

**ARTS 231. Painting I.** (3 credits). This course explores the potentials of various painting media with stress on color and composition. (6 laboratory hours per week).

**ARTS 232. Painting II.** (3 credits). This course includes a study of the techniques and media used in painting; expression, as well as subject matter, is unrestricted. These courses are open to all students who wish to paint. Art majors must attend painting laboratory. (6 laboratory hours per week). *Prerequisite:* ARTS 231 or instructor approval.

**ARTS 240. Watercolor Painting.** (3 credits). Students explore the watercolor medium as a means of artistic expression through interpretation of still life, landscape, and figure subjects. (6 laboratory hours per week). *Prerequisite:* ARTS 111 or ARTS 121 or equivalent.

**ARTS 241. Introduction to Portrait Painting.** (3 credits). This course is a study of the techniques of various media. Emphasis is on individual expression and on understanding the fundamentals in portrait painting. (6 laboratory hours per week). *Prerequisites:* ARTS 121 and ARTS 122 or instructor approval.

**ARTS 242. Water II.** (3 credits). This course presents a deeper exploration in the field of the watercolor medium as a means of artistic expression through interpretation of still life, landscape, figure, and non-objective approaches. (6 laboratory hours per week). *Prerequisite:* ARTS 240 or ARTS 121 or instructor approval.

**ARTS 251. Commercial Art I.** (3 credits). This course includes an introduction to the processes and techniques of advertising art. (6 laboratory hours per week). *Prerequisites:* ARTS 111 and ARTS 112, or ARTS 121 and ARTS 122, or instructor approval.

**ARTS 252. Commercial Art II.** (3 credits). This course is an advanced study of advertising art and production. (6 laboratory hours per week). *Prerequisites:* ARTS 111 and ARTS 112, or ARTS 121 and ARTS 122, or instructor approval.

**ART 260. Graphic Media.** (3 credits). Students critically evaluate graphic media as well as create works in serigraphy and other print media. (6 laboratory hours per week).

## AUTOMOTIVE TECHNOLOGY

Bruce Westmoreland, *Department Chairperson*  
Charles Graham, Alvin Horn, Guy Powell, Hasso Schroder

**AUTO 101. Basic Automotive.** (4 credits). The course will acquaint the student with service trade information, use and care of shop equipment and tools, standard transmission, brakes, clutches, rear axle, drive line principles, and a limited application of automotive shop practices. (2 lecture and 4 laboratory hours per week).

**AUTO 111. Internal Combustion Engine.** (4 credits). An introduction to the gas-line internal combustion engine. Technique and skill in inspection, repairing and overhauling of engine components, valve timing, use of special tools and equipment. Student will also receive an introduction to diesel engines. (2 lecture and 4 laboratory hours per week).

**AUTO 112. Automotive Electricity and Ignition System.** (4 credits). An introduction into the fundamentals of electricity as applied to the automotive vehicle. Classroom theory and laboratory practices of magnetic principles of electricity, functions of the diode and transistor, the storage battery, D.C. and A.C. charging systems, generators and alternators, and complete wiring systems. (2 lecture and 4 laboratory hours per week).

**AUTO 113. Carburetion and Fuel Systems.** (4 credits). A study of fuels and their applications, requirements, and effect on carburetion. Students will disassemble, clean, overhaul, reassemble, and adjust various types of carburetors. (2 lecture and 4 laboratory hours per week).

**AUTO 202. Automotive Transmission.** (4 credits). An introduction to theory and principle of hydraulic controls. The course will include a study of torque converters, power flow, gear trains, oil circuits, and correct procedures of disassembly, cleaning, inspection, repair, and reassembly of current types of automatic transmissions. (2 lecture and 4 laboratory hours per week).

**AUTO 211. Automotive and Truck Chassis.** (4 credits). A study of designs, construction, and frame alignment fundamentals of the vehicle chassis. Classroom theory and laboratory practices will include front end alignment, shock absorbers, springs, steering mechanism, wheel balancing, and power steering. (2 lecture and 4 laboratory hours per week).

**AUTO 212. Automotive Air Conditioning.** (4 credits). Basic principle of the automotive air conditioning unit. Classroom theory and laboratory practices will include a study of liquids, vapors, gases and heat transfer, and repairing of air conditioning units. (2 lecture and 4 laboratory hours per week).

**AUTO 213. Automotive Diagnostics.** (4 credits). A complete study of diagnostic procedures used in the analysis of automotive electrical systems, carburetor and combustion systems, and control systems for exhaust emission. Proper use of test equipment for diagnostic purposes will be taught. (2 lecture and 4 laboratory hours per week). *Prerequisites:* AUTO 112, AUTO 113.

**AUTO 214. Automobile Repair Shop Organization and Management.** (2 credits). A study of record keeping, finance, personnel, equipment and use of facilities is made. Problem areas in auto repair business are analyzed. (2 lecture hours per week).

**AUTO 215. Accessory Equipment.** (4 credits). Automatic temperature systems, light sensors, speed control systems, power seats, power windows, clocks and similar types of systems used in modern automobiles are studied, analyzed and repaired. (2 lecture and 4 laboratory hours per week). *Prerequisites:* AUTO 212, AUTO 112.

**AUTO 216. Automotive Technology Internship.** (3 credits). The students work in a qualifying dealership or auto repair shop for 20 hours per week in an occupational situation where he receives practical training and experience compatible with his career objectives. Students may receive credit from an approved full-time job. *Prerequisite:* approval of department chairperson.

See p. 207 for TDC Automotive Technology courses.

## BIOLOGY

Stephen Wheeler, *Department Chairperson*  
Bill Horine, Roy Turner

**BIOL 101. Contemporary Biology I.** (3 credits). This course covers fundamental characteristics of living matter from the molecular level to the ecological community. The courses stress basic biological principles relevant to animals. (3 lecture hours per week).

**BIOL 102. Contemporary Biology II.** (3 credits). This course covers fundamental characteristics of living matter from the molecular level to the ecological community. The course stresses basic biological principles relevant to plants. (3 lecture hours per week).

**BIOL 110. Environmental Conservation.** (3 credits). This course includes a study of the management of natural resources, the problems caused by population and pollution, the balance of nature, and man's importance in the environment. (3 lecture hours per week).

**BIOL 111. General Biology I.** (4 credits). This course covers the principles of biology, including considerable study of the structure of animals. This course emphasizes the study of the animal kingdom and the human organ system, and it includes an introduction to cell physiology and chemistry. (3 lecture and 3 laboratory hours per week).

**BIOL 112. General Biology II.** (4 credits). This course covers the principles of biology, including considerable study of the structure of plants. The course emphasizes the study of flowering plant anatomy and physiology and presents a survey of plant groups, genetics, ecology, and evolution. (3 lecture and 3 laboratory hours per week).

**BIOL 121. Anatomy and Physiology I.** (4 credits). This course includes a study of the structure and function of organ systems of the human body. (3 lecture and 2 laboratory hours per week).

**BIOL 122. Anatomy and Physiology II.** (4 credits). This course continues the study of the structure and function of organ systems of the human body. (3 lecture and 2 laboratory hours per week). *Prerequisite:* BIOL 121 or instructor approval.

**BIOL 225. Basic Microbiology.** (4 credits). This one-semester course in microbiology stresses the principles and applications of microbial activity, with emphasis given to the bacterial types. The course stresses the role of micro-organisms in disease, ecology, sanitation, industry, and public health as well as considering sterilization techniques, pure culture techniques, and other aspects of microbial control. Basic Microbiology is recommended for students in biology, pre-med, pre-dental, nursing, and related medical fields. (3 lecture and 3 laboratory hours per week). *Prerequisite:* BIOL 111, BIOL 112, BIOL 121, or BIOL 122.

### BUSINESS ADMINISTRATION

Norman Bradshaw, *Department Chairperson*  
Lee Baker, Bill Swenty

**BUAD 110. Introduction to Business.** (3 credits). An overview of the American system of free enterprise with concentration on business and its environment, organization and management of the enterprise, management of human resources, production, marketing, and finance. Primary emphasis is placed on the way American businesses work, what they can do well and what they do poorly. (3 lecture hours per week).

**BUAD 120. Business Law I.** (3 credits). The Commercial Codes pertaining to contracts, agency, property, sales, modern labor legislation, employment. (3 lecture hours per week).

**BUAD 122. Business Law II.** (3 credits). Specific principles of law which form the legal framework for business activities. Areas of emphasis include government regulations, environmental law, secured transactions, partnerships, corporations, real estate, and trust. (3 lecture hours per week).

**BUAD 130. General Business Mathematics.** (3 credits). A review of the fundamental arithmetic skills needed in the business world with particular emphasis on fractions, decimals, percentages, simple and compound interests, dis-

counts, commissions, inventories, depreciation, installment sales and purchases, notes and interest, and payroll. (3 lecture hours per week).

**BUAD 150. Business Psychology.** (3 credits). This course will give the student an understanding of how business, governments, and other organizations compete, and get into conflicts over power struggles. Students gain a wider view of how organizational psychology is related to other disciplines. The course is designed to help the student acquire some specific understandings, skills, and desires which will prepare them to learn to work with others with increased consideration, understanding, and effectiveness. (3 lecture hours per week).

### CHEMISTRY

William R. Bitner, *Department Chairperson*  
Betty Graef

**CHEM 111. Introductory Chemistry I.** (4 credits). Topics covered in this course include atomic-molecular theory, valence, oxidation numbers, formulae, chemical equations, gas laws, and solutions. (3 lecture and 3 laboratory hours per week).

**CHEM 112. Introductory Chemistry II.** (4 credits). This course surveys organic and bio-chemistry, and it may include polymer chemistry and heterocyclics. (3 lecture and 3 laboratory hours per week). *Prerequisite:* CHEM 111.

**CHEM 121. General Chemistry and Analysis.** (4 credits). The topics presented in this course include atomic structure, the periodic classification, the gas laws, reactions involving oxygen and hydrogen, solutions of electrolytes, ionization, and acids, bases, and salts. (3 lecture and 4 laboratory hours per week).

**CHEM 122. General Chemistry and Analysis.** (4 credits). The topics presented in this course include oxidation-reduction, the chemistry of the common elements and their compounds, coordination chemistry, and electro-chemistry. This course also emphasizes the qualitative analysis of the common cations and anions using semi-micro techniques in the laboratory and the study of systems involving chemical equilibria. (3 lecture and 4 laboratory hours per week). *Prerequisite:* CHEM 121.

**CHEM 210. Quantitative Analysis.** (4 credits). This course emphasizes the fundamental principles of quantitative analysis. Students make determinations involving gravimetric and volumetric methods and carry out acid-base titration. Students use some of the more modern techniques, including spectrophotometric and electroanalytical procedures. (2 lecture and 6 laboratory hours per week). *Prerequisite:* CHEM 122.

**CHEM 211. Organic Chemistry.** (4 credits). This course covers general principles and theories of elementary organic chemistry, with special emphasis on characteristics, structures, preparation, reactions, and nomenclature of hydrocarbons, alkyl halides, alcohols, phenols, and ethers. (3 lecture and 4 laboratory hours per week). *Prerequisite:* A minimum grade of C in CHEM 121 and CHEM 122 or approval of department chairperson.

**CHEM 212. Organic Chemistry.** (4 credits). This course covers general principles and theories of elementary organic chemistry, with special emphasis on characteristics, structures, preparation, reactions, and nomenclature of aldehydes, ketones, carboxylic acids, and amines. This course also covers stereochemistry and some elementary concepts in biochemistry. (3 lecture and 4 laboratory hours per week). *Prerequisite:* CHEM 211.

## CHILD CARE and DEVELOPMENT

Joan Townsend, *Department Chairperson*  
Sandra Horine

- CHCD 110. Pre-School and Day Care Programs.** (3 credits). A study of child development through pre-school and day care programs. Includes the history, philosophy and practices of specialized care with emphasis on the educational, recreational and health needs of the child. (3 lecture hours a week).
- CHCD 130. Child Care Services.** (3 credits). Child care work with troubled, dependent and neglected children and youth away from their own families. Includes history, philosophy and practices of foster care, adoption and related social services agencies. (3 lecture hours a week).
- CHCD 140. Child Care Recreation.** (2 credits). An introduction to the fundamental principles of child development through physical activity. Physical activities appropriate to motor development and movement education. (1 lecture and 2 laboratory hours a week).
- CHCD 150. Introductory Creative Activities.** (2 credits). Introduction to art media suitable for use with young children. Includes the process of working with paint, clay, wood, paper and other materials. (1 lecture and 2 laboratory hours a week).
- CHCD 160. Literature for Young Children.** (2 credits). An introduction to the various forms of children's literature. Examination is made of literature available specifically for the young child. The student is acquainted with authors and illustrations of children's books. (1 lecture hour and 2 laboratory hours per week).
- CHCD 170. Music for Young Children.** (2 credits). A study of the fundamentals of music, including rhythms, harmonic and melodic concepts, pitch, key determination; the musical interests of the child at early age levels. Emphasis to methods which will encourage musical participation by children. (1 lecture and 2 laboratory hours a week).
- CHCD 200. Exceptional Children.** (3 credits). An introduction to the understanding of exceptional children — the mentally retarded, the visually handicapped, the auditorially handicapped, the child with speech and language disorders, the brain damaged, the child with behavior disorders and the child with serious emotional disturbances. Includes study of theories relevant to treatment and education of exceptional children and types of services available in special education. (3 lecture hours a week). *Prerequisite:* PSYC 130 or consent of department chairperson.
- CHCD 210. Creative Activities II.** (2 credits). Instruction in a variety of simple science media for use with young children. Basic instruction in the use of tools to facilitate the creation and maintenance of play equipment. Techniques for toy making, creative activities for hospitalized children and simple science projects are developed. (1 lecture and 2 laboratory hours a week).
- CHCD 220. Child Nutrition and Health Care.** (3 credits). Provides students with basic information on human nutrition, the nutritional value of food, and an understanding of food and food habits in relation to nutrition of the young child. Examination of food purchasing, storage, safe handling and sanitation. Importance of good nutrition in maintaining good health is presented. (3 lecture hours a week).
- CHCD 230. Advanced Child Growth and Development.** (3 credits). Provides the student with an understanding of the physical, social, emotional, and mental development of the young child up to preadolescence, with concentration on

child guidance. Increases student's understanding of the dynamics of behavior, including attitudes, values and knowledge of growth patterns. (3 lecture hours a week).

- CHCD 240. Child Care and Development I.** (4 credits). The history, philosophy, and ethics of child care, types of child caring facilities, laws and standards governing agency management. Understanding the child and the roles of team members within the agency. Emphasis is placed on the responsibilities, personality and involvement of the child care worker. Includes a two-hour visit each week to designated facilities. (3 lecture and 2 laboratory hours a week).
- CHCD 250. Child Care and Development II.** (4 credits). A survey of the differences in children in child caring facilities, special methods of care and study of specific children based upon actual records. A study of communications, reports and agency records on the child. Provides opportunity for extensive observation of curriculum within a selected facility which allows the student to begin specialization in a particular field. (2 lecture and 4 laboratory hours a week). *Prerequisite:* Child Care 240 or consent of instructor.
- CHCD 260. Seminar and Field Work.** (4 credits). On-the-job experience under the supervision of a professional team with opportunities for direct involvement in program activities in the area of specialization. (3 lecture and 8 laboratory hours a week).
- CHCD 270. Special Project.** (4 credits). Opportunity for a student or group of students to pursue a special interest in the area of child care. Special projects which would demonstrate a functional capability within an area of child care will be undertaken with the approval of the instructor. Student projects may include child development models in areas of literature, recreation, music, etc. (3 lecture and 8 laboratory hours a week).

## COMMUNICATIONS

Cathy Forsythe, *Department Chairperson*  
Leslie Brinkley, Jerry Perkins

- COMM 105. Introduction to Mass Communications.** (3 credits). This course presents a study of communications with large groups of people through such media as newspapers, magazines, radio, and television. The course examines the communicator, the audience, and the media as well as the nature of their interaction which forms the communication experience in modern society. (3 lecture hours per week).
- COMM 106. News Photography.** (3 credits). This course covers basic photographic principles for work in media. Single, multiple, and electronic flash will be studied and put to use. The course will emphasize working with deadlines and high-speed processing. (3 lecture hours per week).
- COMM 110. Survey of Radio and TV.** (3 credits). This course presents a survey of the broadcasting industry. It includes discussion of historical highlights, technical developments, and regulation of radio and television, and it explains the operation of radio and TV equipment. The course also covers radio and television programming, cable TV, and new electronic media. (3 lecture hours per week).
- COMM 111. Basic Recording Techniques.** (3 credits). This course familiarizes the student with modern multi-track recording techniques. The course includes live 8-track recording sessions, offering the student the opportunity to apply the related techniques. (1 lecture and 2 laboratory hours per week).

- COMM 112. Advanced Audio Recording Techniques.** (3 credits). This course is primarily a recording "projects" course. Under the guidance of qualified instructors, the student produces approved projects such as demo tapes, radio spots, jingles, or master tapes for records. Studies also include the examination of sound reinforcement systems and the practical experience of assisting the ACC audio staff with programs and concerts on and off campus. Students arrange scheduled studio time by appointment. (1 lecture and 2 laboratory hours per week).
- COMM 113. Television Production I.** (3 credits). A practical approach to the presentation of commercials, news, and live programs as encountered in the daily operation of commercial TV stations, this course gives basic instruction in camera work, video and audio control, and editing. (3 lecture hours per week).
- COMM 114. Television Production Workshop.** (3 credits). This course continues instruction in camera work, video, and editing. Students will actually produce public affairs/news oriented shows for broadcast on local cable TV stations. (3 lecture hours per week). Prerequisite: TV Production I.
- COMM 115. Writing for Mass Media.** (3 credits). This course provides an introduction to the fundamentals of the writing and fact-gathering skills of journalism, advertising, and public relations for print and electronic media. Students create and write effective commercials and public service announcements for radio and TV. (3 lecture hours per week).
- COMM 210. Radio News Workshop.** (3 credits). This course emphasizes the preparation of news and specialized news program copy for radio presentation. It includes news styles for electronic media, spot news, interpretive specials, and analysis. The lab includes airing of newscasts on the College radio station. (1 lecture and 4 laboratory hours per week). Prerequisites: ENGL 111 or ENGL 121 and instructor approval.
- COMM 211. Radio Production.** (3 credits). This course presents a practical approach to the presentation of announcements and live programs as encountered in the daily operation of the average radio station. The course begins with instruction in audio control, and it includes on-air experience at the College radio station. (1 lecture and 4 laboratory hours per week). Prerequisite: ENGL 111 or ENGL 121 and instructor approval.
- COMM 212. Principles of Advertising.** (3 credits). This study of the fundamentals of advertising includes topics such as universal appeal, copywriting, layouts, and selection of media. The course stresses the relationship between topography and newspaper advertising, and it places additional emphasis on other media. (3 lecture hours per week).
- COMM 215. TV News Workshop.** (3 credits). This course includes preparation of news and specialized news program copy for television presentation. The course explores new styles for the electronic media, including spot news, interpretive specials, and analysis. (3 lecture hours per week).
- COMM 220. Independent Study in Communications.** (3 credits). This course allows the student advanced work in communications and meets his/her specific needs. The student, with approval of the instructor and the department chairperson, prepares and executes a written contract (proposal for learning). When the student completes all aspects of the contract, he/she is awarded credit upon the approval of the department. (3 lecture hours per week). Prerequisite: approval of department chairperson.
- COMM 221. Independent Study in Communications.** (3 credits). This course allows the student advanced work in communications and meets his/her specific needs. The student, with approval of the instructor and the department

chairperson, prepares and executes a written contract (proposal for learning). When the student completes all aspects of the contract, he/she is awarded credit upon the approval of the department. (3 lecture hours per week). Prerequisite: approval of department chairperson.

**COMM 222. Public Relations.** (3 credits). This course includes a study of the principles and practices within the field of public relations, with special emphasis on publicity problems of the public schools and colleges. By means of the text, outside reading, and the lectures, students examine a special type of journalism. (3 lecture hours per week).

**COMM 224. Radio & Television Announcing.** (3 credits). This speech course specifically addresses broadcast journalism, giving students actual "on-air" training for news anchoring, commercial work, on camera interviews, and field reporting. The course will analyze the trends of broadcasting and provide practical experience. (3 lecture hours per week.)

**COMM 225. Independent Project in Television.** (3 credits). This course allows the student advanced work in television to meet specific needs. The student, with approval of the instructor and department chairperson, executes a project outlined in a course contract. The student is awarded credit upon approval of the department. (3 lecture hours per week). Prerequisite: approval of department chairperson.

**COMM 226. Independent Project in Television.** This course allows the student advanced work in television to meet specific needs. The student, with approval of the instructor and department chairperson, executes a project outlined in a course contract. The student is awarded credit upon approval of the department. (3 lecture hours per week). Prerequisite: approval of department chairperson.

## COMPUTER SCIENCE

Gerald Pullen, *Department Chairperson*  
Don Armstrong, Barry Russell

**CSCI 101. Introduction to Computers.** (3 credits). This course is an overview of the basic concepts of computer information processing. The functional characteristics of digital computers, and their capabilities and limitations are discussed. Application of computers in business, industry, and society—for non-computer science majors. (3 lecture hours per week).

**CSCI 102. Micro-Computer Programming—BASIC.** (3 credits). Fundamental concepts of the BASIC programming language as applied to micro-computers. Includes problem solving, applications, graphics, music, and other programming techniques applicable to micro-computers. For non-computer science majors. (3 lecture and 3 laboratory hours per week).

**CSCI 103. Micro-Computers and their Uses.** (2 credits). An introductory course in understanding and using micro-computers. Fundamentals of micro-computer hardware including design, interfacing, and operation. Hands on use of micro-computers using common application programs and popular software. For non-computer science majors. (1 lecture and 2 laboratory hours per week).

**CSCI 110. Introduction to Computer Science.** (4 credits). An introduction to Computer Science with FORTRAN. FORTRAN programming includes input, output, looping, arrays, and sub-programs. Also includes reading and interpreting FORTRAN programs. This course also contains computer science history, number systems, algorithms, flowcharts, block concepts of computer organization, applications, compiles overview, overview of other programming lan-

guages, review of cards, papertape, magnetic tape, and magnetic disc. (3 lecture and 3 laboratory hours per week). *Prerequisite:* high school algebra or equivalent.

**CSCI 112. Programming for Engineering and Science.** (4 credits). Computer programming using FORTRAN with emphasis on the solution of engineering and science problems. (3 lecture and 3 laboratory hours per week). *Prerequisite:* MATH 121 or MATH 180 or higher.

**CSCI 114. Computer Programming (BASIC).** (4 credits). This course is to teach BASIC Computer programming language. BASIC is an interpreter programming language designed for use at a terminal. (3 lecture and 3 laboratory hours per week).

**CSCI 116. Intro. Computer Graphics.** (4 credits). An introduction to computer graphic hardware, software, and theory, including experience with a graphics terminal, plotter, programs, and subroutines. (3 lecture and 3 laboratory hours per week). *Prerequisites:* CSCI 110 and MATH 121.

**CSCI 120. RPG Programming.** (4 credits). Report Program Generator is a compiler language that will process data into a printed report with a minimum of programming effort. The coding forms provided make the programmer's role principally clerical. Lecture will include a detailed description of the language, forms and use. Several programs are constructed, run, and debugged as an aid to comprehending RPG and its capabilities. (3 lecture and 3 laboratory hours per week).

**CSCI 130. Computer Programming (Introductory COBOL).** (4 credits). Students will be required to program, debug, and test specified business problems using COBOL. This high level language is commonly used for business problems. Lectures will cover processing of data from the original document to the final report. (3 lecture and 3 laboratory hours per week).

**CSCI 200. Special Topics.** (4 credits). This course consists of special projects designed to meet individual students needs and interests. (3 lecture and 3 laboratory hours per week). *Prerequisite:* consent of the department chairperson.

**CSCI 210. Computer Programming (Advanced FORTRAN).** (4 credits). A detailed study of FORTRAN. This high level language is commonly used in scientific computations. One of the basic objectives is providing the student with the knowledge to handle mathematical and statistical problems on a computer. (3 lecture and 3 laboratory hours per week). *Prerequisite:* CSCI 110, MATH 121 or MATH 180, or consent of the department chairperson.

**CSCI 215. Digital Computer Fundamentals.** (4 credits). A study of digital theory, devices, bus-organized computers, architecture, and programming. (3 lecture and 3 laboratory hours per week). *Prerequisite:* consent of the department chairperson.

**CSCI 220. Computer Programming (Adv. RPG).** (4 credits). This course is a continuing study of CSCI 120 emphasizing array processing, table look-ups, matching records. A treatment of disc files involving file updating. (3 lecture and 3 laboratory hours per week). *Prerequisite:* CSCI 120 or consent of department chairperson.

**CSCI 230. Computer Programming (Advanced COBOL).** (4 credits). This course is designed to acquaint the student with the more advanced aspects of COBOL. Complete business application systems will be implemented, coded, programmed, tested, and documented as one would expect to find in a real life environment. (3 lecture and 3 laboratory hours per week). *Prerequisite:* CSCI 130.

**CSCI 240. Business Systems Analysis.** (4 credits). A study of the area of systems and systems analysis. Topics covered are: scope of systems analysis, systems investigation, input design, output design, designing files, design and documentation, proving the design, communications, justifying the system, implementation, controls and security, hardware, software. (3 lecture and 3 laboratory hours per week). *Prerequisite:* CSCI 230. *Corequisite:* CSCI 220.

**CSCI 250. Computer Programming (Assembly).** (4 credits). A study of assembly languages. The student studies assembly language. (3 lecture and 3 laboratory hours per week). *Prerequisite:* CSCI 110, CSCI 115, and consent of the department chairperson.

**CSCI 260. Mini/Micro Computers.** (4 credits). A study of mini/micro computers and their use in business and industry. Mini/micro computer programming and hands-on operation. (3 lecture and 3 laboratory hours per week). *Prerequisite:* consent of the department chairperson.

**CSCI 270. Computer Programming (PASCAL).** (4 credits). A study of the PASCAL programming language. Students will be required to program, debug and test problems using the PASCAL language. (3 lecture and 3 laboratory hours per week). *Prerequisite:* consent of department chairperson.

**CSCI 280. Data Base Systems.** (4 credits). An introduction to data based management systems, data organization and structure, and data base design; the student will use a query language for business applications. (3 lecture and 3 laboratory hours per week). *Prerequisite:* consent of department chairperson.

## COOPERATIVE EDUCATION

Linda Chaput, *Department Chairperson*

**COOP 111. Seminar and Work Experience.** (3 credits). A comprehensive treatment of internship related activities, individualized objectives, and regularly scheduled activities. Concentration on proper interviewing techniques, letters of application and resume writing, developing human relations skill and effective communications on the job, investigating career choices, developing better study habits and time-management techniques. *Prerequisite:* approval of Coordinator of Cooperative Education.

**COOP 112. Seminar and Work Experience.** (3 credits). A comprehensive treatment of internship related activities, individualized objectives, and regularly scheduled activities. Concentration of the development of a philosophy towards work including personal life planning, value clarification, and self awareness. *Prerequisite:* approval of Coordinator of Cooperative Education.

**COOP 211. Seminar and Work Experience.** (3 credits). A comprehensive treatment of internship related activities, individualized objectives, and regularly scheduled activities. Concentration on long-term employment considerations, continue developing a positive image, investigating the implications of body language, and learning a technique for relaxing. *Prerequisite:* approval of Coordinator of Cooperative Education.

**COOP 212. Seminar and Work Experience.** (3 credits). A comprehensive treatment of internship related activities, individualized objectives, and regularly scheduled activities. Concentration on self awareness activities, how to sell one's viewpoint and related career investigation. *Prerequisite:* approval of Coordinator of Cooperative Education.



## COURT REPORTING

Mary Knapp, *Department Chairperson*

Bill Cranford, Joe Jackson, Margaret Montgomery, Laura Noulles, Jim Preston,  
Nancy Reed, Roy Stubbs, Clayton Williams

- CTRP 111. Machine Shorthand Theory.** (6 credits). Theory of machine shorthand, vocabulary development, and skill building through reading and machine practice. Dictation and transcription of machine shorthand notes. Two theory courses are required of the beginning student. (6 lecture and 4 laboratory hours per week).
- CTRP 112. Machine Shorthand I (60-80-100).** (6 credits). Development of vocabulary and skill building through concentrated emphasis on live dictation and transcription of machine shorthand notes. The objective of the course is to attain the speed of 100 words per minute. The student advances at his/her own rate. (6 lecture and 4 laboratory hours per week). *Prerequisite:* CTRP 111.
- CTRP 120. Machine Shorthand II (120-140).** (6 credits). Emphasis on increased skill and speed. The objective of the course is to attain the speed of 140 words per minute. The student advances at his/her own rate. (6 lecture and 4 laboratory hours per week). *Prerequisite:* CTRP 112.
- CTRP 121. Law and Legal Terminology.** (3 credits). Course objectives are to insure comprehension of meanings and applications of legal terminology, while instructing in the various fields of law encountered in the practice of the court reporter. Emphasis is placed on the judicial system, types of courts, jurisdictions, and appellate procedures. Court practices and responsibilities of the reporter are fully covered, including ethics of the profession. Course also includes researching of legal reference books and handling of citations in the record. (4 lecture hours and 1 laboratory hour per week).
- CTRP 122. Medical Terminology.** (3 credits). Study of human anatomy, skeletal structure, systems of the body, and medical specialties, coupled with lectures, study guides, tests and exercises designed to insure knowledge of the components in building medical vocabulary and application thereof. (4 lecture hours and 1 laboratory hour per week).
- CTRP 125. Court Reporting Procedures.** (3 credits). Course objective to acquaint the student with various fields of reporting, essential qualifications of reporter, procedures in the free-lance and official office, transcript set-ups for interrogatories, statements, depositions, court matters, certification of questions, interpreted proceedings, legislative matters, and conventions. (3 lecture and 2 laboratory hours per week). *Prerequisites:* CTRP 112, CTRP 130, CTRP 142, ENGL 112.
- CTRP 130. Transcription I.** (2 credits). Supervised activity with continued concentration on dictation and transcription of shorthand notes. (5 laboratory hours per week).
- CTRP 140. Transcription II.** (2 credits). Supervised activity with continued concentration on dictation and transcription of shorthand notes. (5 laboratory hours per week).
- CTRP 141. Grammar and Punctuation I.** (2 credits). The study of basic grammar as applied to the reporting profession, with emphasis on parts of speech; formation of plurals and possessives, verbal, adverbial, and adjective comparisons; sentence patterns; capitalization, and vocabulary development. This study approaches English grammar from the proofreading aspect rather than from the writing aspect. (This course is to be given on alternate days with ENGL 111 — Communication Skills I — 3 credits.) (2 lecture hours per week).

- CTRP 142. Grammar and Punctuation II.** (2 credits). Specialized English training applied to the reporting profession, including the study of clauses and phrases, rules of punctuation, capitalization, word division, proper transcription, forms for numerals, use of abbreviations, transcript editing, proofreading, and NSRA Punctuation. The student is given numerous dictations for transcribing and is tutored in voice and speech patterns while reading notes aloud. (This course is to be given on alternate days with ENGL 112 — Communication Skills II — 3 credits.) (2 lecture hours per week).
- CTRP 210. Transcription III.** (2 credits). Supervised activity with continued concentration on dictation and transcription of shorthand notes. (5 laboratory hours per week).
- CTRP 211. Machine Shorthand III (160-180).** (6 credits). Continued emphasis on skill and speed building. The objective is to attain the speed of 180 words per minute. (6 lecture and 4 laboratory hours per week). *Prerequisite:* CTRP 120.
- CTRP 212. Machine Shorthand IV (200-225).** (6 credits). Continued emphasis on skill and speed building, culminating in the attainment of the speed of 225 words per minute. (6 lecture and 4 laboratory hours per week). *Prerequisite:* CTRP 211.
- CTRP 220. Transcription IV.** (2 credits). Supervised activity with continued concentration on dictation and transcription of shorthand notes. (5 laboratory hours per week).
- CTRP 221. Courtroom Procedures I.** (3 credits). Untimed simulated courtroom situations are presented, using attorneys, witnesses, and court personnel. Emphasis is placed on varied courtroom practices, such as voir dire examinations, opening and closing statements, objections, marking of exhibits, indexing and filing of notes, citations, readback, and preparation of transcripts in required format. (3 lecture and 2 laboratory hours per week). *Prerequisite:* CTRP 120.
- CTRP 222. Courtroom Procedures II.** (3 credits). Untimed simulated courtroom situations are continued as described in Courtroom Procedures I. Material is presented to develop endurance and machine writing techniques. Court Reporting ethics are stressed with emphasis on the responsibilities of a reporter and the profession. At this level arrangements are made when possible for the student to participate in actual court proceedings with an official court reporter in attendance. (3 lecture and 2 laboratory hours per week). *Prerequisite:* CTRP 221.
- CTRP 224. Reporting Technology.** (3 credits). Introduction to modern technology applicable to the Court Reporting profession, including lectures, dictation, and practical applications of word processing, videotaping, and computer-aided transcription, including proofreading of rough drafts and production of the finished transcript. (3 lecture and 2 laboratory hours per week). *Prerequisites:* CTRP 112, CTRP 130, CTRP 142, ENGL 112.
- CTRP 225. Technical Dictation.** (3 credits). Dictation emphasizing all aspects of technical terminology, involving medical, legal, surveying, engineering, chemical, maritime, patent, aerospace, etc., with readback and transcription assignments in correct format, including proper transcription of mathematical and chemical formulae. This course utilizes one- and two-voice dictation material. (3 lecture and 2 laboratory hours per week). *Prerequisite:* CTRP 120.
- CTRP 240. General Office Practices.** (3 credits). The first half introduces the use of office dictation equipment, primarily the Stenorette; stresses dictation from notes, emphasizing enunciation in general and verb tenses, word endings, and punctuation in particular; promotes practice in transcribing from reporters'

tapes, use of work sheets, marking exhibits, and working with general deposition forms and procedures. The second half introduces techniques of billing, basic bookkeeping and tax records, sample letter writing, indexing and filing of notes, and pertinent office practices. At this level, arrangements are made for the student to accompany a practicing court reporter on actual assignments, observing on-the-job techniques and the job preparations at the office. (3 lecture and 2 laboratory hours per week). *Prerequisite:* CTRP 211.

## CRIMINAL JUSTICE

D. A. Miller, Jr., *Department Chairperson*  
Gerald Crane

- CJUS 110. Introduction to Criminal Justice.** (3 credits). A survey of the philosophy and history of criminal justice, identifying contemporary crime trends, current issues, and the roles of the various criminal justice agencies. (3 lecture hours per week).
- CJUS 115. Penology.** (3 credits). Analysis and evaluation of contemporary correctional systems; discussion of recent research concerning the correctional institution. Includes the study of the administrator's role in setting objectives, planning, decision making, and controlling of the municipal jail. (3 lecture hours per week).
- CJUS 120. Criminal Investigation.** (3 credits). Investigative theory; crime scene conduct; collection and preservation of evidence; sources of information; interview and interrogation; role of forensic sciences and case preparation. (3 lecture hours per week).
- CJUS 125. American Legal System.** (3 credits). The court system of the United States is explained at all levels, emphasizing adversary procedures in the criminal and civil procedures in the juvenile court, together with recent Supreme Court decisions regarding both. (3 lecture hours per week).
- CJUS 130. Legal Aspects of Law Enforcement.** (3 credits). History and philosophy of modern law; laws of arrest, search and seizure, determination of probable cause; Texas Penal Code; emphasis on practical legal problems confronting the law enforcement officer. (3 lecture hours per week).
- CJUS 135. Probation and Parole.** (3 credits). The development, organization, operation, and result of systems of probation and parole as substitutions for incarceration. Includes methods of selection and prediction scales. (3 lecture hours per week).
- CJUS 140. Criminal Procedure and Evidence.** (3 credits). Examination of the rules governing the admissibility of evidence as they may affect the law enforcement officer in the administration of criminal justice. Includes study of the rules of evidence, and kinds and degrees of evidence and their application in the legal processes, from arrest, through probation and parole procedures, to final disposition of the case. (3 lecture hours per week).
- CJUS 150. Police Role in Crime and Delinquency.** (3 credits). Study of deviant behavior and current criminological theories, with emphasis on the history and development of juvenile law in Texas and an in depth study of the current Texas Family Code. (3 lecture hours per week).
- CJUS 210. Elements of Police Supervision.** (3 credits). Duties and problems of the police supervisor: recruitment, training, promotion, discipline and morale, duty assignments and shift supervision, human relations and leadership problems, essentials of organization, types of organizations, planning the work of the department. (3 lecture hours per week).

- CJUS 215. Institutional Procedures, Jails and Detention.** (3 credits). The function of the custodial staff is examined with special emphasis on the correctional officer. Institutional procedures are reviewed, including reception, classification, program assignment, and release procedures. (3 lecture hours per week).
- CJUS 220. Police Organization and Administration.** (3 credits). An analysis of the duties and responsibilities of police administrators; study of the principles of police organization; police management, coordination, and personnel management. (3 lecture hours per week).
- CJUS 225. Contemporary Practices in Corrections.** (3 credits). Modern trends in corrections, such as the community-based programs in work-release, half-way houses, contract program planning, as well as the therapeutic community and treatment team concept in institutions are described and evaluated. (3 lecture hours per week). *Prerequisite:* CJUS 115, CJUS 150, and CJUS 110.
- CJUS 230. Patrol Administration.** (3 credits). Study of the philosophy and history of systems dealing with patrol functions. An analysis of the principles of organization and function of the patrol operation; contemporary operational activities. (3 lecture hours per week).
- CJUS 235. Corrections I: Organization and Operations.** (3 credits). A minimum of three months in an approved correctional setting taken after two semesters of approved work. The organization of correctional institutions is studied. Treatment, custody and support activities are examined. Students utilize functional charts for the various departments within the institution. *Prerequisite:* consent of department chairperson.
- CJUS 240. Police-Community Relations.** (3 credits). The interrelationship of law enforcement agencies and the community; problems related to police-community relations; emerging law enforcement concept of active involvement in community relations. (3 lecture hours per week).
- CJUS 245. Corrections II: Theory and Practice.** (3 credits). A minimum of three months in an approved correctional setting taken in conjunction with CJUS 235. Current theory and practice in state correctional institutions are examined with emphasis on the Texas Department of Correction programs. *Prerequisite:* consent of department chairperson.
- CJUS 250. Traffic Law and Investigation.** (3 credits). A course in the investigation of traffic accidents, laws, and advanced investigation procedures. Special emphasis will be placed on the handling of traffic accidents on thoroughfares and expressways. (3 lecture hours per week).
- CJUS 260. Traffic Planning and Administration.** (3 credits). A course designed to provide the student with an understanding of the magnitude and complexities of the traffic problem. Analysis is made of the methods and techniques used by various agencies to control problems. (3 lecture hours per week).
- CJUS 270. Juvenile Delinquency.** (3 credits). The nature and extent of delinquency and environments in which juvenile delinquency develops including delinquent subcultures and peer groups. Evaluation of prevention, control, and treatment programs. (3 lecture hours per week).
- CJUS 290. Narcotics Investigation.** (3 credits). Identification of narcotics and dangerous drugs subject to abuse; including origin, distribution, and control; special investigation techniques, and recognition of drug users. (3 lecture hours per week).
- CJUS 295. Defensive Measures.** (4 credits). Introduction to the special physical skills and techniques required for the protection and safety of in-service criminal justice personnel and the public. Emphasis on individual capabilities and limitations in procedures of arrest, search, suspect control and transportation,

defensive tactics, and the firing of service weapons; including theory and application. The F.B.I. Tactical Revolver Course will be utilized for course record/score. (3 lecture and 3 laboratory hours per week). *Prerequisite:* sophomore standing and approval of the department chairperson.

## CZECH

José G. Castillo, Jr., *Department Chairperson*

- CZEC 111. Elementary Czech I.** (4 credits). While this course is definitely aimed toward proficiency in everyday conversational Czech, it gives the student the necessary background in pronunciation, acquisition of vocabulary, grammatical construction, and formation of sentences. (3 lecture and 2 laboratory hours per week).
- CZEC 112. Elementary Czech II.** (4 credits). This course is a continuation of the oral practice of CZEC 111, with some stress on reading and composition. (3 lecture and 2 laboratory hours per week). *Prerequisite:* CZEC 111 or instructor approval.

## DRAFTING

Ben Daw, *Department Chairperson*  
Larry Huffman

- DRFT 105. Blueprint Reading I.** (2 credits). A course designed to introduce the beginning draftsman or tradesman with available catalogs, books and vocabulary used in the engineering field. Classroom instruction will consist of reading and interpreting mechanical blueprints, offering a basic knowledge of sketching, dimensioning, section views, assembly drawings and drafting techniques. (2 lecture hours and 1 laboratory hour per week).
- DRFT 106. Blueprint Reading II.** (2 credits). A course designed to introduce the beginning draftsman or tradesman with available catalogs, books and vocabulary used in the architectural and construction fields. The study of house and small building blueprints will be used. Designed for persons in all areas of construction, as well as policemen, firemen, business and finance managers. (2 lecture hours and 1 laboratory hour per week).
- DRFT 107. Industrial Blueprint Reading.** (3 credits). A course for students employed in or studying construction trades or related fields. A brief review of basic drafting skills is followed by a study of blueprints in sheet metal drafting, sizing and placement of ducts, plumbing, electrical and mechanical layouts. (3 lecture hours and 1 laboratory hour per week).
- DRFT 110. Fundamentals of Drafting.** (3 credits). A course for students without previous drafting experience or non-drafting majors. A basic course including use of drawing instruments, lettering, geometric construction, orthographic projection with an introduction to specialized areas. (2 lecture and 4 laboratory hours per week).
- DRFT 111. Engineering Drafting.** (4 credits). The principles of technical drawing as required to express ideas graphically are introduced. Topics include: use of instruments, geometric construction, orthographic projection, sections, auxiliary views, revolutions, dimensioning, axonometric projection, intersections and developments. Recommended for drafting and engineering majors. (2 lecture and 6 laboratory hours per week).



- DRFT 120. Descriptive Geometry.** (3 credits). Problems relating to point, lines, and planes; intersection and sheetmetal developments; and auxiliary views. (2 lecture and 4 laboratory hours per week). *Prerequisite:* DRFT 111.
- DRFT 130. General Drafting.** (4 credits). Instruction provides a basic introduction to drafting procedures as applied in various areas of drafting. Such topics as pipe, machine, concrete foundations, pressure vessels, structural steel and architectural drafting techniques are introduced to aid the student in his decision toward an area of specialization. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111.
- DRFT 211. Pipe Drafting.** (4 credits). A basic course designed for the study of engineering standards, pipe and fitting designs, symbols and specifications. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111 or consent of department chairperson.
- DRFT 221. Structural Drafting.** (4 credits). A course designed to cover AISC specifications and standards, design and detail, or structural members and connections. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111 or consent of department chairperson.
- DRFT 231. Electrical Drafting.** (4 credits). An introduction to electrical schematics and diagrams. Also covers basic electricity and study of electrical and electronic symbols, their application and associated terminology. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111 or consent of department chairperson.
- DRFT 241. Architectural Drafting I.** (4 credits). Basic drafting techniques as related to the preparation of residential details, with emphasis on floor plans, plot plans, foundations, structural details, sections and elevations. (2 lecture and 6 laboratory hours per week).
- DRFT 242. Architectural Drafting II.** (4 credits). A continuation of DRFT 241 on an advanced level. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 241.
- DRFT 251. Machine Drafting.** (4 credits). Problems relating to detail and assembly drawings of small machines, with emphasis on screw threads, fasteners, gears, and shop processes. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111 or permission of department chairperson.
- DRFT 265. Map Drafting.** (4 credits). Plotting surveyor's notes, plot plans and plats. Streets, highways, waterways and industrial applications are included. Attention is given to lettering and lettering devices as used in civil drafting. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111 or approval of department chairperson.
- DRFT 270. Construction Drafting.** (4 credits). A course designed to gain insight into all types and methods of construction, the nature of various building materials and their use, and methods of construction. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111 or approval of department chairperson.
- DRFT 275. Industrial Model Construction.** (4 credits). Construction of models are used to introduce the student to the methods of, uses, principles and techniques used in the building of industrial models. (2 lecture and 6 laboratory hours per week). *Prerequisite:* DRFT 111 or approval of department chairperson.
- DRFT 281. Special Problems I.** (4 credits). A course designed to give the student an opportunity to develop additional skills in an area of major interest or explore an additional specialized field. The student will complete actual job problems

in the chosen area of his interest. (2 lecture and 6 laboratory hours per week). *Prerequisite:* approval of department chairperson.

- DRFT 282. Special Problems II.** (4 credits). May be repeated for credit when topics vary. (2 lecture and 6 laboratory hours per week). *Prerequisite:* approval of department chairperson.

See p. 208 for TDC Drafting courses.

## DRAMA

C. Jay Burton, *Department Chairperson*  
Michael Corrison

- DRAM 111. Rehearsal and Performance.** (2 credits). This course is an activities course in which the student participates in theatre productions either as an actor or crew member. (6 laboratory hours per week).
- DRAM 112. Rehearsal and Performance.** (2 credits). This course is an activities course in which the student participates in theatre productions either as an actor or crew member. (6 laboratory hours per week).
- DRAM 130. Introduction to the Theatre Arts.** (3 credits). This course is the study of the principles of drama and the development of the Theatre as an art as evidenced through study of areas of productions past and present. (3 lecture and 2 laboratory hours per week).
- DRAM 140. Introduction to Acting.** (3 credits). This course is a study of the basic techniques of acting. Included in the course are relaxation, concentration, objectives and intentions, scene work, and improvisational acting. (2 lecture and 4 laboratory hours per week).
- DRAM 145. Movement and Dance for the Performing Arts.** (3 credits). This course provides instruction and participation in stage movement and beginning dance. (1 lecture and 3 laboratory hours per week).
- DRAM 150. Stage Makeup.** (3 credits). This course provides a survey of the reasons for stage makeup and the types of makeup available. It includes principles for defining makeup for characters in a play and intensive practical application. (2 lecture and 4 laboratory hours per week).
- DRAM 211. Rehearsal and Performance.** (2 credits). This course is an activities course in which the student participates in theatre productions either as actor or crew member. (6 laboratory hours per week).
- DRAM 212. Rehearsal and Performance.** (2 credits). This course is an activities course in which the student participates in theatre productions either as actor or crew member. (6 laboratory hours per week).
- DRAM 230. Introduction to Technical Theatre.** (3 credits). This course is a study of the basics for working in the areas of construction, properties, and sets. (2 lecture and 4 laboratory hours per week).
- DRAM 235. Intermediate Technical Theatre.** (3 credits). This course is a study of the basic concepts of stage lighting, including principles and practice. The course also presents the basic principles of lighting design. (3 lecture and 3 laboratory hours per week). *Prerequisite:* DRAM 230.
- DRAM 240. Advanced Acting.** (3 credits). This course is a study of script analysis, character analysis, characterization, and situation. (2 lecture and 4 laboratory hours per week). *Prerequisite:* DRAM 140 or instructor approval.

**DRAM 250. Theatre Speech.** (3 credits). This course is a study of the necessary development of the voice for use for the stage. The course includes voice development, placement, projection, and diction. (3 lecture hours per week). *Prerequisite:* DRAM 140.

**DRAM 260. Modern Theatre Literature.** (3 credits). This course presents a survey of the dramatic literature and dramaturgical tendencies in Europe and America since the time of Ibsen. (3 lecture hours per week).

## ECONOMICS

Arthur Daniel, *Department Chairperson*  
Bob Higby, Tim Reynolds

**ECON 110. Consumer Economics.** (3 credits). This course shows the student how to make the most efficient use of business goods and services. It provides insight into buying problems such as use and evaluation of advertising and into consumer financial problems such as banking, credit, personal accounting and budgeting, and installment buying. (3 lecture hours per week).

**ECON 111. Principles of Economics I.** (3 credits). This course is an analysis of economic aggregates: inflation, unemployment, economic growth, and the distribution of income (including current policies and problems). The course presents problems of fiscal and monetary policy and places primary emphasis on critical understanding of the economy's ability to meet the needs of its people participating as workers, consumers, and citizens. (3 lecture hours per week).

**ECON 112. Principles of Economics II.** (3 credits). This course provides a study of supply-demand relationships, economics of the firm and resource allocation (price and output determination—pure competition, monopolistic competition, oligopoly, and monopoly), economic problems (business, agriculture, labor, etc.), and international economic relations. (3 lecture hours per week).

## ELECTRONICS

Curtis Glatt, *Department Chairperson*

**ELEC 110. Introduction to Electronic Technology.** (3 credits). An introduction to concepts in electronic technology, including a study of basic electronic manufacturing methods and electronic equipment utilization. (3 lecture hours per week). *Prerequisites:* MATH 110, ENGL 110, and RDNG 110 or equivalent. *Corequisite:* ELEC 115.

**ELEC 115. Introduction to Electronic Technology Laboratory.** (1 credit). (3 laboratory hours per week). *Corequisite:* ELEC 110.

**ELEC 120. D.C. Theory and Circuit Analysis.** (3 credits). A study of direct current electricity involving voltage, current and resistance relationships and basic network equations. (3 lecture hours per week). *Prerequisite:* 2 years high school algebra or equivalent. *Corequisites:* ELEC 110, ELEC 115, ELEC 125 and ELEC 151 or equivalent.

**ELEC 125. D.C. Theory and Circuit Analysis Laboratory.** (1 credit). (3 laboratory hours per week). *Corequisite:* ELEC 120.

**ELEC 130. A.C. Theory and Circuit Analysis.** (3 credits). The analysis of passive electronic circuits with respect to time varying d.c. and a.c. waveforms. (3 lecture hours per week). *Prerequisites:* ELEC 120 and ELEC 125. *Corequisite:* ELEC 135 and ELEC 152 or equivalent.

**ELEC 135. A.C. Theory and Circuit Analysis Laboratory.** (1 credit). (3 laboratory hours per week). *Corequisite:* ELEC 130.

**ELEC 140. Electronics I.** (3 credits). An introduction to discrete active components and circuit configurations in preparation for the study of amplifier, oscillator, and digital circuit analysis. (3 lecture hours per week). *Prerequisites:* ELEC 120 and 125. *Corequisites:* ELEC 130, ELEC 135, ELEC 145.

**ELEC 145. Electronics I Laboratory.** (1 credit). (3 laboratory hours per week). *Corequisite:* ELEC 140.

**ELEC 151. Electronics Problems I.** (3 credits). The application of mathematics and calculations to solve direct current electronics problems. Topics from algebra using representative DC circuits are selected. (3 lecture hours per week). *Prerequisite:* MATH 115 or approval of the department.

**ELEC 152. Electronics Problems II.** (3 credits). The application of mathematics and calculations to solve alternating current problems. Topics from trigonometry using representative AC circuits are selected. (3 lecture hours per week). *Prerequisite:* ELEC 151 or MATH 121.

**ELEC 160. Electronic Drafting and Design.** (3 credits). A study of design, documentation, and drafting techniques involved in the production of electronic equipment for industrial and consumer applications. (3 lecture hours per week). *Prerequisite:* 16 hours of Electronics or approval of department chairperson.

**ELEC 165. Electronic Drafting and Design Laboratory.** (1 credit). Application of design and drafting principles as related to electronic equipment production. (3 laboratory hours per week). *Corequisite:* ELEC 160.

**ELEC 210. Electronics II.** (3 credits). Linear amplifier analysis and design including an introduction to oscillators. (3 lecture hours per week). *Prerequisites:* ELEC 140 and 145. *Corequisite:* ELEC 215.

**ELEC 215. Electronics II Laboratory.** (1 credit). (3 laboratory hours per week). *Corequisite:* ELEC 210.

**ELEC 220. Electronics III.** (3 credits). An introduction to digital circuit analysis and design with emphasis on integrated circuits. (3 lecture hours per week). *Prerequisites:* ELEC 130 and 135. *Corequisite:* ELEC 225.

**ELEC 225. Electronics III Laboratory.** (1 credit). (3 laboratory hours per week). *Corequisite:* ELEC 220.

**ELEC 230. Electronic Instrumentation and Measurement Techniques.** (3 credits). Theory of operation and application of standard laboratory test equipment. (3 lecture hours per week). *Prerequisites:* ELEC 210, ELEC 215, ELEC 220, ELEC 225. *Corequisite:* ELEC 235.

**ELEC 235. Electronic Instrumentation and Measurement Techniques Laboratory.** (1 credit). (3 laboratory hours per week). *Corequisite:* ELEC 230.

**ELEC 240. Electronics Seminar and Project.** (3 credits). A survey of current electronic devices found in industrial applications. (3 seminar lecture hours per week). *Prerequisite:* 16 hours of electronics or approval of the department chairperson. *Corequisite:* ELEC 245.

**ENGL 211. Survey of Literature I.** (3 credits). Readings in world masterpieces dating from ancient times to the eighteenth century provide topics for various kinds of written analysis. Collateral reading and reports are required. (3 lecture hours per week). *Prerequisites:* ENGL 121 and ENGL 122.

**ENGL 212. Survey of Literature II.** (3 credits). This course is a continuation of ENGL 211. World literature ranging from seventeenth-century Europe to twentieth-century America is the subject area of reading and writing assignments. Collateral reading and reports are required. (3 lecture hours per week). *Prerequisites:* ENGL 121 and ENGL 122.

**ENGL 221. Survey of English Literature I.** (3 credits). This course covers British literature from its beginning to the eighteenth century. Collateral reading and reports are required. (3 lecture hours per week). *Prerequisites:* ENGL 121 and ENGL 122.

**ENGL 222. Survey of English Literature II.** (3 credits). As a continuation of ENGL 221, this course is a study of British literature from the Romantic Period to the present. Collateral reading and reports are required. (3 lecture hours per week). *Prerequisites:* ENGL 121 and ENGL 122.

**ENGL 230. American Literature.** (3 credits). This course examines our national literary heritage dating from colonial times to the present. Collateral readings and reports are required. (3 lecture hours per week). *Prerequisites:* ENGL 121 and ENGL 122.

**ENGL 250. Creative Writing.** (3 credits). Designed for students interested in writing poetry, fiction, or nonfiction, this humanities elective course presents a study of literary techniques in contemporary published examples, but it emphasizes writing and revising original works. (3 lecture hours per week). *Prerequisites:* ENGL 121 and ENGL 122 or approval of the department chairperson.

**ENGL 260. Technical Communication.** (3 credits). Designed primarily for students working toward a four-year science or technology degree, this course stresses accurate and effective writing in formal reports and other professional communication forms. Brief attention is also given to the oral report. (3 lecture hours per week). *Prerequisites:* sophomore standing and ENGL 111-112 or ENGL 121-122.

## FASHION MERCHANDISING

Patty Hertenberger, *Department Chairperson*

**FASH 130. Introduction to Fashion Merchandising.** (3 credits). This course develops an overview of the fashion industry, its principles, and procedures. Production, distribution, and consumption of fashion apparel will be analyzed. Consumer characteristics and their influence and changing demand for fashion goods will be related to fashion marketing activities. (3 lecture hours per week). *Prerequisite:* consent of instructor.

**FASH 140. Fashion Buying and Merchandising.** (3 credits). The student will study the fundamental concepts in the buying and merchandising of fashion products. The course will develop an understanding of methods of inventory, elements of profit, pricing, mark-up, mark-down, and terms of sale. Sources of buying information, selection of fashion merchandise and responsibilities of buyers will be covered. Field trips to stores will supplement class lectures. (3 lecture hours per week). *Prerequisite:* consent of instructor.

**FASH 150. Merchandising Math.** (3 credits). This course is designed to prepare career-oriented students for employment at such entry level merchandising positions in retail organizations as assistant buyer, assistant manager, or merchandising clerical. Topics include: merchandising profit, merchandising planning, purchase orders, markdowns, markups, inventory control, computerized merchandising operations. (3 lecture hours per week).

**FASH 210. Fashion Sales Promotion.** (3 credits). This course is designed to introduce the student to general procedures and objectives of sales promotion to stimulate a creative approach to the promotion of fashion merchandise. A study of sales promotion activities, fashion advertisements, media, display, and publicity will be made. Emphasis will be placed on a fashion show presentation as a term project. (3 lecture hours per week). *Prerequisite:* consent of the instructor.

**FASH 220. Textiles.** (3 credits). A study of fibers, yarns, weaves, designs, and finishes with emphasis on information applicable to the selection and performance of textiles normally used in apparel will be used. (3 lecture hours per week). *Prerequisite:* consent of the instructor.

**FASH 230. Fashion Fundamentals.** (3 credits). A course designed to add balance to the Fashion Merchandising curriculum; comprehensive coverage in the personality and grooming fields to help students develop tasteful appearance, attractive personality, and the social refinements that are necessary for success in today's fashion world. (3 lecture hours per week). *Prerequisite:* consent of the instructor.

**FASH 240. Principles of Fashion Design.** (3 credits). Provides the student with a general interest in fashion and understanding of the way apparel is created and manufactured. Students will have an opportunity to increase their visual and verbal vocabulary of terms basic to all fashion careers. The course will detail the specific talents and skills required, and how to develop them. Many important areas of fashion design are brought together to show their interrelation in becoming the tools of the professional apparel designer. (3 lecture hours per week). *Prerequisite:* consent of instructor.

**FASH 250. Introduction to Interior Design.** (3 credits). Study of basic principles and elements of design. Emphasis is placed on understanding color and design principles and distribution of these principles in a room composition. Course includes window and wall treatments, furniture arrangements, lighting and fabric and furniture selection. (3 lecture hours per week). *Prerequisite:* consent of instructor.

**FASH 260. Professional Application of Interior Design Principles.** (3 credits). Professional business procedures and responsibilities related to employment in this field. Study of trade source/designer/client relations including specifications, selling, and basic application. (3 lecture hours per week). *Prerequisite:* consent of instructor.

**FASH 112, 122, 212, 222. Internship.** (3 credits, each). The student works in a qualifying firm 20 hours per week in an occupational situation where he receives practical training and experience compatible with his management career objective. Students may receive credit from an approved full-time job.

## FRENCH

José G. Castillo, Jr., *Department Chairperson*

- FREN 111. Elementary French.** (4 credits). Designed for the student with no previous instruction in French, this course emphasizes conversational French, but students also learn the essentials of grammar. (3 lecture and 2 laboratory hours per week).
- FREN 112. Elementary French.** (4 credits). This course is a continuation of FREN 111 with some stress on reading and composition. (3 lecture and 2 laboratory hours per week).
- FREN 121. Intermediate French.** (3 credits). This course includes French readings, grammar, and composition based partly on a formal text and partly on selected readings. The course stresses oral work. (3 lecture hours and 1 laboratory hour per week). *Prerequisite:* FREN 112 or instructor approval.
- FREN 122. Intermediate French.** (3 credits). This course continues the study of French readings, grammar, and composition based partly on a formal text and partly on selected readings studied in FREN 121. (3 lecture hours and 1 laboratory hour per week). *Prerequisite:* FREN 112 or instructor approval.

## GEOGRAPHY

Arthur Daniel, *Department Chairperson*

- GEOG 110. Principles of Geography.** (3 credits). This course includes a study of the natural and cultural features within the world-wide geographic setting. The course emphasizes world climatic regions with discussion and interpretation. (3 lecture hours per week).

## GEOLOGY

Dick Graef, *Department Chairperson*  
Phyllis Eggleston

- GEOL 111. General Geology I.** (4 credits). This course provides an introduction to the study of rocks, minerals, and physical pressures that modify the surface of the earth, and it gives special attention to the practical aspects of geology in society, such as mineral, energy, and water resources, volcanism, and geologic factors that influence the environment. (3 lecture and 2 laboratory hours per week).
- GEOL 112. General Geology II.** (4 credits). This course presents a survey of the evolution of the earth and life through geologic time. The course includes such topics as earthquakes and the earth's interior, mountain building, drifting continents, the Ice Ages, the solar system, the history of life, and the geological aspects of the environment and its effect on the future of mankind. (3 lecture and 2 laboratory hours per week). *Prerequisite:* GEOL 111.

## GERMAN

José G. Castillo, Jr., *Department Chairperson*

- GERM 111. Elementary German I.** (4 credits). While this course is definitely aimed toward proficiency in everyday conversational German, it gives the student the necessary background in pronunciation, acquisition of vocabulary, grammatical construction, and formation of sentences. (3 lecture and 2 laboratory hours per week).
- GERM 112. Elementary German II.** (4 credits). This course is a continuation of the oral practice of GERM 111, with some stress on reading and composition. (3 lecture and 2 laboratory hours per week). *Prerequisite:* GERM 111 or instructor approval.
- GERM 121. Intermediate German I.** (3 credits). This course includes German readings, grammar, and composition based partly on a formal text and partly on selected readings. This course stresses written work and continues the oral work started in elementary German. (3 lecture hours and 1 laboratory hour per week). *Prerequisite:* GERM 112 or instructor approval.
- GERM 122. Intermediate German II.** (3 credits). This course continues the study of German readings, grammar, and composition, based partly on a formal text and partly on selected readings studied in GERM 121. (3 lecture hours and 1 laboratory hour per week). *Prerequisite:* GERM 121 or instructor approval.

## GOVERNMENT

Arthur Daniel, *Department Chairperson*  
Ida Blanchette, Marvin Longshore, Tim Reynolds, Bill Taliaferro

- GOVT 211. American National and State Governments I.** (3 credits). This course includes a study of the origin and development of our federal system of government and an analysis of federal and state constitutions, with special attention to the Texas constitution, and of federal-state and inter-state relations. The course places special emphasis on the problems of citizenship in a modern democratic society. (3 lecture hours per week).
- GOVT 212. American National and State Governments II.** (3 credits). This course presents a study of the functions and services of the government of the United States, of the states in general, and of Texas in particular. (3 lecture hours per week).

## HEALTH MEDICAL LABORATORY TECHNOLOGY

Florence Pipes, *Department Chairperson*  
Johneta Turner

- HMLT 110. Introduction to Medical Technology and Terminology.** (3 credits). Study of the fundamentals of laboratory and hospital organization and personnel, laboratory safety, blood collection, laboratory math, and basic quality control. Study and practical experience are provided in these and in solution preparation, the use of basic lab glassware, and the use of basic lab equipment and instruments. Study of medical vocabulary is included as a separate part of this course. (2 lecture and 3 laboratory hours per week).

**HMLT 111. Clinical Chemistry I.** (5 credits). Introduction to Clinical Chemistry. Study of and laboratory practice in sample collection and preservation for routine clinical chemistry tests; use and evaluation of sample accession and record keeping systems; use and evaluation of quality control and lab safety; use and simple troubleshooting of basic clinical chemistry instruments and procedures; recognition, performance, and interpretation of routine clinical chemistry tests (glucose, BUN, creatinine, protein, chloride, electrolytes, CO<sub>2</sub>, and others). (3 lecture and 8 laboratory hours per week). *Prerequisites:* HMLT 110 and CHEM 111 or equivalent.

**HMLT 112. Clinical Microbiology I.** (4 credits). Introduction to Clinical Microbiology. Study of the basic concepts of microbiology including taxonomy, morphology and physiology of bacteria, as well as disease(s) produced by them. Methods to isolate, cultivate, and identify bacteria will be studied including routine staining procedures, and biochemical identification tests. Included will be procedures for specimen collection, processing, and shipment, media preparation and quality control. (2 lecture and 8 laboratory hours per week). *Prerequisite:* HMLT 110.

**HMLT 113. Hematology I.** (4 credits). Lecture and lab on chemicals and physical nature of blood, use and maintenance of routinely used manual and semi-automated hematology equipment, quality control, sample identification, study of the formed elements of blood, performance and interpretation of routine hematology tests, study of basic coagulation procedures. Some tests included in this course are hemoglobin, hematocrit, sedimentation rate, RBC morphology, WBC differential, prothrombin time, bleeding time. (2 lecture and 8 laboratory hours per week). *Corequisite:* HMLT 110.

**HMLT 123. Medical Microbiology.** (3 credits). A study of the medically important microbes. Emphasis will be placed on those organisms producing disease in the upper respiratory tract. The epidemiology of microbes in the clinical environment will be studied. The basic principles of disease and the mechanisms of host defense will be presented. The student should be able to perform routine culture and isolation procedures, antibiotic susceptibility testing and rapid identification for bacteria and yeast. (2 lecture and 3 laboratory hours per week).

**HMLT 130. Urinology.** (3 credits). Study of urinalysis procedures including chemical tests, microscopic examination, pregnancy tests, renal function tests, and the correlation of these procedures to disease state(s) and malfunction(s). (2 lecture and 4 laboratory hours week). *Corequisite:* HMLT 110.

**HMLT 140. Fluid Analysis.** (1 credit). Body fluids, including gastric, synovial, spinal, seminal, pleural, peritoneal and pericardial fluids, will be studied. Methods for determining their biochemical and cellular content will be presented and abnormal values will be correlated with pathological conditions. (1 hour lecture per week). *Prerequisite:* HMLT 110.

**HMLT 150. Parasitology.** (2 credits). Study of the taxonomy, morphology, and specific characteristics of human parasites as well as the disease states produced by them. Microscopic examination, concentration, fixation, staining, and preservation of specimens will be practiced. (1 lecture and 2 laboratory hours per week). *Prerequisites:* HMLT 110 and HMLT 112.

**HMLT 210. Serology-Immunology.** (3 credits). Study of serological and immunological procedures, including flocculation, agglutination, precipitation, gel diffusion, hemagglutination, complement fixation, fluorescent antibody and protein electrophoresis. The student should be able to discuss the reticuloendothelial system, cellular and humoral immunity, the inflammatory process, antigens, antibodies, complement, and other aspects of the immune mecha-

nism and the body reaction to foreign matter. (2 lecture and 4 laboratory hours per week). *Prerequisite:* HMLT 110.

**HMLT 211. Clinical Chemistry II.** (4 credits). Continuation of HMLT 111. Study of routine and more advanced clinical chemistry tests and the relationship to disease processes, evaluation of metabolism and organ function, and an introduction to complicated clinical chemistry techniques. Study includes blood gases, lipids, enzymes, organ functions and related tests, and special chemistry procedures. Lecture on campus. Lab at clinical sites to provide use and maintenance of current, automated clinical chemistry equipment and clinical chemistry lab organization. (3 lecture and 4 laboratory hours per week). *Prerequisites:* HMLT 110, HMLT 111, and CHEM 111 or equivalent.

**HMLT 212. Clinical Microbiology II.** (4 credits). Study of bacteriology and mycology including procedures to isolate, cultivate and identify acid-fast and anaerobic bacteria, filamentous fungi and yeast. The student should be able to perform antibiotic susceptibility testing, serological and biochemical identification tests, and to use rapid identification systems for identification of bacteria and yeasts. A general understanding of the relationship of this course to physiology, biochemistry, and immunology as they are associated with disease processes is necessary. (2 lecture and 8 laboratory hours per week). *Prerequisites:* HMLT 110 and HMLT 112.

**HMLT 213. Hematology II.** (3 credits). Study of cellular elements and coagulation factors in the blood as they relate to diseases like anemias, leukemias, and bleeding disorders. Special stains, special anemia tests, and diagnostic coagulation tests are included. Lecture on campus. Lab at clinical sites to provide blood drawing experience, an introduction to the clinical laboratory and clinical hematology, and the use and maintenance of current clinical hematology instrumentation. (2 lecture and 4 laboratory hours per week). *Prerequisites:* HMLT 110 and HMLT 113.

**HMLT 220. Clinical Instrumentation.** (3 credits). Study of basic principles of physics, especially electricity and the electromagnetic spectrum. The principles of clinical laboratory instruments such as colorimeters, spectrophotometers, flame emission and atomic absorption photometers, fluorometers, pH meters, blood gas analyzers, electronic cell counters and automated chemistry analyzers will be discussed as well as the operation, calibration, maintenance and troubleshooting techniques of these instruments. (2 lecture and 4 laboratory hours per week). *Prerequisite:* CHEM 111 or equivalent, HMLT 110, HMLT 111, and HMLT 211.

**HMLT 230. Immunohematology.** (4 credits). Study and practice in the use of blood cell antigens and antibodies as they apply to certain disease processes and to transfusions. Quality control and sample identification are stressed. Study of blood donor requirements; blood component preparation, storage and use; routine and diagnostic blood banking procedures to include at least ABO, rH, antibody detection and identification, elution, and crossmatch. (2 lecture and 8 laboratory hours per week). *Prerequisites:* HMLT 110, HMLT 113, HMLT 210, and HMLT 213.

**HMLT 240. MLT Practicum.** (6 credits). Forty hours of supervised work experience each week for eleven weeks in a clinical laboratory. One week of review in the classroom.

## HEALTH RESPIRATORY THERAPY TECHNOLOGY

Diane Flatland, *Department Chairperson*  
Alice Worthen

**HRTT 109. Cardiopulmonary Anatomy and Physiology.** (3 credits). Course designed to introduce the student with the anatomy and physiology of the cardiovascular and pulmonary systems. The student will also be acquainted with the terminology used in respiratory physiology. (3 lecture hours per week).

**HRTT 111. Introduction to Respiratory Therapy.** (4 credits). Introductory course designed to acquaint students with the responsibilities of the technician as a member of the health care team. Instruction and practice in basic procedures pertaining to medical gas administration, humidity and aerosol therapy, cleaning and sterilization, nursing skills and medical physics. (3 lecture hours and 2 laboratory hours per week).

**HRTT 112. Clinical Practical I.** (2 credits). Opportunity to perform and to demonstrate clinically, the knowledge gained in parallel courses. Setups, operation and troubleshooting involved with the more sophisticated equipment is also included. (16 laboratory hours per week). *Prerequisites:* HRTT 111, HRTT 114.

**HRTT 113. Clinical Practical II.** (4 credits). A continuation of Clinical Practical I. Emphasis is placed on quality and evaluation of therapy patients receive on routine and critical care. Experience in arterial blood gas puncture, analysis and interpretation. (12 laboratory hours per week). (SSI-32 laboratory hours per week). *Prerequisites:* HRTT 112, HRTT 117.

**HRTT 114. Respiratory Therapy Procedures I.** (4 credits). An in-depth study of basic respiratory therapy concepts, theories and techniques, with emphasis on IPPB therapy, airway management, suctioning, chest physical therapy, and incentive spirometry. Application of these procedures are performed in the laboratory and clinical area under supervision. (3 lecture hours and 10 laboratory hours per week).

**HRTT 115. Pediatrics.** (2 credits). Care of the pediatric patient with cardiopulmonary disease. Cardiopulmonary anatomy and physiology, fetal development and diseases are discussed. Equipment and therapeutic techniques used in treating these diseases are covered. (2 lecture hours per week). (SSII-5 lecture hours per week).

**HRTT 116. Clinical Medicine and Pulmonary Disorders.** (3 credits). Medical problems will be discussed from an etiological, symptomatic, diagnostic, therapeutic and prognostic point of view. Theories and techniques in pulmonary function testing are also discussed. Topics include obstructive and restrictive diseases, neuromuscular and CNS diseases, cardiac failure, etc. (4 lecture hours per week).

**HRTT 117. Respiratory Therapy Procedures II.** (4 credits). Designed to introduce the student to the design, function and operation of volume-cycled ventilators. Emphasis is placed on assisted and controlled ventilation and the use of special procedures (IMV, CPAP, etc.). Blood gas interpretation, including arterial blood gas sampling techniques and analysis are also discussed. (3 lecture hours and 2 laboratory hours per week). *Prerequisites:* HRTT 109, HRTT 114.

**HRTT 119. Clinical Practical III.** (6 credits). A continuation of Clinical Practical II, this course is designed to complete the basic learning experience necessary to become a safe and competent Respiratory Therapy Technician. The student rotates through specialty areas of the hospital; including Pulmonary Function, Anesthesiology, Emergency Room, Operating Room, Cardiovascular, Pathology, Pediatrics, Obstetrics, and Intensive Care Units. The student is also intro-



duced to departmental management and supervision. (12 laboratory hours per week). (SSII-32 laboratory hours per week). *Prerequisite:* HRTT 113.

**HRTT 120. Pharmacology.** (3 credits). An introduction to the study of drugs, their origin, nature, properties, classification, and effects upon the living organism. Drugs which affect the respiratory system are emphasized. (3 lecture hours per week).

**HRTT 210. Clinical Practical IV.** (3 credits). An indepth exposure to respiratory care and ventilator management with emphasis on neonatal and pediatric therapy. Case studies and follow-ups are presented. (9 laboratory hours per week). (SSII-24 laboratory hours per week).

**HRTT 211. Clinical Management and Education.** (3 credits). This course is an introduction to the managerial aspects of the Respiratory Therapy Department to include budgeting, scheduling, and staffing. It also covers inservice education, behavioral objectives, teaching and testing strategies. (3 lecture hours and 8 laboratory hours per week).

**HRTT 212. Clinical Practical V.** (2 credits). A continuation of Clinical Practical IV with the student applying all respiratory concepts related to patient care to demonstrate experience as a practicing therapist with correlation of advanced clinical and technological concepts. (16 laboratory hours per week).

**HRTT 216. Advanced Pathophysiology.** (3 credits). An indepth study of various diseases and disorders related to the cardiopulmonary system. Advanced diagnostic techniques including chest radiography are also discussed. (3 lecture hours per week). *Prerequisite:* HRTT 109, HRTT 116, or equivalent.

**HRTT 217. Advanced Intensive Care Procedures.** (3 credits). Course designed to introduce the student to the intensive monitoring involved in the critical care area. Included are Swan-Ganz catheterization, CVP lines, chest drainage, arterial lines, transcutaneous monitoring and electrocardiography. Special procedures, such as bronchoscopy and thoracentesis are discussed. (3 lecture hours per week). *Prerequisite:* HRTT 117 or equivalent.

**HRTT 218. Review and Seminar.** (1 credit). Designed to permit the student to read, review, abstract and present current articles from journals related to respiratory therapy. A structured review of the previous years' courses is included with practice on simulated written-registry examinations and clinical simulations. (2 lecture hours per week). *Prerequisites:* All previous Respiratory Therapy courses.

**HRTT 219. Speciality Rotations.** (4 credits). Designed for the student to rotate through speciality areas including pulmonary function laboratory, neonatal intensive care area, surgery and anesthesia. (12 laboratory hours per week). (SSI-32 laboratory hours per week). *Prerequisites:* All previous Respiratory Therapy courses.

## HISTORY

Arthur Daniel, *Department Chairperson*

Ida Blanchette, Tom Bryan, José Castillo, John Duke, Marvin Longshore, Bill Taliaferro

**HIST 111. Western Civilization to 1660.** (3 credits). This course presents the chief political, social, and intellectual developments of occidental civilization from the earliest human cultures to 1660, including the origins of languages, literature, governments, and economic and social practices. (3 lecture hours per week).

**HIST 112. Western Civilization Since 1660.** (3 credits). This course is a continuation of HIST 111. (3 lecture hours per week).

**\*HIST 131. History of Texas to 1865.** (3 credits). This course includes a study of the growth and development of Texas from 1500 to 1865: the Spanish colonial period, the French influence, the end of Spanish rule, the Mexican colonial period, analysis of the Revolution, the Republic era, the Statehood years, and the role of Texas in the Civil War. (3 lecture hours per week).

**\*HIST 132. History of Texas Since 1865.** (3 credits). This course analyzes cultural, social, industrial, and political developments in Texas from 1865 to the present. The course emphasizes the Reconstruction period, political history since the Civil War, and the emergence of the modern state of Texas, and it includes studies of governors and their administrations. (3 lecture hours per week).

**\*HIST 141. The United States to 1877.** (3 credits). This course explores American history from colonial origins through reconstruction, including exploration and colonization of the new world, the American Revolution, westward expansion, the Civil War, and reconstruction. (3 lecture hours per week).

**\*HIST 142. The United States Since 1877.** (3 credits). This course provides a survey of American history from 1877 to the present. Chief topics are big business, big labor, the United States as a world power, the great depression, and the cold war. (3 lecture hours per week).

\*Texas law stipulates that three hours in Texas history may be applied toward satisfying the United States history requirement.

## HORTICULTURE

### (ORNAMENTAL)

Stephen Wheeler, *Department Chairperson*  
Dwight Rhodes

**HORT 101. Principles of Horticulture.** (4 credits). This course presents the fundamental principles and practices of structure, growth, development, maintenance, and use of horticultural plants. The course outlines the commercial horticulture industry and occupational opportunities. The laboratory experience provides an introduction to growing, grounds maintenance, planting, and transplanting. (3 lecture and 2 laboratory hours per week).

**HORT 111. Plant Materials for Landscape Use.** (4 credits). This course provides a study of ornamental trees, shrubs, vines, and ground covers for landscape use with emphasis on their identification, characteristics, adaptability, use, and maintenance. Students use basic concepts and practices in preparing landscape plans. (3 lecture and 2 laboratory hours per week). *Prerequisite or corequisite:* DRFT 110.

**HORT 121. Plant Propagation.** (4 credits). This course provides the student with theoretical consideration and practical experiences in producing horticultural plants by sexual and asexual methods. It includes laboratory exercises of cutting, layering, division, growing from seeds, budding, and grafting. (3 lecture and 2 laboratory hours per week).

**HORT 131. Greenhouse Crop Production.** (4 credits). This course details greenhouse production and marketing of foliage and flowering house plants, holiday pot plants, bedding plants, and cut flowers. The course also includes a study of the construction of greenhouses and other related growing structures, including their arrangement and heating, cooling, lighting, and watering facilities. (3 lecture and 2 laboratory hours per week).

**HORT 201. Soils and Fertilizer.** (4 credits). This course includes studies of the physical and chemical properties of soils and their relationship to soil development, the relationship between crops and soils, the use of fertilizers, and soil fertility. (3 lecture and 2 laboratory hours per week).

**HORT 211. Nursery and Garden Center Management.** (4 credits). This course explores the principles and practices involved in production of field and container-grown plants, including plant growing, planting, transplanting, balling, and burlapping. The course gives an introduction to nursery and garden center management: garden center plans, the structures needed for growing and selling plants and the necessary equipment and supplies, production costs, markets, and marketing techniques. (3 lecture and 2 laboratory hours per week).

**HORT 221. Chemical Control of Weeds, Plants, Diseases, and Pests.** (4 credits). The course covers the identification, cause, and control of common weeds, plant diseases, and pests and the study of equipment for their prevention and control. (3 lecture and 2 laboratory hours per week).

**HORT 231. Turf Management.** (4 credits). This course presents principles and practices of turfgrass management for such specialized areas as athletic fields, playground areas, golf courses, and home lawns. (3 lecture and 2 laboratory hours per week).

\***HORT 240. Indoor Plants.** (4 credits). This course includes a study of the identification, planting, and placing of foliage and flowering plants suitable for indoor use. The course covers environmental conditions, care and maintenance, insects and disease, potting, and repotting. (3 lecture and 2 laboratory hours per week).

\***HORT 250. Vegetable Crops.** (4 credits). This course is a study of vegetable production, including factors that affect production of important fresh market and processing vegetables in different areas of the United States. (3 lecture and 2 laboratory hours per week).

\*Recommended related electives.

See p. 208 for TDC Horticulture courses.

## HUMANITIES

José G. Castillo, Jr., *Department Chairperson*  
Gilbert Benton, Tom Bryan, Doris Burbank, Cleo Congrady

**HUMN 101. Introduction to Humanities.** (3 credits). This course includes a study of representative examples of literature, art, and music of the classical, romantic, realistic, impressionistic, and expressionistic periods. The course stresses the interrelationship of the arts and their philosophies. (3 lecture hours per week).

**HUMN 216. American Studies.** (3 credits). This course is a multi-media interdisciplinary examination of contemporary American cultures. Using the topical and chronological approaches, the course emphasizes the relationships of history, art, music, literature, philosophy, and science in the mainstream of America's uniqueness as a nation. Major topics of study include the cross-culture exchange of ethnic groups in American life. (3 lecture hours per week).

**HUMN 217. Southwest Studies.** (3 credits). This multi-media interdisciplinary survey course increases the student's awareness of the major ethnic contributions to the development of the Southwest from earliest times to the contemporary setting. The course places special emphasis on three influential cultures of the

southwestern United States: Indian, Mexican, and Black American. (3 lecture hours per week).

**HUMN 218. Career-Oriented Foreign Languages.** (3 credits). This course provides practice in Spanish, French, or another modern language, depending on the needs of the persons engaged in community services. Students learn dialogue and vocabulary useful for policemen, corrections officers, firemen, social workers, and public health and medical personnel. Students need no prior knowledge of a foreign language. This course does not fulfill the requirements for foreign languages in the Liberal Arts program. (3 lecture hours per week).

## JOURNALISM

Bill Crider, *Department Chairperson*

**JOUR 120. Journalism Activities.** (1 credit). This course gives basic journalism training to students through experience on college publications. (2 laboratory hours per week). *Prerequisite:* instructor approval.

## MATHEMATICS

Gerald Skidmore, *Department Chairperson*  
Charles Bennett, James Boler, Don Brown, Jim Corbett, Alice Hagood

### GENERAL MATHEMATICS

**MATH 101. Fundamentals of Arithmetic.** (3 credits). This individualized course offers instruction and practice in the basic arithmetic operations. The student's program of study is based on diagnostic tests as well as on personal interviews. Students who must take MATH 102 and whose diagnostic tests indicate a need for arithmetic preparation must take this course. (3 lecture hours per week).

**MATH 102. Fundamentals of Algebra.** (3 credits). Topics included in the course are whole numbers, integers, linear equations, products, factors, fractions, exponents, radicals, and quadratic equations. The course attempts to improve the algebraic skills of the students. The student who scores below 16 in math on the ACT or performs unsatisfactorily on the ACC placement test must take MATH 102. (3 lecture hours per week).

**MATH 109. Arithmetic.** (3 credits). This individualized course offers instruction and practice in the basic arithmetic operations. The student's program of study is based on diagnostic and prescriptive tests as well as on personal interviews. Students who must take MATH 110 and whose diagnostic tests indicate a need for arithmetic preparation must take this course. (3 lecture hours and 1 laboratory hour per week).

**MATH 110. Developmental Mathematics-Algebra.** (3 credits). This course includes classroom instruction and work in the Learning Lab. The materials consist of a textbook and audio-tutorial tapes, with tutoring and peer counseling provided. Some of the topics included are whole numbers, integers, first degree equations, products, factors, fractions, exponents, radicals, and quadratic equations. The course attempts to improve the algebraic skills of the students. The student who scores below 16 in math on the ACT or performs unsatisfactorily on the ACC placement test must take MATH 110. (3 lecture hours and 1 laboratory hour per week).



**MATH 115. Intermediate Algebra.** (3 credits). Topics of this course include a review of the arithmetic operations, factoring, fractions, exponents, radicals, linear equations, quadratic equations, inequalities, and systems of equations. Students who need MATH 121 and who have had only one year of high school algebra and/or MATH 110 should take this course. If the student has not taken MATH 110, he/she must have an ACT math score greater than 15. (3 lecture hours per week). *Prerequisite:* one year of high school algebra and/or MATH 110.

**MATH 121. College Algebra.** (3 credits). This course includes a brief review of elementary algebra topics followed by a more intensive study of linear equations in one variable, relations, functions, graphs, products and factoring of polynomials, algebraic fractions, fractional equations, systems of linear equations, exponents, radicals, quadratic equations, and inequalities. (3 lecture hours per week). *Prerequisite:* 2 years of high school algebra, MATH 115, or instructor approval.

**MATH 125. Informal Geometry.** (3 credits). The major emphasis of this course is on Euclidean Geometry. Topics included are proofs, parallel lines, congruent triangles, polygons, similar triangles, circles, area, locus, and space geometry. Students who did not have plane geometry in high school and who plan to pursue a math-related curriculum which requires knowledge of geometry should take this course. (3 lecture hours per week). *Prerequisite:* MATH 121 or its equivalent.

**MATH 132. Plane Trigonometry.** (3 credits). This course covers such topics as mastery of trigonometric functions with applications, functions of acute angles, functions of obtuse and multiple angles, identities, derivation of formulas, logarithms, solution of both right triangles and obtuse triangles, practical problems involving heights and distances, graphical representation of trigonometric functions, and geometric applications. (3 lecture hours per week). *Prerequisite:* MATH 121 or its equivalent.

**MATH 150. Analytic Geometry.** (3 credits). This course details the solution of geometric problems through applied algebra by the graphical representation of points, lines, and curves and the transformation of coordinates, polar coordinates, transcendental curves, vectors, parametrics, and space formulas, with special emphasis on rapid curve sketching. (3 lecture hours per week). *Prerequisites:* MATH 121, MATH 132, or instructor approval.

**MATH 210. Statistics.** (3 credits). This course includes such topics as permutations and combinations, probability, testing hypotheses, sample theory, parameter estimation, frequency functions, and correlation and regression. (3 lecture hours per week). *Prerequisite:* MATH 121 or equivalent.

**MATH 213. Differential and Integral Calculus I.** (4 credits). Topics included in this course are inequalities, functions, limits, the derivative, differentiation of algebraic functions, the differential, and the definite integral. This course meets the needs of mathematics, engineering, and science students. (4 lecture hours per week). *Prerequisite:* MATH 150 or instructor approval.

**MATH 214. Differential and Integral Calculus II.** (4 credits). This course is a continuation of MATH 213. Topics covered include trigonometric functions, logarithmic functions, exponential functions, parametric equations, arc length, polar coordinates, formulas and methods of interpretation, applications of the integral, and solid analytic geometry. (4 lecture hours per week). *Prerequisite:* MATH 213.

**MATH 215. Calculus Applications.** (4 credits). Topics included in MATH 215 are elements of infinite series, partial derivatives with applications, multiple integration, vectors, power series, Taylor's series, gradient, and linear algebra. (4 lecture hours per week). *Prerequisite:* MATH 214.

**MATH 221. Differential Equations.** (3 credits). The course includes the following topics: equations of the first order, singular solutions, linear equations with coefficient, and miscellaneous methods of solving equations of higher order than the first, with geometric and physical applications. (3 lecture hours per week). *Prerequisite:* MATH 214.

## MATHEMATICS FOR LIBERAL ARTS MAJORS

**MATH 111. Selected Topics I.** (3 credits). Topics included in MATH 111 are number systems and calculators, formulas and ratios, personal finance, consumer mathematics, the metric system, and number sequences. MATH 111 and MATH 112 satisfy the mathematics requirements for liberal arts majors. (3 lecture hours per week).

**MATH 112. Selected Topics II.** (3 credits). Topics included in MATH 112 are probability, statistics, applications, geometry, graphs, logic, sets, and computers. MATH 111 and MATH 112 satisfy the mathematics requirements for liberal arts majors. (3 lecture hours per week).

## MATHEMATICS FOR ELEMENTARY EDUCATION MAJORS

**MATH 160. Foundations of Mathematics.** (3 credits). This course uses modern methods to develop skill and understanding in the use and meaning of sets, number symbols, operations, properties, equivalence and number relations, modular systems and bases, scientific notation, measurements, coordinate systems, equations, and various number systems. (3 lecture hours per week). *Prerequisite:* Math 121 or its equivalent.

**MATH 170. Modern Topics in Mathematics.** (3 credits). Topics include studies in modern geometry, sets, relations and functions, ratio and percent, systems of logic, statistics and graphs, probability, systems of equations, and problem-solving with practical applications. (3 lecture hours per week). *Prerequisite:* MATH 160 or instructor approval.

## MATHEMATICS FOR BUSINESS MAJORS

**MATH 180. Finite Mathematics.** (3 credits). This course includes a review of the elementary topics of algebra followed by a study of logic, sets, equations, relations, functions, linear systems, vectors, matrices, linear programming, and non-linear functions. The course meets the needs of students majoring in business and other related fields. (3 lecture hours per week). *Prerequisite:* MATH 121.

**MATH 190. Analysis.** (3 credits). This course includes a review of the real number system, relations and functions, and sequences and series, and it follows these topics with a study of the differential and integral calculus. The course meets the needs of students majoring in business management, science, quantitative analysis, or other related fields. (3 lecture hours per week). *Prerequisite:* MATH 180 or the equivalent.

## MATHEMATICS FOR TECHNICAL PROGRAMS

**MATH 151. Technical Mathematics I.** (3 credits). Topics covered in this course include a review of arithmetic and proceed through a treatment of measured data, slide rule operation, tables and interpolation, algebra, analytic geometry, and determinants. The course meets the needs of technology students. (3 lecture hours per week).

**MATH 152. Technical Mathematics II.** (3 credits). Topics covered in this course include logarithms, exponential functions, numerical trigonometry of the right triangle, and analytical trigonometry. (3 lecture hours per week). *Prerequisite:* MATH 151 or instructor approval.

**MATH 250. Advanced Technical Mathematics.** (3 credits). Topics covered in this course include vector operations, differential calculus, integral calculus, and special functions. The course meets the needs of technology students who require a deeper understanding of definitions and procedures used in mathematics. (3 lecture hours per week). *Prerequisite:* MATH 152 or instructor approval.

## MID-MANAGEMENT

Dick Brigham, *Department Chairperson*  
Kenneth Sweeney

**MMGT 111. Supervision.** (3 credits). This course will include emphasis upon behavioral aspects of supervision, up-to-date and inclusive examination of what the supervisor now does and what tools, knowledge, and skills he requires. The course has been designed for those who aspire to be supervisors as well as for those present supervisors who seek a knowledge of developing management theory to supplement and reinforce their accumulating experience. (3 lecture hours per week).

**MMGT 112. Internship.** (3 credits). The student works in a qualifying firm 20 hours per week in an occupational situation where he receives practical training and experience compatible with his management career objective. Students may receive credit from an approved full-time job.

**MMGT 121. Principles of Management.** (3 credits). An overview of organization and human behavior within the organization. Functions of management are presented such as creating, planning, organizing, motivating, communicating, and controlling. Considerable attention is given to management practices. (3 lecture hours per week).

**MMGT 122. Internship.** (3 credits). The student works in a qualifying firm 20 hours per week in an occupational situation where he receives practical training and experience compatible with his management career objective. Students may receive credit from an approved full-time job.

**MMGT 123. Small Business Organization and Management.** (3 credits). The formation and operation of the individual enterprise. Involves an analysis of problems, opportunities, and regulations important to the management of a small business with special emphasis given to financing and financial control. (3 lecture hours per week). *Prerequisite:* Consent of instructor.

**MMGT 211. Personnel Management.** (3 credits). Principles and practice of personnel management; emphasis on the procurement, development, compensation, integration, and maintenance of the labor force. (3 lecture hours per week). *Prerequisite:* MMGT 121.

**MMGT 212. Internship.** (3 credits). The student works in a qualifying firm 20 hours per week in an occupational situation where he receives practical training and experience compatible with his management career objective. Students may receive credit from an approved full-time job.

**MMGT 221. Problems in Management.** (3 credits). Extension of management principles to administrative strategy in solving problems. Case studies and simulated games are utilized in a decision-making, problem-solving environment. (3 lecture hours per week). *Prerequisite:* MMGT 111 or 121.

**MMGT 222. Internship.** (3 credits). The student works in a qualifying firm 20 hours per week in an occupational situation where he receives practical training and experience compatible with his management career objective. Student may receive credit from an approved full-time job.

## BANK MID-MANAGEMENT

**BANK 130. Principles of Bank Operations.** (3 credits). This course presents the fundamentals of bank functions in a descriptive fashion so that the beginning banker may view his/her chosen profession in a broad (and operational) perspective. The descriptive orientation is intentional. Banking is increasingly dependent upon personnel who have the broad perspective so necessary for career advancement. (3 lecture hours per week).

**BANK 140. Money and Banking.** (3 credits). This course stresses the practical aspects of money and banking and emphasizes the basic monetary theory needed by the banking student to apply his/her knowledge to his/her particular job. Historical treatment has been kept to a minimum. Emphasis is also placed on such problems as economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments, and foreign exchange, showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios. (3 lecture hours per week).

**BANK 150. Analyzing Bank Financial Statements.** (3 credits). This course organizes into two main sections: characteristics of financial statements and financial statement analysis. For students who have studied accounting, this section serves as a useful review of basic accounting principles; for students who have not studied accounting, the section provides the minimum background necessary for profitable study of financial statement analysis. (3 lecture hours per week).

**BANK 230. Marketing for Bankers.** (3 credits). This course discusses the basis of public relations, both internal and external, and seeks simply to explain the why, the what, and some of the how of public relations and marketing. It is intended as an overview for all bankers in terms of what everyone in banking should know about the essentials of bank public relations and marketing. (3 lecture hours per week).

**BANK 240. Bank Investments.** (3 credits). Because the bank's needs for primary reserves and loanable funds limit the funds available for investment, this course describes the nature of such funds and how their uses are determined. It also analyzes the primary and secondary reserve needs of commercial bank, the sources of reserves, and their random and cyclical fluctuations, showing the influence of these factors on investment policy. This analysis is followed by a study of yield changes as they affect a bank's long-term holdings. (3 lecture hours per week).

**BANK 250. Credit Administration.** (3 credits). This course, directed toward the executive level, concerns itself partly with a statement and a discussion of factors influencing and determining loan policy. Methods of credit investigation and analysis, credit techniques, specific credit problems, and regular as well as unusual types of loans are discussed. (3 lecture hours per week).

**BANK 260. Supervision and Personnel Administration.** (3 credits). This course is designed to aid first-line supervisors in making a smooth transition from expert in a particular task to the role of a supervisor who must produce results through the efforts of other people. In this role, the first-line supervisor must reflect management attitudes and carry out management policies while at the same time inspiring his/her group to achieve friendly cooperation and maximum production. It should be recognized that the same principles are involved at every level of supervision within the organization. (3 lecture hours per week).

**BANK 270. Installment Credit.** (3 credits). In this course, the techniques of installment lending are presented concisely. Emphasis is placed on establishing the credit, obtaining and checking information, servicing the loan, and collecting the amounts due. Each phase of a bank's installment credit operation should be carefully scrutinized to be certain that the most efficient methods are employed, for only through an efficient operation can a bank maximize its profits on this particular kind of credit. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. (3 lecture hours per week).

**BANK 280. Teller Training Seminars.** (3 credits): (a) Loan and Discount. This seminar teaches bank employees the essential facts about promissory notes, including calculating interest and discounting commercial paper; guaranties; general collateral agreements; examining and processing documents accompanying notes secured by stocks, bonds, and savings account passbooks, and the concept of attachment, perfection, priority, default, and foreclosure; (b) Loss Prevention. This seminar focuses on check cashing, check swindles, bank holdups, and security procedures; (c) Selling Bank Services. Teaches tellers and new-accounts personnel how to recognize and meet bank customer needs: checking accounts, saving services, loans to individuals, safe deposit boxes, travelers checks and cross selling. (3 lecture hours per week).

### PRODUCTION MID-MANAGEMENT

**PROD 230. Industrial Management.** (3 credits). Modern industrial concepts as applied to specific business situations. Course deals with automation, managerial skills, organizational trends, employee motivation, and principles of industrial relations. (3 lecture hours per week).

**PROD 240. Production Planning and Control.** (3 credits). The function of managerial planning and control are given more detailed treatment. Relationship of objective to different types of planning is presented. Attention is directed to effective control systems, human factors in controlling modern business. (3 lecture hours per week).

**PROD 250. Materials Management.** (3 credits). A study of manufacturing processes including general procedure, cutting and noncutting processes. Destructive and nondestructive testing of materials, automation, safety, product materials and production materials management will also be encountered. (3 lecture hours per week).

**PROD 260. Methods Analysis and Work Measurement.** (3 credits). Operational problems and control of production and logistics systems; application of management tools (both qualitative and quantitative) to operating systems. (3 lecture hours per week).

### REAL ESTATE MID-MANAGEMENT

**REAL 130. Principles of Real Estate.** (3 credits). A beginning course in real estate fundamentals and principles. The development of real estate in Texas. Introductory study of ownership appraisal, law, practices, financing, land and location values, transfers, trends, regulations and economic effects. (3 lecture hours per week).

**REAL 140. Real Estate Mathematics.** (3 credits). Provides both student and practitioner the means for acquiring and maintaining a sound proficiency with the mathematics of basic real estate transactions. This course will allow the student to learn how to compute the figures that underlie most real estate transactions: costs, values, income, expenses, profits, taxes and money, money variations and innovations. (3 lecture hours per week).

**REAL 220. Real Estate Practice.** (3 credits). Deals with the problems of establishing and conducting a real estate business. Includes establishing the office, securing and listing prospects, showing properties and closing sales, financing, property management, rentals and leases, appraisals, and the Texas Real Estate Act. (3 lecture hours per week). *Prerequisite:* REAL 130.

**REAL 230. Real Estate Law.** (3 credits). A study of Texas real property law. Includes the history of land titles, real property estates, including acquisition and transfer and methods and incidents of ownership, easements, fixtures, land descriptions, recording, homesteads, land contracts, mortgages, and trust deeds, liens, taxes and assessments, covenants, conditions, and restrictions, zoning ordinances, leases, brokers, and types of listing agreements, escrows, title insurance, and probate proceedings. (3 lecture hours per week). *Prerequisite:* REAL 130.

**REAL 240. Real Estate Finance.** (3 credits). Techniques of using security devices, legal aspects of mortgages and related instruments, return mortgage and equity capital, where and how best to obtain funds, procedures in financing and mathematics of real estate finance. Problems, policies, and risks involved in financing of various types of real property. (3 lecture hours per week). *Prerequisite:* REAL 130.

**REAL 250. Real Estate Brokerage.** (3 credits). The course emphasizes planning and organizing for brokerage operations, selecting and training real estate sales personnel, and managing sales activities. Treatment is given also to control systems, effective advertising practices, and "professionalism" in real estate brokerage. (3 lecture hours per week). *Prerequisite:* REAL 130.

**REAL 260. Real Estate Appraisal.** (3 credits). Methods of real estate appraisal are presented including market value, income, and cost. Emphasis is placed on case studies to provide maximum practice in appraising real estate. (3 lecture hours per week). *Prerequisite:* REAL 130.

**REAL 270. Property Management.** (3 credits). This course will provide an overview of the field and describe the major functions of property managers, including their legal, interpersonal, maintenance, accounting, administrative, and other activities. The course will also be concerned with specific practices and problems in the management of various types of property: apartment buildings, cooperatives and condominiums, office buildings, retail property, indus-

trial property, and subsidized housing. (3 lecture hours per week). *Prerequisite:* REAL 130.

**REAL 280. Residential Selling Strategies.** (3 credits). This course will help the agent establish a system of strategies by which an agent can successfully implement the selling activities identified in strategic planning. The emphasis is on the content, strategy, and timing of an agent's communications with his customers. These strategies will include listing, lawyers, negotiating and prospecting. (3 lecture hours per week). *Prerequisite:* REAL 130.

**REAL 290. Real Estate Investment.** (3 credits). This course provides a general background of information essential to successful real estate investment. Topics include investment cost, tools of analysis, property income taxation, land use, residential property, and income property investment. (3 lecture hours per week). *Prerequisite:* REAL 130.

## RETAIL MID-MANAGEMENT

**RETL 130. Principles of Retailing.** (3 credits). This course is designed to introduce the student to the essential principles of retailing, including consumer motivation, market segmentation, retail research, buying, retail pricing, inventory control, and store location. (3 lecture hours per week).

**RETL 230. Principles of Marketing.** (3 credits). This course is designed to provide treatment of the broad range of business activities that direct the flow of goods and services of businesses and individuals. Activities considered include product planning, standardization, buying, pricing, promotion, selling, credit, storage, transportation, and marketing research. (3 lecture hours per week).

**RETL 240. Advertising.** (3 credits). Advertising is considered as an integral part of the overall marketing strategy. Topics covered include marketing planning, evaluating the advertising opportunity, product development, branding, packaging, pricing, marketing research, consumer behavior, and budgeting as these relate to advertising. (3 lecture hours per week). *Prerequisite:* RETL 130.

**RETL 250. Selling and Salesmanship.** (3 credits). Attention is given to general principles of successful selling, qualification, and training programs. Role-playing techniques and media center materials complement the classroom and the text. (3 lecture hours per week). *Prerequisite:* RETL 130.

**RETL 260. Retail Merchandise Management.** (3 credits). Effective methods of merchandise control are presented including minimizing investment in inventory, guides to use in buying, pricing policies, and computing stock turnover. Merchandise budgeting techniques are also presented. (3 lecture hours per week). *Prerequisite:* RETL 130.

## MUSIC

Andy Anderson, *Department Chairperson*  
Doris Burbank, Jerry Perkins

### GENERAL MUSIC

**MUSC 105. Business of Music.** (3 credits). This course provides a guide to the real world of the music industry. Topics include careers in the recording and performing fields, retail music business, publishing, copyrights, and other legalities. Special guest lecturers are featured. (3 lecture hours per week).

**MUSC 110. Introduction to Music.** (3 credits). This course familiarizes the student with the meaning of musical notation through the study of scales, chords, and rhythm. The course meets the needs of elementary education majors and other students who wish to gain a working knowledge of music. Students who enroll in this class should also enroll in class piano. (3 lecture hours per week).

**MUSC 111. Survey of Music Literature.** (3 credits). This course is a study of instrumental and vocal music forms. It includes representative compositions from sacred and secular music. (3 lecture hours and 1 laboratory hour per week).

**MUSC 112. Survey of Music Literature.** (3 credits). This course continues the study of instrumental and vocal music forms. It includes representative compositions from sacred and secular music. (3 lecture hours and 1 laboratory hour per week).

**MUSC 113. A History of Jazz.** (1 credit). This course consists of discussion and listening experiences reflecting the development of jazz music and its impact on American culture. The course traces the music from its African roots through ragtime, blues, the big-band swing era, be-bop, cool jazz, and free jazz. (1 lecture and 2 laboratory hours per week).

**MUSC 120. Music Appreciation.** (3 credits). This general survey course provides the student with a foundation for the enjoyment and understanding of music. The course presents a study of representative composers and their works through recorded music. (3 lecture hours per week).

**MUSC 121. Ear Training and Sight-Singing.** (2 credits). This required course for music majors is the first part of a four-semester presentation of basic aural, visual, and vocal experiences in dictation and in sight-singing. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**MUSC 122. Ear Training and Sight-Singing.** (2 credits). This required course for music majors is the second part of a four-semester presentation of basic aural, visual, and vocal experiences in dictation and sight-singing. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**MUSC 223. Ear Training and Sight-Singing.** (2 credits). This required course for music majors is the third part of a four-semester presentation of basic aural, visual, and vocal experiences in dictation and sight-singing. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**MUSC 224. Ear Training and Sight-Singing.** (2 credits). This required course for music majors is the last part of a four-semester presentation of basic aural, visual, and vocal experiences in dictation and sight-singing. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**MUSC 123. Conducting.** (2 credits). This basic course for the beginning conductor introduces beat patterns, subdivisions, and practical experience in conducting vocal and instrumental groups. (2 laboratory hours per week).

**MUSC 124. Conducting.** (2 credits). This basic course for the beginning conductor continues the study of beat patterns, subdivisions, and practical experience in conducting vocal and instrumental groups. (2 laboratory hours per week).

**MUSC 131. Class Piano.** (1 credit). Class Piano, a course designed for students with little or no previous experience, provides a study of basic techniques, scales, chords, and basic repertoire. (1 lecture hour and 1 laboratory hour per week). *Prerequisite:* instructor approval.

**MUSC 131B. Brass Class.** (1 credit). This required course for music education majors with instrumental concentrations examines techniques of performing and of instructing beginning instrumentalists on trumpet, French horn, trombone, and tuba. (1 lecture and 2 laboratory hours per week).

**MUSC 131G. Guitar Class.** (1 credit). This course, designed for beginning guitar students, provides a study of basic techniques, chords, and basic repertoire. (1 lecture and 2 laboratory hours per week).

**MUSC 131P. Percussion Class.** (1 credit). This required course for music education majors with instrumental concentrations examines techniques of performing and of instructing beginning instrumentalists on snare drum, tympani, xylophone, cymbals, and other percussion instruments. (1 lecture and 2 laboratory hours per week).

**MUSC 131V. Voice Class.** (1 credit). This laboratory class, designed for students with no previous voice training, provides instruction in breathing, tone production, and diction. (1 lecture and 2 laboratory hours per week). *Prerequisite:* instructor approval.

**MUSC 131W. Woodwind Class.** (1 credit). This required course for music education majors with instrumental concentrations examines techniques of performing and of instructing beginning instrumentalists on flute, oboe, clarinet, bassoon, saxophone, and piccolo. (1 lecture and 2 laboratory hours per week).

**MUSC 132. Class Piano.** (1 credit). This Class Piano course for beginners continues the study of basic techniques, scales, chords, and basic repertoire. (1 lecture hour and 1 laboratory hour per week). *Prerequisite:* instructor approval.

**MUSC 132G. Guitar Class.** (1 credit). This course, designed for beginning guitar students, continues the study of basic techniques, chords, and basic repertoire. (1 lecture and 2 laboratory hours per week).

**MUSC 141. Music Theory.** (3 credits). This course provides a study of the fundamentals of musicianship, including scales, intervals, diatonic triads, inversions, written and keyboard harmony, and dominant seventh chords and inversions. (3 lecture hours per week).

**MUSC 142. Music Theory.** (3 credits). This course continues the study of scales, intervals, diatonic triads, inversions, written and keyboard harmony, and dominant seventh chords and inversions. (3 lecture hours per week).

**MUSC 195. Improvisation.** (2 credits). This course presents the techniques of improvising music through the analysis of melodic motives, chordal construction, and sequencing, and it applies this analysis to traditional and contemporary materials. (1 lecture and 2 laboratory hours per week).

**MUSC 243. Music Theory.** (3 credits). This course continues the study began in MUSC 141 and MUSC 142 with advanced aural and written study and with emphasis on chromatic harmony, harmonic analysis, and twentieth-century techniques. (3 lecture hours per week). *Prerequisite:* MUSC 142 or instructor approval.

**MUSC 244. Music Theory.** (3 credits). This course continues the study began in MUSC 141, MUSC 142, and MUSC 244 with advanced aural and written study and with emphasis on chromatic harmony, harmonic analysis, and twentieth-century techniques. (3 lecture hours per week). *Prerequisite:* MUSC 142 or instructor approval.

#### ENSEMBLES

**MUSC 151, 152. Concert Choir.** (1 credit each). This organization rehearses and performs traditional and contemporary choral literature. In addition to local concerts, the group participates in campus activities and makes several concert tours to other cities. In order to obtain credit, members must attend all called rehearsals and public performances. (5 laboratory rehearsal hours per week).

**MUSC 153. Opera Workshop.** (1 credit). This course provides practical experience for the singing actor in the integration of music, acting, and staging of portions of operas. (1 lecture and 3 laboratory hours per week).

**MUSC 154. Musical Theatre.** (2 credits). This course stresses the study and performance of works selected from the music theatre repertoire. (1 lecture and 4 laboratory hours per week).

**MUSC 161, 162. College Singers.** (1 credit each). This organization is limited in membership. Students are selected through auditions from the membership of the College choir. (4 laboratory rehearsal hours per week). *Prerequisite:* previous experience in choral music, a member in good standing of the concert choir, ability to sight-read, and instructor approval.

**MUSC 181, 182. Stage Band.** (1 credit each). This organization rehearses and performs contemporary jazz and rock music as well as standard big band literature. Performances include concerts and participation in area festivals. Membership is open to all College students by approval of the instructor. (4 laboratory rehearsal hours per week). *Prerequisite:* instructor approval.

**MUSC 185, 186. Concert Band.** (1 credit each). This concert group of brass, woodwind, and percussion performs traditional repertoire and contemporary works for wind ensembles. (5 laboratory rehearsal hours per week). *Prerequisite:* instructor approval.

**MUSC 191, 192. Jazz Lab.** (1 credit each). This organization performs for many special occasions on and off campus. Music includes small band jazz-rock with emphasis on individual improvisation. Membership is open to all College students by approval of the instructor. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**MUSC 253, 254. Concert Choir.** (1 credit each). This organization rehearses and performs traditional and contemporary choral literature. In addition to local concerts, the group participates in campus activities and makes several concert tours to other cities. In order to obtain credit, members must attend all called rehearsals and public performances. (5 laboratory rehearsal hours per week).

**MUSC 263, 264. College Singers.** (1 credit each). This organization is limited in membership. Students are selected through auditions from the membership of the College choir. (4 laboratory rehearsal hours per week). *Prerequisites:* previous experience in choral music, a member in good standing of the concert choir, ability to sight-read, and instructor approval.

**MUSC 283, 284. Stage Band.** (1 credit each). This organization rehearses and performs contemporary jazz and rock music as well as standard big band literature. Performances include concerts and participation in area festivals. Membership is open to all College students by approval of the instructor. (4 laboratory rehearsal hours per week). *Prerequisite:* instructor approval.

**MUSC 287, 288. Concert Band.** (1 credit each). This concert group of brass, woodwind, and percussion performs traditional repertoire and contemporary works for wind ensembles. (5 laboratory rehearsal hours per week). *Prerequisite:* instructor approval.

**MUSC 293, 294. Jazz Lab.** (1 credit each). This organization performs for many special occasions on and off campus. Music includes small band jazz-rock with emphasis on individual improvisation. Membership is open to all College students by approval of the instructor. (3 laboratory hours per week). *Prerequisite:* instructor approval.

## APPLIED MUSIC

- MUSC 115X, 115Y. Applied Music — Piano.** (2 credits each). These courses provide one hour of individual instruction a week. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 117X, 117Y. Applied Music — Piano.** (1 credit each). These courses provide one-half hour of individual instruction a week. (1/2 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 125X, 125Y. Applied Music — Voice.** (2 credits each). These courses provide one hour of individual instruction per week. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 127X, 127Y. Applied Music — Voice.** (1 credit each). These courses provide one-half hour of individual instruction a week. (1/2 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 135X, 135Y. Applied Music — Brass.** (2 credits each). These courses provide one hour of individual instruction per week in trumpet, trombone, French horn, and tuba. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 145X, 145Y. Applied Music — Woodwind.** (2 credits each). These courses provide one hour of individual instruction per week in bassoon, clarinet, flute, oboe, and saxophone. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 155X, 155Y. Applied Music — Percussion.** (2 credits each). These courses provide one hour of individual instruction a week in the use of percussion instruments. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 175X, 175Y. Applied Music — Guitar.** (2 credits each). These courses provide one hour of individual instruction a week in guitar. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 215X, 215Y. Applied Music — Piano.** (2 credits each). These courses provide one hour of individual instruction a week. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 217X, 217Y. Applied Music — Piano.** (1 credit each). These courses provide one-half hour of individual instruction a week. (1/2 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 225X, 225Y. Applied Music — Voice.** (2 credits each). These courses provide one hour of individual instruction a week. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 227X, 227Y. Applied Music — Voice.** (1 credit each). These courses provide one-half hour of individual instruction a week. (1/2 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 235X, 235Y. Applied Music — Brass.** (2 credits each). These courses provide one hour of individual instruction per week in trumpet, trombone, French horn, and tuba. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.
- MUSC 245X, 245Y. Applied Music — Woodwind.** (2 credits each). These courses provide one hour of individual instruction per week in bassoon, clarinet, flute, oboe, and saxophone. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.

**MUSC 255X, 255Y. Applied Music — Percussion.** (2 credits each). These courses provide one hour of individual instruction a week in the use of percussion instruments. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.

**MUSC 275X, 275Y. Applied Music — Guitar.** (2 credits each). These courses provide one hour of individual instruction a week in guitar. (1 lecture and 4 laboratory practice hours per week). *Prerequisite:* instructor approval.

## NURSING

Betty Oliver, *Director*

Lydia Biegert, Emeola Curvey, Sally Durand,  
Sheila Eastmade, Janet Rhorer, Dee Shields,  
Miriam Villageliu, Sharon Walters, Jean Withrow

### ADN — Associate Degree Nursing

**NURS 110. Introduction to Nursing.** (8 credits). This is the basic course in the nurse curriculum. It provides the foundation upon which the other nursing courses are built. The student is introduced to the more common deviations from wellness so that he/she develops an increased awareness of the health-illness continuum. The foundation for curriculum threads is introduced in this course and integrated throughout subsequent nursing courses. These curriculum threads are: developmental stages, interpersonal relationships, pathology, treatment modalities, nursing process, nursing skills and legal-ethical aspects of nursing. Laboratory and clinical experiences will be provided in the nursing skills laboratory and with the adult patients in health care facilities. (4 lecture and 13 laboratory hours per week). *Pre- or corequisites:* BIOL 121, PSYC 120.

**NURS 130. Psychiatric Nursing.** (4 credits). This course focuses on individuals whose behavioral patterns are considered to be deviations from the normal. These individuals are identified through their admission to a psychiatric inpatient facility. The role of the nurse in treatment modalities is stressed. Clinical experiences provide opportunities for students to interact therapeutically with patients both individually and in groups. (2 lecture and 6 clinical hours per week). *Prerequisites:* BIOL 122, PSYC 120, NURS 211, PSYC 130.

**NURS 211. Medical-Surgical Nursing I.** (9 credits). This course familiarizes the student with the more common medical and surgical conditions for which patients are hospitalized. It emphasizes the biological, psychological and social components of each patient's situation. The student will utilize the nursing process in the management of the patient with more complex problems. (4 lecture and 16 clinical hours per week). *Prerequisite:* NURS 110. *Pre- or corequisites:* BIOL 122, ENGL 121, PHED.

**NURS 212. Medical-Surgical Nursing II.** (9 credits). This course is a continuation of Medical-Surgical Nursing I. It provides a more in-depth level of learning and includes nursing practice in more complex nursing settings. Opportunities are provided for the assumption of increased responsibility in the management of nursing care. The student will synthesize and apply the knowledge and skills from nursing and science courses. (4 lecture and 16 clinical hours per week). *Prerequisite:* NURS 130. *Pre- or corequisites:* CHEM 111, BIOL 225, ENGL 122.

**NURS 213. Maternal Nursing.** (4 credits). (8 weeks). This course approaches the family at the establishment phase and includes the antepartal phase, parturition, and the post-partal phase of childbearing. It also includes the care of the newborn. Meeting the physiological and psychological needs of the family is stressed with emphasis on the normal aspects of childbearing. Deviations from normal are included with the focus on the assessment and nursing management. Experiences are provided in clinical agencies for caring for the mother and the newborn. (4 lecture and 13 laboratory hours per week). *Prerequisite:* NURS 212.

**NURS 214. Child Health Nursing.** (4 credits). (8 weeks). This course includes the care of the child from birth through adolescence. The stages of growth and development is a prerequisite course which serves as the theoretical foundation for the nursing care. Acute and chronic illnesses of children are studied with emphasis on nursing care. Clinical experiences provide the student with opportunities to care for and observe children in both the hospital and well-child settings. (4 lecture and 13 clinical hours per week). *Prerequisite:* NURS 212.

**NURS 221. Professional Development.** (2 credits). This course is designed to offer the student of nursing a better understanding of the nursing profession as it relates to the health care delivery system. The content will include historical, contemporary and future issues in nursing; legal responsibilities; professional behavior and ethics; professional organizations; opportunities and employment responsibilities in nursing; and concepts of management. (1 lecture and 2 laboratory hours per week). *Corequisite:* NURS 213/214.

## NURSING

Judy Siefert, *Department Chairperson*  
Glo Ann Cole

### VN — Vocational Nursing

**NURS 001. Personal and Vocational Adjustments.** (12 contact hours). This course introduces vocational nursing, nursing history, nursing ethics, legal aspects, personal hygiene and grooming, licensure, nursing associations, publications, and the role of the vocational nurse as a part of the health team and the health care delivery system.

**NURS 002. Microbiology.** (12 contact hours). This course introduces the student to the world of microscopic organisms with emphasis on disease prevention, disease control programs, and community resources. A brief introduction relates organisms to various communicable diseases.

**NURS 003. Anatomy and Physiology.** (70 contact hours). This is a basic course in normal body structure and function and serves as a background for nursing care principles. Independent and interdependent functioning of the body systems are included, i.e. the cell, body organization, the musculoskeletal systems, nervous, cardiovascular, respiratory, gastrointestinal, genito-urinary, and endocrine systems.

**NURS 004. Vocational Nursing Skills.** (165 contact hours). This course is designed to assist the student develop competency in nursing skills and activities. The student will receive classroom and laboratory instruction and preclinical hospital setting experience. The sequence of study will proceed from simple to complex and in the order of man's basic needs hierarchy.

**NURS 005. Nutrition.** (25 contact hours). This course is designed to provide general knowledge of nutrition in healthy and diseased states of all age groups. The student will study the importances of good nutrition, the nutritional essentials, nutrition planning, and basic diet development for individuals needing diet alteration.

**NURS 006. Pharmacology.** (70 contact hours). This course introduces pharmacology, weight systems, calculation of dosages and introduces the basic drug classification, drug uses, actions, dosages, routes of administration, side effects, precautions and nursing implications. Laboratory demonstrations of correct patient identification, medication preparation, and safety are emphasized. Minimum clinical experiences will be 1 week of Functional Medication Administration or 8 weeks Total Patient Care Assignments.

**NURS 007. Mental Health and Mental Illness.** (25 contact hours). This course defines the basic concepts of positive mental health, coping mechanisms, and the various aspects of emotional behavior due to illness and/or environmental factors. Related pharmacological and nutritional aspects of patient care are integrated. Clinical experience if available will be two weeks psychiatric nursing.

**NURS 008. Maternal Child Nursing.** (81 contact hours). This course approaches the study of the family at the established phase using the nursing process. Normal obstetrics and complications specific to the mother and the newborn are studied in the prenatal, antenatal and post-natal and/or post-partum periods. Normal growth and development of children from birth through adolescence is included. Childhood diseases and disorders, their effects upon normal growth and development, pediatric nursing care measures necessary to meet the emotional, physical, and socio-economic needs of the child are followed through the family life cycle. The minimum clinical experience will be 5 weeks obstetrical nursing, 2 weeks newborn, 3 weeks pediatric nursing.

**NURS 009. Medical-Surgical Nursing.** (140 contact hours). This course is designed to aid the student in the nursing process and in meeting the needs of the adult and geriatric patient in the hospital, or other health care agencies. The student will utilize his basic knowledge of nursing care principles, the nursing process and man's basic needs in administering care to patients with major and minor medical-surgical conditions. Principles of first-aid, pharmacology, and nutrition are included in the development of the total plan of care for each patient condition. The minimum clinical experience will be 6 weeks medical nursing and 6 weeks surgical nursing.

## ORIENTATION

Sponsored by the Counseling Center  
*Instructors:* Jerry Carrier, James Ray Couser,  
Renee Gascoigne, Bill Henry, Dale Lynn,  
Art Neumeyer, Hugo Valdes

**ORIE 101. College Orientation.** (1 credit). In addition to the two orientation days which precede each fall and spring semester, there are one-hour orientation classes scheduled at various times throughout the semester. There is a general orientation section, and there are special sections for returning students, handicapped students, foreign students, and special needs students. The student is required to fulfill sixteen hours of class time between the presemester orientation days and the one-hour class sessions scheduled throughout the semester. Throughout the semester, the student chooses from a variety of topics offered at different times to allow flexibility in scheduling. The following

topics are currently being offered: career exploration, job attainment skills, stress reduction, relaxation training leadership, motivation, time-management, assertiveness, financial aid, problem-solving, reading a college textbook, notetaking, taking examinations, self-awareness, transfer, interest and aptitude testing, and verbal communication. The course also includes information on college rules and regulations. The course is recommended for all new students and for students who have been attending the college but have not taken an orientation course.

## PHYSICAL EDUCATION

Don Childs, *Department Chairperson/Athletic Director*  
Frankie Blansit, Gary Bullion, Gary Coffman, Bonnie Mabry

### ACTIVITY COURSES

- PHED 115B. Individual and Dual Sports — Tennis.** (1 credit). This course provides instruction and participation in tennis in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115C. Individual and Dual Sports — Badminton.** (1 credit). This course provides instruction and participation in badminton in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115G. Individual and Dual Sports — Karate.** (1 credit). This course provides instruction and participation in karate in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115H. Individual and Dual Sports — Racquetball.** (1 credit). This course provides instruction and participation in racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115I. Individual and Dual Sports — Advanced Racquetball.** (1 credit). This course provides instruction and participation in advanced racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115K. Individual and Dual Sports — Scuba Diving.** (1 credit). This course provides instruction and participation in scuba diving in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115L. Individual and Dual Sports — Gymnastics.** (1 credit). This course provides instruction and participation in gymnastics in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115M. Individual and Dual Sports — Yoga.** (1 credit). This course provides instruction and participation in yoga in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).
- PHED 115N. Individual and Dual Sports — Cheerleading.** (1 credit). This course provides instruction and participation in cheerleading in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 115P. Individual and Dual Sports — Jogging.** (1 credit). This course provides instruction and participation in jogging in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week).

**PHED 115Q. Individual and Dual Sports — Fencing.** (1 credit). This course provides instruction and participation in the art of fencing in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week).

**PHED 116B. Individual and Dual Sports — Tennis.** (1 credit). This course provides instruction and participation in tennis in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116C. Individual and Dual Sports — Badminton.** (1 credit). This course provides instruction and participation in badminton in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116G. Individual and Dual Sports — Karate.** (1 credit). This course provides instruction and participation in karate in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116H. Individual and Dual Sports — Racquetball.** (1 credit). This course provides instruction and participation in racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116I. Individual and Dual Sports — Advanced Racquetball.** (1 credit). This course provides instruction and participation in advanced racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116K. Individual and Dual Sports — Scuba Diving.** (1 credit). This course provides instruction and participation in scuba diving in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116L. Individual and Dual Sports — Gymnastics.** (1 credit). This course provides instruction and participation in gymnastics in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116M. Individual and Dual Sports — Yoga.** (1 credit). This course provides instruction and participation in yoga in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116N. Individual and Dual Sports — Cheerleading.** (1 credit). This course provides instruction and participation in cheerleading in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 116P. Individual and Dual Sports — Jogging.** (1 credit). This course provides instruction and participation in jogging in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week).

**PHED 116Q. Individual and Dual Sports — Fencing.** (1 credit). This course provides instruction and participation in the art of fencing in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week).



**PHED 117. Volleyball.** (1 credit). This course consists of instruction and participation in both beginning and advanced volleyball. (3 laboratory hours per week).

**PHED 118. Volleyball.** (1 credit). This course consists of instruction and participation in both beginning and advanced volleyball. (3 laboratory hours per week).

**PHED 121. Physical Fitness and Weight Training.** (1 credit). This course includes a study of basic fundamental skills and techniques of an overload, strength, and conditioning program. (3 laboratory hours of class instruction and participation per week).

**PHED 122. Physical Fitness and Weight Training.** (1 credit). This course includes a study of basic fundamental skills and techniques of an overload, strength, and conditioning program. (3 laboratory hours of class instruction and participation per week).

**PHED 125A. Fundamentals of Movement — Aerobic Dance.** (1 credit). This course provides instruction and participation in aerobic dance, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week).

**PHED 125B. Fundamentals of Movement — Disco Country.** (1 credit). This course provides instruction and participation in disco country dance, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week).

**PHED 125C. Fundamentals of Movement — Ballet.** (1 credit). This course provides instruction and participation in ballet, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week).

**PHED 126A. Fundamentals of Movement — Aerobic Dance.** (1 credit). This course provides instruction and participation in aerobic dance, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week).

**PHED 126B. Fundamentals of Movement — Disco and Country/Western.** (1 credit). This course provides instruction and participation in disco and country/western dance, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week).

**PHED 126C. Fundamentals of Movement — Ballet.** (1 credit). This course provides instruction and participation in ballet, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week).

**PHED 137. Bowling.** (1 credit). This course meets the needs of both the beginning and the advanced bowler. After a four week instruction period, a class league forms with students receiving experience in league etiquette, procedures, scoring, etc. (3 laboratory hours of class instruction and participation per week).

**PHED 138. Bowling.** (1 credit). This course meets the needs of both the beginning and the advanced bowler. After a four week instruction period, a class league forms with students receiving experience in league etiquette, procedures, scoring, etc. (3 laboratory hours of class instruction and participation per week).

**PHED 151A. Team Sports — Flag Football and Soccer.** (1 credit). This course includes class instruction and participation in flag football and soccer. (3 laboratory hours per week).

**PHED 151B. Team Sports — Volleyball and Softball.** (1 credit). This course includes class instruction and participation in volleyball and softball. (3 laboratory hours per week).

**PHED 152A. Team Sports — Basketball and Softball.** (1 credit). This course includes class instruction and participation in basketball and softball. (3 laboratory hours per week).

**PHED 152B. Team Sports — Volleyball and Softball.** (1 credit). This course includes class instruction and participation in volleyball and softball. (3 laboratory hours per week).

**PHED 165. Aerobic Exercise.** (1 credit). This course consists of a planned program of exercise to provide a condition of fitness and figure improvement through increased cardio-vascular activity and large muscle exercise. (3 laboratory hours of class instruction and participation per week).

**PHED 166. Aerobic Exercise.** (1 credit). This course consists of a planned program of exercise to provide a condition of fitness and figure improvement through increased cardio-vascular activity and large muscle exercise. (3 laboratory hours of class instruction and participation per week).

**PHED 215B. Individual and Dual Sports — Tennis.** (1 credit). This course provides instruction and participation in tennis in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215C. Individual and Dual Sports — Badminton.** (1 credit). This course provides instruction and participation in badminton in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215G. Individual and Dual Sports — Karate.** (1 credit). This course provides instruction and participation in karate in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215H. Individual and Dual Sports — Racquetball.** (1 credit). This course provides instruction and participation in racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215I. Individual and Dual Sports — Advanced Racquetball.** (1 credit). This course provides instruction and participation in advanced racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215K. Individual and Dual Sports — Advanced Scuba Diving.** (1 credit). This course provides instruction and participation in advanced scuba diving in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 215L. Individual and Dual Sports — Gymnastics.** (1 credit). This course provides instruction and participation in gymnastics in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215M. Individual and Dual Sports — Yoga.** (1 credit). This course provides instruction and participation in yoga in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215N. Individual and Dual Sports — Cheerleading.** (1 credit). This course provides instruction and participation in cheerleading in order to develop

the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215P. Individual and Dual Sports — Jogging.** (1 credit). This course provides instruction and participation in jogging in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 215Q. Individual and Dual Sports — Fencing.** (1 credit). This course provides instruction and participation in the art of fencing in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216B. Individual and Dual Sports — Tennis.** (1 credit). This course provides instruction and participation in tennis in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216C. Individual and Dual Sports — Badminton.** (1 credit). This course provides instruction and participation in badminton in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216G. Individual and Dual Sports — Karate.** (1 credit). This course provides instruction and participation in karate in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216H. Individual and Dual Sports — Racquetball.** (1 credit). This course provides instruction and participation in racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216I. Individual and Dual Sports — Advanced Racquetball.** (1 credit). This course provides instruction and participation in advanced racquetball in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216K. Individual and Dual Sports — Advanced Scuba Diving.** (1 credit). This course provides instruction and participation in advanced scuba diving in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week).

**PHED 216L. Individual and Dual Sports — Gymnastics.** (1 credit). This course provides instruction and participation in gymnastics in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216M. Individual and Dual Sports — Yoga.** (1 credit). This course provides instruction and participation in yoga in order to develop the student's fitness, skills, knowledge, and appreciation. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216P. Individual and Dual Sports — Jogging.** (1 credit). This course provides instruction and participation in jogging in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 216Q. Individual and Dual Sports — Fencing.** (1 credit). This course provides instruction and participation in the art of fencing in order to develop the student's fitness, skills, knowledge, and appreciation of the sport. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 217. Volleyball.** (1 credit). This course consists of instruction and participation in both beginning and advanced volleyball. (3 laboratory hours per week). *Prerequisite:* sophomore standing.

**PHED 218. Volleyball.** (1 credit). This course consists of instruction and participation in both beginning and advanced volleyball. (3 laboratory hours per week). *Prerequisite:* sophomore standing.

**PHED 221. Physical Fitness and Weight Training.** (1 credit). This course includes a study of basic fundamental skills and techniques of an overload, strength, and conditioning program. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 222. Physical Fitness and Weight Training.** (1 credit). This course includes a study of basic fundamental skills and techniques of an overload, strength, and conditioning program. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 225A. Fundamentals of Movement — Aerobic Dance.** (1 credit). This course provides instruction and participation in aerobic dance, and it includes a brief study of history and philosophy of dance. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 225B. Fundamentals of Movement — Disco & Country/Western.** (1 credit). This course provides instruction and participation in disco and country/western dance, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 225C. Fundamentals of Movement — Ballet.** (1 credit). This course provides instruction and participation in ballet, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 226A. Fundamentals of Movement — Aerobic Dance.** (1 credit). This course provides instruction and participation in aerobic dance, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 226B. Fundamentals of Movement — Disco & Country/Western.** (1 credit). This course provides instruction and participation in disco and country/western dance, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 226C. Fundamentals of Movement — Ballet.** (1 credit). This course provides instruction and participation in ballet, and it includes a brief study of history and philosophy of the dance. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 237. Bowling.** (1 credit). This course meets the needs of both the beginning and the advanced bowler. After a four week instruction period, a class league forms with students receiving experience in league etiquette, procedures, scoring, etc. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 238. Bowling.** (1 credit). This course meets the needs of both the beginning and the advanced bowler. After a four week instruction period, a class league forms with students receiving experience in league etiquette, procedures, scoring, etc. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 251A. Team Sports — Football and Soccer.** (1 credit). This course includes class instruction and participation in football and soccer. (3 laboratory hours per week). *Prerequisite:* sophomore standing.

**PHED 251B. Team Sports — Volleyball and Softball.** (1 credit). This course includes class instruction and participation in volleyball and softball. (3 laboratory hours per week). *Prerequisite:* sophomore standing.

**PHED 252A. Team Sports — Volleyball and Basketball.** (1 credit). This course includes class instruction and participation in volleyball and basketball. (3 laboratory hours per week). *Prerequisite:* sophomore standing.

**PHED 252B. Team Sports — Volleyball and Softball.** (1 credit). This course includes class instruction and participation in volleyball and softball. (3 laboratory hours per week). *Prerequisite:* sophomore standing.

**PHED 265. Aerobic Exercise.** (1 credit). This course consists of a planned program of exercise to provide a condition of fitness and figure improvement through increased cardio-vascular activity and large muscle exercise. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

**PHED 266. Aerobic Exercise.** (1 credit). This course consists of a planned program of exercise to provide a condition of fitness and figure improvement through increased cardio-vascular activity and large muscle exercise. (3 laboratory hours of class instruction and participation per week). *Prerequisite:* sophomore standing.

#### VARSITY SPORTS

**PHED 131, 132. Varsity Volleyball.** (1 credit each). These courses are for advanced volleyball players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 161, 162. Varsity Tennis.** (1 credit each). These courses are for advanced tennis players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 171, 172. Varsity Baseball.** (1 credit each). These courses are for advanced baseball players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 181, 182. Varsity Basketball.** (1 credit each). These courses are for advanced basketball players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 191, 192. Varsity Golf.** (1 credit each). These courses are for advanced golf players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 231, 232. Varsity Volleyball.** (1 credit each). These courses are for advanced volleyball players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 261, 262. Varsity Tennis.** (1 credit each). These courses are for advanced tennis players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 271, 272. Varsity Baseball.** (1 credit each). These courses are for advanced baseball players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 281, 282. Varsity Basketball.** (1 credit each). These courses are for advanced basketball players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

**PHED 291, 292. Varsity Golf.** (1 credit each). These courses are for advanced golf players who are competing on the collegiate level. (3 laboratory hours per week). *Prerequisite:* instructor approval.

#### THEORY COURSES:

**PHED 110. Foundations of Physical Education.** (3 credits). Designed for professional orientation in physical education, health, and recreation, this course includes a brief history and a study of the philosophy and modern trends of physical education, teacher qualification, vocational opportunities, and skill testing. (3 lecture hours per week).

**PHED 120. Personal and Community Health.** (3 credits). This course presents the essential present-day knowledge of personal and community health. The course stresses physiological and anatomical background, showing the student how to make a sound appraisal of the effects of health practices upon the body. The course also includes discussion of pollution and prevention and control of diseases. (3 lecture hours per week).

**PHED 130A. Coaching Athletics — Basketball.** (3 credits). Students learn methods of coaching basketball through lectures, demonstrations, practice, and reading of present-day literature on the sports. (3 lecture hours per week).

**PHED 130B. Coaching Athletics — Baseball.** (3 credits). Students learn methods of coaching baseball through lectures, demonstrations, practice, and reading of present-day literature on the sports. (3 lecture hours per week).

**PHED 130C. Coaching Athletics — Football and Track.** (3 credits). Students learn methods of coaching football and track through lectures, demonstrations, practice, and reading of present-day literature on the sports. (3 lecture hours per week).

**PHED 210. First Aid.** (3 credits). This course presents the theory and practice used in the standard and advanced courses of the American Red Cross in first aid and home and farm study. (3 lecture hours per week).

**PHED 220A. Officiating — Volleyball.** (3 credits). This course teaches the rules of volleyball. It provides opportunities for experience in intramurals, practice games, and tournaments. (3 lecture hours per week).

**PHED 220B. Officiating — Football — Basketball.** (3 credits). This course teaches the rules of football and basketball. It provides opportunities for experience in intramurals, practice games, and tournaments. (3 lecture hours per week).

**PHED 230. Athletic Injuries.** (3 credits). This course in the practical and theoretical study of massage, taping, bandaging, care of sprains, bruises, strains, and wounds acquaints the student with the problems of the athletic training room, and it provides him/her with the practical instruction needed to aid in the solutions of these problems. (3 lecture hours per week).

**PHED 240. Sports Appreciation for the Spectator.** (3 credits). This is an elective course for all students who desire a broader knowledge of major and minor sports. The course includes rules, terminology, and the finer points of many sports. (3 lecture hours per week).



## PHYSICS

Dick Graef, *Department Chairperson*

- PHYS 111. Physical Science I.** (4 credits). This survey course of the physical science field presents topics from physics, chemistry, geology, astronomy, and meteorology. Experiments illustrate the philosophy and methods of science. This course meets the needs of non-science majors. (3 lecture and 2 laboratory hours per week).
- PHYS 112. Physical Science II.** (4 credits). This course continues the survey of the physical science field, and it presents topics from physics, chemistry, geology, astronomy, and meteorology. Experiments illustrate the philosophy and methods of science. This course meets the needs of non-science majors. (3 lecture and 2 laboratory hours per week).
- PHYS 121. General Physics I.** (4 credits). This introductory course includes the study of mechanics, heat, electricity, magnetism, light, and nuclear physics. (3 lecture and 3 laboratory hours per week). *Prerequisite:* MATH 110 or equivalent.
- PHYS 122. General Physics II.** (4 credits). This introductory course continues the study of mechanics, heat, electricity, magnetism, light, and nuclear physics. (3 lecture and 3 laboratory hours per week). *Prerequisites:* PHYS 121; MATH 110 or equivalent.
- PHYS 133. Technical Physics I.** (4 credits). This course includes instruction in motion, Newton's laws, sound, electricity, and magnetism. The course introduces the student to atomic structure, inorganic reactions, bonding, organic nomenclature, heat, spectra, and optical instruments. The course meets the needs of students in the technology program who need a fundamental understanding of physics and chemistry. (3 lecture and 3 laboratory hours per week). *Prerequisite:* MATH 110 or equivalent.
- PHYS 134. Technical Physics II.** (4 credits). This course continues the study of motion, Newton's laws, sound, electricity, and magnetism. The course introduces the student to atomic structure, inorganic reactions, bonding, organic nomenclature, heat, spectra, and optical instruments. The course meets the needs of students in the technology program who need a fundamental understanding of physics and chemistry. (3 lecture and 3 laboratory hours per week). *Prerequisite:* MATH 110 or equivalent.
- PHYS 141. Mechanics and Heat.** (3 credits). Topics covered in this course include vectors and vector products, equilibrium, moments of force, motion, Newton's laws, and heat. The course meets the needs of science and engineering students. (3 lecture hours per week). *Corequisite:* MATH 212 or MATH 214.
- PHYS 146. Mechanics and Heat Laboratory.** (1 credit). This laboratory course meets the needs of students taking PHYS 141. (3 laboratory hours per week). *Corequisite:* PHYS 141.
- PHYS 242. Electricity and Magnetism.** (3 credits). Designed for science and engineering students, this course provides instruction in electricity and magnetism. (3 lecture hours per week). *Prerequisite:* PHYS 141.
- PHYS 243. Wave-Motion, Sound, Light.** (3 credits). This course for students in science, engineering, and other related fields covers such topics as the nature and propagation of light, reflection interference, diffraction, lens, polarization, natural radioactivity, and nuclear energy. (3 lecture hours per week). *Prerequisite:* PHYS 242.

**PHYS 247. Electricity and Magnetism Laboratory.** (1 credit). This laboratory course meets the needs of students taking PHYS 242. (3 laboratory hours per week). *Corequisite:* PHYS 242.

**PHYS 248. Wave-Motion, Sound, Light Laboratory.** (1 credit). This laboratory course meets the needs of students taking PHYS 243. (3 laboratory hours per week). *Corequisite:* PHYS 243.

## PSYCHOLOGY

Arthur Daniel, *Department Chairperson*  
John Brannon, Nancey Lobb

**PSYC 110. Human Development.** (3 credits). This course employs the basic principles of psychology and helps the student to identify personal strengths and career interests and to develop those interpersonal skills necessary for functioning in the student's chosen field or vocation. The course identifies and builds upon the student's strengths, especially as these are related to diverse cultural and/or native language capabilities that may help assure success in the student's chosen field or vocation. (3 lecture hours per week).

**PSYC 120. General Psychology.** (3 credits). This course gives the student a broad view of the field and acquaints him/her with the fundamental laws of behavior that have to do with daily conduct in various life situations. The course covers such topics as the study of human behavior relating experimental data to practical problems, the measurement of ability, sensor and perceptive processes, organic basis of behavior, heredity, maturation, learning and thinking, motivation, emotion, personality, and social favors in behavior. (3 lecture hours per week).

**PSYC 130. Child Growth and Development.** (3 credits). This course includes a study of the physical and psychological development of the child from conception to adolescence, with emphasis on factors which influence growth and development. The course helps the individual develop skills in observing and interpreting children's behavior. (3 lecture hours per week).

**PSYC 230. Adolescent Psychology.** (3 credits). This course provides a survey of adolescent development, including physical, intellectual, social, and emotional factors. The course focuses on the problems of adjustment and typical manifestations of anti-social behavior during adolescence. (3 lecture hours per week).

**PSYC 240. Statistical Methods in Psychology.** (3 credits). This course explores such topics as measures of central tendency and variability, statistical inference, and correlation and regression. (3 lecture hours per week). *Prerequisite:* PSYC 120.

**PSYC 260. Human Development: Biofeedback Training.** (3 credits). This course provides the student with some simple skills in self-control through the use of biofeedback equipment. It provides a means for learning appropriate responses to stress and for improving the individual's self-concept. (2 lecture and 2 laboratory hours per week).

## READING

Lynda Vern, *Department Chairperson*  
Dickie Fox

**NOTE:** Basic reading skills are taught in RDNG 101, 102, 109, and 110. These courses benefit students needing additional preparation for college-level work and those desiring only to improve their reading ability.

Students who (1) score below 16 in Social Science on the ACT or (2) perform unsatisfactorily on the ACC placement test must take either one or two basic reading courses, depending on test results. Basic reading courses are strongly recommended for all students with ACT Social Science scores below 18.

**RDNG 101. Reading Fundamentals I.** (3 credits). Students learn basic reading skills through phonetic and structural analysis and techniques of comprehension. (3 lecture hours per week).

**RDNG 102. Reading Fundamentals II.** (3 credits). This course features exercises designed to improve the reading skills necessary for college-level work. Various study skills are also taught. (3 lecture hours per week).

**RDNG 109. Developmental Reading I.** (3 credits). To improve basic reading abilities, this course teaches phonetic and structural analysis skills that enable the student to "decode" unfamiliar words and thus become an independent reader. Techniques of comprehension are also stressed. (3 lecture hours and 1 laboratory hour per week).

**RDNG 110. Developmental Reading II.** (3 credits). Through improvement of reading comprehension and speed, vocabulary, and study skills, this course prepares the student to deal more successfully with the study materials required in many college courses. (3 lecture hours and 1 laboratory hour per week).

**RDNG 115. Speed Reading.** (3 credits). This transferable course for the average or advanced reader focuses on reading comprehension and speed, vocabulary development, and study skills. (3 lecture hours per week). *Prerequisite:* RDNG 110 or a satisfactory placement test score.

## RADIO AND TELEVISION REPAIR

See p. 209 for TDC Radio and Television Repair courses.

## SECRETARIAL SCIENCE

Dorothy Hitt, *Department Chairperson*  
Crystal Brittingham, Pearl Rinderknecht

**SECT 111, 112. Shorthand I, II.** (3 credits each). Aims at mastery of the principles of Gregg shorthand with drills in the correct formation of work outlines and phrase forms; the study of word signs, phrasing, dictation, transcription, and speed building. (3 lecture and 2 laboratory hours per week).

**SECT 121, 122. Typewriting I, II.** (3 credits each). The typewriting keyboard and skills essential to obtain employment in an office occupation. Correct typing techniques and practice in production problems such as centering, letters, manuscripts, simple tabulations, and forms. Both courses are structured for individualized learning. (2 lecture and 3 laboratory hours per week).

**SECT 130. Business Communications.** (3 credits). A study of the use of correct and forceful English and the application of positive qualities in writing business letters and reports. (3 lecture hours per week).

**SECT 140. Secretarial Practice.** (3 credits). A study of secretarial occupations and secretarial duties in the business office including handling of mail, filing, personality and human relations, and office routine. (3 lecture and 2 laboratory hours per week). *Prerequisite:* SECT 112.

**SECT 141. Medical Secretarial Practice.** (3 credits). A study of the duties of a medical secretary with actual practice given in all phases. Special attention is given to vocabulary, receptionist's duties, filing, typing, and accounting. (3 lecture and 2 laboratory hours per week).

**SECT 142. Medical Terminology.** (3 credits). Study of human anatomy, skeletal structure, systems of the body, and medical specialities, coupled with lectures, study guides, tests and exercises designed to insure knowledge of the components in building medical vocabulary and application thereof. (4 lecture hours and 1 laboratory hour per week).

**SECT 143. Legal Secretarial Practice.** (3 credits). A study of the duties of legal secretary. Special attention is given to vocabulary, legal typing, court documents, filing, accounting, and machine transcription. (3 lecture and 2 laboratory hours per week).

**SECT 144. Legal Terminology.** (3 credits). Course objectives are to insure comprehension of meanings and applications of legal terminology, while instructing in the various fields of law encountered in the practice of the course reporter. Emphasis is placed on the judicial system, types of courts, jurisdictions, and appellate procedures. Course also includes researching of legal reference books and handling of citations in the record. (4 lecture hours and 1 laboratory hour per week).

**SECT 150. Office Machines.** (3 credits). Application of basic arithmetic skills (percentages, interests, discounts, depreciation, payroll, etc.) to the operation of small business machines such as the electronic calculator. The course is designed to develop sufficient speed and accuracy skill for office use. The course includes an introduction to the machine transcriber and the IBM Electronic 50 typewriter. (2 lecture and 3 laboratory hours per week).

**SECT 160. Office Accounting.** (3 credits). Procedures and techniques used in recording business transactions and preparing financial statements. Course adapted to the needs of those training for secretarial positions. (2 lecture hours and 1 laboratory hour per week).

**SECT 210. Shorthand III.** (3 credits). Improvement of shorthand speed and office efficiency through practice. Further emphasis is given to widening vocabulary. Accurate transcription is stressed. (3 lecture and 2 laboratory hours per week). *Prerequisite:* SECT 112.

**SECT 212. Secretarial Internship.** (3 credits). The student works in a qualifying firm 20 hours per week in an occupational situation where he receives practical training and experience compatible with his management career objective. Students may receive credit from an approved full-time job.

**SECT 220. Typewriting III.** (3 credits). This advanced typing course places emphasis on production typing with additional training given in letter writing, tabulation, and creation of office atmosphere. (2 lecture and 3 laboratory hours per week). *Prerequisite:* SECT 122.

**SECT 222. Secretarial Internship.** (3 credits). The student works in a qualifying firm 20 hours per week in an occupational situation where he receives practical training and experience compatible with his management career objective. Students may receive credit from an approved full-time job.

**SECT 230. Records Management.** (3 credits). A study of basic filing procedures and records control, providing instruction in the fundamentals that are essential to the managing of the records of a business. (2 lecture and 2 laboratory hours per week).

**SECT 250. Word Processing.** (3 credits). Office simulation of business typing, transcribing, and production work utilizing equipment currently found in word processing centers. Develops concept of word processing in business for both the administrative secretary and the corresponding secretary. Includes a review of grammar, punctuation, and vocabulary, as well as training in decision making. (2 lecture and 3 laboratory hours per week). *Prerequisite:* SECT 122 or equivalent.

**SECT 260. Word Processing Applications.** (3 credits). A further study of word processing concepts with "hands on" applications involving students in advanced keyboarding skills, text editing skills, and information processing skills. (2 lecture hours and 3 laboratory hours per week). *Prerequisite:* SECT 250.

## SOCIOLOGY

Arthur Daniel, *Department Chairperson*  
John Brannon, Mike Eernisse

**SOCI 110. Marriage and Family Relationships.** (3 credits). A contemporary study of the freedom and growth potential of the individual in marriage and family life, this course explores the many parameters of the marital and parental relationships, and it places emphasis on raising current questions with comprehensive examination of the values and goals of the individual as well as the institution of the family. (3 lecture hours per week).

**SOCI 111. Principles of Sociology.** (3 credits). This course presents a scientific examination of the organization of human social life, the unique forms and social order of group life, and the products of group living. The course places special emphasis on social interaction patterns and the processes and institutions developed by man to facilitate his progress. (3 lecture hours per week).

**SOCI 122. Social Problems.** (3 credits). This course includes the scientific examination of conditions that are disruptive to society today, those seen as problematic for society as a whole, and those that represent violations of the norms of special groups in society: population, poverty, social minorities, mass society, delinquency, crime, drugs, sexual deviance, and disorganization of family, education, and religion. (3 lecture hours per week).

**SOCI 230. Introduction to Anthropology.** (3 credits). Following principles of physical and cultural anthropology, this course analyzes the cultures of prehistoric and existing preliterate people and the impact of modern western culture on preliterate societies. (3 lecture hours per week). *Prerequisite:* SOCI 111.

## SPANISH

José G. Castillo, Jr., *Department Chairperson*

- SPAN 101. Conversational Spanish I.** (3 credits). The primary purpose of this course is to give the student an opportunity to develop an accurate oral use of the language, based on a sound understanding of structure. Reading will be incidental to the oral objective. (3 lecture hours per week). *Prerequisite:* instructor approval.
- SPAN 111. Elementary Spanish I.** (4 credits). While this course is definitely aimed toward proficiency in everyday conversational Spanish, it gives the student the necessary background in pronunciation, acquisition of vocabulary, grammatical construction, and formation of sentences. (3 lecture and 2 laboratory hours per week).
- SPAN 112. Elementary Spanish II.** (4 credits). This course is a continuation of the oral practice of SPAN 111 with some stress placed on reading and composition. (3 lecture and 2 laboratory hours per week).
- SPAN 121. Intermediate Spanish I.** (3 credits). This course includes the more complex grammatical points. The course includes a review of pronunciation and aural/oral drills, and it emphasizes proper usage of grammar, both written and oral. Students read classical and contemporary literature of moderate difficulty to further cultural appreciation and to gain a better understanding of international affairs. (3 lecture hours and 1 laboratory hour per week). *Prerequisite:* SPAN 112 or instructor approval.
- SPAN 122. Intermediate Spanish II.** (3 credits). This course is a continuation of the study introduced in SPAN 121, and it emphasizes fluent usage of oral and written Spanish. (3 lecture hours and 1 laboratory hour per week). *Prerequisite:* SPAN 112 or instructor approval.
- SPAN 211. Advanced Conversation and Composition.** (3 credits). This course furthers the student's study and use of Spanish after the fourth semester of college study in the language. (3 lecture hours per week). *Prerequisite:* instructor approval.
- SPAN 212. Advanced Conversation and Composition.** (3 credits). This course is a continuation of SPAN 211. (3 lecture hours per week). *Prerequisite:* instructor approval.

## SPEECH

C. Jay Burton, *Department Chairperson*  
Bill Waggoner

- SPCH 105. Interpersonal Communication.** (3 credits). This course presents theory, examples, and participation in exercises in order to improve effective one-to-one and small group communication. (3 lecture hours per week).
- SPCH 110. Fundamentals of Speech.** (3 credits). This course consists of the study of the importance of speech as an aid in social adjustment; the improvement of articulation and pronunciation; the study of the use of bodily activity and its relation to effective speaking; vocabulary development; the study of the general ends of speech; and preparation toward the achieving of these ends. (3 lecture hours per week).
- SPCH 120. Public Speaking.** (3 credits). This course concentrates on the methods of organization and the techniques of delivery of the platform speech, with emphasis on explanation and persuasion. The course includes a study of

group methods of problem solving and parliamentary procedures. (3 lecture hours per week). *Prerequisite:* SPCH 110 or instructor approval.

**SPCH 130. Oral Interpretation.** (3 credits). This course presents the study of platform interpretation of literature. The course emphasizes improvement in voice, pronunciation, and enunciation for interpreting lyric poetry, narrative prose and poetry, the descriptive essay, the monologue, and dramatic scenes. This course is particularly recommended for English and elementary majors. (3 lecture hours per week). *Prerequisite:* SPCH 110.

**SPCH 140. Business Speech.** (3 credits). This course provides studies of the techniques of technical reporting (speeches to instruct, speeches of special reporting), of special situational speeches, of techniques of problem-solving through public discussion (panel discussion, symposium, etc.), and of the techniques of parliamentary law for purposes of learning to preside at various meetings. The course also gives interview experience. (3 lecture hours per week).

## WELDING

Bruce Westmoreland, *Department Chairperson*  
Gary Church, Lemuel Bruner

**WELD 110. Welding Processes.** (4 credits). Theory and practice in techniques of oxy-acetylene welding and cutting. Layout and preparation of commonly used joints. Servicing and regulation of oxy-acetylene equipment and basic shop practice. Basic welding machine theory and set up procedures of electronic arc welding machine. (2 lecture and 6 laboratory hours per week).

**WELD 121. Arc Welding (Plate I).** (4 credits). Metal cutting with oxygen and acetylene equipment. Theory of plate welding. Plate welding in three positions: flat, vertical up, and horizontal. (2 lecture and 6 laboratory hours per week).

**WELD 122. Arc Welding (Plate II).** (4 credits). Advanced theory of plate welding. Plate welding in five positions: flat, vertical up, horizontal, vertical down, and overhead. Root and Face Bend tests for qualifications of plate welders. Advanced theory and troubleshooting procedures for electronic arc welding machines. (2 lecture and 6 laboratory hours per week). *Prerequisite:* WELD 121 or approval of department chairperson.

**WELD 131. Basic MIG and TIG.** (4 credits). Theory of Tungsten Inert Gas Welding and Metallic Inert Gas Welding. Laboratory experiences in gas shielded arc welding. (2 lecture and 6 laboratory hours per week). *Prerequisite:* WELD 121 or approval of department chairperson.

**WELD 160. Shop Equipment and Safety.** (2 credits). An introductory course in safety to be used while in the shop or on the job. Shop and job safety will be taught and carried out at all times. (1 lecture and 2 laboratory hours per week).

**WELD 231. Advanced MIG and TIG.** (4 credits). Advanced theory of Tungsten Inert Gas Welding and Metallic Inert Gas Welding. Advanced laboratory experiences in gas shielded arc welding. (2 lecture and 6 laboratory hours per week). *Corequisite:* WELD 131 or approval of department chairperson.

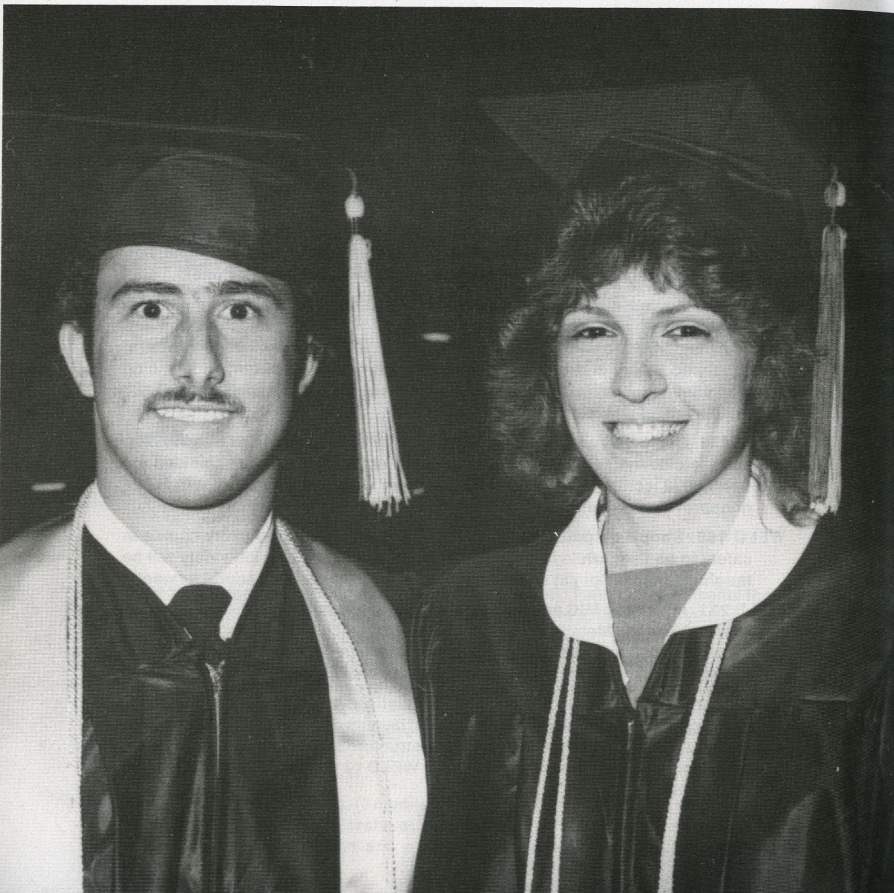
**WELD 241. Basic Layout Design and Fabrication.** (3 credits). Introduction to design and construction of various types of layouts according to specifications. Related welding experiences involved in structure fabrication. (1 lecture and 4 laboratory hours per week). *Prerequisite:* WELD 121 or approval of department chairperson.

**WELD 242. Advanced Layout Design and Fabrication.** (3 credits). Advanced design and construction of various types of layouts according to specifications. Related welding experiences involved in structure fabrication. (1 lecture and 4 laboratory hours per week). *Prerequisite:* WELD 241 or approval of department chairperson.

**WELD 251. Pipe Welding I.** (4 credits). Theory of pipe welding. Cutting and beveling pipe with oxygen and acetylene equipment. Pipe welding in two positions: Rolling and horizontal. (2 lecture and 6 laboratory hours per week). *Prerequisite:* WELD 122 or approval of department chairperson.

**WELD 252. Pipe Welding II.** (4 credits). Advanced theory of pipe welding. Pipe welding in four positions: Rolling, horizontal, downhill, and overhead. Code test under Section IX, A. W. S. (2 lecture and 6 laboratory hours per week). *Prerequisite:* WELD 251 or approval of department chairperson.

See p. 209 for TDC Welding courses.



## TEXAS DEPARTMENT OF CORRECTIONS PROGRAMS

### \*AIR CONDITIONING AND REFRIGERATION

Alec Huffman, *Department Chairperson*  
Charles Dolney

**ACRH 111. Principles of Refrigeration.** (4 credits). A study of heat concepts, the refrigeration cycle, system component parts design, constructions, and operational characteristics. Lab work: Operating and testing refrigeration units. (3 lecture and 7 laboratory hours per week).

**ACRH 120. Electrical Controls for Refrigeration.** (4 credits). Electric motor theory, motor controls, temperature controls; service and maintenance techniques. Lab work: Troubleshooting refrigerating equipment. (3 lecture and 7 laboratory hours per week).

**ACRH 123. Principles of Air Conditioning.** (4 credits). Basic principles of heating and comfort cooling, including psychometrics of air, load calculations, and performance characteristics of cooling and heating equipment. Lab work: Installing, testing, and checking operation of air conditioning equipment. (3 lecture and 7 laboratory hours per week).

**ACRH 124. Heat and Air Conditioning.** (4 credits). Theory and practice of installing, operating, and testing heating equipment to include heating elements, heat pumps, gas, steam and hot water heating system. Cost estimating procedures and problems. (3 lecture and 7 laboratory hours per week). *Prerequisite:* ACRH 123.

**ACRH 125. Air Conditioning Controls.** (4 credits). A detailed study of electrical and pneumatic controls and circuits. Testing controls and procedures of analyzing troubles in control circuits. (3 lecture and 7 laboratory hours per week). *Prerequisite:* ACRH 123.

### \*AUTOMOBILE MECHANICS

Bruce Westmoreland, *Department Chairperson*  
Charles Graham, Guy Powell, Hasso Schroder

**AUTO 110. Basic Automotive.** (4 credits). The course will acquaint the student with service trade information, use and care of shop equipment and tools, standard transmission, brakes, clutches, rear axle, drive line principles, and a limited application of automotive shop practice. (3 lecture and 6 laboratory hours per week).

**AUTO 120. Internal Combustion Engine.** (4 credits). An introduction to the gasoline internal combustion engine. Technique and skill in inspection, repairing and overhauling of engine components, valve timing, use of special tools and equipment. (3 lecture and 6 laboratory hours per week).

**AUTO 130. Automotive Electricity and Ignition System.** (4 credits). An introduction into the fundamentals of electricity as applied to the automotive vehicle. Classroom theory and laboratory practices of magnetic principles of electricity, functions of the diode and transistor, the storage battery, D.C. and A.C. charging systems, generators and alternators, and complete wiring systems. (3 lecture and 6 laboratory hours per week).



**AUTO 140. Carburetion and Fuel Systems.** (4 credits). A study of fuels and their applications, requirements, and effect on carburetion. Students will disassemble, clean, overhaul, reassemble, and adjust various types of carburetors. (3 lecture and 6 laboratory hours per week).

**AUTO 150. Automotive and Truck Chassis.** (4 credits). A study of designs, construction, and frame alignment fundamentals of the vehicle chassis. Classroom theory and laboratory practices will include front end alignment, shock absorbers, springs steering mechanism, wheel balancing, and power steering. (3 lecture and 6 laboratory hours per week).

#### \*DRAFTING

Ben Daw, *Department Chairperson*  
Larry Huffman

**DRFT 112. Technical Drafting.** (4 credits). The principles of technical drawing as required to express ideas graphically are introduced. Topics include: use of instruments, geometric construction, orthographic projection, sections, auxiliary views, revolutions, dimensioning, axonometric projection, intersections and developments. (3 lecture and 6 laboratory hours per week).

**DRFT 213. Pipe Drafting.** (4 credits). A basic course designed for the study of engineering standards, pipe and fitting designs, symbols and specifications. (3 lecture and 6 laboratory hours per week).

**DRFT 223. Structural Drafting.** (4 credits). A course designed to cover AISC specifications and standards, design and detail, or structural members and connections. (3 lecture and 6 laboratory hours per week).

**DRFT 233. Electrical Drafting.** (4 credits). An introduction to electrical schematics and diagrams. Also covers basic electricity and study of electrical and electronic symbols, their application and associated terminology. (3 lecture and 6 laboratory hours per week).

**DRFT 243. Architectural Drafting.** (4 credits). Basic drafting techniques as related to the preparation of residential details, with emphasis on floor plans, plot plans, foundations, structural details, sections and elevations. (3 lecture and 6 laboratory hours per week).

#### \*HORTICULTURE (ORNAMENTAL)

Steve Wheeler, *Department Chairperson*  
Dwight Rhodes

**HORT 102. Principles of Horticulture.** (4 credits). This course presents fundamental principles and practices of structure, growth, development, maintenance, and use of horticultural plants. The course outlines the commercial horticulture industry and occupational opportunities. The laboratory experience provides an introduction to growing, grounds maintenance, planting, transplanting, and plant maintenance. (3 lecture and 6 laboratory hours per week).

**HORT 112. Plant Materials for Landscape Use.** (4 credits). This course provides a study of ornamental trees, shrubs, vines, and ground covers for landscape use, and it emphasizes their identification, characteristics, adaptability, use, and maintenance. Students use basic concepts and practices in preparing landscape plans. (3 lecture and 6 laboratory hours per week).

**HORT 122. Plant Propagation.** (4 credits). This course provides the student with theoretical consideration and practical experiences in producing horticultural plants by sexual and asexual methods. It includes laboratory exercises in cutting, layering, division, growing from seeds, budding, and grafting. (3 lecture and 6 laboratory hours per week).

**HORT 222. Chemical Control of Weeds, Plants, Diseases, and Pests.** (4 credits). This course covers the identification, cause, and control of common weeds, plant diseases, and pests, and it includes a study of equipment for their prevention and control. (3 lecture and 6 laboratory hours per week).

**HORT 251. Vegetable Crops.** (4 credits). This course is a study of vegetable production, and it includes factors that affect production of important fresh market and processing vegetables in different areas of the United States. (3 lecture and 6 laboratory hours per week).

#### \*RADIO AND TELEVISION REPAIR

Buddy Brogdon, Lew Garrett

**RATV 110. Basic Radio Receivers.** (4 credits). An introduction to radio receivers and radio circuitry. Prepares the student for radio servicing and is the basic foundation for further study in television servicing of black and white, color and industrial closed circuit as well as home receivers. (3 lecture and 7 laboratory hours per week).

**RATV 120. Basic Television Receivers.** (4 credits). Study of television circuits as applied to the black and white home and industrial closed circuit receivers. Servicing experiments in lab will be done on actual lab TV receivers using up-to-date equipment and schematics. The use of the VTVM and the scope is emphasized. (3 lecture and 7 laboratory hours per week).

**RATV 220. Basic Color Television.** (4 credits). The study of color television circuits as they are applied to the modern receiver. The student will study color, mixing both additive and subtractive methods, requirement of the composite color signal, makeup of the color picture tube, convergence, and troubleshooting procedures. All lab experiments are performed on live color receivers, using up-to-date equipment and schematics. (3 lecture and 7 laboratory hours per week). *Prerequisite:* RATV 120 or equivalent.

**RATV 230. Advanced Service Techniques.** (4 credits). A course of study designed for the technician who is familiar with television circuitry and wants to progress to advance servicing techniques. Includes visual alignment and overall response analysis. (3 lecture and 7 laboratory hours per week). *Corequisite:* RATV 120 or equivalent.

**RATV 260. Communications I.** (4 credits). Theory and application of electronics from basic through transmitters and antennas. Lab includes application, operating and testing of communication equipment. (3 lecture and 7 laboratory hours per week).

#### \*WELDING

Bruce Westmoreland, *Department Chairperson*  
Gary Church, Lemuel Bruner

**WELD 111. Welding Processes and Safety.** (4 credits). Theory and practice in techniques of oxy-acetylene welding and cutting. Layout and preparation of commonly used joints. Servicing and regulation of oxy-acetylene equipment

and basic shop practice. Basic welding machine theory and set up procedures of electrical arc welding machine. This course will also include an introduction to shop and job safety. (3 lecture and 6 laboratory hours per week).

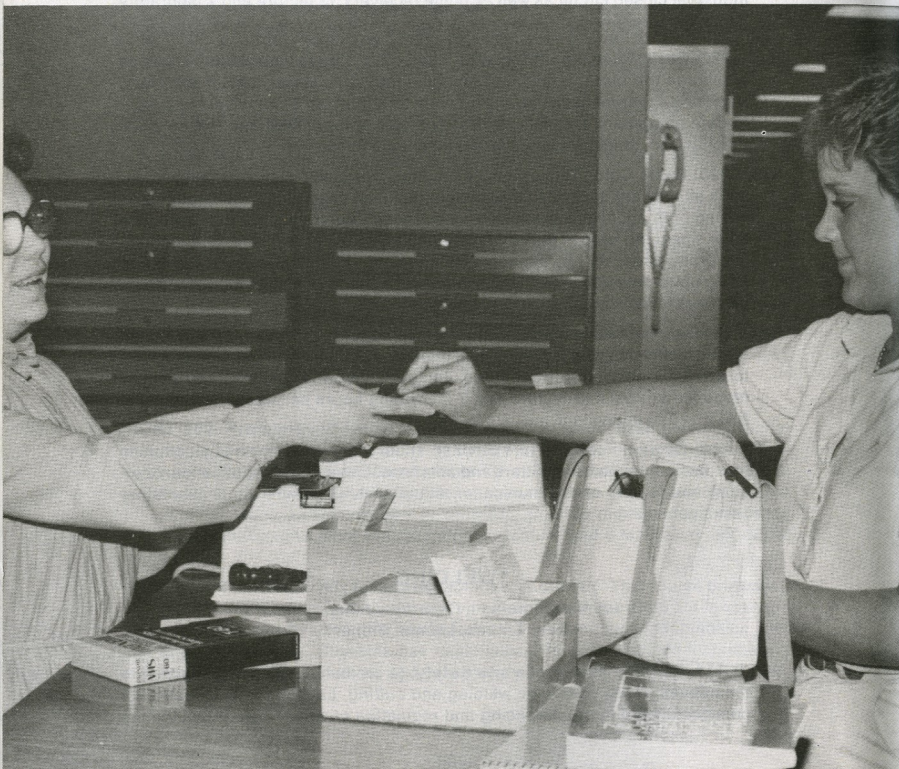
**WELD 120. Arc Welding (Plate I).** (4 credits). Metal cutting with oxygen and acetylene equipment. Theory of plate welding. Plate welding in three positions: flat, vertical up, and horizontal. (3 lecture and 6 laboratory hours per week).

**WELD 123. Arc Welding (Plate II).** (4 credits). Advanced theory of plate welding. Plate welding in five positions: flat, vertical up, horizontal, vertical down, and overhead. Root and Face Bend tests for qualifications of plate welders. Advanced theory and troubleshooting procedures for electronic arc welding machines. (3 lecture and 6 laboratory hours per week).

**WELD 253. Pipe Welding I.** (4 credits). Theory of pipe welding. Cutting and beveling pipe with oxygen and acetylene equipment. Pipe welding in two positions: Rolling and horizontal. (3 lecture and 6 laboratory hours per week).

**WELD 254. Pipe Welding II.** (4 credits). Advance theory of pipe welding. Pipe welding in four positions will be studied: Rolling, horizontal, downhill, and overhead. (3 lecture and 6 laboratory hours per week).

\*Courses offered only at the Texas Department of Corrections.



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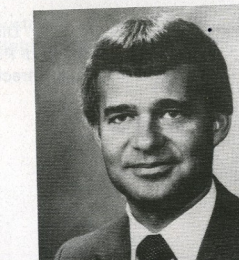
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**William McDaniel, M.D.**



**Doyle Swindell**



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M.Ed., University of Houston

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 M.S., University of Houston at Clear Lake City

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 M.A., Texas Christian University

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 R.T., Kettering College of Medical Arts  
 M.S., University of Houston at Clear Lake City

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 M.S., University of Houston at Clear Lake City

Clemence R. Graef ..... Instructor of Physics  
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 M.S., Southwest Texas State University

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 Technology

Alice Hagood ..... Instructor of Mathematics  
 B.A., University of Texas

Bill Henry ..... Instructor of Physical Education  
 Director, Student Financial  
 Aid & Placement  
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Patty Hertenberger ..... Instructor/Coordinator  
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 M.Ed., Sam Houston State University

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 M.Ed., University of Houston at Clear Lake City

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 M.S., University of Houston

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 Librarian  
 B.S., Purdue University  
 M.S., Michigan State University  
 M.A.L.S., University of Michigan  
 Ph.D., Michigan State University

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 Refrigeration/Heating  
 Department Chairperson, Air Conditioning  
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Larry Huffman ..... Instructor of Drafting

Joe Jackson ..... Instructor of Court Reporting  
 B.A., Texas Tech University

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 M.A., Southwest Texas State University

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 B.S., Rider College

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 Assistant for Administrative Affairs  
 B.S., Union University  
 M.S., Texas Tech University

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 B.A., University of Texas  
 M.A., University of Texas

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 B.S., Texas A&I University  
 M.S., Texas A&I University

Dale Lynn ..... Counselor  
 B.A., Fairfield University  
 M.A., Columbia University Teachers College  
 M.Ed., Columbia University Teachers College

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 Volleyball Coach  
 B.S., University of Houston

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 B.S., Oklahoma University  
 M.A., Oklahoma University

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 Associate Dean of University Parallel Programs  
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 M.Ed., East Texas State University  
 M.A., University of Illinois

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 Department Chairperson of Criminal Justice  
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 M.A., Sam Houston State University

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 M.A., Sam Houston State University

Arthur D. Neumeyer ..... TDC Counselor/Coordinator  
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 M.A., University of Houston

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 Diploma-McMahon College

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 ADN Director  
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 M.S., Texas Woman's University

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 M.A., Purdue University

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Band Director  
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B.M.Ed., Sam Houston State University  
M.A., Sam Houston State University

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Dean of Instruction, Student &  
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M.S., Texas Tech University

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Department Chairperson, Medical Laboratory Technology  
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M.S., Louisiana State University  
M.T., Charity Hospital at New Orleans School of Medical Technology

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B.S., Stephen F. Austin College  
M.S., Stephen F. Austin University  
Ph.D., Texas A&M University

Guy Powell ..... Instructor of Auto Mechanics

Jim Preston ..... Instructor of Court Reporting  
Certificate, Alvin Community College

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B.B.A., Southwestern University

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B.S., University of Houston  
M.Ed., Sam Houston State University  
M.S., East Texas State University

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B.S., University of Houston at Clear Lake City

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Timothy J. Reynolds ..... Instructor of Economics  
B.A., University of Texas  
M.A., University of Texas

Dwight Rhodes ..... Instructor of Horticulture  
B.S., University of Arkansas  
M.S., University of Arkansas

Janet H. Rhorer ..... Instructor of ADN  
B.S.N., University of New Mexico  
M.S.N., Texas Woman's University

Robert N. Richarz ..... Director of Physical Plant

Pearl Marie Rinderknecht ..... Instructor of Secretarial Science  
B.B.A., University of Texas  
M.Ed., University of Houston

John Roberson ..... Environmental Systems Supervisor

Julia Roberts ..... Instructor of GED/ABE  
B.S., University of Houston  
M.Ed., Sam Houston State College

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Administrative Services  
B.A., Trinity University  
M.B.A., Syracuse University  
Ph.D., University of Texas at Austin

William Barry Russell ..... Instructor of Computer Science  
B.A., Texas A & M College  
M.C.S., Texas A & M University

Hasso Schroder ..... Instructor of Auto Technology

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Department Chairperson, Art  
B.A., University of Tulsa  
M.A., University of Tulsa

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B.S., Dominican College  
M.Ed., Texas Southern University

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Department Chairperson, Vocational Nursing  
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M.S., Texas Woman's University

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B.S., Sam Houston State University  
M.A., Sam Houston State University  
Ed.D., University of Houston

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Assistant Director Continuing Education  
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B.A., University of Corpus Christi  
B.D., Southwestern Baptist Theological Seminary  
M.A., North Texas State University

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B.A., Grinnell College  
M.S., Cornell University  
Ph.D., Cornell University

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Reporting  
Diploma-McMahon College

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B.B.A., University of Texas at Austin  
M.B.A., University of Texas at Austin

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B.A., Wichita State University  
M.S., Wichita State University

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 B.A., University of Florida  
 M.S., Florida State University  
 Ed.D., University of Houston

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 M.A., Central Michigan University  
 M.T., Hermann Hospital School of Medical Technology  
 M.S., University of Houston at Clear Lake City

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 M.A., Sam Houston State University

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 Ed.D., University of Houston

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 M.S., Texas Woman's University

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 M.A., Eastern Illinois University  
 Ph.D., St. Louis University

Sharon Walters ..... Instructor of Associate Degree Nursing  
 B.S.N., University of Evansville  
 M.S.N., University of Texas

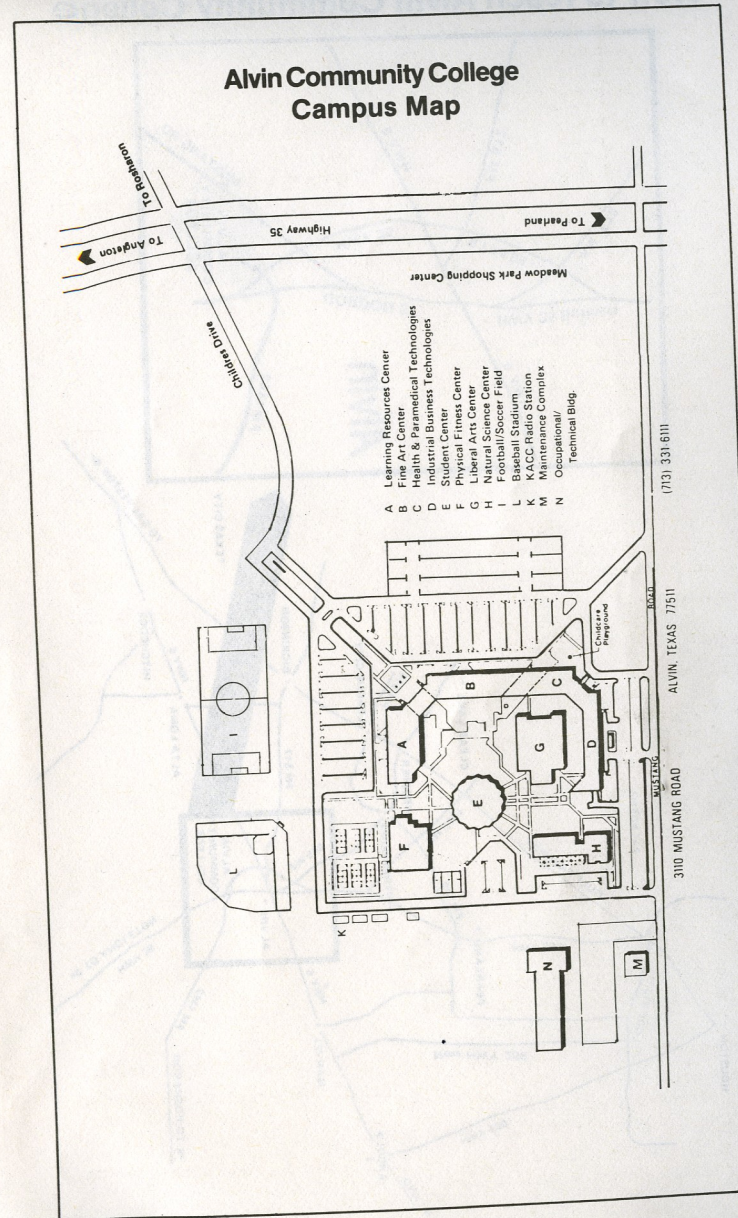
Bruce E. Westmoreland ..... Instructor of Welding  
 Department Chairperson, Welding  
 B.A., Sam Houston State University

Stephen Wheeler ..... Instructor of Biology  
 Department Chairperson, Biology,  
 Horticulture & Agriculture  
 B.S., Stephen F. Austin State College  
 M.S., Stephen F. Austin State College  
 Ph.D., Texas A&M University

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Marilyn Withrow ..... Instructor of Associate Degree Nursing  
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 M.A., University of Houston at Clear Lake

Alice G. Worthen ..... Instructor of Respiratory Therapy  
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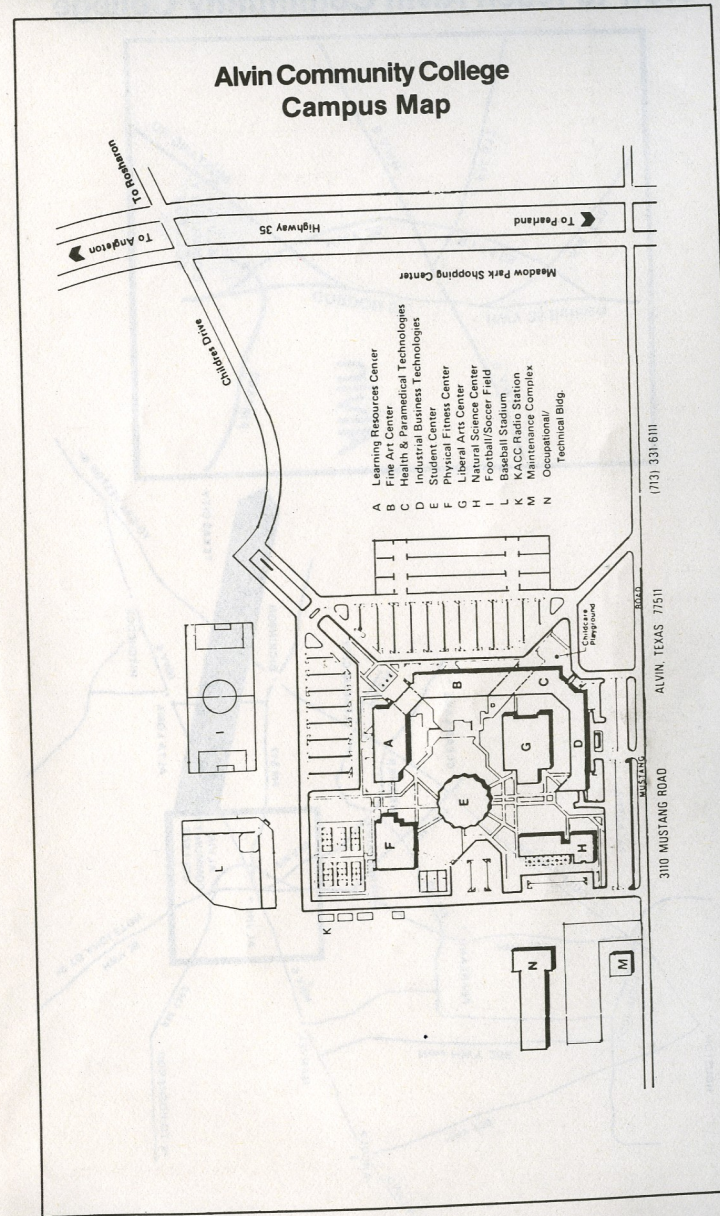
B.S., Stephen F. Austin State College  
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## Alvin Community College Campus Map



# How to reach Alvin Community College

