agency where they will learn agency policies and procedures, observe professionals at work, and practice their own human service skills. Supervision will be provided by a qualified professional and an appropriate college representative. Classroom instruction will focus on discussion of experiences encountered in the practicum setting.

### **5290 Behavior Management**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1386, or by permission of the Academic Director or instructor. Course is graded A-E.

The emphasis of this course is on the fundamental principles of behavior management and the effective use of behavior modification techniques with diverse populations. Relevant terminology, data collection, behavioral analysis, and practical application of techniques will be among the topics covered.

### **5293 Community Mental Health Issues**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1386. Course is graded A-E.

This course surveys the nature of mental illness and mental health as well as the organization of mental health services. Topics covered include current identification and classification systems for mental health disorders, dual diagnosis, community based and residential treatment, the societal impact of deinstitutionalization, and strategies for meeting the individual and community needs of diverse populations.

### **5297 Crisis Intervention**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 5281 or permission of the Academic Director or instructor. Not open to students with credit for 5287. Course is graded A-E.

This course emphasizes assessment of diverse crisis situations with emphasis on the use of short-term intervention and problem-solving techniques to help individuals and families de-escalate crisis situations and develop appropriate coping techniques. Students must demonstrate skills in laboratory experiences.

### **5298 Human Services Practicum II**

4 credit hours, 19 contact hours (2 hours lecture and 0 hours lab, 17 hours practicum). Prerequisite: Must be enrolled in Human Services Program, have permission from the Practicum Coordinator or the Program Director, and have a C grade (2.00) or better in 5289. Course is graded A-E.

This course is designed as a continuation of practical experience and provides an additional 170 clock hours in a human services agency. Students will increase their level of responsibility in implementing their human services skills. Supervision will be provided by a qualified professional and an appropriate college representative. Classroom instruction will focus on discussion of experiences encountered in the practicum setting.

### **5300 Principles of Chemical Dependency**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course explores chemical dependency issues from a historical, cultural, and legal perspective. Current theories of addiction are presented, as well as physiological effects and categorization of numerous addictive substances. An overview of treatment and prevention will also be included.

### **5301 Pharmacology of Chemical Dependency**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1386 and 5300 or by permission of the Academic Director or instructor. Course is graded A-E.

This course extensively examines the composition, uses, and effects of various addictive substances. A comprehensive overview of the central nervous system and drug/neurotransmitter interactions will also be covered.

### **5302 Prevention and Treatment of Chemical Dependency**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 5300 or by permission of the instructor or Academic Director. Course is graded A-E.

This course covers the theory and practices related to chemical dependency treatment. Strategies and community resources useful in preventing chemical dependency and/or relapse are also presented.

### **5303 Family Dynamics and Addiction**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5300, or by permission of the Academic Director or instructor. Course is graded A-E.

This course will survey various addictions and examine the interrelationship between family dynamics and the addiction process. Examples of topics include co-dependency, children of alcoholic parents, compulsive gambling, prescription and non-prescription substance abuse, and eating disorders.

### **5304 CD Issues with Special Populations**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5300 or by permission of the Academic Director or instructor. Course is graded A-E.

This course will explore the psychosocial aspects of chemical dependency across the lifespan, as well as within particular populations. Examples of populations covered include the elderly; ethnic minority groups; gays and lesbians; adolescents, including juvenile delinquents; persons who are homeless; and persons who are physically and/or mentally challenged.

### **5308 Practicum in CD Counseling**

4 credit hours, 19 contact hours (2 hours lecture and 0 hours lab, 17 hours practicum). Prerequisite: Must be enrolled in the Human Services Program, Chemical Dependency Counseling Option, have permission of the Practicum Coordinator or the Program Director, and have a C grade (2.00) or better in 5298. Course is graded A-E.

This course is designed as the culmination of practical experience and provides an additional 170 clock hours in a human services agency. Students will be placed in an agency that provides chemical dependency counseling services to clients. Students will implement the specific skills appropriate to this area of specialty with supervision provided by a qualified professional and an appropriate college representative. Classroom instruction will focus on discussion of experiences encountered in the practicum setting.

### **5310 Foundations of MR/DD**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course presents an overview of past, current and future trends in the MR/DD field. Topics covered include terminology, legal issues, etiology, and provision of services.

### **5311 Habilitation Programming**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5310, or by permission of the Academic Director or instructor. Course is graded A-E.

The process by which habilitation services are provided is the focus of this course. Topics include evaluation, program plan development, and implementation. Theoretical aspects as well as practical application of techniques will be covered.

### **5312 Principles of Work for MR/DD**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5310, or by permission of the Academic Director or instructor. Course is graded A-E.

This course explores the basic principles of providing work experiences and opportunities to persons with disabilities. Topics covered include comprehensive job analysis, application of job techniques, legal issues, and discussion of both community and sheltered work settings.

**5318 Practicum with MR/DD**

4 credit hours, 19 contact hours (2 hours lecture and 0 hours lab, 17 hours practicum). Prerequisite: Must be enrolled in the Human Services Program, Mental Retardation/Developmental Disabilities Option, have permission of the Program Director, and have a C grade (2.00) or better in 5298. Course is graded A-E.

This course is designed as the culmination of practical experience and provides an additional 170 clock hours in a human services agency. Students will be placed in an agency that provides services to persons who are mentally retarded and/or developmentally disabled. Students will implement the specific skills appropriate to this area of specialty with supervision provided by a qualified professional and an appropriate college representative. Classroom instruction will focus on discussion of experiences encountered in the practicum setting.

**5321 Social Welfare and Policy**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5280, or by permission of the Academic Director or instructor. Course is graded A-E.

This course examines the programs and policies of the social welfare system in the United States. Historical development as well as current policies and trends will be analyzed.

**5322 Social Gerontology**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

In this course the knowledge and principles of generalist social work practice are applied to working with people in late adulthood. The physical, cognitive, and psychosocial aspects of aging will be discussed. Special emphasis will be placed on strategies for meeting the needs of an aging population through community and institutional services.

**5324 Social Problems**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5280, or by permission of the Academic Director or instructor. Course is graded A-E.

In this course a variety of selected social problems in contemporary society are studied. Special emphasis is given to the analysis of the problems and evaluation of potential solutions. Social problems to be covered will include both micro-level and macro-level social issues.

**5328 Practicum in Social Services**

4 credit hours, 19 contact hours (2 hours lecture and 0 hours lab, 17 hours practicum). Prerequisite: Must be enrolled in the Human Services Program, Social Services Option, have permission of the Practicum Coordinator or the Program Director, and have a C grade (2.00) or better in 5298. Course is graded A-E.

This course is designed as the culmination of practical experience and provides an additional 170 clock hours in a human services agency. Students will be placed in an agency that provides social services and will implement the specific skills appropriate to this area of specialty with supervision provided by a licensed professional and an appropriate college representative. Classroom instruction will focus on discussion of experiences encountered in the practicum setting.

### **5380 Strategies for Change in Human Services**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Must be currently employed by a TOPS approved Agency--CDHS or CSEA. Course is graded A-E.

In this course participants begin to develop concepts for program change, explore factors that underlie stress, and examine positive team-building strategies through a variety of learning exercises including group discussion, role-play, brainstorming, and various investigatory activities.

### **5381 Supervision for CDHS/CSEA Collaboration**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Must be currently employed by a TOPS approved agency -- CDHS or CSEA. Course is graded A-E.

The course presents methods that aid the human services worker in understanding and coping with the changing human service delivery system including fostering cooperative working relationships between the human services agencies. Through a variety of learning exercises including group discussion, role play, case studies, simulation, brainstorming, problem solving activities and other learning techniques, the student will begin to develop insights and skills necessary for the cultivation of cooperation, collaboration, and team work, the elements required to bring about change.

### **5382 Maintaining Professional Safety in Human Services**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: Must be currently employed by a TOPS approved agency--CDHS or CSEA. Course is graded A-E.

This course presents the necessity of workplace safety awareness in human services including reducing the chances of being victimized and basic self-defense strategies. Methods of promoting safety by developing rapport, recognizing cultural distinctions and minimizing the risk of threatening situations will be presented. Further, the course will introduce the concepts of mental health awareness as a foundation for safety and safety and the law.

### **5510 Principles of Forensics**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1223/1225 or 1227 and 5209 or permission of the instructor or the Academic Director. Course is graded A-E.

The purpose of this course is to provide the student with an overview of the various disciplines of forensic science and how they relate to the identification, detection, and solution of crime. The student will learn the significance of crime scene searches including the identification and preservation of potential evidence. The student will be introduced to the role of the criminalistic laboratory in developing and running comparisons of physical evidence from fingerprints to ballistics and toolmarks. Further areas to be introduced will be chemical evidence for drug identification, toxicology testing to reveal the presence of drugs and other chemicals in the human body, and seriological testing to establish the relationship of biological fluids to a suspect or victim. This course provides the framework for the skills needed by the crime laboratory technician.

### **5515 Forensic Firearms**

2 credit hours, 3 contact hours (1 hour lecture and 2 hours lab). Prerequisite: Must be accepted in to the Forensic Science Technology program, concurrent enrollment in 5510, or C grade (2.00) or better in 5510. Course is graded A-E.

The student will learn firearm safety techniques including unloading weapons and transporting them to the lab in the appropriate manner in accordance with all safety measures. The student will be introduced on how to test fire a weapon while maintaining all safety requirements. This course will allow the student to test fire weapons safely for ballistics tests and bullet comparison test.

### **5520 Legal and Evidentiary Aspects of Forensics**

4 credit hours, 5 contact hours (3 hours lecture and 2 hour lab). Prerequisite: C grade (2.00) or better in 5209 and 5510 or permission of the instructor or the Academic Director. Course is graded A-E.

The student will learn the law of search and seizure as it relates to the lawful collection of evidence at a crime scene; constitutional and statutory provisions applicable to forensic testing; and evidentiary rules applicable to testifying as a forensic science expert in court. The student will be able to recognize constitutional and other legal concerns associated with collecting and testing evidence, and thereafter testify as an expert. The student will apply this knowledge in a simulated crime setting. The student will participate in a mock trial or a trip to watch a live trial involving expert forensic testimony.

### **5522 Forensic Photography I**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: Acceptance into the Forensic Science Technology program, C grade (2.00) or better in 5215, 5510 and 5515, or permission of the instructor or the Academic Director. Course is graded A-E.

The student will learn the use of a 35mm camera, which will include shutter speeds, f-stops, film speed, depth of field, various lenses, and focus. Both natural light and artificial light will be used in photography techniques as they relate to police and forensic photography. The student will learn to develop their own film and how to produce a finished photograph, enlarge it, and how to use the film dryer.

### **5523 Forensic Photography II**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5522. Course is graded A-E.

The student will learn techniques in lighting, filters, crime scene photography, accident photography, arson scene photography, alternative light photography, and infrared photography. Microscopic, macro, and telephoto techniques will be used in police and crime laboratory settings. Legal aspects and court presentation of photographs will be discussed.

### **5530 Forensic Criminalistics I**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5215, 5510 and 5515 or permission of the instructor or the Academic Director. Course is graded A-E.

The student will be involved in the study and application of scientific crime detection techniques with emphasis on collection of physical evidence, fingerprint development, identification of known to unknown fingerprint and palm prints. The student will learn footprint recovery and identification, tool mark comparisons, and blood spatter analysis.

### **5531 Forensic Criminalistics II**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5530. Course is graded A-E.

The student will be involved in the study of scientific crime detection techniques with emphasis on ballistics, trace metal, gunpowder, residue, hair and fiber evidence, paint comparison and physical comparisons. The student will participate in courtroom testimony and what is required from an expert witness.



### **5532 Introduction to Laboratory Instrumentation**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1223/1225 or 1227, 3026 and 5510 and concurrent enrollment in 5534. Course is graded A-E.

The student will learn that advances in the technology of laboratory instrumentation have enabled technicians to replace highly trained analytical chemists in the routine work of the forensic laboratory. The purpose of this course is to introduce the student to the basic underlying principles of spectroscopy and chromatography, the techniques of identification and separation science. The student will become familiar with the Beer-Lambert Law which provides the theoretical basis for quantitative spectroscopy. The student will be exposed to the common principles which run through thin-layer, liquid and gas chromatography. The student will learn the basic principles of operation for the gas chromatography detectors, their limits of detectability and their application to analysis for forensic evidence.

### **5534 Instrumentation Analysis**

1 credit hour, 2 contact hours (0 hours lecture and 2 hours lab). Prerequisite: This course must be taken concurrently with 5532. Course is graded A-E.

Through demonstration and hands on experience, the student will expand their theoretical knowledge with practical illustration of spectrophotometers and chromatographs. Through examples of actual casework, the student will apply visible ultraviolet and infrared spectroscopy. The student will also apply gas chromatography to alcohol and drug analysis. The student will gain experience the application of the combined technique, gas chromatography/mass spectroscopy to forensic problems.

### **5535 Forensic Toxicology**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5532 and 5534. Course is graded A-E.

The student will learn the adverse effects of drugs and chemicals upon the human body. Forensic toxicology is concerned with not only the identification and quantitation of chemicals, but also the relationship of any levels detected in body fluids or tissues to the impairment of a person's health or behavior. The student will focus on the pharmacology of alcohol and the major drugs of abuse and their detection in breath, blood, urine, and saliva. Demonstrations and laboratory work will be essential to the student's successful completion of this course.

### **5538 Questioned Documents**

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

The student will learn through lecture, demonstration, and laboratory work, an overview of the field of questioned document examination. The field of document examination has traditionally been one of more art than science involving the carefully trained eye of an expert technician. Now, science, with the aid of computer-driven equipment, can compare handwriting, raise obliterated text, and detect subtle changes in style. Forged signatures and bad checks along with computer-assisted forgeries will be examined, as well as document alterations and wire fraud.

### **5545 Forensic Science Practicum I**

2 credit hours, 7 contact hours (1 hour lecture, 0 hours lab, and 6 hours practicum). Prerequisite: Student must have completed a minimum of 77 credit hours with a C grade (2.00) or better, including the following courses: 1210, 1223/1225 or 1227, 3026, 4081, 5209, 5532, 5534 and 5535 (or concurrent enrollment in 5535). Course is graded A-E.

This purpose of this course is to expose the student to applications of their knowledge and training through practical experience situations in a forensic science setting. Through a consortium of cooperating crime laboratories and coroner offices, the student will have the opportunity to interact with professionals who are daily involved with the scientific identification, detection, and solution of crime. The emphasis for this course will be on the criminalistics and forensic toxicology fields. A written summary of the student's work will be required to evaluate their basic understanding of the responsibilities of the functions of the forensic science technician.

### **5546 Forensic Science Practicum II**

2 credit hours, 8 contact hours (1 hour lecture, 0 hours lab, and 7 hours practicum). Prerequisite: C grade (2.00) or better in 5522, 5523, 5530, 5531 and 5548 (or concurrent enrollment in 5548) and permission of the instructor. Course is graded A-E.

The student will increase their level of competency in forensic Science with emphasis on all areas of Forensic Science. The student will receive more advanced practical experience and will be challenged to more complex crime scenes to process. The student will also learn the role of the coroner in the State of Ohio and will work with the coroner when possible to understand the necessity for care and attention to details for investigative forensic people for the successful conclusion of a case.

### **5547 Forensic Serology**

4 credit hours, 5 contact hours (3 hours lecture and 2 hours lab). Prerequisite: C grade (2.00) or better in 1210, 1223/1225 or 1227, 3026, 4070, 4081, 5209, 5215, 5510, 5532 and 5534. Course is graded A-E.

The purpose of this course is, through lecture, demonstration and laboratory, to overview the field of serology with an emphasis on forensic application. The course will comprise a review of the formed elements of the blood and other biological fluids such as saliva, perspiration, milk, and semen. The traditional immunological techniques used for identification and blood grouping of fluids and dried stains will be emphasized by lecture and lab. The principles of DNA testing will be explained and demonstrated. The student will learn to apply the most appropriate technique to their specific serological circumstance.

### **5548 Advanced Crime Scenes**

4 credit hours, 6 contact hours (3 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5530 and 5531. Course is graded A-E.

This course will prepare the student for court preparation of crime scenes. The student will process crime scenes and then draw the scenes manually for court presentation. The student will learn how to reenact a crime scene for presentation in court.

**5550 Introduction to Fire Origin and Cause**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 1223/1225 or 1227, 3026, 4070, 5215, 5510, 5522, and 5523. Course is graded A-E.

The purpose of this course is to be able to determine the cause of fires and explosions. Finding the point of origin and determining the cause at a scene will be discussed. Familiarity with chemical and physical principles are necessary in these investigations and the conditions which influence the growth, spread, and development will be reviewed. Emphasis will be placed on techniques for debris removal and scene reconstruction and examination of evidence.

**5610 Observation and Assessment of Young Children**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Concurrent enrollment in 5614 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to help prepare students to observe, record and assess young children's development and learning for the purpose of planning appropriate programs, environments, interactions, and adapting for individual differences. Informal, authentic assessment will be highlighted and formal techniques will be introduced. Observation will be required in various early childhood programs and include teacher's reflective practices across the curriculum that encompasses the developmental continuum.

**5614 Introduction to Early Childhood Education**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: Concurrent enrollment in 5610 or permission of the ECD Program Director. Course is graded A-E.

This course will introduce the student to topics on the history of early childhood education, program descriptions, evaluation, policy concerns, and professional behavior. The underlying theories and practices of specific program models or frameworks to curriculum planning for early childcare and education settings will be examined. The student will discover the broad range of educational strategies that are available for working with young children and their families.

**5615 Managing Children in Groups**

2.5 credit hours, 5 contact hours (2 hours seminar, 0 hours lab, and 3 hours practicum). Prerequisite: 1506, and a C grade (2.00) or better in 5610, 5614, 5656, plus prior approval by the ECD Program Director at least six week prior to the start of class, a completed Student Practicum File, or by permission of the ECD Program Director. Course is graded A-E.

This course will focus on the principles and methods of guiding young children. Emphasis will be on the use of individual and group guidance and problem solving techniques to develop positive and supportive relationships with children. Students will explore and reflect on strategies that promote positive conflict resolution, self-control, self-esteem within a nurturing, safe community classroom environment. As participant observers, students will apply the principles of active positive guidance with young children under the supervision of a qualified cooperating teacher. Referral sources, parental participation and program collaboration will be an important focus for children with challenging behaviors.

### **5620 ECD Instructional Technology**

3 credit hours, 5 contact hours (2 hours lecture and 3 hours lab). Prerequisite: C grade (2.00) or better in 5614 and 2 credit hours of personal computer software applications also to include internet access or permission of the ECD program director. Course is graded A-E.

This course will prepare the Early Childhood Development professional to design, select and analyze instructional materials, basic media options, and computer applications to enhance teaching, and maximize children's progress. An overview of augmentative technology will be included.

### **5621 ECD Field Practicum**

1.5 credit hours, 4.5 contact hours (1 hour seminar, 0 hours lab and 3.5 hours practicum). Prerequisite: C grade (2.00) or better in 5610, 5614, 5615, 5620, 5624 (or concurrent enrollment in 5624), 5656 and concurrent enrollment in 5638, or by permission of the ECD Program Director. Course is graded A-E.

This course will assist the student in applying the principles, methods and practices learned in the following method course, 5638 Children's Literature. The student will participate in a supervised early childhood setting.

### **5624 Curriculum Planning**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5620 and 5686 or 5679 or permission of ECD Program Director. Course is graded A-E.

In this course the student will be introduced to theories of classroom planning and instruction. Specific topics will include planning and assessment, teaching strategies, classroom transitions, guidance techniques with special attention to exceptionality and cultural diversity.

### **5631 ECD Field Practicum**

1.5 credit hours, 4.5 contact hours (1 hour lecture, 0 hours lab and 3.5 hours practicum). Prerequisite: C grade (2.00) or better in 5610, 5614, 5615, 5620, 5624, and 5656 and concurrent enrollment in 5637, or by permission of the ECD Program Director. Course is graded A-E.

This course will assist the student in applying the principles, methods, and practices learned in the following method course, 5637 Creative Arts Across the Curriculum. The student will participate in a supervised early childhood setting.

### **5637 Creative Arts Across the Curriculum**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5610, 5614, 5624, 5615, and 5656 and concurrent enrollment in 5631 or permission of the ECD Program Director. Course is graded A-E.

This course will emphasize the aesthetic development of children through creative experiences in art, music, drama, and movement. The student will explore, practice and reflect on the integration of meaningful learning experiences across the curriculum. The principles of project based work will be introduced and practiced within an early childhood program. Students will work with a group of children following the children's interests and needs in planning experiences.

**5638 Children's Literature**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5610, 5614, 5620, 5624, 5615, 5656, concurrent enrollment in 5631, and completion of the ECD Student Practicum File, or by permission of the ECD Program Director. Course is graded A-E.

This course will explore and evaluate children's literature, by genre for children birth to early school age. The integration of family literacy and cultural background will be included as students develop plans for integrating children's literature across curricular areas especially with links to social studies. Students will assess, critique and reflect on appropriate literature for children and families. The student will practice reading and integrating meaningful literature related experiences for children within an early childhood program.

**5640 Parenting and Parent Education**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is an introduction to current theories of parenting and parent education programs that focus on parenting from infancy through the early childhood years. Topics will examine guidance techniques that promote the optimum development of young children with sensitivity to special needs and cultural variation. The student will examine ways to work with parents, individually or in groups, within the early childhood setting.

**5641 ECD Field Practicum**

1.5 credit hours, 4.5 contact hours (1 hour seminar, 0 hours lab and 3.5 hours practicum). Prerequisite: C grade (2.00) or better in 5610, 5614, 5615, 5620, 5624 (or concurrent enrollment in 5624), 5656 and concurrent enrollment in 5649, or by permission of the ECD Program Director. Course is graded A-E.

This course will assist the student in applying the principles, methods, and practices learned in the following method course, 5649 Math and Science for ECD. The student will participate in a supervised early childhood setting.

**5645 Theory and Practice of Children's Play**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course will explore the important role of play in the development of young children and ways to foster play experiences in the early childhood setting. Child-initiated and teacher-guided events of play will be discussed, including age appropriate play activities such as blocks, sociodramatic play, games, and sensorimotor play.

**5649 Math and Science for ECD**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5610, 5614, 5615, 5620, 5624 (or concurrent enrollment in 5624), 5656 and concurrent enrollment in 5641 or by permission of the ECD Program Director. Course is graded A-E.

In this course the student will explore various ways to assist preschool children in developing specific concepts in the areas of math and science including computers and current technologies. The focus will be on setting up developmentally appropriate practices which enable children to develop critical thinking and problem-solving skills. Attention will be given to various methods of documentation of children's learning.

### **5664 ECD Early Intervention Practicum**

3 credit hours, 15 contact hours (1 hour lecture and 0 hours lab, and 14 hours practicum). Prerequisite: 1201, 1386, 1389, 1504 and [C grade (2.00) or better in 4045, 5620, 5621, 5638, 5686, 5631, 5637, 5640, 5685, 5645, 5656, 5671, 5675, 5676 and 5677] or permission of the ECD Program Director. Course is graded A-E.

The student will observe and participate in the planning and implementation of a positive learning environment for children birth to six years in a variety of settings, including classrooms, community and home based programs. The student will focus on accommodating children with special needs within the least restrictive environment, engaging parent participation and cooperating with agency professionals. The student will receive guidance from a qualified supervisor on a regular basis.

### **5665 Mentoring and Supervision Seminar**

2 credit hours, 2 contact hours (2 hours seminar and 0 hours lab). Prerequisite: C grade (2.00) or better in all ECD technical courses required for graduation through the sixth quarter of the second year, or permission of the ECD Program Director. Course is graded A-E.

This course is designed to provide the student with the opportunity to analyze and evaluate personal, professional and pre-service teaching experiences relevant to the principles and practices of mentors and protégés in the early childhood field. Students will explore the stages of teacher development, working towards collegiality, conflict resolution and assessment of adult knowledge, skills and dispositions.

### **5666 ECD Student Teaching**

2.5 credit hours, 17.5 contact hours (.5 seminar hours, 0 hours lab, and 17 hour practicum). Prerequisite: Completion of Math Elective, 1381, 1386, 1389, 4036; and C grade (2.00) or better in 5610, 5614, 5620, 5621, 5631, 5637, 5638, 5640, 5641, 5645, 5649, 5679, 5686, 5685, 5684, 5665 (or concurrent enrollment in 5665); or by permission of the ECD Program Director. The student must meet with the ECD Program Director at least one month prior to the start of the quarter prior to enrolling in this course. Course is graded A-E.

This course is designed to meet the final requirements for ODE Pre-Kindergarten Associate Licensure by providing the opportunity for the student to assume responsibility for planning and assessing children's learning. Under the guidance and supervision of a qualified early childhood teacher and supervising faculty, the student will actively assume the role of teacher within an early childhood program

### **5671 Exceptional Children**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5686 and (5656 or equivalent) or by permission of the ECD Program Director. Course is graded A-E.

This course will explore the special needs of atypical children, which include children with severe mental or physical disabling conditions, children with more mild forms of delay, and gifted children. Causes, treatment, concepts, and services available will be studied.

### **5674 Trends and Issues in ECD**

2 credit hours, 2 contact hours (2 hours lecture and 0 hours lab). Prerequisite: C (2.00) or better in 5614 or experience in Early Childhood Education and permission of the ECD Program Director. Course is graded A-E.

In this course the student will explore historical and contemporary issues affecting children, family, community and the early childhood professional. Topics will include societal views of children, early childhood professionalism, current research and future implications.

### **5675 ECD Early Intervention Family Dynamics**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 5685 or approved early intervention course work or experience and permission of the ECD Program Director. Course is graded A-E.

This course examines the function and structure of the relationship and interaction among the family, helping professional and the child, birth to age six years with special needs. The student will complete structured observations and interviews with community professionals and families emphasizing an individualized family service planning.

### **5676 Team Models and Community Collaboration**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: 5310 or 5614 or permission of the ECD Program Director. Course is graded A-E.

This course is designed to familiarize the student with the importance of early intervention team models and community collaboration. Focus will be with the development of cooperative community services for children birth to six years and their families. In addition, the student will explore the formation of group processes, team leadership and the coordination of the individualized service plans for the family and child.

### **5678 Early Intervention Assessment Practices**

3 credit hours, 4 contact hours (2 hours lecture and 2 hours lab). Prerequisite: 5610, 5621, 5631, 5615, 5671, 5679, 5686, or approved early intervention course work or experience and permission of ECD Program Director. Course is graded A-E.

This course is designed to provide basic knowledge of finding, screening, and assessing children, birth to age six, who are at risk and need further assessment. The student will become familiar with a wide range of diagnostic assessment instruments and procedures that encompass the developmental needs of the whole child involving the family, appropriate community resources and professionals. The student will complete structured observations of typically developing children and assist with the screening and assessment of children with special needs.

### **5679 Infant and Toddler Development and Care**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course will emphasize development from conception through three years of age. Principles related to physical, cognitive, language, social, and emotional development will be covered. Connections of principles to practices, with a focus on appropriate environments, activities and curriculums will be evaluated. The importance of parents as partners will be explored.

**5680 Administration in Early Childhood Programs**

4 credit hours, 4 contact hours (4 hours lecture and 0 hours lab). Prerequisite: Successful completion of Field Practicum or equivalent and written permission of the ECD Program Director. Course is graded A-E.

This course is designed for the student interested in the administration of Early Childhood care and education programs. The focus will be on operational planning to include curriculum, parent programs, staff management, community involvement, legal responsibilities, and hiring requirements. Establishing and maintaining effective fiscal practices will be explored.

**5682 Children's Mental Health Issues**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course will explore children's mental health issues related to self-esteem, development, the effects of adult life choices, and the effects of current day stressors.

**5683 School Age Programs and Care**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is designed to assist caregivers of school ages in understanding the needs elementary school age children have for programs and care outside of school hours. Students will explore developmentally and culturally appropriate activities, positive guidance, and communication guidelines.

**5684 Fundamentals of Reading and Writing**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course will focus on research-based principles and practices that will provide children birth to eight years of age with a solid foundation in developmentally appropriate early reading and writing. The student will explore and evaluate the concepts in practice.

**5685 Family Development**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: None. Course is graded A-E.

This course is an introduction to the study of families from a social science perspective. The focus will be on family related issues that affect individuals throughout the life cycle. The course will comprise the principles of family research including cultural and historical influences. Contemporary social issues will be explored that affect the formation and maintenance of family life.

**5686 Child Development**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in 5681 or by permission of the ECD Program Director. Course is graded A-E.

This course will emphasize the development of young children, and explore development in middle childhood and adolescence. Principles related to physical, cognitive, social and emotional development will be covered. Class topics will include influences on development, such as culture and various abilities. Connections of principles to practice will be evaluated.



**5801 ECD Independent Study: Creative Music Experiences with Pre-Schoolers**

1-2 (variable) credit hours; 5-10 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5802 ECD Independent Study: Self-Esteem Development with Children**

1-2 (variable) credit hours; 5-10 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5803 ECD Independent Study: Children's Literature**

1-2 (variable) credit hours; 5-10 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5804 ECD Independent Study: Special Needs Inclusion**

1-2 (variable) credit hours; 5-10 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5805 ECD Independent Study: The School Age Child: Plans and Activities**

1-3 (variable) credit hours; 5-15 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5806 ECD Independent Study: Parent Education**

1-3 (variable) credit hours; 5-15 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5807 ECD Independent Study: Current Issues in Child Development**

1-3 (variable) credit hours; 5-15 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5808 ECD Independent Study: Developing an ECD Manual**

1-3 (variable) credit hours; 5-15 hours contact hours independent study. Prerequisite: C grade (2.00) or better in 5610, 5614 and 5686 or by permission of the ECD Program Director. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.

**5810 INSITE Home Intervention Special Topic**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: By permission of the ECD Program Director and registration in a certified INSITE workshop with qualified trainer approved by the Office of the Ohio Department of Education MR/DD Professional Development and Certification. Course is graded A-E.

This training will prepare professionals to deliver effective programs of the INSITE Home Intervention curriculum by preparing students in the knowledge and practice of principles, procedures, content, sequencing, program assessment and reporting. The student will utilize exploration and practice of skills in providing family support, information and collaboration with parents to meet the needs of the family and the child.

**58XX Independent Study in ECD**

1-2 (variable) credit hours; 5 hours per quarter minimum contact hours. Prerequisite: C grade (2.00) or better in 5610, 5614, and 5686. Course is graded A-E.

This course is designed to allow the ECD student the opportunity to choose a topic for independent study related to early childhood development or education. The student will work closely with an ECD faculty member in determining the appropriateness of the topic area. Transfer students receiving partial credit for an ECD course may utilize this course as an elective to meet up to 2 credit hours in any one topic area towards the required credits for graduation.