

COURSE LISTING

Auto Body and Repair (ABDR)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

ABDR 1203 Vehicle Design and Structural Analysis

This course provides an introduction to the collision repair industry with emphasis on safety, professionalism, and vehicle structural design. Lec 1, Lab 3, Cr 2

ABDR 1315 Vehicle Trim and Hardware

Vehicle trim and glass service are studied in this course while utilizing tools and procedures for servicing interior and exterior trim and glass with emphasis on shop safety practices. Lec 2, Lab 2, Cr 3

ABDR 1327 Suspension Systems

This course is a basic study of steering components and suspension systems, related tools and equipment, and individual system components while emphasizing diagnostic service on chassis, front suspension, and manual power steering systems. Lec 2, Lab 5, Cr 3

ABDR 1331 Basic Refinishing

An introduction to terms, trade practices, hand tools, current refinishing products, shop safety, automotive refinishing equipment, and painting of trim and replacement parts are covered in this course. Lec 2, Lab 4, Cr 3

ABDR 1349 Automotive Plastic and Sheet Molded Compound Repair

This is a comprehensive course in repair of interior and exterior plastics including the use of various types of adhesives and plastic welding. Lec 2, Lab 3, Cr 3

ABDR 1419 Basic Metal Repair

Students learn metal principles and perform basic metal repair procedures and techniques while complying with personal and environmental safety practices. Lec 2, Lab 4, Cr 4

ABDR 1441 Structural Analysis and Damage Repair I

Skills development in automotive sheet metal procedures necessary to make satisfactory minor body repairs doors, hood, front-end assemblies and deck lids are emphasized in this course. Lec 2, Lab 6, Cr 4.

ABDR 1442 Structural Analysis and Damage Repair II

This course covers continuation of skill development in general repair and replacement procedures for damaged structural parts and collision damaged. Lec 2, Lab 5, Cr 4

ABDR 1455 Minor Metal Repair

Minor Metal Repair covers sheet metal alignment principles using mechanical and hydraulic equipment while emphasizing attachment devices used to straighten and align exterior body panels. Lec 2, Lab 5, Cr 4

ABDR 1458 Intermediate Refinishing

Expanded training in mixing and spraying of automotive topcoats are skills covered. Emphasis will be placed on formula ingredient, reducing, thinning, and special spraying techniques while introducing partial panel refinishing techniques and current industry paint removal techniques. Lec 2, Lab 5, Cr 4.

ABDR 1542 Structural Analysis and Damage Repair II

Continuation of general repair and replacement procedures for damaged structural parts and collision damaged. Lec 3, Lab 6, Cr 5. Prerequisite: Departmental approval.

ABDR 2345 Vehicle Safety Systems

Theory and operation of air bags and other passive restraint systems including automotives anti-lock systems and diagnostic methods used in the collision repair industry are covered in this course. Lec 2, Lab 5, Cr 3

ABDR 2353 Color Analysis and Paint Matching

This is an advanced course in color theory, color analysis, tinting, and advanced blending techniques for acceptable paint matching. Lec 3, Cr 3.

ABDR 2355 Collision Repair and Estimating

This is an advanced course in collision estimating and development of an accurate damage report. Lec 3, Cr 3.

ABDR 2357 Collision Repair Shop Management

Methods and equipment used in collision repair shops to improve management functions and profitability will be studied in this course. Lec 3, Cr 3

ABDR 2388 Internship- Auto Body Collision and Repair

This course is a work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Lec 192, Cr 3

ABDR 2389 Internship

This course is the second of the sequence of work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Lec 192, Cr 3

ABDR 2402 Mechanical and Electrical Service

Topics covered are the mechanical and electrical repair, replacement, and service of collision damaged systems including drive train, cooling, exhaust, and emission control systems. Lec 2, Lab 6, Cr 4.

ABDR 2441 Major Collision Repair and Panel Replacement

This course covers instruction in preparation of vehicles for major repair processes. Lec 2, Lab 4, Cr 4.

ABDR 2449 Advanced Refinishing

Skill development in multi-stage refinishing including base coat/clear coat techniques. Further development in identification of problems and solutions in color matching and partial panel. Lec 3, Lab 2, Cr 4

ABDR 2451 Specialized Refinishing Techniques

This course covers advanced topics in specialty automotive refinishing, such as refinishing interior plastics, fiberglass, and aluminum and galvanized panels as well as custom graphics and current industry innovations. Lec 2, Lab 5, Cr 4.

Applied Business Technology (ABUS)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

ABUS 3312 Administrative Office Management

This course relates to the study of administrative office management, the management of human resources and administrative services, the implementation of electronic office systems, and the controlling of administrative services. Case studies and projects are used to develop decision-making and supervisory skills necessary for organization and administration in the business office. Lec 3, Cr 3. Prerequisite: Satisfaction of general requirements in English.

ABUS 3335 Organizational Communications

A systems approach to information processing, the practical and psychological aspects of formal and informal communication in organizations. Stress inter-and intra-personal communication related to various corporate cultures. Intercultural differences in various communication scenarios are also studied. Lec 3, Cr 3. Prerequisite: ENGL 1301 and ENGL 1302 with "C" or better.

Accounting (ACCT)

Business Administration Department/School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

ACCT 2301 Principles of Accounting I

Financial accounting applies to sole proprietorships, partnerships, and corporations. Financial accounting systems and accounting for equity rights are also covered. BBA degrees require that this course be passed with a C or better. Lec 3, Cr 3. Prerequisite: MATH 1314 and sophomore standing.

ACCT 2302 Principles of Accounting II

Managerial accounting includes systems, budgeting, and financial analysis quantitative techniques. Accounting for departments and branches and price level change as they affect decision-making are also covered. BBA degrees require that this course be passed with C or better. Lec 3, Cr 3. Prerequisite: ACCT 2301 with "C" or better.

ACCT 3321 Intermediate Accounting I

The accounting process and financial statements, present value concepts, a detailed study of current assets and current liabilities, property, plant and equipment, intangible assets. Lec 3, Cr 3 Prerequisite: ACCT 2302 with "C" or better; admission to upper division.

ACCT 3322 Intermediate Accounting II

The continuing study of Intermediate Accounting I, long term liabilities, long term investments, capital structure and earnings per share, pension costs, leases, statement of charges in financial position. Lec 3, Cr 3 Prerequisite: ACCT 3321 with "C" or better; admission to upper division.

ACCT 3323 Income Tax Procedure

Analysis of federal tax laws, with emphasis on determining net taxable income and preparing income tax returns for individuals. Lec 3, Cr 3. Prerequisite: ACCT 2301 with "C" or better; admission to upper division.

ACCT 3324 Cost Management

Basic cost accounting concepts and techniques, with an emphasis on providing information for management decision-making. Topics include job and process costing, cost-volume-profit analysis, budgeting, standard costs and variance analysis, direct costing, cost behavior and relevant costs. Lec 3, Cr 3 Prerequisite: ACCT 2302 with "C" or better; admission to upper division.

ACCT 3325 Governmental and Not-For-Profit Accounting

The special features of fund accounting as applied to not-for-profit entities, municipalities, school districts and other governmental units. Lec 3, Cr 3. Prerequisite: ACCT 2301 with "C" or better; admission to upper division.

ACCT 3351 Information Systems in Organizations

This course addresses issues associated with the expanding role of information systems and accounting information systems in organizations, including their development and use, strategic impact, and international implications. Lec 3, Cr 3. Prerequisite: ACCT 2302 with "C" or better; admission to upper division.

ACCT 4320 Advanced Accounting I

Selected topics including accounting for income taxes, price level changes, foreign operations, estates and trusts, corporate reorganizations and liquidations and nonprofit organizations. Lec 3, Cr 3. Prerequisite: ACCT 3322 with "C" or better; admission to upper division.

ACCT 4321 Advanced Accounting II

Theory and techniques of consolidated financial statements. Accounting for partnerships and branches and branch operations. Lec 3, Cr 3. Prerequisite: ACCT 3322 with "C" or better; admission to upper division.

ACCT 4323 Contemporary Accounting Theory

Contemporary advanced accounting and auditing theory, including controversial issues, with emphasis on income determination and asset valuation particular attention is given to current publications of professional and governmental agencies. Lec 3, Cr 3 Prerequisite: ACCT 3322 and ACCT 4324 with "C" or better; or concurrent enrollment; admission to upper division.

ACCT 4324 Auditing I

A survey of auditing standards and procedures applied by public accountants and internal auditors in examining financial statements and verifying underlying data. Includes elements of operational auditing. Lec 3, Cr 3. Prerequisite: ACCT 3322 with "C" or better; admission to upper division.

ACCT 4325 Taxation of Capital Assets

The course will address tax treatment of active and passive business losses, determination of basis, recognition of gains and losses, treatment of capital and Section 1231 assets, recapture of depreciation, and alternative minimum tax and tax credits. Prerequisite: ACCT 3323 with "C" or better; admission to upper division.

ACCT 4327 Advanced Managerial Accounting

Advanced cost and managerial concepts. Effects on internal reporting. Topics include evolution and development of cost accounting, cost allocations and other topics of current interest. Prerequisite: ACCT 2302 with "C" or better; admission to upper division.

ACCT 4328 Seminar in Auditing

Examination of auditing philosophy and contemporary auditing issues. Study of auditing research including the behavioral aspects of auditing. Prerequisite: Admission to upper division.

ACCT 4329 Corporation and Partnership Tax

Analysis of tax laws applicable to partnerships and corporations. Federal gift, estate and inheritance taxes may also be covered. Lec 3, Cr 3 Prerequisite: ACCT 3323 with "C" or better; admission to upper division.

ACCT 4331 Accounting Report Writing

An applied communication/ report-writing course for accounting majors using current reporting standards. Emphasis on data accumulation, documentation, drafting and communication of the different types of opinion letters, management letters, representation letters, compilation reports, internal control reports, interim reports, reports to the S.E.C., proper notes to financial statements, written communication with other professional accountants, and special reports. Lec 3, Cr 3. Prerequisite: Admission to upper division and ACCT 4324 with "C" or better.

ACCT 4345 Accounting Internship

Supervised full-time or part-time, off campus training in public accounting, industry, or government. Oral and written required. Students must apply to program and be accepted prior to registration. May not be repeated for credit. Prerequisite: Admission to upper division. Accounting Major only. Senior standing with 3.0 minimum accumulated GPA in upper division accounting courses.

ACCT 4351 Fraud Examination

An examination of various aspects of fraud prevention and detection including: elements of fraud, types of fraud involving accounting information, economic impact of fraud, use of controls to detect and prevent fraud, and fraud examination methods. Limited use of case analysis. Lec 3, Cr 3. Prerequisite: ACCT 4324 with "C" or better; admission to upper division.

Accounting Technology (ACNT)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

ACNT 1311 Introduction to Computerized Accounting

This course includes an introduction to utilizing the computer in maintaining accounting records, making management decisions, and processing common business applications with primary emphasis on a general ledger package. Lec 3, Cr 3. Prerequisite: ACNT 1404 or ACCT 2301.

ACNT 1313 Computerized Accounting Applications

The computer is used to develop and maintain accounting record keeping systems, make management decisions, and process common business applications with emphasis on utilizing a spreadsheet and/or data base package/program. Lec 3, Cr 3. Prerequisite: ACNT 1403 and ITSW 1304 with "C" or better.

ACNT 1329 Payroll and Business Tax Accounting

This course includes the study of payroll procedures, taxing entities, and reporting requirements of local, state, and federal taxing authorities in a manual and computerized environment. Lec 3, Cr 3. Prerequisite: ACNT 1403 or ACCT 2401.

ACNT 1331 Federal Income Tax: Individual

This course includes the study of the laws currently implements by the IRS. Students will gain a working knowledge of preparing taxes for the individual. Lec 3, Cr 3. Prerequisite: ACNT 1403 or ACCT 2401.

ACNT 1403 Introduction to Accounting I

In this course, students will analyze, classify, and record business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations, and payroll. Lec 4, Cr 4.

ACNT 1404 Introduction to Accounting II

This course includes the study of accounting for merchandising, notes payable, notes receivable, valuation of receivables and equipment, valuation of inventories in a manual and computerized environment. Lec 4, Cr 4. Prerequisite: ACNT 1403 with "C" or better.

ACNT 2302 Accounting Capstone

This capstone course provides a learning experience that allows students to apply a broad knowledge of the accounting profession through discipline specific projects involving the integration of individuals and teams performing activities to simulate workplace situations. A grade of C or better is required for graduation. Lec 3, Cr 3. Prerequisite: Approval of Coop Coordinator or department chair.

ACNT 2380 Coop Education- Accounting

This course offers career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Lec 1, Lab 20, Cr 3. Prerequisite: Approval of Coop Coordinator or department chair.

Anthropology (ANTH)

Behavioral Sciences Department/College of Liberal Arts • 882-8225 • Dr. Virginia V. Wood, Chair • MRCS 293 • E-mail: virginia.v.wood@utb.edu URL:<http://unix.utb.edu/~cla/behsci.html>

ANTH 2301 Physical Anthropology

Human evolution, race, heredity, the organic basis of culture history through Paleolithic period. Lec 3, Cr 3

ANTH 2351 Cultural Anthropology

Key concepts, methods and theory in the study of cultural diversity, social institutions, linguistics of culture change among world peoples. Lec 3, Cr 3

ANTH 3301 Cultures & Communities of Latin America

This class examines contemporary communities in Latin American with special emphasis on Mexico and Guatemala. The class is designed to integrate theory and case studies to provide the student an overview of regional socio-cultural processes. Lec 3, Cr 3.

ANTH 3335 Anthropological Theory

This course examines anthropological theory. The course provides critical analysis of the epistemological foundations of anthropological thinking and surveys major theoretical orientations. Lec 3, Cr 3. Prerequisite: ANTH 2351.

ANTH 3374 Religion in Society

This course surveys both classical and newer approaches to the social scientific study of religion. The course is designed to give students in the social sciences a thorough understanding of the leading approaches to religion. Lec 3, Cr 3.

ANTH 3375 Mexican American Folklore

A survey of general introductory topics in folklore as applied to the Hispanic American population of the American Southwest and Northern Mexico. Topics include myth, tale, folk medicine, song, dance, as well as discussion of the Material culture. Lec 3, Cr 3

ANTH 4353 Ritual, Belief, and Healing

An examination of how ritual and belief systems create alternative healing systems with a focus on the U.S. Mexico border and curanderismo. Lec 3, Cr 3.

ANTH 4369 Archeology of Mexico and Central America

A survey of the major archeological sites and the theories concerning the pre-Columbian societies of Meso-America. Lec 3, Cr 3.

ANTH 4383 Independent Study

This course provides students with an opportunity to engage in study of anthropological subjects that may not otherwise be available in regular course offerings. Lec 3, Cr 3. Prerequisite: Permission of instructor.

Arabic (ARAB)

Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL:<http://blue.utb.edu/mlang/>

ARAB 1311 Elementary Arabic I

This course is a study of fundamental skills in listening comprehension, speaking, reading, and writing. It includes basic vocabulary, grammatical structures, and culture. Lec 3, Cr 3.

ARAB 1312 Elementary Arabic II

This course is the second of two basic courses in the Arabic language. It is a continuation of the study of fundamental skills in listening comprehension, speaking, reading, and writing, including basic vocabulary, grammatical structures, and culture. Lec 3, Cr 3. Prerequisite: ARAB 1311.

Drafting (ARCE, DFTG, MBST, SRVY)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

ARCE 1191 Special Topics in Architecture

Course topic address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lec 1, Cr 1. Prerequisite: Departmental approval.

ARCE 1352 Structural Detailing

Topics include a study of structural systems including concrete foundations and frames, wood framing and trusses, and structural steel framing systems. Includes detailing of concrete, wood, and steel to meet industry standards including the AISC and the ACI. Lec 2, Lab 3, Cr 3. Prerequisite: DFTG 1405, DFTG 1409, and DFTG 2440.

Arts (ARTS)

Fine Arts Department/College of Liberal Arts • 882-8247 • Dr. Sue Zanne Urbis, Chair • E-107A • E-mail: sue.z.urbis@utb.edu URL: <http://blue.utb.edu/finearts>

ARTS 1301 Art Appreciation

An introduction to creative art, relationship of line, mass, color, texture. A survey of the history and philosophy of art and architecture in the Western World. Lec 3, Cr 3.

ARTS 1303 Art History Survey I

Art History Survey I is a survey of painting, sculpture, architecture, and the minor arts from prehistoric times to the 14th century. Lec 3, Cr 3.

ARTS 1304 Art History Survey II

Art History Survey II is a survey of painting, sculpture, architecture, and minor arts from the 14th century to the present. Lec 3, Cr 3. Prerequisite: ARTS 1303

ARTS 1311 Two Dimensional Design

Principles of design and development of design structure on two dimensional surfaces. Lec 3, Lab 3, Cr 3.

ARTS 1312 Three Dimensional Design

This course investigates the art elements and principles of design applied to three dimensional surfaces. Lec 3, Lab 3, Cr 3.

ARTS 1316 Drawing I

The investigation of drawing media and techniques, including descriptive and expressive possibilities. Lec 2, Lab 4, Ind 3, Cr 3.

ARTS 1317 Drawing II

Drawing II is a continuation of Drawing I with an emphasis on forms of expression that represent the human figure. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1311 and ARTS 1316.

ARTS 2233 Drawing III

A continuation of Drawing II, but with an even greater emphasis on the human figure. Lec 2, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1317.

ARTS 2313 Computer Imaging I

Computer Imaging I is an introductory studio art course that explores the potential of computer hardware and software as a medium for visual, conceptual and practical uses in the visual arts. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1301 or ARTS 1311.

ARTS 2314 Computer Imaging II

This course is a continuation of Computer Imaging I, but with a greater emphasis on the creation of fine art digital manipulation and computer graphics. Lec 3, Cr 3. Prerequisite: ARTS 2313.

ARTS 2316 Painting I

Painting I is a studio course that explores ideas using painting media and techniques. Lec 3, Cr 3. Prerequisite: ARTS 1311 and ARTS 1316.

ARTS 2317 Painting II

Painting II is a continuation of Painting I with an emphasis on special problems determined by the student in cooperation with the instructor. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1311, ARTS 1316, and ARTS 2316.

ARTS 2326 Sculpture I

This course investigates the use of materials such as clay, stone, wood and plaster to create three dimensional sculptures. Lec 2, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1312.

ARTS 2327 Sculpture II

Sculpture II is a continuation of Sculpture I, but with a greater emphasis on aiding the student in solving individual problems using sculpture media and techniques. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1312 and ARTS 2326.

ARTS 2333 Printmaking I

Printmaking I is a studio art class which explores visual expression and ideas using printmaking processes. Lec 3, Cr 3. Prerequisite: ARTS 1311 and ARTS 1316.

ARTS 2334 Printmaking II

Printmaking II is a continuation of Printmaking I. Students will explore a variety of printmaking processes. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1311, ARTS 1316, and ARTS 2333.

ARTS 2346 Ceramics I

This course investigates the basic ceramic processes of hand building, throwing, glazing, and the firing of clay. Lec 2, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1312.

ARTS 2347 Ceramics II

Ceramics II is a continuation of Ceramics I with an emphasis on glaze formulation. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1312 and ARTS 2346.

ARTS 2356 Photography I

Study of fundamental lighting, posing, camera techniques, composition, processing and printing relating to all shooting with special emphasis on portraits and still life. Lec 2, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1311.

ARTS 2357 Photography II

Photography II is a continuation of Photography I with an emphasis on extending the students' knowledge of techniques and guides them in developing personal outlooks toward specific applications of the photographic process. Lec 3, Cr 3. Prerequisite: ARTS 1311 and ARTS 2356.

ARTS 3303 Italian Renaissance 1400-1650

This course will study the major artists of the Italian Renaissance and will focus on the development of NeoClassicism and NeoPlatonism. Lec 3, Cr 3. Prerequisite: ARTS 1303 and ARTS 1304.

ARTS 3314 Individual Problems

Individual problems is a studio art class which allows the student to work on advanced individual projects to be completed under faculty supervision on a one-to-one basis. This course may be taken for a total of 12 hours of credit. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: Permission of Department Chair.

ARTS 3321 Advanced Painting

Advanced Painting is a studio art class where students undertake advanced problems in painting. This course may be taken four times for a total of 12 hours of credit. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 2316 and ARTS 2317.

ARTS 3323 Advanced Drawing

Advanced Drawing is an upper division studio art class in which students will investigate advanced studio problems in drawing. This course may be taken four times for a total of 12 hours of credit. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1316 and ARTS 1317.

ARTS 3326 Advanced Sculpture

Advanced Sculpture is a continuation of Sculpture II but with an even greater emphasis on aiding the student in solving individual problems. This course may be taken 4 times for a total of 12 hours of credit. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 1312, ARTS 2326, and ARTS 2327.

ARTS 3338 Fundamentals of Creative and Critical Thinking in Art

The course offers discussion in synectics, philosophy, and analytical thinking. A topology of creative behavior development is presented along with spatial exercises. Lec 3, Cr 3. Prerequisite: Junior Standing

ARTS 3340 History of Women in Art

The course History of Women in Art is a thematic and chronological survey of women artists, using gender theories to analyze issues concerning visual representation. Lec 3, Cr 3. Prerequisite: ARTS 1303 and ARTS 1304 or ARTS 1301

ARTS 3352 Contemporary Art History

Art history from 19th century in Europe and America to the present. Development and growth of today's arts and aesthetics. Lec 3, Cr 3. Prerequisite: ARTS 1303 and ARTS 1304.

ARTS 3371 Advanced Ceramics

Advanced Ceramics investigates the advanced studio problems in the ceramics process. This course may be taken four times for a total of 12 hours credit. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 2346 and ARTS 2347.

ARTS 3381 Art Education: Theory and Background

Students will be introduced to key figures and theories within the field and their relationship to significant developments within the art world. This course will provide students with a theoretical base for art at all levels. Lec 3, Cr 3. Prerequisite: ARTS 1311, ARTS 1312, ARTS 1316, ART S 1317, ARTS 1303 and ARTS 1304.

ARTS 3382 19th Century European Art

European painting, sculpture and architecture as social and political events ranging from the French Revolution to 1900. This art history course covers the development of the neoclassicism, romanticism, social realism, impressionism and post impressionism and their international impact. Lec 3, Cr 3. Prerequisite: ARTS 1303 and ARTS 1304.

ARTS 3383 Art Education: Issues & Practice

The current issues and practices related to the art classroom are covered. Lec 3, Cr 3. Prerequisite: ARTS 1303, ARTS 1304, ARTS 1311, ARTS 1312, ARTS 1316, and ARTS 1317.

ARTS 3384 Art Education: Classroom Strategies

Students will learn various approaches for the art classroom with an overview of the various art concepts currently in practice, their ideologies, and important strengths and weaknesses. Lec 3, Cr 3. Prerequisite: ARTS 3381, ARTS 1311, ARTS 1312, ARTS 1316, ARTS 1317, ARTS 1303, and ARTS 1304.

ARTS 4301 Senior Experience in Art

Senior Experience is a capstone course for art majors. It is designed to make connections of the various elements of the arts degree program. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: Approval by instructor.

ARTS 4331 Advanced Computer Imaging

Advanced Computer Imaging is a studio arts course that explores advanced techniques in the uses of the computer as an artistic and graphic medium. This course may be taken four times for a total of 12 hours of credit. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 2313 and ARTSU 2314.

ARTS 4334 Advanced Printmaking

This course consists of advanced studio problems in printmaking. This course may be taken four times for a total of 12 credit hours. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 2333 and ARTS 2334

ARTS 4337 Internship in Art Studio

Internship in Art Studio provides opportunities for students in applied learning related to visual art through local business, government, industry, or institutional organizations. Students will work under faculty direction with periodic and final written reports and a supporting portfolio. May be taken four times for a total of 12 hours of credit. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: Approval by instructor.

ARTS 4353 American Art History

History of visual arts in the United States from the 17th century to the present, including the art of the Native Americans. Lec 3, Cr 3. Prerequisite: ARTS 1303 and ARTS 1304.

ARTS 4354 Latin American Art and Architecture

Major monuments of Latin-American art and architecture in the New World, 16th century to the present. Emphasizes post-Conquest mixtures of European and Indigenous styles during the colonial period and major developments in modern Latin American art since independence. Lec 3, Cr 3. Prerequisite: ARTS 1303 and ARTS 1304.

ARTS 4359 Advanced Photography

This course consists of advanced studio problems in photography. This course may be taken four times for a total of 12 credits. Lec 3, Lab 4, Ind 3, Cr 3. Prerequisite: ARTS 2356 and ARTS 2357

ARTS 4387 Far East Art History

This course explores the art and architecture of India, Japan, and China from ancient times to the early 19th century. It explores the different cultures by analyzing the impact of Brahmanism, Confucianism and Taoism in buildings, paintings, sculptures and tapestries of the Far East. Lec 3, Cr 3. Prerequisite: ARTS 1303 and ARTS 1304.

ARTS 4390 Topics in Arts History

This course is an in-depth study of specific arts historical topics that go beyond the current course offerings. The topics may vary. The course may be repeated when topic vary for the total of 6 credit hours. Lec 3, Cr 3. Prerequisite: ARTS 1301 or ARTS 1304.

ARTS 4391 Studio Art General

Advanced problems in art of the students' choice and/or internship with an art professional in the field of interest. This course may be taken four times for a total of 12 hours credit. Lec 2, Lab 4, Ind 3, Cr 3. Prerequisite: Upper division standing.

ARTS 4393 Senior Exhibit

This course requires an art exhibition and a written thesis from all last semester seniors. Students must complete before student teaching. Lec 2, Lab 4, Cr 4. Prerequisite: Consent of instructor.

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>

ARTV 1441 3-D Animation I

Three-dimensional (3-D) modeling and rendering techniques including lighting, staging, camera, and special effects while emphasizing 3-D modeling building blocks and using primitives to create simple and complex objects. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1437.

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>

ARTV 2451 3-D Animation II

This course emphasizes skill development in three-dimensional modeling and rendering techniques using lighting, staging, and special effects for digital output with emphasis on the production of three-dimensional (3-D) animation as final digital outputting using modeling, rendering, and animation software. Lec 3, Lab 2, Cr 4. Prerequisite: ARTV 1441.

Auto Mechanics (AUMT, VHPA)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

AUMT 1213 Automotive Suspension and Steering

Topics covered in this course are a study of automotive suspension & steering systems, theory of wheel & tire construction, and alignment angles & procedures. Lec 1, Lab 3, Cr 2. Prerequisite: Departmental approval.

AUMT 1249 Automotive Electronics Theory

This course covers automotive technology including electrical principles, semiconductor & integrated circuits, digital fundamentals. Lec 1, Lab 3, Cr 2 Prerequisite: Departmental approval.

AUMT 1253 Automotive Electrical System Theory

Automotive electrical systems including operational theory, testing and diagnosis of batteries, charging & starting are covered. Lec 1, Lab 3, Cr 2 Prerequisite: Departmental approval.

AUMT 1257 Automotive Brake Systems Theory

Topics in this course are theory and principles related to the design, operation, and servicing of automotive braking systems. Including disc and drum-type brakes, hydraulic systems, power assist components, anti-lock brake systems and diagnosis and reconditioning procedures. Lec 1, Lab 3, Cr 2. Prerequisite: Departmental approval.

AUMT 1266 Practicum

Practical, general workplace training supported by an individualized learning plan developed by the employer, college & student are course components. Lec 256, Cr 2.

AUMT 1306 Automotive Engine Removal and Installation

This course covers fundamentals of engine inspection, removal and installation procedures. May be taught manufacturer specific. Lec 2, Lab 3, Cr 3. Prerequisite: AUMT 2334.

AUMT 1310 Automotive Brake Systems

Operation and repair of drum/disc type brake systems with emphasis on safe use of modern equipment are covered in this course. Course may be taught with manufacturer specific instructions. Lec 2, Lab 2, Cr 3 Prerequisite: AUMT 1257 and departmental approval.

AUMT 1316 Automotive Suspension & Steering Systems

This course is a study of automotive suspension and steering systems including tire and wheel problem diagnosis, component repair, and alignment procedures and may be taught manufacturer specific. Lec 3, Cr 3 Prerequisite: AUMT 1213

AUMT 1319 Automotive Engine Repair

Fundamentals of engine operation, diagnosis and repair with emphasis on overhaul of selected engines, identification and inspection, measurements, and disassembly, repair, and reassembly of the engine are course topics. Course may be taught manufacturer specific. Lec 2, Lab 4, Cr 3. Prerequisite: AUMT 2334.

AUMT 1341 Automotive Heating & Air Conditioning Theory

Course topics are theory of automotive air conditioning and heating systems with emphasis on the basic refrigeration cycle and diagnosis of system malfunctions. Lec 2, Lab 2, Cr 3 Prerequisite: AUMT 1407 and departmental approval.

AUMT 1345 Automotive Heating and Air Conditioning

This course emphasizes the basic refrigeration cycle and diagnosis and repair of system malfunctions and covers EPA guidelines for refrigerant handling and new refrigerant replacements. Course may be taught manufacturer specific. Lec 2, Lab 4, Cr 3 Prerequisite: AUMT 1407 and departmental approval.

AUMT 1405 Introduction to Automotive Technology

This course is an introduction to the automotive industry including automotive history, safety practices, shop equipment and tools, vehicle operation. Lec 3, Lab 3, Cr 4

AUMT 1407 Automotive Electrical Systems

Automotive electrical systems, operational theory, testing, diagnosis, repair of batteries, charging and starting systems, electrical accessories, electrical schematic diagrams and service manuals are course topics. The course may be taught manufacturer specific. Lec 3, Lab 3, Cr 4. Prerequisite: Departmental approval.

AUMT 2205 Automotive Engine Theory

Topics of the course are fundamentals of engine operation and diagnosis including lubrication and cooling systems with emphasis on identification of components, measurements, inspections, and repair methods. Lec 1, Lab 3, Cr 2.

AUMT 2211 Automotive Electronic Controls

This course is a study of electric principles, semiconductor and integrated circuits, digital fundamentals, micro computer systems, and electrical test equipment applied to automotive technology and may be taught manufacturer specific. Lec 1, Lab 3, Cr 2. Prerequisite: Departmental approval.

AUMT 2215 Automotive Engine Performance Analysis

Course topics are operation & diagnosis of basic engine dynamics including the study of the ignition system, fuel delivery systems, and the use of engine performance diagnostic equipment. Lec 1, Lab 3, Cr 2. Prerequisite: Departmental approval.

AUMT 2317 Automotive Engine Perform Analysis I

Theory, operation, diagnosis, and repair of basic engine dynamics, ignition systems, and fuel delivery systems are course topics. Basic engine performance diagnostic equipment may be taught with manufacturer specific instructions. Lec 2, Lab 2, Cr 3 Prerequisite: Departmental approval.

AUMT 2321 Automotive Electrical Lighting and Accessories

This course covers repair of automotive electrical subsystems, lighting, instrumentation, and accessories with emphasis on accurate diagnosis and proper repair methods using various troubleshooting skills and techniques. Course may be taught manufacturer specific. Lec 3, Cr 3 Prerequisite: AUMT 1407

AUMT 2323 Automotive Automatic Transmission and Transaxle Theory

Automatic transmission and transaxle theory of operation, hydraulic principles, related circuits, and discussion of diagnosis and repair techniques are course topics. Lec 2, Lab 3, Cr 3.

AUMT 2325 Automotive Automatic Transmission

This course covers the diagnosis, disassembly and assembly procedures of automatic transmissions with emphasis on the use of special tools and proper repair techniques. The course may be taught manufacturer specific. Lec 2, Lab 4, Cr 3. Prerequisite: AUMT 2323 and departmental approval.

AUMT 2328 Automotive Service

Course topics include the mastery of automotive vehicle service and component systems repair with emphasis on mastering automotive competencies covered in related courses. Course may be taught manufacturer specific. Lec 2, Lab 4, Cr 3 Prerequisite: Departmental approval.

AUMT 2334 Automotive Engine Performance Analysis II

This course studies diagnosis and repair of emission systems, computerized engine performance systems, advanced ignition and fuel systems, and proper use of advanced engine performance diagnostic equipment. Course may be taught manufacturer specific. Lec 2, Lab 2, Cr 3 Prerequisite: AUMT 2317

AUMT 2388 Internship

Practicum is a work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college or the employer. Lec 256, Cr 3

AUMT 2413 Automotive Drive Train and Axles

This course is a study of automotive clutches, clutch operation devices, manual transmissions/transaxles, and differentials with emphasis on the diagnosis and repair of transmissions/transaxles and drive lines. May be taught with manufacturer specific instructions. Lec 3, Lab 3, Cr 4

Physics Bioengineering (BENG)

Physics and Astronomy Department/College of Science, Math, and Technology • 882-6779 • Dr. Natalia V. Guevara, Chair • SETB 1.214 • E-mail: natalia.guevara@utb.edu URL: <http://www.phys.utb.edu>

BENG 3310 Pathways of Cellular Signaling

The course is designed for students in Bachelors of Science in Engineering Physics/Bioengineering Program. It describes major pathways of inter- and intracellular signaling, and emphasizes its biophysical aspects. Structural features of signaling components are discussed. Lec 3, Cr 3. Prerequisite: BIOL 1307 and CHEM 1312.

BENG 4120 Molecular Bioengineering Lab

Laboratory experiments in macromolecular design. Lec 3. Cr 1. Prerequisite: Credit for or concurrent enrollment in BENG 4320.

BENG 4320 Molecular Bioengineering

The course is designed for students in Bachelors of Science in Engineering Physics/Bioengineering Program. The topics include biomaterials, designing biomolecules for therapeutics and diagnostics, and advanced biomolecular assemblies. Lec 3, Cr 3. Prerequisite: PHYS 3315 and concurrent enrollment in BENG 4120.

Education - Bilingual Education/ Spanish (BILS, EABL, EDBI)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

BILS 3310 Emergent Literacy in the Bilingual Classroom (spanish)

This course focuses on how children learn to read in the native language. Emphasis is on research-based approaches for teaching reading in bilingual classrooms. Taught in Spanish. Lec 3, Cr 3. Prerequisite: Admission to Teacher Education and SPAN 4316 or concurrent enrollment.

BILS 3312 Teaching Reading in the Bilingual Classroom (Spanish)

Students will be given the opportunity to learn the developmental process involved in biliteracy. This course focuses on methods and techniques for integrating teaching, and assessing reading skills in the Spanish/English bilingual classroom. Taught in Spanish. Lec 3, Cr 3. Prerequisite: BILS 3310 and SPAN 4368 or concurrent enrollment.

BILS 3314 Content Area Methodology in the Bilingual Classroom (Spanish)

This course examines reading processes across text types and subject-specific vocabulary at the EC-4 level. Students learn and practice a variety of planning, managing and learning strategies for all students including those with special needs. Taught in Spanish. Lec 3, Cr 3. Prerequisite: BILS 3312 or concurrent enrollment.

Biology (BIOL)

Biological Sciences Department/College of Science, Math, and Technology • 882-5040 • Dr. Luis Colom, Chair • LHSB 2.816 • E-mail: luis.colom@utb.edu URL: <http://unix.utb.edu/biology/>

BIOL 1106 General Biology Laboratory I

Investigations related to BIOL 1306. First Semester of a laboratory required for science majors and minor, also available to the general student. Lab 3, Cr 1 Prerequisite: READ 0322, ENGL 0321, MATH 0421 or equivalent as determined by English, Math, and Reading assessment. Corequisite: BIOL 1306 or concurrently enroll.

BIOL 1107 General Biology Laboratory II

Investigation related to BIOL 1307. Second semester of a laboratory required for science majors and minors also available to the general student. Lab 3, Cr 1. Prerequisite: READ 0322, ENGL 0321, MATH 0421 or equivalent as determined by English, Math, and Reading assessments. Corequisite: BIOL 1307 or concurrently enroll.

BIOL 1306 General Biology I

An introduction to unifying biological principles with emphasis on fundamentals of molecular and cellular biology, genetics, and evolutionary theory. First semester of an integrated course for science majors and minors, also available to the general student. Lec 3, Cr 3. Prerequisite: READ 0322, ENGL 0321, MATH 0421 or equivalent as determined by English, Math, and Reading assessments. Corequisite: BIOL 1106 or concurrently enroll.

BIOL 1307 General Biology II

A continuation of General Biology I with emphasis on fundamentals of organism biology, ecology, and biodiversity. Second semester of an integrated course for science majors and minors, also available to the general student. Lec 3, Cr 3. Prerequisite: READ 0320, ENGL 0321, MATH 0421, or equivalent as determined by English, Math, and Reading assessments. Corequisite: BIOL 1107 or concurrently enroll.

BIOL 1322 Human Nutrition

A study of the basic principles of nutrition in health and disease. Stresses the modern concept of an adequate diet based on the nutritional needs of the individual. Lec 3, Cr 3.

BIOL 2101 Human Anatomy and Physiology Laboratory I

Cells, tissues, skeletal, muscle, nervous systems. Includes dissections and instrumentation related to basic hands-on understanding of human anatomy and physiology. Lab 3, Cr 1. Prerequisite: READ 0322, ENGL 0321, MATH 0421 or equivalent as determined by English, Math, and Reading assessment. Corequisite: BIOL 2301 or concurrently enroll.

BIOL 2102 Human Anatomy and Physiology Lab II

Emphasis on endocrine cardiovascular, respiratory, digestive, urinary, and reproductive systems. Includes related dissections and instrumentation design to facilitate basic hands-on understanding of human anatomy and physiology. Lab 3, Cr 1. Prerequisite: BIOL 2301, BIOL 2101, and BIOL 2302 or concurrent enrollment.

BIOL 2121 Microbiology Laboratory

Laboratory application microbial techniques including staining, microscopy, cultivation of microbes, and handling of aseptic cultures and materials in the laboratory, biochemical aspects of microbes, chemical, physical and chemotherapeutic control of microbial growth, sanitary analysis of municipal water systems, determination of a bacterial unknown. Lab 4, Cr 1. Prerequisite: BIOL 2321 or concurrent enrollment.

BIOL 2301 Human Anatomy and Physiology I

General biological principles, cellular biology, emphasis on human integumentary, skeletal, muscular, and nervous systems and related topics. Lec 3, Cr 3. Prerequisite: READ 0322, ENGL 0321, MATH 0421 or equivalent as determined by English, Math, and Reading assessment. Corequisite: BIOL 2101 or concurrently enroll.

BIOL 2302 Human Anatomy and Physiology II

Continuation of BIOL 2301, Includes human urogenital circulatory, respiratory, digestive and endocrine systems, human development emphasis on nutrition, metabolism, electrolytic and fluid balance. Lec 3, Cr 3. Prerequisite: BIOL 2301, BIOL 2101, and BIOL 2102 or concurrent enrollment.

BIOL 2321 Microbiology

An introduction to the field of microbiology, microbial morphology, cell fine structure, factors controlling growth and reproduction, microbial survey plus viruses, metabolism, microbial genetics, biotechnology, genetic control of microbes, resistance and infection, immunology transmission of diseases, environmental and applied microbiology. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107, BIOL 1307 or BIOL 2301, BIOL 2302, BIOL 2101, BIOL 2102. Corequisite: BIOL 2121 or concurrent enrollment.

BIOL 2428 Comparative Vertebrate Anatomy

Brief survey of chordates, summary of vertebrate history and development, the development and morphology of vertebrate organ systems dissection of representative vertebrates. (Primarily for biology major and minors.) Lec 3, Lab 4, Cr 4. Prerequisite: 6 hours of general biology or general zoology.

BIOL 3101 Advanced Physiology Laboratory

Laboratory practice in mammalian physiology, primarily man, which include nervous, muscular, cardiovascular, endocrine, immunity, respiratory, digestive, metabolic, urinary, acid-base balance, and reproductive systems. Prerequisite: BIOL 1306, BIOL 1106, BIOL 1307 and BIOL 1107. Corequisite: BIOL 3301 or concurrently enroll.

BIOL 3102 Comparative Animal Physiology Laboratory

Laboratory investigations of the diversity of physiological processes employed by a wide variety of animal groups. Prerequisite: BIOL 1306, BIOL 1307, and concurrently enroll with BIOL 3302.

BIOL 3103 Genetics Laboratory

This is the genetics laboratory that emphasizes the concepts of modern molecular genetics. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 3303.

BIOL 3108 Plant Morphology Laboratory

This is a laboratory emphasizing the study of the morphology development and relationships of fungi, algae, liverworts, mosses, ferns, gymnosperms and angiosperms. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 3308.

BIOL 3109 Ecology Laboratory

This is a laboratory for ecology which covers the study of the basic environmental factors affecting plants and animals, and their relation to economic and conservation problems. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 3309.

BIOL 3112 Cell and Molecular Biology Laboratory

This is a laboratory study of cell and molecular structure and function with emphasis on bioenergetics, membranes, genes, and genetic control, cell division and its regulation, cellular differentiation. Biochemistry I is highly recommended before taking this course. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 3312.

BIOL 3114 Invertebrate Zoology Laboratory

This is a laboratory study of the comparative morphology, evolution, systematic, and natural history of the invertebrates. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 3314.

BIOL 3301 Advanced Physiology

Selective topics of mammalian physiology, primarily man, which include nervous, muscular, cardiovascular, endocrine, immunity, respiratory, digestive, metabolic, urinary, acid-base balance, and reproductive. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306 and BIOL 1307. Corequisite: BIOL 3101 or concurrently enroll.

BIOL 3302 Comparative Animal Physiology

A study of the diversity of physiological processes employed by different animal groups at various level of biological organization from cellular processes to integrated individuals. Prerequisite: BIOL 1306, BIOL 1307, and concurrently enroll with BIOL 3102.

BIOL 3303 Genetics

This course is an introduction to genetics with consideration of its application in plant and animal biology and human welfare. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107, and BIOL 1307. Concurrently enroll in or credit for BIOL 3103.

BIOL 3308 Plant Morphology

This course is a study of the morphology, development and relationships, of fungi, algae, liverworts, mosses, ferns, gymnosperms and angiosperms. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 3108.

BIOL 3309 Ecology

This course is a study of the basic environmental factors affecting plants and animals, and their relation to economic and conservation problems. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Co-requisite: Enrollment in or credit for BIOL 3109.

BIOL 3312 Cell and Molecular Biology

This course is a study of cell and molecular structure and functions with emphasis on bioenergetics, membranes, genes, and genetic control, cell division and its regulation, cellular differentiation. Biochemistry I is highly recommended for this course. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Co-requisite: Enrollment in or credit for BIOL 3112.

BIOL 3314 Invertebrate Zoology

This is a course that covers the comparative morphology, evolution, systematic, and natural history of the invertebrates. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Co-requisite: Enrollment in or credit for BIOL 3114.

BIOL 3360 Introduction to Neurobiology and Behavior

This course provides an overview of the neurobiological basis of behavior - including neurophysiology, neuronal and synaptic function, developmental neurobiology, evolution of behavior, behavioral ecology, hormonal influences, navigation, sensory systems, learning, memory, and communication. Lec 3, Cr 3. Prerequisite: BIOL 1306 and BIOL 1307.

BIOL 4100 Biology Seminar

The student completes independent scholarly review of a research topic, makes an oral report on the topic, and discusses current research with faculty and students. Lec 1, Cr 1. Prerequisite: Senior standing and 24 hours of Biology.

BIOL 4102 Marine Zoology Laboratory

This is a laboratory study of the common marine animals, especially invertebrates in local coastal waters, particular attention given to structural and physiological relationships. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4302.

BIOL 4104 Ichthyology Laboratory

This lab emphasizes field surveys, taxonomy, and the identification of local marines and freshwater fishes. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4304.

BIOL 4109 Herpetology Laboratory

The lab and fieldwork familiarize students with herptofauna of the lower Rio Grande Valley and with plant and animal associations in a variety of habitats. Students will be required to keep a journal of field observations and a catalog of specimens observed. The instructor will provide keys and relevant scientific journal articles. Lab 3, Cr 1. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306 and BIOL 1307. Co-requisite: BIOL 3101 or concurrently enroll.

BIOL 4110 Marine Botany Laboratory

This course is a laboratory practice emphasizing the collection, preservation and identification of common local marine flora with emphasis on the macroscopic algae forms. Field trips to local marine environments is required. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4310.

BIOL 4114 Plant Taxonomy Laboratory

This course covers the laboratory identification of vascular plants with emphasis on native flowering plants is the primary focus of this course. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4314.

BIOL 4120 Plant Anatomy Laboratory

This is a laboratory study of the anatomy of seed plants. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4320.

BIOL 4125 Plant Physiology Laboratory

This is a laboratory analysis of cell biology, biochemistry, metabolism, ecophysiology, and the development of plants. Topics included are water relations, respiration, photosynthesis, nitrogen fixation, mineral nutrition, plant molecular biology, genetic engineering, and the role of environmental signals to plant development. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 BIOL 1307 and CHEM 2323 AND CHEM 2325. Corequisite: Enrollment in or credit for BIOL 4125.

BIOL 4127 Texas Coastal Ecology Laboratory

This course is a series of laboratory and field investigations emphasizing identification, biology and ecology of local marine organisms. Prerequisite: BIOL 1306, BIOL 1307 and concurrent enrollment in BIOL 4327.

BIOL 4132 Animal Behavior Laboratory

Projects introduce students to laboratory and field methods for observing, quantifying, analyzing, and reporting animal behavior. Typical research projects address: sensory mechanisms, chemical and vocal communication signals, and dynamic behavioral interactions. Lab 3, Cr 1. Prerequisite: Junior standing and completion of 12 credit hours in Biology. Co-requisite: BIOL 4332.

BIOL 4140 Immunology Laboratory

This course covers the immune system, cell and organs of the immune system, antigens and antibodies, immunoglobulin genes, Major Histocompatibility Complex proteins, cytokines, vaccines, and infectious diseases. Biochemistry I is highly recommended for this course. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107, BIOL 1307, CHEM 2323 and CHEM 2325.

BIOL 4150 Ornithology Laboratory

This course is a laboratory practice concerning the field identification, classification, morphology, ecology, distribution, migration patterns, and behavior of local birds. Field trips are required. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4350.

BIOL 4170 Laboratory Topics in Biology

This course is a series of lab/field investigations in areas not available in other courses. May be repeated for credit when content changes. Lab 3, Cr 1. Prerequisite: BIOL 1306, BIOL 1106, BIOL 1307 and BIOL 1107.

BIOL 4199 Research Problems in Biology

Research under the supervision of a Biology faculty member. May be repeated for credit but no more than three semester credit hours (•) may apply toward the Biology major. (• combinations of 4199, 4299). Lec 1, Cr 1. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306, BIOL 1307 and approval of instructor.

BIOL 4299 Research Problems in Biology

Research under the supervision of a Biology faculty member. May be repeated for credit but no more than three semester credit hours (•) may apply toward the Biology major. (• combinations of 4199, 4299). Lec 2, Cr 2. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306, BIOL 1307 and approval of instructor.

BIOL 4302 Marine Zoology

This course is a study of the common marine animals, especially invertebrates in coastal waters, particular attention is given to structural and physiological relationships. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4102.

BIOL 4304 Ichthyology

This course covers the classification, evolution, ecology, and biology of the fishes. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4104.

BIOL 4309 Herpetology

An in-depth study of amphibians and reptiles. Classification according to their types and characteristics as well as collection and field trip techniques for acquiring and preparing museum specimens and their preparation for proper storage and cataloging. A good knowledge of South Texas herpetofauna will be emphasized. Special in-depth study of venomous snakes and current snakebite treatment measures will be surveyed. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306 and BIOL 1307. Co-requisite: BIOL 3101 or concurrently enroll.

BIOL 4310 Marine Botany

This course is a study of local marine flora with emphasis on the microscopic algae forms. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4110.

BIOL 4314 Plant Taxonomy

This course deals with the identification of vascular plants with emphasis on native flowering plants. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4114.

BIOL 4320 Plant Anatomy

This course covers a study of the anatomy of seed plants. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4120.

BIOL 4325 Plant Physiology

Plant physiology is an analysis of cell biology, biochemistry, metabolism, ecophysiology, and development of plants. Topics included are water relations, respiration, photosynthesis, nitrogen fixation, mineral nutrition, plant molecular biology, genetic engineering, and the role of environmental signal to plant development. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 BIOL 1307 and CHEM 2323 AND CHEM 2325. Corequisite: Enrollment in or credit for BIOL 4125.

BIOL 4327 Texas Coastal Ecology

This course examines the major near shore habitats and communities of the western Gulf of Mexico including: beaches, sand dunes, estuaries, salt marshes, mud flats, sea grass meadows, and rocky shores. Emphasis is placed on directed, field-oriented, group and/or individual research projects. Lec 3, Cr 3. Prerequisite: BIOL 1306, BIOL 1307, and one course in general Ecology (BIOL 3309) or Zoology (BIOL 3314 or BIOL 4302).

BIOL 4330 Integrative Biology for Middle School Science Teachers

This course designed for middle school science teachers is the coordinated-thematic integration of biology with physics, chemistry, and earth/space science through a series of lectures, panels, demonstrations, and applied activities. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306, and BIOL 1307.

BIOL 4331 Integrative Biology for High School Science Teachers

This course designed for high school science teachers is the coordinated-thematic integration of biology with physics, chemistry, and earth/space science through a series of lectures, panels, demonstrations, and applied activities. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306, and BIOL 1307.

BIOL 4332 Animal Behavior

Lectures introduce students to the biological basis of animal behavior. Emphasis is placed on evolutionary explanations of: behavioral genetics and development, neural and hormonal mechanisms, instincts and learning, reproductive, and social behavior. Lec 3, Cr 3. Prerequisite: Junior standing and completion of 12 credit hours in Biology. Co-requisite: BIOL 4132.

BIOL 4340 Immunology

This course covers the immune system, cells and organs of the immune system, antigens and antibodies, immunoglobulin genes, Major Histocompatibility Complex proteins, cytokines, vaccines, and infectious diseases. Biochemistry I is highly recommended for this course. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107, BIOL 1307, CHEM 2323 and CHEM 2325.

BIOL 4350 Ornithology

This course is a study of the classification, morphology, ecology, distribution, migration patterns, and behavior of birds. Emphasis will be mainly on local species. Field trips are required. Prerequisite: BIOL 1106, BIOL 1306, BIOL 1107 and BIOL 1307. Corequisite: Enrollment in or credit for BIOL 4150.

BIOL 4361 Neuroscience I (Cellular and Molecular)

This is a comprehensive first course in the cell and molecular neuroscience for students with biology and/or health science majors. The course offers general principles with a useful blend of data from vertebrate and invertebrate, and provides clear focus and well rounded modern knowledge. Lec 3, Cr 3. Prerequisite: BIOL 3312, BIOL 3112, or consent of instructor.

BIOL 4362 Neuroscience II (System, Developmental, and Disorders)

This is a comprehensive course in systems, developmental, and disorders of the nervous system. Neuronal mechanisms underlying intercellular communication, learning and memory, and diseases will be taught based on the knowledge in cellular and molecular neuroscience. Prerequisite: BIOL 4361.

BIOL 4370 Topics in Biology

Specialized lecture content not available in other courses. May be repeated for credit as topics change but no more than three credit hours may apply toward the Biology major. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306, and BIOL 1307.

BIOL 4390 Biology Internship

This course is an applied experience in an industrial, educational, private agency, or government facility supported by an acceptable scholarly written report and a seminar. Lab 6-8, Cr 3. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306, and BIOL 1307.

BIOL 4391 Biomedical Research I-Research Principles and Ethics

This course will provide students with a general understanding of issues surrounding ethical conduct in scientific research. Topics include scientific authorship, protocol for research on human subjects, mechanisms of peer review, grant application review. Students will gain ability to think about scientific conduct issues in an ethical decision-making way. Lec 3, Cr 3. Prerequisite: BIOL 1306, BIOL 1106 and BIOL 1307, BIOL 1107.

BIOL 4392 Biomedical Research II - Research Methodology

Methodologies employed in biomedical research will be discussed and explored. Topics will include formulation and testing of scientific hypotheses, experimental design, laboratory notebook maintenance, and data interpretation. Biochemical, genetic, immunohistochemical, and molecular techniques will be review. At the completion of the course students are anticipated to understand the basic methods employed in scientific research. Lec 3, Cr 3. Prerequisite: BIOL 1306, BIOL 1106 and BIOL 1307, BIOL 1107.

BIOL 4393 Biomedical Research III- Research Project

Students will be expected to design, develop, and conduct and independent research subproject in the laboratory with the guidance of a research faculty . Acquisition of experimental techniques, note keeping, safety, and appropriate laboratory conduct will be emphasized. Lec 3, Cr 3. Prerequisite: This course will require the approval and supervision of a faculty prior to enrollment.

BIOL 4394 Biomedical Research IV- Research Presentation

The course will promote the development of presentation skills and the ability to discuss research data in scientific or public forum. Literature search, reading of research articles, and interpretation of experimental results will be emphasized. Verbal and written presentations will be expected from students for successful completion of the course. Formats utilized will be those employed at scientific meetings and required by peer-reviewed scientific journal. Literature research and presentation topics will be assigned by the instructor. Lec 3, Cr 3. Prerequisite: This course will require the approval and supervision of a research faculty prior to enrollment.

BIOL 4399 Research Problems in Biology

Research under the supervision of a Biology faculty member. May be repeated for credit but no more than three semester credit hours may apply toward the Biology major. Students enrolling for BIOL 4399 will present research results in a Department seminar. Lec 3, Cr 3. Prerequisite: BIOL 1106, BIOL 1107, BIOL 1306, BIOL 1307 and approval of instructor.

Business Law (BLAW)

Business Administration Department/School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

BLAW 3337 Business Law I

The study of the development and functioning of our legal environment. The development of case law and precedents, the application of procedural and substantive law pertaining to civil and penal matters, study and analysis of cases and rules of law relating to basic business practices, governmental regulations of business, property rights, and business ethics. Course also includes torts, contracts, commercial transactions, and agency. Lec 3, Cr 3.

BLAW 3338 Business Law II

A continuation and expansion of the study of rules of law, including sales, commercial paper and credit transactions with emphasis on the Uniform Commercial Code business organization government regulations property, wills and trusts consumer protection bankruptcy. Lec 3, Cr 3. Prerequisite: BLAW 3337 with "C" or better.

International Business (BMGT, IBUS, MRKG)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

BMGT 1301 Supervision

This course includes a study of the role of the supervisor. Managerial functions as applied to leadership, counseling, motivation, and human skills are examined. Lec 3, Cr 3.

Information Systems (BMIS, BMISU)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

BMIS 1125 Fundamentals of Spreadsheets Business Management

An introductory course designed to familiarize students on how to create, edit, store, and print spreadsheets, databases, and graphics using the Lotus 1-2-3 software program. Introduces the basics of a menu bar, creation of formulas, functions, graphic presentation, and general ease of presenting numeric materials. Lec 1, Cr 1

BMIS 1135 Fundamentals of Access for Windows Software

This course is designed as an introduction to the fundamentals of creating and using a database. Applications will include entering and editing data, finding and sorting records, working with tables, forms, reports, queries, and working with images and other objects. Lec 1, Cr 1

BMIS 1180 Introduction to Income Tax Preparation

This course will introduce students to automated income tax preparation using Turbo Tax. Lec 1, Cr 1.

BMIS 3301 Web Programming with Java

Introductory level exposure to computer programming concepts and an overview of the uses and application of programming languages used on the Web. Students will be exposed to the nature and organization of the Internet, including the underlying infrastructure of the Web, ad distributed and multi-tiered applications. Students will be able to understand the core concepts of computer programming and write stand-alone programs and applets using the Java language. Lec 3, Cr 3.

BMIS 3302 Database Information Systems

Students will learn the basis of constructing, managing, and deploying relational databases solution in support of electronic based commerce activities. On completion of this course, participants will understand the requirements of defining and using data in relational databases, and incorporating the collection, management, and use of data as an integral part of successful e-Business endeavors. Lec 3, Cr 3.

BMIS 3303 E-Commerce Strategies

This introductory course provides a general view of the elements most important for effective commerce opportunity through the Internet. Topics include strategies and tools within E-Commerce categories, which include Business-to-Consumer, Business-to-Business, Consumer-to-Consumer, technological infrastructure, electronic security, electronic payment mechanisms and virtual communities. Lec 3, Cr 3. Prerequisite: Admission to Upper Division.

BMIS 3351 Information Systems in Organizations

This course addresses issues associated with the expanding role of information systems and accounting information systems in organizations, including their development and use, strategic impact, and international implications. May be counted as either ACCT 3351 or BMIS 3351. Lec 3, Cr 3

BMIS 4303 Web Systems Development

This course surveys the essential elements of World Wide Web systems development as an approach. Focus is on creating professional-quality XHTML, XML, CSS, JavaScript, and server-side Web pages that can take in process, return information. Covers design features and architecture as critical components that contribute to Website success. Students will be able to design and develop their own interactive sites for the Web. Lec 3, Cr 3.

BMIS 4304 Systems Analysis E-Business

Designed for students to learn the fundamentals of e-Business infrastructure, tools, and applications to learn Rapid Application Development (RAD) system application life cycles and be able to select an appropriate model and to demonstrate their learning by building an e-Business site as a team. Lec 3, Cr 3. Prerequisite: BMIS 3301 and BMIS 3302.

BMIS 4367 Topics in E-Commerce

The study of significant topics related to Management. Course may be repeated for credit when topic varies. Lec 3, Cr 3. Prerequisite: Admission to upper division and will vary depending on specific topics and BMIS 3303.

BMISU 1125 Fundamentals of Spreadsheets

An introductory course designed to familiarized students on how to create, edit, store, and print spreadsheets, databases, and graphics using the latest software program. Introduces the basics of a menu bar, creation of formulas, functions, graphic presentation, and general ease of presenting numeric materials. BBA degrees require that this course be passed with a C or better. Lec 1, Cr 1.

BMISU 1135 Fundamentals of Access for Windows Software

This course is designed as an introduction to the fundamentals of creating and using a database. Applications will include entering and editing data, finding and sorting records, working with tables, forms, reports, queries, and working with images and other objects. BBA degrees require that this course be passed with a C or better. Lec 1, Cr 1.

BMISU 1185 Fundamentals of Project Management

This hands-on introductory course is designed to teach students various project management techniques including: scheduling, budgeting staffing, evaluating, prioritizing, Program Evaluation Review Technique (PERT) and GANTT Charts. The software used in this course is Microsoft Project Management. BBA degrees require that this course be passed with a C or better. Lec 1, Cr 1.

BMISU 1310 Data and Project Management

Students will receive hands-on exposure to the latest software tools used to improve personal productivity in the workplace. Emphasis is placed on data management and data interpretation with the use of spreadsheets, graphs, relational database solutions and project management techniques such as scheduling, budgeting, staffing, activity prioritization and evaluation. BBA degrees require that this course be passed with a C or better. Lec 3, Cr 3.

Business Law - General (BUSG)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

BUSG 2317 Business Law/Commercial

This course covers the relationships of law and business as they relate to commercial transactions. Lec 3, Cr 3

Business (BUSI)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

BUSI 1301 Introduction to Business

A survey of the various fields of business and their interrelationships, production and distribution systems, finance, accounting, statistics, capital, labor, marketing, taxes, governmental regulations, and other aspects of business necessary for understanding modern business enterprises and organization. BBA degrees require that this course be passed with a C or better. Lec 3, Cr 3.

BUSI 3117 Bilingual in Business

This is two-hour lab course of business readings in Spanish. Readings will be current and derived from professional literature, business periodicals and news papers. Selections will be provided so that students can match readings with business courses they are enrolled in each semester. Other activities of the lab include lectures, paired study, small group discussions, written reports, formal presentations and experiential interfaces. A sole authored paper written in Spanish is required each time the course is attempted. Lab 2, Cr 1 Prerequisite: Admission to Upper Division. Taught in Spanish

BUSI 3335 Organizational Communications

A systems approach to information processing, the practical and psychological aspects of formal and informal communication in organizations. Stresses inter-and intra-personal communication related to various corporate cultures. Intercultural differences in various communication scenarios are also studied. Lec 3, Cr 3 Prerequisite: ENGL 1301 and ENGL 1302 with "C" or better.

BUSI 3343 Decision Analysis

A study of regression, forecasting, and other analytical methods. The format of the course will be lectures and case studies. Students will address problems in context, determine the proper techniques, collect the information, and then solve the problem. Lec 3, Cr 3. Prerequisite: BUSIU 2341 with a "C" or better. Admission to upper division.

BUSI 4330 International Business

Business concepts, analytical processes, and philosophical bases for international business operations. Emphasizes environmental dynamics, multinational business organizations, cultural and economic constraints, unique international business practices, and international operations, strategies, and policy. Lec 3, Cr 3 Prerequisite: MANA 3361, MARK 3371, FINA 3380, or approval of instructor. Admission to Upper Division.

BUSI 4369 Business Policy

A broad course in business management designed to integrate earlier studies in business. Comprehensive case problems are studied with student participation in decision making related to business operations under conditions of uncertainty. Lec 3, Cr 3 Prerequisite: ACCT 2301, ACCT 2302, ECON 2301, ECON 2302, FINA 3380, MANA 3361, and MARK 3371; admission to upper division. This course should be taken on the last semester prior to graduation.

BUSIU 2341 Statistics

An analysis of descriptive statistics and inference methods with emphasis on business applications. Topics include measures of central tendency and variation, probability distributions, sampling distributions, hypothesis testing, correlation, linear regression, index numbers, nonparametric statistics and other decision making tools. BBA degrees require that this course be passed with a C or better. Lec 3, Cr 3. Prerequisite: MATH 1314 with "C" or better.

Care and Development (CDEC)

School Specialties Department/School of Education • 882-8238 • Dr. Olivia Rivas, Chair • Child Care & Development URL:<http://blue.utb.edu/education/>

CDEC 1313 Curriculum Resources for E.C. Programs Child

This course is composed of fundamentals of early childhood education focusing on curriculum design, developmentally appropriate practices, and types of programs, historical perspectives, ethics, and current issues from the National Association for the Education of Young Children. Lec 3, Cr 3.

CDEC 1318 Wellness of the Young Child

This course is a study of factors impacting the well-being of young children. Includes healthy behavior, food, nutrition, fitness, and safety practices. Focuses on local and national standards and legal implications of relevant policies and regulations. Course content is aligned with State Board of Education Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 15 hours field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations. Lec 3, Cr 3.

CDEC 1319 Child Guidance

This course is an exploration of common behavior problems of young children in an early childhood setting. It puts emphasis on positive guidance techniques for effective behavior management and practical application through direct participation in an early childhood setting. Lec 2, Lab 8, Cr 3. Prerequisite: Departmental approval.

CDEC 1321 The Infant and Toddler

A study of appropriate infant and toddler programs (birth to 3 years), including an overview of development, quality care giving routines, appropriate environments, materials and activities, and teaching/guidance techniques. Lec 3, Cr 3.

CDEC 1354 Child Growth & Development

This course is a study of the principles of normal child growth and development from conception to adolescence. Focus is placed on physical, cognitive, social, and emotional domains of development. Lec 3, Cr 3.

CDEC 1356 Emergent Literacy for Early Childhood

This course is an exploration of principles, methods, and materials for teaching young children language and literacy through a play-based integrated curriculum. Lec 3, Cr 3.

CDEC 1358 Creative Arts for Early Childhood

This course is an exploration of principles, methods, and materials for teaching young children movement, music, visual arts, and dramatic play through the process-oriented experience to support divergent thinking. Lec 1, Lab 5, Cr 3. Prerequisite: CDEC 1367.

CDEC 1359 Children With Special Needs

This course is a survey of information regarding children with special needs including possible causes and characteristics of exceptionalities, educational interventions, available resources, referral processes, parental involvement and the advocacy role and legislative issues. Lec 3, Cr 3.

CDEC 1367 Practicum-Child Development

This course gives practical general training and experiences in the workplace. The college, along with the employer, develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. These guides of external experiences may be for pay or no pay. The student will also develop a Child Development Associate Professional Resource File. Lec 1, Lab 20, Cr 3. Prerequisite: CDEC 1319.

CDEC 1396 Special Topics in Child Care and Support Services Management

This course deals with topics addressed recently, identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Lec 3, Cr 3.

CDEC 2307 Math and Science for Early Childhood

This course is an exploration of principles, methods, and materials for teaching young children mathematics and science through discovery and play. Lec 1, Lab 5, Cr 3. Prerequisite: CDEC 1367.

CDEC 2315 Diverse Cultural/ Multilingual Education

This course is an overview of multi-cultural education to include relationship with the family and community to develop awareness and sensitivity to diversity related to individual needs of children. Lec 3, Cr 3.

CDEC 2326 Administration of Programs for Children I

This course is a practical application of management procedures for early care and education programs, including a study of operations, supervising, and evaluating programs. Topics include philosophy, types of programs, policies, physical management, regulations, staffing, evaluation, and communication. Lec 3, Cr 3.

CDEC 2328 Administration of Programs for Children II

This course is an in-depth study of the skills and techniques in managing early care and education programs, including legal and ethical issues, personnel management, team building, leadership, conflict resolution, stress management, advocacy professionalism, fiscal analysis and planning parental/partnership, and technical applications in process. Lec 3, Cr 3.

CDEC 2341 The School Age Child

This course is a study of appropriate age (5 to 13 years) program, including overviews of development, appropriate environments, materials and activities, and teaching/guidance techniques. Lec 3, Cr 3.

CDEC 2587 Internship - Early Childhood Provider/ Assistant

This course gives advanced students experience external to the college in a specialized field involving a written agreement between the educational institution and a business or industry. Mentored and supervised by a workplace employee, the student achieves objectives that are developed and documented by the college and that are directly related to specific occupational outcomes. This may be a paid or unpaid experience. Lec 1, Lab 20, Cr 5. Prerequisite: CDEC 1319, CDEC 1367, CDEC 1358, and CDEC 2307.

CETT 1321 Electronic Fabrication

Air Conditioning and Refrigeration Technology (CETT, HART, MAIR) Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL:<http://blue.utb.edu/industrialtech/> A study of electronic circuit fabrication techniques including printed circuit boards, wire wrapping, bread boarding, and various soldering techniques. Lec 0, Lab 3, Cr 3.

CETT 1425 Digital Fundamentals

An entry-level course in digital electronics covering number systems, binary mathematics, digital codes logic gates, Boolean algebra, Karnaugh maps, and combination logic. Emphasis circuit logic analysis and troubleshooting digital circuits. Lec 3, Lab 4, Cr 4

CETT 1429 Solid State Devices

A study of diodes and bipolar semiconductor devices, including analysis of static and dynamic characteristics, bitemplates, and thermal considerations of solid state devices. Lec 3, Lab 4, Cr 4.

CETT 1441 Solid State Circuits

A study of various semiconductor devices incorporated in their circuits and their applications. Emphasis on circuit construction, measurements and analysis. Lec 4, Lab 4, Cr 4.

CETT 1445 Microprocessor

An introductory course in microprocessor software and hardware, its architecture timing sequence, operation, and programming, and discussion of appropriate software diagnostic language and tools. Lec 3, Lab 4, Cr 4.

CETT 2435 Advanced Microprocessors

An advanced course utilizing the microprocessor in control systems and interfacing. Emphasis on microprocessor hardware and implementation of peripheral interfacing. Lec 3, Lab 4, Cr 4.

Chemistry (CHEM)

Chemistry & Environmental Sciences Department/College of Science, Math, and Technology • 882-6691 • Dr. Gene Paull, Chair • MO 1.114 • E-mail: gene.paull@utb.edu URL: <http://blue.utb.edu/chemenv/>

CHEM 1105 Introductory Chemistry Lab I

Laboratory practice that illustrates elementary, general, organic, and biochemical experimental techniques. Lab 3, Cr 1. Co-requisite: CHEM 1305 (or prior credit).

CHEM 1107 Introductory Chemistry Lab II

Continuation of CHEM 1105, with greater emphasis on organic and biochemical laboratory techniques. Lab 3, Cr 1. Prerequisite: CHEM 1105, CHEM 1305. Corequisite: CHEM 1307 (or prior credit).

CHEM 1111 General Chemistry Laboratory I

Introduction to laboratory techniques of chemical experimentation. Lab 3, Cr 1 Prerequisite: CHEM 1311 with "C" or better or concurrent enrollment.

CHEM 1112 General Chemistry Laboratory II

Introduction to some basic laboratory techniques used in studying chemical kinetics, chemical equilibrium, electrochemistry, and qualitative inorganic analysis, introduction to instruments used in pH measurement. Lab 3, Cr 1. Prerequisite: CHEM 1111 and CHEM 1311 with "C" or better and concurrent enrollment in CHEM 1312 or prior credit in CHEM 1312.

CHEM 1305 Introductory Chemistry I

A terminal course in chemistry for non-science majors and technology students. Major topics covered are: atomic and molecular structure, chemical bonding, the state of matter, solution calculations, and acid-base concepts includes a brief introduction to organic chemistry and biochemistry. Lec 3, Cr 3. Co-requisite: CHEM 1105 (or prior credit).

CHEM 1307 Introductory Chemistry II

Continuation of CHEM 1305. Elementary study of organic and biochemistry the nomenclature, preparation, and reactions of the principle classes of organic compounds by functional group structures and metabolic reactions of carbohydrates, lipids, and proteins a look at hormones, enzymes, and biosynthetic pathways, physiological action of drugs, food, nutrients, poisons, and causing agents. Lec 3, Cr 3. Prerequisite: CHEM 1305 and CHEM 1105 with "C" or better. Corequisite: CHEM 1107 (or prior credit).

CHEM 1311 General Chemistry I

A Study of atomic and molecular structure, chemical stoichiometry, chemical bonding, states of matter, solutions and colloids, and acid-base concepts. Lec 3, Cr 3. Prerequisite: MATH 1314 with a "C" or better.

CHEM 1312 General Chemistry II

Continuation of CHEM 1311. Study of chemical kinetics, equilibrium, electron transfer reactions, electrochemistry, nuclear chemistry, chemical thermodynamics, and some descriptive inorganic chemistry. Lec 3, Cr 3. Prerequisite: CHEM 1311 with a "C" or better.

CHEM 2123 Organic Chemistry Laboratory I

Laboratory application of techniques used in experimental organic chemistry. Lab 3, Cr 1. Prerequisite: CHEM 1112 and CHEM 1312 with a "C" or better. Corequisite: CHEM 2323

CHEM 2125 Organic Chemistry Laboratory II

Additional laboratory application of techniques used in experimental organic chemistry. Lab 3, Cr 1. Prerequisite: CHEM 2123 and CHEM 2323 with a "C" or better and CHEM 2325 or concurrent enrollment.

CHEM 2323 Organic Chemistry I

Study of the structure, properties, preparations and reactions of aliphatic and aromatic compounds stereo chemistry, reaction mechanisms, and the use of spectroscopic techniques are included. Lec 3, Cr 3. Prerequisite: CHEM 1312, CHEM 1112 with a "C" or better.

CHEM 2325 Organic Chemistry II

Continuation of CHEM 2323. Includes a brief introduction to the chemistry of polymers, fats, carbohydrates, amino acids and proteins. Lec 3, Cr 3. Prerequisite: CHEM 2323 with a "C" or better.

CHEM 3103 Biochemistry Laboratory I

Laboratory work consists of selected experiments in biochemistry with special emphasis on the chemical interpretation of the structure and function of biological macromolecules. Lab 3, Cr 1. Prerequisite: CHEM 2123, CHEM 2323 with a "C" or better and concurrent enrollment in CHEM 3303.

CHEM 3105 Analytical Laboratory

Laboratory methods in analytical chemistry, including a quantitative separation techniques, electrochemistry, and absorption spectroscopy. Lec 4, Cr 1. Prerequisite: CHEM 1111, CHEM 1112 with a "C" or better. CHEM 3305 or concurrent enrollment.

CHEM 3110 Physical Chemistry Laboratory I

The use of modern instrumentation to illustrate physical chemical techniques used to study electrochemistry, molecular structure, calorimetry, and thermodynamics. Lab 3, Cr 1. Prerequisite: CHEM 1111, CHEM 1112 with a "C" or better, and CHEM 3310 or concurrent enrollment.

CHEM 3112 Physical Chemistry Laboratory II

The use of modern instrumentation to illustrate physical chemical techniques used to study macromolecules, chemical kinetics, properties of gases. Lab 3, Cr 1. Prerequisite: CHEM 3110 with a "C" or better and CHEM 3312 or concurrent enrollment.

CHEM 3301 Inorganic Chemistry

An introductory study of the elements other than carbon and their compounds based on the periodic classification and certain related theoretical concepts explaining structure and reactivity. Lec 3, Cr 3. Prerequisite: CHEM 1112 and CHEM 1312 with "C" or better.

CHEM 3303 Biochemistry I

Study of the chemical properties of the biomolecules, amino acids, proteins, enzymes, carbohydrates, lipids, nucleic acids, and coenzymes metabolic energy the biosynthesis of informational molecules, such as DNA and RNA, will also be discussed. Lec 3, Cr 3. Prerequisite: CHEM 2123, CHEM 2323 with a "C" or better.

CHEM 3304 Biochemistry II

A detailed study of the design, integration and control of metabolism. Hormone action and the regulation of gene expression. Lec 3, Cr 3. Prerequisite: CHEM 3303 with a "C" or better.

CHEM 3305 Analytical Chemistry

Modern analytical chemistry, including separation methods and quantitative chemistry, introduction to methods of analysis in electrochemistry, absorption and emission spectroscopy. Lec 3, Cr 3. Prerequisite: CHEM 1112, CHEM 1312 with a "C" or better and CHEM 3105 or concurrent enrollment.

CHEM 3306 Chemical Literature

A course designed to provide students with a working knowledge of the chemical literature. Students will learn how to obtain information using the libraries in the university system under the supervision of a faculty member in the Chemistry & Environmental Sciences Department. Lec 3, Cr 3. Prerequisite: Junior standing in Chemistry and consent of instructor.

CHEM 3310 Physical Chemistry I

Study of the classical thermodynamics including applications to gases, liquids, solutions and phase equilibrium, ionic equilibrium, and electrochemist. Lec 3, Cr 3 Prerequisite: MATH 2314, PHYS 1302, CHEM 1312 with a grade "C" or better.

CHEM 3312 Physical Chemistry II

Fundamentals of quantum mechanics, chemical bonding spectroscopy, photochemistry, chemical kinetics, kinetic theory of gases and the transport of both gas and liquid phases. Lec 3, Cr 3. Prerequisite: CHEM 3310 with a "C" or better.

CHEM 4104 Selected Topics in Biochemistry Lab

This course will cover the study of contemporary biochemical techniques. Lab 3, Cr 1. Prerequisite: CHEM 4304 or concurrent enrollment.

CHEM 4105 Instrumental Methods of Analysis Laboratory

Introduction to use of electrical and optical measurements in chemical analysis. Interpretation of infrared, ultraviolet, nuclear magnetic resonance, and mass spectra. Lab 4, Cr 1. Prerequisite: CHEM 3305, CHEM 3105 with a "C" or better and CHEM 4305 or concurrent enrollment.

CHEM 4110 Chemistry Seminar

Students are expected to research a current chemical topic, previously approved by a faculty member in the Chemistry & Environmental Sciences Department, and to present it in a formal seminar to fellow students and faculty members. Lec 3, Cr 1. Prerequisite: Senior standing in chemistry and consent of instructor.

CHEM 4112 Selected Topics in Physical Chemistry Laboratory

A laboratory course that will concentrate on applications of an initial quantum chemistry, molecular dynamics, semempirical methods, and QSPR/QSAR. Lab 3, Cr 1. Prerequisite: CHEM 4312 or concurrent enrollment.

CHEM 4123 Selected Topics in Organic Laboratory

This laboratory involves a comprehensive literature survey of both contemporary and classical organic name reactions. Lab 3, Cr 1. Prerequisite: CHEM 4323 or concurrent enrollment.

CHEM 4304 Selected Topics in Biochemistry

An advanced course in Biochemistry with emphasis on current developments. Lec 3, Cr 3. Prerequisite: CHEM 3304 and CHEM 3103 with "C" or better.

CHEM 4305 Instrumental Methods of Analysis

Introduction to the theory and practice of optical and electro-analytical methods of analysis. Interpretation of infrared, ultraviolet, nuclear magnetic resonance, and mass spectra. Lec 3, Cr 3. Prerequisite: CHEM 3305, CHEM 3105 with a "C" or better and CHEM 4105 or concurrent enrollment.

CHEM 4306 Environmental Chemistry

This course covers environmental issues and the chemistry associated with these issues. Key areas include energy used and production, the atmosphere, the hydrosphere. Specific topics to be discussed include fossil fuels, nuclear and solar energy, the Greenhouse effect, ozone chemistry, air and water pollution, water resources, nitrogen and food production, and agrochemicals. Lec 3, Cr 3. Prerequisite: CHEM 1311, CHEM 1312, CHEM 2323, BIOL 1306, BIOL 1307, and PHYS 1301.

CHEM 4312 Selected Topics in Physical Chemistry

An advanced course in Physical Chemistry that includes topics in Computational Chemistry, Molecular Modeling, and Molecular Dynamics. Lec 3, Cr 3. Prerequisite: CHEM 3312, CHEM 3112 with "C" or better.

CHEM 4320 Chemistry Problems

An individual introduction to research which involves both laboratory and library work. Students will work under the direct supervision of a Chemistry faculty member on a chemistry topic of mutual interest. Lec 1, Lab 6, Cr 3. Prerequisite: Six hours of advanced Chemistry with "C" or better and consent of instructor.

CHEM 4323 Selected Topics in Organic Chemistry

An advanced course in Organic Chemistry which covers topics in Reaction Mechanisms, Synthesis Design and includes the theory of structure determination. Lec 3, Cr 3. Prerequisite: CHEM 2325, CHEM 2125 with "C" or better.

CHEM 4325 Chemistry Internship

This course is designed to give the Chemistry student the opportunity to gain insight and experience in applying chemistry principles and concepts in an actual work-related environment. The student will perform the internship under the supervision of both a chemistry faculty member and a collaborating member of the participating internship site. This course will provide opportunity for the student to apply prior learning to practical laboratory situations. Lec 1, Lab 6, Cr 3. Prerequisite: Senior standing in Chemistry and consent of instructor.

Chinese (CHIN)

Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL: <http://blue.utb.edu/mlang/>

CHIN 1311 Beginning Chinese I

Fundamental skills in listening comprehension, speaking, reading and writing, including basic vocabulary, grammatical structures and culture. Lec 3, Cr 3.

CHIN 1312 Beginning Chinese II

Continuation of Chinese 1311. Lec 3, Cr 3.

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>

CIST 3316 Web Programming and Design

This course focuses on web programming and the underlying Internet client server paradigm. Techniques to be studied include dynamic content with client-side and server-side scripting languages. Issues of security, session management and integration with databases are discussed in detail along with an overview of the fundamentals of e-Commerce. Lec 3, Cr 3. Prerequisite: COSC 1437 with "C" or better.

CIST 3330 Networking and Database Management

This course provides detailed view of networking and database management systems. Networking topics include ISO/OSI layer models, study of LANs and standards, Internetworking, and network security. Database topics include access methods, data models, query languages and optimization, concurrency control, recovery, security, integrity, client-server architecture, and distributed database systems. Lec 3, Cr 3. Prerequisite: Junior level standing, COSC 1437 and MATH 3362. Recommended courses COSC 2312, MATH 1316, and MATH 1348.

CIST 3340 Concepts and Methods of Education Technology

This course will provide an understanding of learning models and the impact of technology in enhancing in the learning process. This includes the application of teaching and learning strategies that integrate technology in the classroom environment. Lec 3, Cr 3. Prerequisite: CIST 3316 with "C" or better.

CIST 3380 Special Topics in Computer Systems

This course covers a special topic at the junior level. Different sections of the course may cover different topics in a semester. Special topics chosen will be related to new and state of the art developments in the area of computer information systems. Lec 3, Cr 3. Prerequisite: Junior level standing and approval of instructor.

CIST 4310 Operating Systems Management

This course introduces applied operating system concepts. Operating System theory and application are explored using various environments. Topics include: operating system installations, configuration and troubleshooting, process management, communication and synchronization, memory and device management, directory and file management, system administration and security including user account management. Lec 3, Cr 3. Prerequisite: CIST 3330 with "C" or better.

CIST 4313 Advanced Computer Networking

This course provides computer networking topics based on the OSI seven layers. Networking topics include advanced administration techniques, advanced security, adding components, trouble-shooting techniques and network management. Students will install and administrate current networking operating systems in servers and clients in a lab environment. Lec 3, Cr 3. Prerequisite: CIST 3330 or consent of instructor.

CIST 4330 Graphics and Digital Imaging

This course covers fundamental principles of graphics and digital imaging. Topics of this course include graphics acquisition, graphics optimization, image manipulations, masking, layering, compositing, image correction techniques, and video manipulating and filtering techniques. Lec 3, Cr 3. Prerequisite: CIST 3330 and CIST 3380 with a minimum grade of C.

CIST 4346 Systems Analysis and Design

This course provides an understanding of the system development cycle. It enables students to evaluate and choose a system development methodology. Topics include systems survey, functional specifications, interface specification, data design, program design, system testing and implementation. Lec 3, Cr 3. Prerequisite: COSC 1437 and it is recommended CIST 4340.

CIST 4360 Computer Graphics and Digital Imaging

This course introduces basic concepts of designing, creating, editing and manipulating the layout of photographic-quality animation sequences, professional images, and multi-media slide presentations and how to integrate them within the web environment. Image and audio formats, compression techniques and transmission techniques are also discussed. Lec 3, Cr 3. Prerequisite: CIST 3316 with "C" or better.

CIST 4380 Advanced Special Topic in Computer Systems

This course covers a special topic at the senior level. Different sections of the course may cover different topics in a semester. Special topics chosen will be related to new and state of the art developments in the area of computer information systems. Lec 3, Cr 3. Prerequisite: Senior level standing and approval of instructor.

Criminal Justice (CJSA, CRIJ)

Criminal Justice Department/College of Liberal Arts • 882-8993 • Dr. Susan Ritter, Chair • MRCS 319 • E-mail: susan.ritter@utb.edu URL: <http://unix.utb.edu/~claj/crijust.html>

CJSA 1312 Crime in America

American crime problems in historical perspective social and public policy factors affecting crime impact and crime trends social characteristics of specific crimes prevention of crime. Lec 3, Cr3.

CJSA 1322 Introduction to Criminal Justice

History and philosophy of criminal justice and ethical considerations crime defined its nature and impact overview of criminal justice system law enforcement court system prosecution and defense trial process corrections. Lec 3, Cr 3.

CJSA 2388 Internship-Criminal Justice Studies

Provides the student with real-world experience, problem solving, and practitioner supervision in criminal justice agencies related to the interest of the student. Students are required to work for a minimum of 112 hours during the semester, must submit weekly activity logs, and meet with the intern coordinator weekly. Lec 1, Lab 7.5, Cr 3ab 7.5, Cr 3 Prerequisite: Six hours of English with grade "C" or better. Concurrent enrollment will be accepted with approval of instructor.

Construction Technology (CNBT, CRPT, ELPT, ELTN, PFPB, WDWK)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

CNBT 1166 Practicum

The practicum provides the student a field experience with practical and general workplace training supported by an individualized learning plan developed by the employer, college, and student. Lec 112, Cr 1.

CNBT 1167 Practicum

The practicum provides the student a field experience with practical and general workplace training supported by an individualized learning plan developed by the employer, college, and student. Lec 112, Cr 1.

CNBT 1301 Introduction to Construction Industry

This course provides an overview of the construction industry, including: organizational structures and systems, safety regulation and agencies, construction documents office and field organizations, and the various construction crafts. Field trips will be utilized to reinforce classroom and laboratory instruction. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

CNBT 1302 Mechanic, Plumbing, and Electrical Systems in Construction

The course presents the basic mechanical, plumbing and electrical components in construction from a systems approach and their relationship to the overall construction of a building. The craft of carpentry will also be covered as an integral part of the construction process from the initial installation of forms to the detail finish of a construction project. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

CNBT 1311 Construction Methods and Materials

This course provides an introduction to construction materials and methods and their applications. Students will identify construction materials and list their applications to various construction methods in the carpentry, electrical, and plumbing trades. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

CNBT 1346 Construction Estimating

Fundamentals of estimating materials and labor costs in construction are topics in this course. Lec 3, Cr 3.

CNBT 1391 Special Topics: Construction Blueprint Reading

Topics in this course address current events, skills, knowledge, and/or attitudes and behaviors pertinent to the construction industry. This course was designed to be multiple times to improve student proficiency. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

CNBT 2166 Practicum

The practicum provides the student a field experience with practical and general workplace training supported by an individualized learning plan developed by the employer, college, and student. Lec 112, Cr 1.

CNBT 2167 Practicum

The practicum provides the student a field experience with practical and general workplace training supported by an individualized learning plan developed by the employer, college, and student. Lec 112, Cr 1.

Communication (COMM)

English and Speech Department/College of Liberal Arts • 882-8239 • Mr. William Harris, Chair • MRCS 204 • E-mail: william.harris@utb.edu URL: <http://unix.utb.edu/~cla/engspch.html>

COMM 1129 Publications Laboratory

Supervised work as a member of the university newspaper staff. The student is expected to learn editing and makeup. A student may register for this course each semester, with a maximum of four semester hours. Lab 3, Cr 1 Prerequisite or concurrent enrollment: COMM 2311, COMM 2315.

COMM 1307 Survey of the Media

This course is designed to provide students with an overview of broadcasting and cable casting history, programming, regulations, and financial structures. Commercial, educational and public radio and television, both in the United States and around the world, will be covered with an emphasis on helping the student be a better-informed, and more critical consumer. Lec 3, Cr 1. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 2311 News Writing for the Mass Media I

Theory and practice of news gathering and writing with emphasis on effective writing. Assignments cover general news, interviews, speeches, meetings, and other fields of activity. Lec 3, Cr 3 Prerequisite: ENGL 1301 and SPCH 1315 or SPCH 1318

COMM 2315 News Writing for Mass Media II

A continuation of COMM 2311, with emphasis on further developing news gathering and reporting skills. Reports about speeches, interviews, meeting, as well as other types of reportorial writing are assigned. Lec 3, Cr 3 Prerequisite: COMM 2311

COMM 2316 Interviewing Principles

This course is designed to improve students' verbal and nonverbal skills in participating in and conducting several types of interviews. Students have the opportunity to develop basic skills in data analysis and techniques such as structuring interviews, techniques, methods of evaluation, and personal presentation. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 2324 Studio Technology I

Students will produce, engineer, mix, setup, and perform in actual recording sessions. Samples for portfolios may be acquired. Lec 1, Lab 4, Cr 3 Prerequisite: MUSI 2373.

COMM 2331 Radio/Television Announcing

Study of voice, diction, pronunciation, phonetics, and delivery in various types of announcing. Lec 3, Cr 3

COMM 3310 Communication in Context

Designed to expose students to significant issues and topics are related to specific contexts in communication: media issues, political communication, health communication, gender communication, and family communication. May be repeated twice for credit. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, SPCH 1315 or SPCH 1318.

COMM 3314 Communication for Sales Success

Course will examine tools, tactics, and processes for successful selling. Students will practice selling products by phone, in person, sales interviews and sales presentations for both consumer and corporate customer. Lec 3, Cr 3. Prerequisite: SPCH 1315, ENGL 1301 and ENGL 1302.

COMM 3315 Methods and Strategies of Social Influence

Designed to examine persuasive and rhetorical techniques as they apply to effective social influence in interpersonal, small group, and mass communication settings. Emphasis on motivational factors, psychological and rhetorical principles, credibility, image, and theories of attitude change. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 3316 Intercultural Communication

Study of the symbolic and relativistic nature of culture and the resultant problems in attempting to communicate meaning across cultural lines. Lec 3, Cr 3

COMM 3321 Technical and Professional Communication

Designed to serve students in scientific and technical areas, including business administration, computer science, engineering, biochemistry, and other fields. Provides students with the specific speech communication concepts, principles, and competencies needed to create in listeners an understanding of both the principles and applications of scientifically studied fields of knowledge. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 3323 Theories of Communication

Designed to provide the student with a comprehensive overview and analysis of the nature, history and goals of communication theories. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 3325 Technical and Mediated Communication

Designed to provide the students with a survey of modern technology on interpersonal communication, including an introduction to communication technologies the influence of technology on interpersonal communication, group decision making, and mediated communication and an analysis of argumentation and persuasion in technological issues. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 3330 Leadership Communication

Designed to examine the role appropriate communication skills play in improving students' ability to address management and leadership duties. Emphasis is placed on organizational processes, leadership styles, and interpersonal, presentational, and group communication skills that are useful in business, governmental, and professional settings. Relationships between cultural diversity and leadership and communication are explored. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 3331 History of Film

This course traces the history of film from its conception. Within the course, the student will examine all aspects of cinematic systems of style and narrative. Both the communication major and non-major will be provided with critical skills to analyze and discuss film. Lec 3, Cr 3. Prerequisite: SPCH 1315, ENGL 1301, and ENGL 1302.

COMM 3335 Mass Communication and Society

Examines theories and effects of the mass communication process. Emphasis on media as they relate to political systems, radio talk shows, and new communication technologies. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 3353 Advanced Public Speaking

Provides students with intensive application of public speaking principles to various situations. Critical thinking, analysis, reasoning, organization skills, and methods for intensifying presentation impact are stressed. An audience-centered approach to public presentations is the central issue for this course. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 3360 Feature Writing

Interpreting trends in reader appeal, analyzing feature story structure finding ideas for gathering materials, writing and selling feature articles. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 4300 Communication Internship

Course applies communication knowledge to a specific career or job opportunity. Student works 10-15 hours per week in a applied communication field with supervisory feedback to instructor. Students will assemble portfolio of work to demonstrate what has been learned/ accomplished in the internship. Intern 3, Cr 3. Prerequisite: 15 credit hours of COMM course work and departmental approval.

COMM 4303 Special Topics in Communication

Select topic in an identified area of communication. May be repeated for credit when the topics vary. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 4310 Integrated Communication for Advertising Public Relations and Sales Promotion

This course examines the integration of promotional activities within an advertising and public relations context. Lec 3, Cr 3. Prerequisite: SPCH 1315, ENGL 1301 and ENGL 1302.

COMM 4311 Public Relations

Explores the principles of public relations as practiced in public affairs and private business. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 4312 Applied Organizational Communication

Analysis of organizational communication processes and development of interpersonal, presentational, and group communication skills that are useful in business, governmental, and professional organizations. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 4332 Principles of Instruction and Training

Designed to provide students with exposure to classroom communication patterns, climate, and ecology as they relate to instruction. Student-teacher, teacher-teacher, teacher-administrator, and school-public interaction and examined. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 4340 Advertising

Designed to expose the student to principles of advertising as they are applied and used in differing media. Emphasis is place on writing advertising copy, layout, and design. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 4344 Campaign Development

Designed to provide students with an in-depth study of persuasive and public relations campaign development. Lec 3, Cr 3. Prerequisite: COMM 2311, COMM 2315, COMM 4340, and COMM 4311, or approval of instructor.

COMM 4345 Communication and Conflict Management

Theory and research pertaining to management to resolution of conflict across diverse contexts. Lec3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 4350 Applied Research Methods in Communication

Designed to develop students' ability to understand, evaluate, and produce social/scientific research in the area of communication. Students will be exposed to the major methods of research used in speech communication, journalism, and mass media. Each student is responsible for the successful completion of an individually authored research project. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

COMM 2333 Television/ Video Production

Students will learn the practical application of television production principles through hands on training in the operation of video cameras, lighting, grip equipment, sound recording equipment, and digital editing systems. Lec 3, Cr 3. Prerequisite: COMM 1307.

COMM 2353 Argumentation and Debate

This course will teach theory and practice of formal debate. Course covers the basis for establishing a point of view, logical proof (evidence and reasoning) and also requires development of written briefs, critical thinking exercises, and public debate. Lec 3, Cr 3. Prerequisite: SPCH 1315, ENGL 1301, and ENGL 1302.

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>

COOP 4301 Cooperative Education (Internship)

Specially structured, personalized course(s) providing learning gained through on-the-job experience. Academic theory is integrated with workplace learning. Upper-level credit may be earned in any BAT specialization. Coursework is completed during a four-months period. Enrollment is effective when a new learning opportunity is offered or when placement into a new position occurs. Course content is determined by nature of the position and by a learning contract between student, employer, and faculty sponsor. The course may be repeated as determined by the department. Lec 3, Cr 3.

Computer Sciences (COSC)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>

COSC 1305 Computer Systems

An introduction to the primary components of a business computer system and to the primary application software packages used to increase business productivity. These topics are reinforced with microcomputer laboratory exercises. Student are required to attend scheduled lab beyond lecture sessions. Lec 3, Cr 3. Prerequisite: MATH 0322 with “C” or better.

COSC 1310 Computer Literacy

A descriptive introduction to the organization and use of computers in the modern age: Computer as a tool for acquiring, representing, distributing, and processing information. Organization of computers and their different components. Concepts of hardware, software, algorithms, processes, languages, operating systems database systems, systems analysis and design, data communications, multiprocessing and distributed processing. Students learn the application of computer-based information through projects involving word processing, databases, spreadsheets, file-handling, and general novice programming. Students are required to attend scheduled lab beyond lecture sessions. Lec 3, Cr 3. Prerequisite: MATH 0322 with “C” or better.

COSC 1317 Fortran Programming

A programming intensive course involving fundamental characteristics of digital computers and algorithms concerning general applications geared toward scientific and/or engineering concepts. Examples of algorithms cover topics from scientific and engineering fields. Lec 3, Lab 1, Cr 3. Prerequisite: MATH 1314.

COSC 1336 Programming Fundamentals I

Introduction to programming logic and programming. Topics include propositional calculus and Boolean algebra, numeric systems and their arithmetic, software development methodology, data types, control structures, functions, arrays, and the mechanisms of running testing and debugging. This course satisfies computer literacy requirements. Prerequisite: MATH 1314 with “C” or better.

COSC 1437 Programming Fundamentals II

This programming intensive course uses a high level language to review controls structures subroutines, structured and abstract data types, file input and output, the object oriented paradigm, software engineering techniques, syntax and semantics, compilation, libraries, basic searching and sorting techniques, and elementary analysis of algorithm. Prerequisite: COSC 1336 with “C” or better or consent of instructor.

COSC 2310 Discrete Structures

This course is a study of proof techniques, asymptotic notations for growth function analysis, common functions found in algorithm analysis, manipulating and bounding summations, different methods to solve recurrences including alteration and generating functions, combinatory analysis, number theory, binomial coefficients, sets, graphs, and trees. Prerequisite: MATH 2313 with “C” or better.

COSC 2312 Foundations of Computer Science

The student is introduced to number systems and applied Boolean algebra relevant to the design of computer hardware. Introduction to machine architecture and assembly language. Classical and modern aspects of programming languages and the relationship of formal languages with their grammars are studied. Credit may only be awarded for COSC 2310 and COSC 2320 or COSC 2312. Lec 3, Cr 3. Prerequisite: COSC 1336 and COSC 2310 with a grade of “C” or better.

COSC 2316 Web Programming and Design

This course focuses on the design of multimedia programs and Web applications using languages such as JAVA and HTML. The course will develop the student’s skills in developing multimedia applications integrated with Web designs through the use of programming languages. Lec 3, Cr 3. Prerequisite: COSC 1437 with “C” or better.

COSC 2325 Machine Language and Computer Organization

This assembly language intensive course covers machine cycle, digital representation of data and instructions, assemblers, loaders, macros, subroutines, and program linkages. Concepts of computer organization, operating systems, concurrent processes, synchronization and communication are introduced. Lec 3, Cr 3. Prerequisite: COSC 2312 and COSC 2336 with a “C” or better.

COSC 2336 Programming Fundamentals III

This programming intensive course deepens the concepts of file input/output, recursion backtracking, analysis of algorithms, and data structures including queues, stacks, linked lists, trees, hash tables, trees and graphs. Software engineering techniques for modularity, reusability, documentation, testing, error detection and recovery are covered. Lec 3, Cr 3. Prerequisite: COSC 1437, COSC 2310, and MATH 3381 with “C” or better.

COSC 3325 Digital Logic and Computer Architecture

Combinational and sequential logic (reinforced by several lab projects) are studied leading to the design of a processor. Hardware description languages in conjunction with hardwired/microprogramming controllers are studied. Lec 3, Cr 3. Prerequisite: COSC 2312, COSC 2336, and PHYS 2326 with a grade of “C” or better.

COSC 3330 Introduction to Networks & Databases

A modern operating system is used to enable students to perform exercises in multitasking, distributed DBMS, networking, and user interfaces. Computer networking, and network programming, and concepts of computer graphics are introduced. Lec 3, Cr 3. Prerequisite: COSC 2312, COSC 2336, MATH 2414, and PHYS 2326 with “C” or better.

COSC 3345 Data Structures and Algorithm Analysis

Concepts of creating, storing, retrieving, ordering, and manipulation of data structures are introduced via programming intensive projects. Formal specification of data structures in programming languages is studied in depth. Algorithms used are analyzed for their space and time complexity. This course satisfies the computer science requirements for Math majors. Students majoring or minoring in both Mathematics and Computer Science cannot receive dual credit for this course. Lec 3, Cr 3. Prerequisite: COSC 2336 and MATH 2414 with a grade of “C” or better.

COSC 3355 Principles of Programming Languages

Theory of programming languages is dealt with: Syntax and semantics of a language, scoping, binding, storage allocation, procedures and data objects, data-directed programming, object-oriented programming, and other modern programming concepts. Lec 3, Cr 3. Prerequisite: COSC 2312 and COSC 2336 with “C” or better.

COSC 3380 Special Topic

A special topic will be covered in this course at the junior level. Different sections may cover different topics in a semester. Under special topics, courses related to new developments in the area of computer science will be offered. Lec 3, Cr 3.

COSC 4190 Senior Project

Students will develop a project and give a presentation to a faculty committee under the guidance of a faculty project advisor. Lab 3, Cr 1. Prerequisite: 27 hours in computer science.

COSC 4300 Compiler Construction

Different phases of compiler construction are studied: lexical, syntax, semantics, and code generation. Projects leading to the complete construction of a compiler for a mini set of a language are given. Lec 3, Cr 3. Prerequisite: COSC 2325, COSC 3345, and COSC 3355; with a grade of "C" or better.

COSC 4310 Operating Systems

The student is familiarized with the services common to most operating systems. Issues in CPU scheduling, concurrent processes, deadlocks, memory management, file management, and distributed systems are dealt with. Students are given relevant projects to support the theoretical aspects learned in class. Lec 3, Cr 3. Prerequisite: COSC 2325 and COSC 3345 with "C" or better.

COSC 4313 Computer Networking

Computer networks are presented via seven distinct layers: physical, data link, network, transport, session, presentation, and application layer. hardware and protocols used at different layers and in different networks are studied in detail. Different existing networks are studied as examples in every layer. Lec 3, Cr 3. Prerequisite: COSC 3330

COSC 4315 Advanced Computer Networks

This course covers the design of networks and their performance. Modern networks such as ATM and Gigabit Ethernet network will also be studied. Other topics that will be studied are cryptology, network programming, and secure channels. Lec 3, Cr 3. Prerequisite: COSCU 2317 and COSC 4313 with a grade of a "C" or better.

COSC 4321 E-Commerce

This course introduces the technologies used in building e-commerce applications including e-commerce scalable architecture design, Internet infrastructure, administration, electronic payment systems, e-business relationships, mobile commerce (mCommerce), and business-to-business (B2B) marketplace design, strategies and models. Lec 3, Cr 3. Prerequisite: COSC 2316 and COSC 3330 with minimum grade of a "C".

COSC 4330 Computer Graphics

The student is familiarized with structured graphical objects. The algorithms for transforming, clipping, and projecting objects are put into practice several projects. hidden line/surface removal, shading/lighting models, and the problem of aliasing are studied. Lec 3, Cr 3. Prerequisite: COSC 3345 with a grade of "C" or better.

COSC 4332 Human Computer Interfaces

Simple and compound classes, page and page selector classes, animation and pop up classes, configuration and deriving of new objects, application interface, overall design, and machine dependencies are studied. Application-oriented graphic user interfaces are built. Lec 3, Cr 3. Prerequisite: COSC 3330 and COSC 3345.

COSC 4333 Digital Image Processing

This course covers the basic techniques used in acquiring, processing, and displaying of digital images and video. Topics include image acquisition, spatial and frequency domain representation, image filtering, image compression, image analysis, morphological image processing and image understanding. Efficient implementation of image processing algorithms in a structured computer language is emphasized. Lec 3, Cr 3. Prerequisite: COSC 2336 and MATH 2414. With a grade of a "C" or better.

COSC 4335 Computer Vision

The course covers the fundamental and advanced ideas of developing computerized procedures to extract numeric and symbolic information from images. Key ideas includes image formation, acquisition, calibration, object recognition, video understanding, stereo imaging, optical flow and classification methods. System implementation and applications in communication, medicine, robotics and manufacturing are introduced. Lec 3, Cr 3. Prerequisite: COSC 2336 and MATH 2414 with "C" or better.

COSC 4342 Database Management Systems

Data abstraction and models, entity-relationship model, relational model, formal and commercial query languages, network and hierarchical data models, relational database design, file and system structure, indexing and hashing, query processing, and concurrency control are studied. Lec 3, Cr 3. Prerequisite: COSC 3330 and COSC 3345 with a grade of "C" or better.

COSC 4343 Data Mining

This course gives the fundamentals of applying artificial intelligence techniques for analysis, learning and prediction of information using data extracted from databases. Topics include data mining system architecture, data preprocessing, pattern recognition, attribute relevance analysis, class discrimination, rule association, correlation analysis, classification, prediction, cluster analysis and query languages. Lec 3, Cr 3. Prerequisite: COSC 4342 with a grade of a "C" or better.

COSC 4346 Software Engineering

The scope of systems analysis, systems investigation and analysis, input and output design, storage devices, file organization, sorting and merging, factors affecting file design, system design, the program specifications, design strategy, and financial applications are studied. Lec 3, Cr 3. Prerequisite: COSC 3330 and COSC 3345.

COSC 4349 Computer Architecture

This course covers classical and modern computer architectures. Techniques such as microprogramming and counter-decoder methods will be included. Other topics that will be studied include parallel computing architectures, their performance and programming. Lec 3, Cr 3. Prerequisite: COSC 3325 with a grade of a "C" or better.

COSC 4350 Artificial Intelligence

This course discusses the theoretical and practical foundations of Artificial Intelligence. Principles of reasoning, perception, deduction, planning, learning, knowledge representation and problem resolution are some of the areas covered. Lec 3, Cr 3. Prerequisite: COSC 3345 with "C" or better.

COSC 4355 Expert Systems

This course covers the theoretical and practical principles of modern Expert Systems construction. Prerequisite: COSC 4350 with a grade of a "C" or better.

COSC 4360 Numerical Methods

The topics include root finding, interpolation and numerical differentiation, polynomial interpolation, estimating derivatives, numerical integration, systems of linear equations, approximation by spline functions, and smoothing of data. This course satisfies the computer science course requirements toward a major in mathematics. Lec 3, Cr 3. Prerequisite: COSC 2336 and MATH 2414 with a grade of a "C" or better.

COSC 4380 Special Topics

A special topic will be covered in this course at the senior level. Different sections may cover different topics in a semester. Under special topics, courses related to new developments in the area of computer science will be offered. Lec 3, Cr 3.

COSCU 2317 Signals and Systems

An introduction to signals and systems including discrete and multi-dimensional signals. Random variables and representation of signals in the time and frequency domains will be covered including filter design and analysis. Lec 3, Cr 3. Prerequisite: COSC 2336 and MATH 2314 with a grade of "C" or better.

Construction Technology (CNBT, CPMT, CRPT, EEIR, ELPT, ELTN, PFPB, WDWK)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

CPMT 2302 Home Technology Integration

This course covers the integration and maintenance of various home technology subsystems including home automation, security and surveillance, home networks, video and audio networks, structured wiring, design, installation, and maintenance of the various subsystems available to integrate technology for today's high-tech home. Lec 2, Lab 2, Cr 3. Prerequisite: Departmental approval.

Criminal Justice (CJSA, CRIJ)

Criminal Justice Department/College of Liberal Arts • 882-8993 • Dr. Susan Ritter, Chair • MRCS 319 • E-mail: susan.ritter@utb.edu URL: <http://unix.utb.edu/~clal/crijust.html>

CRIJ 1301 Introduction to Criminal Justice

Provides an overview of the history and philosophy of criminal justice and ethical considerations, defines crime and its nature and impact, provides an overview of the criminal justice system, law enforcement, the court system, prosecution and defense, the trial process, and corrections. Lec 3, Cr 3.

CRIJ 1306 The Courts and Criminal Procedures

Presents the judiciary in the criminal justice system, including the right to counsel, pretrial release, grand juries, the adjudication process, types and rules of evidence, and sentencing. Lec 3, Cr 3

CRIJ 1307 Crime in America

Introduces American crime problems in historical perspective, social and public policy factors affecting crime the impact of crime crime trends, social characteristics of specific crimes, and prevention of crime. Lec 3, Cr 3.

CRIJ 1310 Fundamentals of Criminal Law

Presents the nature of criminal law and its philosophical and historical development major definitions, concepts and classifications of crime, elements of crime and penalties using Texas statutes as illustrations, criminal responsibility. Lec 3, Cr 3.

CRIJ 1313 Juvenile Justice System

Provides an overview of the juvenile justice system in the United States, including theories of juvenile delinquency, justice system policy toward juvenile offenders, the structure of juvenile courts, juvenile detention, and juvenile rehabilitation efforts, emphasis will be placed on understanding and applying the Texas Family Code, Title III to juveniles processed through Texas juvenile courts. Lec 3, Cr 3.

CRIJ 2301 Community Resources in Corrections

Introduces the role of community corrections, including community programs for adults and juveniles, administration of community programs, legal issues, and future trends in community treatment. Lec 3, Cr 3 Prerequisite: ENGL 1302 or ENGL 2311 with "C" or better. Concurrent enrollment will be accepted with approval of instructor.

CRIJ 2313 Correctional Systems and Practices

Introduces corrections in the criminal justice system, organization of correctional systems correctional role, institutional operations, alternatives to institutionalization, treatment and rehabilitation, and current and future issues. Lec 3, Cr 3 Prerequisite: ENGL 1302 or ENGL 2311 with "C" or better. Concurrent enrollment will be accepted with approval of instructor.

CRIJ 2314 Criminal Investigation

Introduces investigative theory, collection and preservation of evidence, sources of information, interview and interrogation, uses of forensic sciences, case and trial preparation. Lec 3, Cr 3 Prerequisite: ENGL 1302 or ENGL 2311 with "C" or better. Concurrent enrollment will be accepted with approval of instructor. Must be a Criminal Justice Major.

CRIJ 2328 Police Systems and Practices

Presents the police profession, the organization of law enforcement systems, the police role, police discretion and ethics, police community interaction, and current and future issues. Lec 3, Cr 3 Prerequisite: ENGL 1302 or ENGL 2311 with "C" or better. Concurrent enrollment will be accepted with approval of instructor.

CRIJ 3302 Current Literature and Research in Criminal Justice

Reviews current literature and examines selected problems affecting the criminal justice system, offers instruction in steps involved in the scientific approach to problem solving, discusses research techniques and paper writing and applications or research in criminal justice. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 3303 Nature of Crime

Provides an overall perspective of the crime problem with special emphasis given to philosophical and theoretical ideas pertaining to crime and its control, including examining of the victim and criminal topologies. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 3315 Legal Aspects of Evidence

Critically examines the legal controls on police officers, with special attention to current court decisions related to such issues as arrest, search and seizure, confessions, wiretapping and eavesdropping, right to counsel, and self-incrimination. Focuses on issues relating to elements of proof for major criminal offenses. Presents an understanding of the concepts of reasonable suspicion and probable cause which direct and control police responses to crime situations. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 3331 Legal Aspects of Corrections

Legal problems and principles from conviction to release, including consideration of convictions, imprisonment, sentencing, conditional release, post conviction procedures, prisoners' rights, probationers' right, and validity of conviction. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 3341 Probation and Parole

The philosophy, history and principles of probation, parole and other community-based treatment programs, the philosophy of punishment and rehabilitation trends, practices and current research in probation and parole, including methods of analysis, selection and prediction. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 3345 Correctional Administration

Fundamental concepts of management, organization, and administration as specifically applicable to correctional institutions, field services, and community-based corrections. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 4301 Practicum Field Experience

Teaches job interview techniques and resume writing and requires placement in a criminal justice (or related) agency for on-the-job training for a minimum of 120 hours. Students are evaluated by agency critiques, daily logs, and a weekly meeting with the intern coordinator. Lec 3, Cr 3. Prerequisite: Senior standing, ENGL 1301, ENGL 1302 or ENGL 2311 and ENGL 2332 or ENGL 2333.

CRIJ 4311 Advanced Police Organization and Administration

In-depth discussion of organizational and administrative theory, comparative discussion of philosophies utilized in business and public administration with potential relationships to police organizations, and the methodology of societal trends affecting criminal justice administration. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311 and ENGL 2332 or ENGL 2333.

CRIJ 4312 Principles of Law Enforcement Supervision

Examines the principles involved in law enforcement supervision, principles of leadership, psychology involved in handling grievances and in building morale, duties and responsibilities of command level personnel, law enforcement budgeting procedures, supervisory problems and responsibilities relating to discipline, and internal affairs investigations. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 4313 Seminar of Issues in Law Enforcement

Analyses and discusses contemporary issues in policing with particular attention to current developments, service delivery, and the changing police role integration of established scientific knowledge with practical police experiences in various areas of policing. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 4330 Psychology and the Legal Systems

This course provides an interdisciplinary introduction to the field of Forensic Psychology, including basic concepts of the American legal process in civil and criminal cases and application of the science of Psychology in the legal system for the development and implementation of law and policy. Lec 3, Cr 3. Prerequisite: CRIJ 3302 or PSYC 3301 or SOCI 4305.

CRIJ 4341 Correctional Casework & Counseling

Examines the role and techniques of casework in corrections with emphasis on integrating casework and counseling responsibilities and procedures. The course includes examining of therapy techniques and processes in various correctional settings and studying of service delivery programs tailored to the specific needs of correctional clients. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 4343 Seminar of Issues in Corrections

Analyses and discusses contemporary correctional systems, including discussion of recent research concerning correctional institutions and various corrections field services. Emphasis is given to administrative and treatment concerns in corrections. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 4361 International Study of Crime and Justice

Studies criminal justice programs and institutions outside of the United States through in-country visitations supplemented by assigned readings, papers, discussion, and dialogue with leading in-country criminal justice personnel. The course permits students to obtain a realistic comparative study of criminal justice in countries other than the United States through first hand experiences. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 4362 Special Topics in Criminal Justice

Gives advanced undergraduate students the academic flexibility and opportunity to study contemporary issues in crime and criminal justice. May be retaken once for credit upon approval of the department chair. Lec 3, Cr 3 Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311, and ENGL 2332 or ENGL 2333.

CRIJ 4363 Gangs and Gang Behavior

This course introduces the student to street and prison gangs it explores gang structure, organization, and characteristics. Official response to gang problems is also analyzed. Lec 3, Cr 3. Prerequisite: 9 hours of ENGL, 1000 level or above.

CRIJ 4370 Senior Seminar - Policy Issues

Provides a capstone course for criminal justice students nearing the completion of the baccalaureate degree (more than 100 semester credit hours). This course is designed to explore current criminal justice policy issues from individual student interest and integrate material learned in the criminal justice curriculum, transcending the parochial view of the crime phenomenon from an agency perspective (police, courts, juvenile justice, and corrections). This course allows the student to explore topical criminal justice policy issues as they effect each agency, from the micro to the macro perspectives and to assess the intended and unintended consequences of criminal justice policies throughout the system and society. Lec 3, Cr 3. Prerequisite: Senior standing, ENGL 1301, ENGL 1302 or ENGL 2311 and ENGL 2332 or ENGL 2333.

Construction Technology (CNBT, CRPT, ELPT, ELTN, PFPB, WDWK)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

CRPT 1311 Conventional Roof Systems

This course is a study of the principles and development of the skills relative to the design and construction of a conventional roof system incorporating gable, hip, and intersections. Emphasis will be placed upon safe work practices and the selection, use, and maintenance of tools, equipment, and materials common to roof construction. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

CRPT 1315 Conventional Wall Systems

This course provides instruction and skill development in the construction of conventional wall systems with emphasis on both wood and metal frame. Topics include identification of components, construction of wood and metal frame wall systems, safe work practices, and the selection, use and maintenance of tools, equipment, and materials typical to wall construction. Lec 2, Lab 4, Cr 3 Prerequisite: Departmental approval.

CRPT 1323 Floor Systems

This course is an introduction to common floor systems. Topics include component identification, floor construction, safe work practices, and the selection, use, and maintenance of tools, equipment, and materials used in floor construction. Lec 2, Lab 3, Cr 3 Prerequisite: Departmental approval.

CRPT 1325 Forms and Foundations I

This course provides instruction in the construction of basic form and foundation systems typical to residential and light commercial construction. Emphasis will be placed upon safety, building lay out, and the selection of tools, equipment, and materials typical to constructing forms and foundations. Lec 2, Lab 3, Cr 3

CRPT 1341 Conventional Exterior Finish Systems

This course provides skill development in the installation of exterior finish systems and components including the placement and installation of cornice, windows, doors, siding, and flashing. Emphasis will be placed on safety maintenance, and the proper selection and use of tools, equipment, and materials. Lec 2, Lab 2, Cr 3

CRPT 1345 Conventional Interior Finish

This course provides instruction and skill development in the installation of interior finish systems and components including the placement and installation of doors, trim, floor, wall, and ceiling finishes. Emphasis will be placed upon safe work practices and proper maintenance in addition to the proper selection and use of materials, tools, and equipment typical to interior finish. Lec 2, Lab 2, Cr 3

Health Services (CTMT, DSEC, DSVT, ECCS)

Allied Health Department/School of Health Sciences • 882-5010 • Dr. John McCabe, Program Director • LHSB 2.406 • E-mail: john.mccabe@utb.edu URL: <http://umix.utb.edu/~kgarcia/rthp.htm>

CTMT 3332 Principles of Computed Tomography

In depth coverage of computed tomography imaging techniques. Image quality assurance and radiation protection are emphasized.

CTMT 3636 Computed Tomography Equipment and Methodology

Skills development in the operation of computed topographic equipment, focusing on routine protocols, image quality, quality assurance and radiation protection.

CTMT 4636 Practicum in Computed Tomography

Practice in the clinical setting performing CT Imaging. Close supervision by preceptor in the clinical setting. This experience can be paid or non paid.

Kinesiology (DANC, HLTH, HLTHU, KINE)

Department of Health & Human Performance/School of Education • 882-8290 • Dr. Zelma Mata, Chair • Gym 203 • E-mail: zelma.mata@utb.edu URL: <http://blue.utb.edu/kinesiology/>

DANC 1241 Ballet I

Introduction to technique, theory and vocabulary of classical ballet. Previous ballet experience necessary. Lab 3, Cr 2.

DANC 1242 Ballet II

A continuation of DANC 1241. Lab 3, Cr 2. Prerequisite: DANC 1241 or equivalent skills.

DANC 1251 Theatre Dance I

An introduction to all aspects of theater dance. Emphasis on technique and vocabulary leading to skills in performing jazz, tap, modern, character, and folkloric dance. Previous dance experience necessary. Lab 3, Cr 2.

DANC 1252 Theater Dance II

A continuation of DANC 1251. Lab 3, Cr 2. Prerequisite: DANC 1241 or equivalent skills.

DANC 2241 Ballet III

A continuation of DANC 1242. Lab 3, Cr 2. Prerequisite: DANC 1242 or equivalent skills.

DANC 2242 Ballet IV

A continuation of DANC 2241. Lab 3, Cr 2. Prerequisite: DANC 2241 or equivalent skills.

DANC 2251 Theater Dance III

A continuation of DANC 1352. Prerequisite: DANC 1252 or equivalent skills. Lab 3, Cr 2 Prerequisite: DANC 1252 or equivalent skills.

DANC 2252 Theater Dance IV

A continuation of DANC 2251. Lab 3, Cr 2. Prerequisite: DANC 2251 or equivalent skills.

Drafting (ARCE, DFTG, MBST, SRVY)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

DFTG 1393 Special Topic: Hurricane Mitigation

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Topics includes weather aspects of hurricanes and high winds design/construction. Lec 2, Lab 3, Cr 3.

DFTG 1405 Technical Drafting

Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, auxiliary views, and reproduction processes. Lec 3, Lab 3, Cr 4 Prerequisite: Math Asset>36, Reading Asset>29, Writing Asset>30, or equivalent. Corequisite: DFTG 1409, DFTG 2440 and departmental approval.

DFTG 1409 Basic CAD

An introduction to basic computer-aided drafting. Emphasis is placed on drawing setup, creating and modifying geometry, storing and retrieving predefined shapes, placing, rotating, and scaling objects, adding text and dimensions, using layers and coordinate systems, input and output devices. Lec 3, Lab 3, Cr 4. Prerequisite: Math Asset>36, Reading Asset>29, Writing Asset>30, or equivalent. Corequisite: DFTG 1409, DFTG 2440 and departmental approval.

DFTG 1417 Architectural-Residential

Architectural drafting procedures, practices, and symbols, including preparation of detailed working drawings for residential structures with emphasis on light frame construction methods. Lec 3, Lab 3, Cr 4 Prerequisite: DFTG 1405, DFTG 1409 and departmental approval required.

DFTG 1491 Special Topics: CAD Applications

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Lec 3, Lab 3, Cr 4 Prerequisite: DFTG 2432

DFTG 2317 Descriptive Geometry

Graphical solutions to problems involving points, lines, and planes in space. Lec 2, Lab 3, Cr 3. Prerequisite: DFTG 1405

DFTG 2323 Pipe Drafting

A study of pipe fittings, symbols, specifications and their applications to a piping process system. Creation of symbols and their usage in flow diagrams, plans, elevations, and isometrics. Lec 2, Lab 3, Cr 3. Prerequisite: DFTG 2440

DFTG 2328 Architectural- Commercial

Architectural drafting procedures, practices, and symbols including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. Lec 2, Lab 3, Cr 3. Prerequisite: DFTG 1417

DFTG 2386 Internship

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed the college and the employer. Lec 144, Cr 3 Prerequisite: Departmental approval.

DFTG 2421 Topographical Drafting

Plotting of surveyors field notes, plotting elevations, contour drawing, plan and profiles, and laying out traverses are course topics. Lec 3, Lab 3, Cr 4 Prerequisite: DFTG 1405, DFTG 1409, DFTG 2440, and departmental approval required.

DFTG 2432 Advanced CAD

Use of advanced techniques, including the use of a customized system and the principles of data manipulation for drawing production enhancement. Presentation of advanced drawing applications, such as three-dimensional modeling and linking graphics entities to external non-graphic data are topics covered. Lec 3, Lab 3, Cr 4. Prerequisite: DFTG 1405, DFTG 1409 and departmental approval.

DFTG 2440 Solid Modeling/Design

A computer-aided modeling course. Development of three-dimensional drawing and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work. Lec 3, Lab 3, Cr 4 Prerequisite: Math Asset>36, Reading Asset>29, Writing Asset>30 or equivalent. Corequisite: DFTG 1405, DFTG 1409 and departmental approval.

Diagnostic Medical Sonography (DMSO)

*Allied Health Department/School of Health Sciences • 882-5011 • Ms. Marti Flores,
Program Director • LHSB 2.436 • E-mail: marti.flores@utb.edu*

DMSO 1166 Practicum-Diagnostic Medical Sonography Technician

This course offers a practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Practicum 9, Cr 1. Prerequisite: DMSO 1441 and DMSO 2405. Corequisite : DMSO 2253.

DMSO 1167 Practicum- Diagnostic Medical Sonography Technician

This course offers a practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Practicum 10, Cr 1. Prerequisite: DMSO 1166.

DMSO 1302 Basic Ultrasound Physics

Basic acoustical physics and acoustical waves in human tissue. Emphasis on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams. Lec 3, Cr 3.

DMSO 1342 Intermediate Ultrasound Physics

A continuation of the study of acoustical physics. Topics include interaction of ultrasound with tissues, the mechanics of ultrasound production and display, various transducer designs and construction, quality assurance, bioeffects, image artifacts, and methods of Doppler flow analysis. The student will describe pulse-echo principles and actions recognize instruments options and transducer selection interpret methods of Doppler flow analysis identify elements of a quality assurance program recognize common image artifacts and describe potential bioeffects. Lec 3, Cr 3.

DMSO 1355 Sonography Pathophysiology

A study of the pathology and pathophysiology of the abdominal structures visualized with ultrasound examination including the urinary and reproductive systems and superficial parts. The student will recognize abnormal sonographic patterns of the abdomen, reproductive and urinary systems, and superficial parts and recognize pathologic processes in identified organ structures. Lec 3, Cr 3.

DMSO 1367 Diagnostic Medical Sonography

This course offers a practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Practicum 24, Cr 3. Prerequisite: DMSO 1167. Corequisite: DMSO 2441 and DMSO 2342.

DMSO 1441 Introduction to Abdominopelvic Sonography

Basic sonographic cross-sectional anatomy as it relates to the abdomen and pelvis. Normal anatomy and physiology of the abdominal/pelvic cavities as related to scanning techniques, transducer selection, and scanning protocols. Lec 3, Lab 4

DMSO 2245 Advanced Sonography Practices

Advanced sonographic procedures and special topics. Review of previously covered material is included. Vascular methodology, case studies, and film critique are discussed. The student will describe various advanced sonographic practices and procedures and identify and describe methods of vascular imaging and testing. Lec 2

DMSO 2253 Sonography of Superficial Structures

Detailed study of normal and pathological superficial structures as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. The student will identify sonographic appearance of normal and abnormal superficial structures demonstrate appropriate scanning technique using accepted protocol guidelines evaluate patient history and laboratory data as it relates to ultrasound and select appropriate transducer for area of interest. Lec 1, Lab 2.

DMSO 2342 Sonography of High Risk Obstetrics

This course emphasizes normal and abnormal maternal/fetal development as it relates to scanning techniques, patient history and laboratory data, transducer selection and scanning protocols. The student will identify and describe normal and abnormal fetal and maternal structures demonstrate pertinent measurement techniques and scanning techniques using accepted protocols evaluate patient history and laboratory data as it relates to ultrasound and select appropriate transducer for area of interest. Lec 2, Lab 4, Cr 3.

DMSO 2343 Advanced Ultrasound Physics

Advanced course emphasizing the use of ultrasound instruments including modes of operation, operation control options, techniques for recording static and dynamic images, and advances in transducer design. The student will apply principles of ultrasound instruments and modes of operation utilize operator control options summarize techniques for recording sonographic images and relate advances in transducer designs. Lec 2, Lab 4, Cr 3.

DMSO 2366 Diagnostic Medical Sonography

This course offers a practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Practicum 24, Cr 3. Prerequisite: DMSO 1367. Corequisite: DMSO 2441 and DMSO 2342.

DMSO 2405 Sonography of Obstetrics and Gynecology

Detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient history and laboratory data, transducers selection, and scanning protocols.

DMSO 2441 Sonography of Abdominopelvic Pathology

This course emphasizes pathologies and disease states of the abdomen and pelvis as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Endocavitary sonographic anatomy and procedures including pregnancy may be discussed. The student will identify abnormal abdominal/pelvic structure demonstrate appropriate scanning techniques using accepted protocol guidelines evaluate patient history and laboratory data as it relates to ultrasound and select appropriate transducer for area of interest. Lec 3, Lab 4, Cr 4.

Communication (COMM)

English and Speech Department/College of Liberal Arts • 882-8239 • Mr. William Harris, Chair • MRCS 204 • E-mail: william.harris@utb.edu URL: <http://unix.utb.edu/~cl/engspch.html>

DRAM 1310 Introduction to Theater

Fundamentals of dramatic art, structural techniques, character analysis and interpretation, makeup costuming, set design, construction, and lighting and participation in plays. Lec 3, Lab 3, Cr 3.

DRAM 1351 Introduction to Acting

Introductory study and analysis of acting, with emphasis on stage movement, spatial awareness, behavioral techniques, and character development. Lec 3, Lab 3, Cr 3

DRAM 2361 History of the Theater

A study of the history of the theatre including critical review and analysis of selected plays from Greek antiquity to the present. Lec 3, Cr 3

Health Services (CTMT, DSEC, DSVT, ECCS)

Allied Health Department/School of Health Sciences • 882-5010 • Dr. John McCabe, Program Director • LHSB 2.406 • E-mail: john.mccabe@utb.edu URL: <http://unix.utb.edu/~kgarcia/rthp.htm>

DSEC 3140 Practicum I Echocardiography

A basic type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional, generally in a clinical setting. Practicum 1, Cr 1.

DSEC 3200 Introduction to Echocardiography Techniques

An introduction to scanning techniques and procedures with hands-on experience in a lab setting. Emphasis is placed on the sonographic explanation of the normal adult heart. Lec 3, Cr 3.

DSEC 3300 Principles of Adult Echocardiography

An introduction to cardiovascular anatomy and physiology, including hemodynamics and spatial relationships of the normal adult heart. Topics include anatomical correlation of 2D, M-mode and Doppler sonographic imaging. Scanning techniques are correlated and taught in the laboratory sessions.

DSEC 3340 Adult Echocardiography

Fundamental theories of echocardiography including cardiac anatomy and physiology, physics, M-mode 2D correlation and scanning protocol, mitral valve normal and abnormal echo patterns, hemodynamic and conduction changes, and basic Doppler and color flow. Designed for sonographers and individuals practicing echo who need more of an academic echo background.

DSEC 4140 Practicum II Echocardiography

An advanced type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional, generally in a clinical setting. Practicum 1, Cr 1.

DSEC 4200 Echocardiography Evaluation of Pathology I

An emphasis on adult acquired cardiac pathologies. Topics include cardiovascular pathophysiology, quantitative measurements and the application of 2D, M-mode, and Doppler. Recognition of the sonographic appearances of cardiovascular disease is stressed.

DSEC 4300 Echocardiography Evaluation of Pathology II

A continuation of Echocardiography Evaluation of Pathology I with emphasis on cardiac disease. Topics include adult and pediatric congenital heart disease. A discussion of quantitative measurements and application of 2D, M-mode, and Doppler. Recognition of the sonographic appearances of cardiac disease is stressed.

DSVT 3140 Practicum I Vascular Technology

A BASIC type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional, generally in a clinical setting.

DSVT 3210 Vascular Technology Applications

Study of noninvasive vascular exams with emphasis on anatomy and physiology, and pathophysiology.

DSVT 3300 Introduction to Vascular Technology

An introduction to basic noninvasive vascular theories, with emphasis on basic skills and knowledge, such a image orientation, transducer handling and identification of anatomic structures.

DSVT 3330 Principles of Vascular Technology

An introduction to noninvasive vascular technology modalities, including 2D imaging, Doppler, plethysmography and segmental pressures. Emphasis on performing basic venous and arterial imaging and non-imaging exams.

DSVT 3340 Cerebral Vascular Evaluation

Integration of basic concepts and the application of non-invasive technology for the evaluation of carotid disease.

DSVT 3350 Peripheral Vascular Evaluation

Integration of basic concept and the application of noninvasive technology for the evaluation of peripheral vascular disease.

DSVT 4140 Practicum II Vascular Technology

An ADVANCED type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing the workflow. Practical experience is simultaneously related to theory. Close and/or direct supervision is provided by the clinical professional, generally in a clinical setting.

Education - Bilingual Education/ Spanish (BILS, EABL, EDBI)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EABL 3312 Teaching Reading in the Bilingual Classroom

Students will be given the opportunity to learn the developmental process involved in biliteracy. This course focuses on methods and techniques for integrating teaching and assessing reading skills in Spanish-English bilingual classrooms. Taught in Spanish Lec 3, Cr 3 Prerequisite: Alternative Certification Program departmental approval to enroll student. EACI 4324 or taken concurrently.

Education - Curriculum and Instruction (EACI, EAIN, EDCI)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EACI 4324 Designing Instruction and Assessment to Promote Student Learning - A.C.P

Knowledge of student diversity and learning goals and objectives will be emphasized. This knowledge will be applied to effective instructional planning and assessment for all students. Field-based course. Lec 3, Lab 3, Cr 3 Prerequisite: Alternative Certification Program and departmental approval to enroll student.

Education - Early Childhood (EAEC, EDEC)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EAEC 4385 Growth and Development of Young Children-A.C.P

Emphasis on developmental and growth characteristics for birth through the eighth year. Affective development, psychomotor development, social and emotional development. Cultural dynamics of family relationships and the family and school are emphasized. Observations, reading, lectures class activities include day care as well as TEA accredited schools for pre-kindergarten and kindergarten children. Field experience required. Lec 3, Cr 3. Prerequisite: Alternative Certification Program and departmental approval to enroll student.

Education - Curriculum and Instruction (EACI, EAIN, EDCI)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EAIN 4320 Elementary/ Secondary Internship I-A.C.P

This course involves supervised classroom teaching and seminars designed to relate classroom teaching/learning experience to corresponding educational theory applicable to all educational levels. Prerequisite: Alternative Certification Program and departmental approval to enroll student.

EAIN 4321 Elementary/ Secondary Internship II - A.C.P

This course involves supervised classroom teaching and seminars designed to relate classroom teaching/learning experience to corresponding educational theory applicable to all educational levels. Prerequisite: Alternative Certification Program, departmental approval to enroll student and EAIN 4320.

Education - Literacy (EALI, EDLI)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EALI 3323 Beginning Literacy for E.S.L Learner: 2nd-4th Grade- A.C.P

Students focus on word analysis and decoding, reading fluency, reading comprehension and writing conventions. Students plan and present literacy lessons using techniques appropriate for English language learners. Field experience required. Lec 3, Cr 3 Prerequisite: Alternative Certification Program departmental approval to enroll student. EACI 4324 or taken concurrently if in ESL Generalist Certification Program.

EALI 4329 Literacy and Assessment- A.C.P

Participants understand the basic principles of formative and summative assessment and use a variety of literacy assessment practices to plan and implement instruction for students. Evaluation of strengths, needs and interests using standardized and alternative assessments will be included. Prerequisite: Alternative Certification Program departmental approval to enroll student, EAMG 4324 or take concurrently.

EALI 4351 Content Area Literacy- A.C.P

This course focuses on explicit strategies to teach and monitor content area reading comprehension, vocabulary development and study skills for all learners. Factors influencing reading comprehension as well as a variety of reading materials and formats will be highlighted. Teachers will also learn ways to encourage students to read for pleasure and be lifelong learners. Field-based course. Lec 3, Cr 3 Prerequisite: Alternative Certification Program, departmental approval to enroll student and EAMG 4324 or taken concurrently.

EALI 4367 Teaching Reading to the English Language Learner- A.C.P

This course offers the student the opportunity to develop knowledge and instructional strategies for teaching reading to students of diverse cultural-linguistics backgrounds. Special emphasis will be placed on developing oral language proficiency as a prerequisite skill to reading and on instructional strategies designed specifically to meet the needs of such learners. Prerequisite: Alternative Certification Program departmental approval to enroll student, EAMG 4324 or taken concurrently.

Education - Middle Grades (EAMG, EDMG)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EAMG 4324 Designing Instruction & Assessment to Promote Student Learning: 4th-8th Grades -A.C.P

Knowledge of students, learning goals and objectives will be emphasized. This knowledge will be applied to effective instructional planning and assessment for all students. Field-based course. Lec 3, Lab 3, Cr 3 Prerequisite: Alternative Certification Program departmental approval to enroll student.

EAMG 4325 Implementing Responsive Instruction & Assessment: 4th-8th Grade- A.C.P

This class emphasizes communication, instruction and assessment and technology. This knowledge will be implemented to create responsive instruction and assessment that actively engages all students in the learning process. Field-based course. Lec 3, Lab 3, Cr 3 Prerequisite: Alternative Certification Program departmental approval to enroll student, EAMG 4324 or taken concurrently.

Education - Secondary Education (EASC, EASL, EDSC, EDSL)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EASC 4324 Designing Instruction and Assessment to Promote Student Learning: 8th-12th Grade -A.C.P

Knowledge of students, learning goals and objectives will be emphasized. This knowledge will be applied to effective instructional planning and assessment for all students. Field-based course. Lec 3, Lab 3, Cr 3 Prerequisite: Alternative Certification Program departmental approval to enroll student.

EASC 4325 Implementing Responsive Instruction and Assessment: 8th-12th Grade-A.C.P

This class emphasizes communication, instruction and assessment strategies and technology. This knowledge will be implemented to create responsive instruction and assessment that actively engages all students in the learning process. Field-based course. Lec 3, Lab 3, Cr 3. Prerequisite: Alternative Certification Program departmental approval to enroll student and EDSC 4324 or taken concurrently.

EASL 4307 Foundations of Bilingual/E.S.L-A.C.P

Students will learn the foundations of Bilingual and English as a Second Language programs. Current research on first and second language acquisition, Bilingual and ESL programs, theories and models are emphasized. Field experience is required. Lec 3, Lab 3, Cr 3 Prerequisite: Alternative Certification Program departmental approval to enroll student, EACI 4324 or taken concurrently.

Education - Curriculum and Instruction (EAUCU)

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EAUCU 2301 Introduction to Special Populations

This education course introduces students to issues related to characteristics of special needs population as well as classroom strategies for instruction of diverse populations. Students will also be introduced to the legal issues related to students with special needs. Field experience required. Lec 3, Cr 3. Prerequisite: Alternative Certification Program approval.

Health Services (CTMT, DSEC, DSVT, ECCS)

Allied Health Department/School of Health Sciences • 882-5010 • Dr. John McCabe, Program Director • LHSB 2.406 • E-mail: john.mccabe@utb.edu URL: <http://unix.utb.edu/~kgarcia/rthp.htm>

ECCS 3310 Introduction to Emergency & Critical Care

The purpose of this course is to provide the learner with advanced knowledge in critical care medicine. Topics will include monitoring technology, advanced procedures, diagnostic testing, and treatment of acutely critical patients.

ECCS 3325 Advanced Airway Management

Prepares the student to perform endotracheal intubations, emergency tracheotomy, and other advanced airway techniques as well as insertion of chest tubes, emergency thoracentesis and other life saving maneuvers. Practice on manikins and possibly live animal labs are planned.

ECCS 3340 Critical Care Pharmacology

This course is designed to provide the learner with a fundamental knowledge of the actions and therapeutic uses of drugs. The topics covered will include basic principles of drug action, pharmacokinetics, autonomic and cardiovascular pharmacology, neuropharmacology, toxicology, endocrine pharmacology, and respiratory tract pharmacology.

ECCS 3355 Electrocardiography

A study of the fundamentals of electrocardiology with emphasis on the role of the 12-lead ECG in and out of hospital medical care. The purpose of this course is to teach in systematic-analytical approach to rapid 12-lead interpretation. Topics begin with cardiac anatomy and physiology and progress to the level of recognizing the classic 12-lead and multi-lead ECG patterns.

ECCS 4310 Invasive Hemodynamic Procedures

The learner will be prepared to monitor hemodynamic data in the intensive care unit. Topics will cover arterial line insertion, aortic counter pulsation, insertion of balloon tip pulmonary artery catheter. The physiology and interpretation of pathology will also be reviewed.

Economics (ECON, ECONU)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

ECON 2301 Macroeconomics

Introduction to national income analysis. Topics include an introduction to supply and demand analysis the economic functions of government the determinants of output, employment, and the general price level national income accounting classical, Keynesian and neoclassical models of the economy the Federal Reserve fiscal and monetary policy the balance of payments. BBA degrees require that this course be passed with a minimum grade of C Lec 3, Cr 3.

ECON 2302 Microeconomics

Introduction to price theory. Topics include elasticity consumer behavior, the behavior of the firm under perfect and imperfect competition, government regulation, natural resources, labor, international trade, and the distribution of income and wealth. Open only to students who have completed all required development courses in reading and/or writing as assessed by the University. BBA degrees require that this course be passed with a minimum grade of C Lec 3, Cr 3.

ECON 3352 Intermediate Microeconomic Theory

The theory of the firm. Supply and demand analysis, distribution theory and imperfect competition. Lec 3, Cr 3

ECON 4345 North American Economic Hist

A survey of North American economic growth and development from the pre-colonial era to the present. May be counted as ECON 4345 or HIST 4345. Lec 3, Cr 3.

ECON 4399 Current Topics in Economics**Ecology (ECOTU)**

Biological Sciences Department/College of Science, Math, and Technology • 882-5040 • Dr. Luis Colom, Chair • LHSB 2.816 • E-mail: luis.colom@utb.edu URL: <http://unix.utb.edu/biology/>

ECOTU 2309 Herpetology

This course is an in-depth study of amphibians and reptiles. A good knowledge of South Texas herptofauna will be emphasized. Special study of venomous snakes and current snakebite treatment will be surveyed. Lec 3, Lab 3, Cr 3. Prerequisite: Departmental approval.

ECOTU 2314 Plant Taxonomy

This course deals with the identification of vascular plants with emphasis on native flowering plants. Lec 3, Lab 3, Cr 3. Prerequisite: Departmental approval.

ECOTU 2327 Texas Coastal Ecology

This course examines the major near shore habitats and communities of the western Gulf of Mexico, including beaches, sand dunes, estuaries, salt marshes, mud flats, sea grass meadows, and rocky shores. Emphasis is places on directed, field-oriented, group and/or individual research projects. Lec 3, Lab 3, Cr 3. Prerequisite: Departmental approval.

ECOTU 2350 Ornithology

This lab emphasizes identification, field surveys/counts, and taxonomy of South Texas and Northeast Mexican birds. Lec 3, Lab 3, Cr 3. Prerequisite: Departmental approval.

ECOTU 2370 Mammalogy

This course examines the diagnostic characteristics of mammals and their evolution, surveys living mammalian orders, and investigates broad biological concepts and special topics, especially as it relates to mammals of Southern Texas and Northeastern Mexico. Lec 3, Lab 3, Cr 3. Prerequisite: Departmental approval.

**Education - Bilingual Education/
Spanish (BILS, EABL, EDBI)**

Curriculum and Instruction Department/School of Education • 882-8979 • Dr. Reynaldo Ramirez, Chair • EDBC 1.308 • E-mail: reynaldo.ramirez@utb.edu URL: <http://blue.utb.edu/education/>

EDBI 4608 Student Teaching Ec-4 Bilingual Generalist

Student teaching occurs in a bilingual classroom under the guidance of EC-4th grade classroom teachers and a university supervisor. Enhancing professional development and preparation for state required certification examinations will be emphasized in a seminar format. Prerequisite: Approval of the Student Teaching Committee.

**Education - Curriculum and
Instruction (EACI, EAIN, EDCI)**

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EDCI 3336 Topics in Education

This course will emphasize topics related to education and pedagogy. Topics will vary and may be repeated for elective credit. Lec 3, Cr 3.

EDCI 4311 Student Teaching E.C- 4th

The student teacher will have the opportunity to design and implement instruction, and practice classroom management techniques. Weekly seminars and individual conferences are required. Students will be assigned a half-semester, all day, Monday through Friday placement. This course is required for all level certifications. Lec 1, Cr 3. Prerequisite: Approval by the Teacher Education Committee. Corequisite: Concurrent enrollment in SPED 4313 or EDSC 4398.

**EDCI 4315 Principles of Teaching Workshop for
Elementary/ Secondary Teachers**

This workshop course is designed to give people entering teaching a theoretical and practical base for their introduction to teaching and for planning learning activities. Special permission must be given before enrollment in the course. Lec 3, Cr 3. Prerequisite: EDCI 4302, EDCI 4303, Paraprofessional status.

EDCI 4322 Human Development and Instruction

Major theories of the teaching-learning process and human growth and development as they relate to the EC-4 learner will be addressed. Areas emphasized are cultural differences, needs of special learners, developmental appropriateness, and linguistically diverse populations. Prerequisite: EDUCU 2303.

**EDCI 4324 Designing Instruction and Assessment to
Promote Student Learning**

Knowledge of student diversity and learning goals and objectives will be emphasized. This knowledge will be applied to effective instructional planning and assessment for all students. To be taken concurrently with EDCI 4325. Field-based course. Prerequisite: EDCI 4322 and concurrent enrollment in EDCI 4325.

**EDCI 4325 Implementing Responsive Instruction and
Assessment**

This class emphasizes communication, instruction and assessment strategies, and technology. This knowledge will be implemented to create responsive instruction and assessment which actively engages all students in the learning process. Lec 3, Cr 3. Prerequisite: EDCI 4322 and concurrent enrollment in EDCI 4324.

EDCI 4328 Method/Tech of Teach Music Elementary

This general music course provides an introduction to the following elementary music methods and approaches: Kodaly, Orff, Delacroze, Music memory, and CM (Comprehensive Musicianship). It also surveys the national standards in Music Education and the National Assessment of Music Education in the public schools. Lec 3, Cr 3. Prerequisite: MUSI 1308, MUSI 1312.

EDCI 4336 Topics in Education

This course covers current issues and topics related to the field of education. Field or lab work may be required. The course may be repeated twice for credit for a total of 9 semester credit hours when the topic is different. Lec 3, Cr 3. Prerequisite: Departmental approval.

EDCI 4608 Student Teaching Ec-4 E.S.L Generalist

Student teaching occurs in an ESL classroom under the guidance of EC-4th grade classroom teachers and a university supervisor. Enhancing professional development and preparation for state required certification examinations will be emphasized in a seminar format. Prerequisite: Approval by the Teacher Education Committee.

EDCI 4620 Internship Elementary / Secondary Schools

Full-time supervised classroom teaching with seminars designed to relate the classroom teaching/ learning experience to corresponding educational theory. Applicable to both elementary and secondary majors. May not substitute for student teaching. Lec 1, Cr 6. Prerequisite: Baccalaureate Degree and acceptance into the UTB/TSC Alternative Certification Program.

Education - Early Childhood (EAEC, EDEC)

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EDEC 4385 Growth and Development of Young Children

Emphasis on developmental and growth characteristics from birth through the eighth year. Affective development, psychomotor development, social and emotional development. Cultural dynamics of family relationships and the family and school are emphasized. Observations, reading, lectures, class activities include day care as well as TEA accredited schools. Environments will be developmentally appropriate inclusion models Fifteen hours of field experience required in addition to the 45 contact hours of classroom instruction. Lec 3, Cr 3. Prerequisite: Admission to Teacher Education

EDEC 4389 The Environment and Early Childhood

This focuses on an examination of appropriate learning environments for young children. It includes the relationship between curriculum and the design by addressing issues of development, assessment, classroom guidance, interdisciplinary lesson planning, culture, language and special needs. Lec 3, Cr 3. Prerequisite: EDEC 4385

Education - Literacy (EALI, EDLI)

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EDLI 3310 Emergent Literacy for E.S.L Learners: Early Childhood - 1st Grade

Early development of oral language, phonological and phonemic awareness, the alphabetic principle, and writing will be explored in this course. Students will tutor young children in these areas based multi-sensory, developmentally appropriate, and English as a second language principles. Field experience required. Lec 3, Cr 3. Prerequisite: Admission to Teacher Education.

EDLI 3323 Beginning Literacy for E.S.L Learners: 2nd-4th Grades

Students focus on word analysis and decoding, reading fluency, reading comprehension, and writing conventions. Students plan and present literacy lessons using techniques appropriate for English language learners. Field experience required. Lec 3, Cr 3 Prerequisite: EDLI 3310 or concurrent enrollment.

EDLI 3324 Fluent Literacy 3rd-4th Grades

Students focus on reading, writing, oral language, and viewing to learn. Students plan and teach research-based lessons using reading, writing, and multicultural children's literature across the curriculum. They apply comprehension strategies, the written conventions, and teaching methods for English as a Second Language in designing lessons. Field experience is required. Lec 3, Cr 3. Prerequisite: EDLI 3323.

EDLI 3329 E.S.L Literacy and Assessment

Participants will learn the basic principles of assessment and use a variety of literacy assessment practices to plan and implement literacy instruction for young ESL learners. Evaluation of strengths, needs, and interests using standardized and alternative assessments will be included. Field experience is required. Lec 3, Cr 3.

EDLI 3340 E.S.L Language Arts and Literature

This class focuses on developing the language arts skills of English language learners through reading, writing, listening, viewing and representing. The reading/writing workshop model includes the writing process, reading quality children's literature in various genres, and responding to the literature. Lec 3, Cr 3. Prerequisite: EDCI 3323

EDLI 3341 Children's Literature

A survey of books and related materials for the elementary/middle school age principles of book selection intensive reading of books required. Lec 3, Cr 3. Prerequisite: Must be taken with EDLI 3324.

EDLI 3343 Foundation of Beginning Literacy

Students learn the importance of oral language and early literacy development and apply explicit instructional strategies. Students design and teach mini-lessons using a wide range of fiction and nonfiction for beginning readers. Field-based experience is required. Lec 3, Cr 3.

EDLI 4329 Literacy and Assessment

Participants understand the basic principles of formative and summative assessment and use a variety of literacy assessment practices to plan and implement instruction for all students. Evaluation of strengths, needs and interests using standardized and alternative assessment will be included. Lec 3, Cr 3 Prerequisite: EDLI 3343.

EDLI 4347 Teaching Language Arts to Students Different Needs

This course will help teachers meet the different instructional needs of students, including English Language learners and students with disabilities. Teachers will learn to identify and understand individual variations in oral language, reading, speaking, writing, viewing and representing. Field-based experience is required. Lec 3, Cr 3. Prerequisite: Admission to Teacher Education Program and EDLI 3343.

EDLI 4350 Adolescent Literature

This course focuses on different genres of literature in multicultural society. It highlights purposes for reading, including reading for pleasure and lifelong learning. Additionally, it emphasizes modeling reading and adapting materials for all learners. Ways to enhance comprehension before, during and after reading are emphasized. Field-based experience is required. Lec 3, Cr 3. Prerequisite: EDLI 4329, Admission to Teacher Education.

EDLI 4351 Content Area Literacy

This course focuses on explicit strategies to teach and monitor content area reading comprehension, vocabulary development, and study skills for all learners. Factors influencing reading comprehension, as well as a variety of reading materials and formats, will be highlighted. Teachers will also learn ways to encourage students to read for pleasure and be life-long learners. Field-based experience is required. Lec 3, Cr 3 Prerequisite: EDMG 4324 or EDSC 4324.

EDLI 4367 Teaching Read to the English Language Learner

This course offers the student the opportunity to develop knowledge and instructional strategies for teaching reading to students of diverse cultural/linguistic backgrounds. Special emphasis will be placed on developing oral language proficiency as a prerequisite skill to reading and on instructional strategies designed specifically to meet the needs of such learners. Lec 3, Cr 3.

Education - Middle Grades (EAMG, EDMG)

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EDMG 4322 Human Development and Instruction

Major theories of the teaching-learning process and human growth and development as they relate to the middle grade learner will be addressed. Areas emphasized are cultural differences, needs of special learners, developmental appropriateness, and linguistically diverse populations. Field experience required. Prerequisite: EDCI 3304 or EDCI 4301 or concurrent enrollment.

EDMG 4324 Designing Instruction and Assessment to Promote Student Learning

Knowledge of students, learning goals and objectives will be emphasized. This knowledge will be applied to effective instructional planning and assessment for all students. Field-based course. Prerequisite: EDMG 4323 and concurrent enrollment in EDMG 4325.

EDMG 4325 Implementing Responsive Instruction and Assessment

This class emphasizes communication, instruction and assessment strategies, and technology. This knowledge will be implemented to create responsive instruction and assessment which actively engages all students in the learning process. Field-based course. Prerequisite: EDMG 4323 and concurrent enrollment in EDMG 4324.

EDMG 4377 Teaching Science in 4-8 Classrooms

An intensive examination of various strategies and techniques, specifically related to teaching 4-8 school science. The course will provide a foundation in learning theories, assessment techniques, teaching with various tools, and designing and implementing mathematics lessons for a diverse student population. Prerequisite: EDMG 4322.

EDMG 4378 Teaching Mathematics in 4-8 Classrooms

An intensive examination of various strategies and techniques, specifically related to teaching 4-8 school mathematics. This course will provide a foundation in learning theories, assessment techniques, teaching with various tools, and designing and implementing mathematics lessons for a diverse student population. Lec 3, Cr 3. Prerequisite: EDMG 4322

EDMG 4648 Student Teaching in the Middle Grade

This course places students in the middle grades classroom settings as a practicing teacher to demonstrate competencies. The student teacher will have the opportunity to design and implement instruction, and practice classroom management techniques. Weekly seminars and individual conferences are required. Students will be assigned a full-semester, all day, Monday thru Friday placement. Lec 1, Cr 6 Prerequisite: Approval by the Teacher Education Committee.

Education - Secondary Education (EASC, EASL, EDSC, EDSL)

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EDSC 4322 Human Development and Instruction

Major theories of the teaching-learning process and human growth and development as they relate to the secondary student will be addressed. Areas emphasized are cultural differences, needs of special learners, developmental appropriateness, and linguistically diverse populations. Field experience required. Prerequisite: EDSC 3304 or EDCI 4301 or concurrent enrollment.

EDSC 4324 Designing Instruction and Assessment to Promote Student Learning

Knowledge of students, learning goals and objectives will be emphasized. This knowledge will be applied to effective instructional planning and assessment for all students. Field-based course. Prerequisite: EDSC 4323 and concurrent enrollment in EDSC 4325.

EDSC 4325 Implementing Responsive Instruction and Assessment

This class emphasizes communication, instruction and assessment strategies, and technology. This knowledge will be implemented to create responsive instruction and assessment which actively engages all students in the learning process. Field-based course. Prerequisite: EDSC 4323 and concurrent enrollment in EDSC 4324.

EDSC 4329 Method/Technology of Teach Music Secondary School

This course provides an introduction to basic choral literature for intermediate and secondary school choirs, small ensemble literature, solo vocal repertoire: jazz/show choir choreography, concert programming, sight reading methods, and texts. It also surveys the rules, regulations and competitions of the University Interscholastic League and the Texas Choral Directors Association. Prerequisite: Music 1308, 1312, 3289. Lec 3, Cr 3 Prerequisite: MUSI 1308, MUSI 1312, MUSI 3289.

EDSC 4378 Teaching Math in 8-12 Classrooms

This course exams issues, strategies and techniques, specifically related to teaching 8-12 school mathematics. The course also provides a foundation in learning theories, assessment techniques, teaching with various tools, and designing and implementing mathematics lessons for a diverse students population. Lec 3, Cr 3 Prerequisite: Admission to Teacher Education.

EDSC 4379 Teaching Science in 8-12 Classroom

This course allows students to synthesize learning, the code of ethics, history and philosophy of education and legal issues in education. Emphasis is also given to classroom management and motivation. This course will also focus on characteristics and assessment requirements of students with special needs in an inclusive setting. Current issues dealing with the assessment of diverse learners will be addressed. A minimum of six hours of field experience per week is required. Prerequisite: Acceptance in Teaching Education.

EDSC 4398 Student Teaching All Level

This course places students in the 8-12 classroom settings as a practicing teacher to demonstrate teacher competencies. The student teacher will have the opportunity to design and implement instruction, and practice classroom management techniques. Weekly seminars and individual conferences are required. Students will be assigned a full-semester, all-day, Monday thru Friday placement and must be enrolled in EDCI 4311. Lec 1, Cr 3 Prerequisite: Approval by the Teacher Education Committee and concurrent enrollment in EDCI 4311.

EDSC 4641 Student Teaching, Secondary

Formally EDCI 4641. Student teaching for one teaching field of 36 hours requires a complete semester of full-day student teaching in an approved, accredited school, and weekly seminars. Lec 3, Cr 6. Prerequisite: Approval by the Teacher Education Committee.

EDSL 4306 Content Area Method in E.S.L Classroom

This course focuses on the current methods and theories of planning and teaching elementary math, science, and social studies or English language learners with a strong emphasis on an interdisciplinary approach to Instruction. Linguistic and cognitive issues for language minority students are addressed. Field-experience is required. Prerequisite: EDCI 4322 or EDCI 4302.

EDSL 4307 Foundations of Bilingual/E.S.L

Students will learn the foundations of Bilingual and English as a Second Language programs. Current research on first and second language acquisition, Bilingual and ESL programs, theories and models are emphasized. Field experience required. Lec 3, Cr 3 Prerequisite: EDCI 3304 or EDCI 4301 and EDCI 4322 or EDCI 4302

Educational Technology (EDTC)

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EDTC 3320 Instructional Design for the Corporate Trainer

This train-the-trainer course introduces the learner to the principles of instructional design. Students will explore the complexities of designing instruction in the context of corporate training environments. Students will learn classic ID theory and models and apply these theories in a real context through a major design project. Lec 3, Cr 3.

EDTC 3321 Computer/Web-Based Training

This course provides with the skills necessary to create effective computer/web-based training programs based on proven instructional design concepts. Lec 3, Cr 3.

EDTC 3323 Designing Instructional Multimedia

This course focuses on the development of skills using the latest multimedia tools for instructional technology training. Significant attention is made to interface design, message design, and the appropriate matching of media tools with specific goals and contexts. Lec 3, Cr 3.

EDTC 3332 Application of Instructional Technology

Students will combine skills and concepts to generate a web/computer-based training solution. Guided observation and practice in the applications of instructional technology to a specified training/educational setting are emphasized. Lec 3, Cr 3. Prerequisite: Complete a minimum of six semester credit hours selected from EDTC 3320, EDTC 3321, or EDTC 3323.

Education - General Education (EDUC, EDUCU)

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EDUC 1301 Introduction to the Teaching Profession

This course introduces students to education in society by analyzing historical, social, political, economic, cultural, global and legal issues in education.

EDUC 2301 Introduction of Special Programs

This education course introduces students to issues related to characteristics of special needs population as well as classroom strategies for instruction on diverse populations. Students will also be introduced to the legal issues related to students with special needs. Field experience required. Lec: 3, Cr. 3 Prerequisite: EDUC 1301

EDUCU 2303 Technology in Education

Students will understand the use of technology applications in classrooms instruction and evaluation. They will use technology as media to enhance instruction in all content areas. Using technology as a learning tool is emphasized. Prerequisite: Admission to Teacher Education.

Electrical Engineering Technology (CMPT, EECT, ELET, INMT)

Department of Engineering/College of Science, Math, and Technology • 882-6639 • Dr. Guillermo Weber, Chair • SETB 1.450 A • E-mail: guillermo.weber@utb.edu URL: <http://unix.utb.edu/eng/>

ELET 3314 Instrumentation and Control

Computer-based instrumentation and control systems including transducers, sensors, signal conversion and conditioning, amplification, filtering and offsetting. Lec 2, Lab 3, Cr 3 Prerequisite: ENGT 1409 or ENGT 1402 or ENGR 3320.

ELET 3410 Electronics II

This course is the second course of a two-semester electronics sequence. The course begins with a study of bipolar junction transistor (BJT) amplifier circuit configurations. Other transistor types, including FET and MOS, are then studied with circuit applications. Differential amplifiers are built and studied, leading to a study of integrated operational amplifiers (OPAMPS) and applications. Active filters are studied and built. Prerequisite: ELETU 2410 or ENGR 3421.

ELET 3411 Electromagnetics and High Frequency Systems

Electromagnetics and High Frequency Systems deals with high frequency concepts including topics in basic electromagnetics, transmission lines, matrix characterization, antennas, and RF circuit design applications including wireless communication systems, satellite communication systems, passive and active microwave circuit design, and high frequency PCB (Printed Circuit Board) layout. Prerequisite: PHYS 2326, PHYS 2126, MATH 3447, MATH 2321, and ELETU 2410.

ELET 3412 Introduction to Microprocessors

Architecture, hardware signals, instruction sets, addressing modes and assembly language programming on 16 and 32 bit processors. Topics include memory and serial and parallel I/O interfacing, wait state analysis, subroutine and interrupt processing. (Signal conditioning, A/D & D/A Data Communication) Lec 3, Cr 3. Prerequisite: ENGT 1407 and COSC 1437.

ELET 3413 Microprocessor Interfacing

Techniques for system development using microprocessors. Hardware interfacing and C language programming of microprocessor-based data acquisition and control systems. Lec 3, Lab 3, Cr 4. Prerequisite: ELET 3412.

ELET 3424 Power Electronics

Power Electronics deals with power diodes and transistors static converters DC power supplies power transistor circuits silicon-controlled rectifiers Classical and modern forced-commutation inverters choppers cycloconverters, and applications in power. Lec 3, Lab 3, Cr 4. Prerequisite: ELET 3410 or ENGR 4322 .

ELET 3431 Introduction to Telecommunications

Introduction to telecommunications principles including analysis of modulation and multiplexing, transmission media, switching techniques and modern communications models and standards. Lec 3, Lab 3, Cr 3. Prerequisite: ELET 2430 and ENGT 3303 or PHYS 3392 or MATH 3447.

ELET 3440 Electric Power and Machinery

This course introduces basic concepts of electric power generation, utilization, and power networks. Modeling of power system components are presented. Power systems functions and issues are presented and discussed. The associated laboratory will introduce power instrumentation and explore power factor correction, transformers, synchronous machines and induction machines. Prerequisite: (ELETU 2402, ENGT 1402, ENGT 1409 or ENGR 3320) and MATH 2414.

ELET 3441 Digital Systems

The main goal of this course is the design and analysis of digital circuits using Hardware Definition Language and CAD programs. Students will develop detailed understanding of advanced logic and system synthesis and optimization algorithms as they create operational systems in the laboratory and interface them with analog external circuits. Prerequisite: ENGT 1407 and COSC 1437.

ELET 4350 Sp Topic: Elet Eng Tech Senior Level

A special topic is offered as an elective in electronic engineering technology as the senior level. Different sections may cover different topics in a semester. Under special topics, courses related to new developments in the area of electronic engineering technology will be offered.

ELET 4423 Control Systems

Study of the classical closed-loop control systems. Major topics include Laplace and z-transforms, second order plants, compensation, proportional-integral-derivative control, continuous and discrete time domain analysis and design and computer-based design and analytical tools. Lec 3, Lab 3, Cr 4. Prerequisite: PHYS 3392 or MATH 3447.

ELET 4424 Power Distribution

General considerations in the transmission and distribution of electrical energy as related to power systems. Topics will also include survey of commercially-available components and systems, safety requirements and testing techniques. Lec 3, Lab 3, Cr 4. Prerequisite: ELET 3440.

ELETU 2201 Fabrication & Instrumentation Lab

Fabrication and Instrumentation Lab will introduce students to electrical fabrication and instrumentation subjects. Topics include fabrication, test, and trouble shooting of an electronic circuit component identification and electronic assembly on PCB, which includes lead cutting, bending and soldering use of a voltmeter, ohmmeter, oscilloscope, and signal generator. Co-requisite: ELETU 2402.

ELETU 2402 Linear Circuits I

Signal and device models and laws used in the analysis of linear circuits are introduced. Topics include Ohm's Law, Kirchoff's Laws, the power law, node and mesh analysis, superposition, Thevenin and Norton equivalents, phasor representation, Laplace transform analysis, and frequency-and-s-domain analysis, including pole/zero plots and transfer functions. Prerequisite: PHYS 2326, PHYS 2126, and MATH 2321.

ELETU 2410 Electronics I: Semiconductor Devices

Electrical characteristics of silicon, fabrication of silicon devices, and operation of bipolar junction diodes and transistors are the main topics of this course. Diode circuits and applications are described, built, and investigated. Transistor Biasing is the third topic of this course. Electronic devices are investigated both in the classroom and in the laboratory. Prerequisite: ELETU 2402 and ELETU 2201.

Construction Technology (CNBT, CRPT, ELPT, ELTN, PFPB, WDWK)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: http://blue.utb.edu/industrialtech/

ELPT 1311 Basic Electrical Theory

Basic theory and practice of electrical circuits. Includes calculations as applied to alternating and direct current. Students will explain atomic structure and basic electrical values, calculate values for circuit combination and voltage drop, and utilize electrical measuring instruments typical to the electrical trade. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

Manufacturing Engineering Technology (MFET)

Department of Engineering/College of Science, Math, and Technology • 882-6639 • Dr. Guillermo Weber, Chair • SETB 1.450 A • E-mail: guillermo.weber@utb.edu URL: http://unix.utb.edu/eng/

ELPT 1315 Electrical Calculations I

Introduction to mathematical applications utilized to solve problems in the electrical field. Topics include fractions, decimals, percentages, simple equations, ratio and proportion, and applied geometry. Lec 2, Lab 2, Cr 3.

Technology (CNBT, CRPT, ELPT, ELTN, PFPB, WDWK)

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ELPT 1320 Fundamentals of Electricity II Construction

This course introduced alternating current (AC), including AC voltage, frequency, mechanical and electrical degrees, waveforms, resistors, capacitors, and inductors. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

ELPT 1325 National Electrical Code I

This course covers knowledge of the National Electrical Code. Emphasis will be on wiring design, protection, methods, materials, equipment, and basic calculations. Lec 2, Lab 2, Cr 3 Prerequisite: Departmental approval

ELPT 1329 Residential Wiring

This course provides instruction and practice in wiring methods used in the construction of single family, two family and multiple-family dwellings. Students will compute in the circuit sizes needed for the installation of branch circuits, feeders, and service entrance conductors, demonstrate the proper installation of wiring devices, grounding systems, and other residential wiring systems, verifying that all work is performed in accordance to electrical codes. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

ELPT 1341 Motor Control

This course covers the operating principles of solid-state and conventional controls along with their practical applications, including braking, jogging, plugging, safety interlocks, wiring, and schematic diagram interpretations. Lec 2, lab 4, Cr 3. Prerequisite: Departmental approval.

ELPT 1345 Commercial Wiring

This course provides instruction and practice in commercial wiring methods. Students will interpret prints/drawings, computer the circuit sizes and over-current protection for branch circuits, feeders, and service entrance conductors, explain the proper installation of wiring devices according to electrical codes, demonstrate grounding methods, and identify commercial wiring methods conduit bending. Lec 2, Lab 4, Cr 3.

ELPT 1357 Industrial Wiring

This course covers the wiring methods used for industrial installations, including motor circuits, raceway and bus way installations, proper grounding techniques, and associated safety procedures. Lec 2, Lab 2, Cr 3.

ELPT 1364 Practicum

This course provides for practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to students' general and technical course of study. The guided external experiences may be for pay or no pay. Lec 336, Cr 3.

ELPT 2319 Programmable Logic Controllers I

This course covers the fundamental concepts of programmable logic controllers, principles of operations, and numbering systems as applied to electrical controls. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

ELPT 2323 Transformers

Transformer types, construction, connections, protection, grounding, and associated safety procedures are covered. Lec 2, Lab 2, Cr 3

ELPT 2355 Programmable Logic Controllers II

This course covers advanced concepts in programmable logic controllers and their applications and interfacing to industrial controls. Lec 2, Lab 2, Cr 3. Prerequisite: Departmental approval.

ELTN 1342 Electrical Troubleshooting

This course provides instruction and practice in the maintenance, theory of operation, troubleshooting, and repair of circuits of various residential, commercial and industrial electrical systems. Students will use multi-meters to perform proper testing on electrical equipment, identify short, open and closed circuits, and troubleshoots various conditions typical to electrical installations and equipment. Lec 2, Lab 2, Cr 3.

ELTN 1343 Electrical Troubleshooting

Maintenance, operation, troubleshooting, and repair of circuits of various residential, commercial, and industrial electrical systems.

ELTN 1391 Special Topic in Electrician: Blueprint Reading

Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Lec 2, Lab 2, Cr 3. Prerequisite: Departmental approval.

Emergency Medical Science (EMSP)

Allied Health Department/School of Health Sciences • 882-5010 • Mr. Adiel Garcia, Program Director • Emergency Medical Science • LHSB 2.436 • E-mail: adiel.garcia@utb.edu

EMSP 1166 Practicum- Emergency Medical Technician I

The Practicum - Emergency Medical Technician I course is a practical and general workplace training supported by an individualized learning plan, developed by the employer, college, and student. Practicum 7, Cr 1. Prerequisite: BIOL 2301, BIOL 2101, and HPRS 1101. Corequisite: EMSP 1501.

EMSP 1266 Practicum/EMT/Technician I

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 16, Cr 2.

EMSP 1267 Practicum/E.M.T/ Technician II

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Practicum 14, Cr 2.

EMSP 1355 Trauma Management

The Trauma Management Course is a detailed study of the knowledge and skills in the assessment and management of patients with traumatic injuries. Lec 2, Lab 2, Cr 3.

EMSP 1356 Patient Assessment and Airway Management

A detailed study of knowledge and skills required to reach competence in performing patient assessment and airway management. Lec 2, Lab 2, Cr 3.

EMSP 1401 Emergency Medical Technician-Basic

Introduction to the level of Emergency Medical Technician (EMT) - Basic. Includes all the skills necessary to provide emergency medical care at a basic level with an ambulance service or other specialized services. Lec 3, Lab 4, Cr 4.

EMSP 1438 Introduction to Advanced Practice

The Introduction to Advanced Practice course is an exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of the hospital. Lec 3, Lab 2, Cr 4.

EMSP 1501 Emergency Medical Technician- Basic

The Emergency Medical Technician - Basic course is an introduction to the level of Emergency Medical Technician (EMT) - Basic. It includes all the skills necessary to provide emergency medical care at a basic life support level with an ambulance service or other specialized services. Lec 4, Lab 3, Cr 5. Prerequisite: BIOL 2301, BIOL 2101, and HPRS 1101.

EMSP 2243 Assessment Based Management

The capstone course of the EMSP program. Designed to provide for teaching and evaluation comprehensive, assessment-based patient care management. Lec 1, Lab 2, Cr 2.

EMSP 2266 Practicum/E.M.T/Technician III

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the students. The plan relates the workplace training and experiences to the student's general and technical course of study. This study may be repeated if topics and learning outcomes vary. Practicum 14, Cr 2.

EMSP 2267 Practicum/E.M.T/Technician IV

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Practicum 14, Cr 2.

EMSP 2268 Practicum- E.M.T/ Technician V

The Practicum- Emergency Medical Technician V course is a practical and general workplace training supported by an individualized learning plan, developed by the employer, college, and student. Practicum 14, Cr 2.

EMSP 2330 Special Populations

The Special Populations course is a detailed study of the knowledge and skills necessary to reach competence in the assessment and management of ill or injured patients in nontraditional populations. Lec 2, Lab 2, Cr 3.

EMSP 2338 E.M.S. Operations

The EMS Operations course is a detailed study of the knowledge and skills to safely manage the scene of an emergency. Lec 2, Lab 2, Cr 3.

EMSP 2348 Emergency Pharmacology

The Emergency Pharmacology course is a comprehensive course covering all aspects of the utilization of medications in treating emergency situations. This course is designed to compliment Cardiology, Special Populations, and Medical Emergency courses. Lec 3, Cr 3.

EMSP 2434 Medical Emergencies

A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of ill or injured patients with medical emergencies. Lec 3, Lab 2, Cr 4.

EMSP 2444 Cardiology

A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies. Lec 3, Lab 2, Cr 4.

English (ENGL)

English and Speech Department/College of Liberal Arts • 882-8239 • Mr. William Harris, Chair • MRCS 204 • E-mail: william.harris@utb.edu URL: <http://unix.utb.edu/~cla/engspch.html>

ENGL 0320 College Writing Skills I

Developmental course. Practice in the fundamentals of written English. The emphasis is on functional writing for successful completion of assignments. Fundamentals of grammar, mechanics, and organization are stressed in the production of clear sentences, paragraphs, and multi-paragraph themes to address specific audiences. Students may be required to attend sessions at the Writing Lab. Students must enroll for READ 0320 or READ 0321 concurrently or demonstrate appropriate assessment scores in reading. Lec 3, Cr Prerequisite: ESOL 0318 with "C" or better, or appropriate assessment score in writing.

ENGL 0321 College Writing Skills II

Developmental course. A continuation of practice in fundamental skills begun in ENGL 0320. Continued practice in audience analysis, organization, and affective sentences. Students may be required to attend sessions at the Writing Lab. Students must enroll for READ 0320 or READ 0321 concurrently or demonstrate appropriate reading assessment scores. Lec 3, Cr 3 Prerequisite: ENGL 0320 with "C" or better, or appropriate assessment score in writing.

ENGL 1301 Composition I

Expository writing with emphasis on thinking and composing skills required to write full length essays on topics of personal experience, current issues, and material in published essays. Students will practice some research skills and produce a documented paper employing in-text citations. Lec 3, Cr 3. Prerequisite: "A" in ENGL 0320, ENGL 0321 with "C" or better, or placement based on assessment scores.

ENGL 1302 Composition II

Continuation of ENGL 1301. This course is a continuation of ENGL 1301 and emphasizes analytical writing in response to literature. A research essay is required. Lec 3, Cr 3. Prerequisite: ENGL 1301.

ENGL 2311 Technical Writing

Technical writing adapted to students in programs leading to bachelor's degrees in Engineering and Business Administration. Topics for reports, statistical tables and graphs, business letters, memoranda and primary and secondary research are normally related to student's field of study. Lec 3, Cr 3 Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 2332 World Literature to 1660

Studies of English translations of selected masterpieces from ancient civilizations through the period of the Renaissance. Additional readings from classics of the English-speaking people. Research project required. Lec 3, Cr 3. Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 2333 World Literature Since 1660

Studies of English translations of selected continental European masterpieces from the time of Renaissance to the modern period. Parallel readings from English and American literature. Research project required. Lec 3, Cr 3. Prerequisite: ENGL 1301 and ENGL 1302.

ENGL 3301 Medieval Literature

A study of various types of medieval literature, including epic, romance, and allegory, with special emphasis on Middle English writers. Lec 3, Cr 3 Prerequisite: 9 hours of English.

ENGL 3302 Literary Analysis

A course introducing students to the methodologies and techniques of reading and writing about literature and literary criticism through the study of works representative of various genres from different literary periods. Lec 3, Cr 3 Prerequisite: ENGL 2332 or ENGL 2333.

ENGL 3304 Eighteenth Century British Literature

A study of the major works of English writers of the Long Eighteenth Century, including Dryden, Congreve, Pope, Swift, Sterne, and Johnson. Lec 3, Cr 3. Prerequisite: Nine hours of English.

ENGL 3306 British Novel to 1900

Chronological study of the development of the English novel from Defoe and Fielding to Hardy with special emphasis on significant 19th century novelists such as Thackeray, Eliot, Dickens, and Austen. Lec 3, Cr 3 Prerequisite: 9 hours of English.

ENGL 3309 Major British Authors

A course that introduces students to the characteristics of major historical periods through the study of representative British literary works. Lec 3, Cr 3. Prerequisite: ENGL 2332 or ENGL 2333.

ENGL 3312 Survey of American Literature

A chronological study of the principal authors, their works and the trends in American literature, from the Colonial period to the Civil War. Lec 3, Cr 3 Prerequisite: ENGL 2332 or ENGL 2333.

ENGL 3313 Survey of American Literature

A chronological study of the principal authors, their works and trends in American literature from the Civil War to the present. Lec 3, Cr 3 Prerequisite: Nine hours of English.

ENGL 3319 Introduction to Descriptive Linguistics

An introduction to linguistic science, primarily phonetics, phonology, syntax, morphology, and the history of English. Lec 3, Cr 3 Prerequisite: Nine hours of English.

ENGL 3322 Business Communications

This course provides an introduction to the fundamentals of business writing, including memos, reports, and proposals. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and either ENGL 2332 or ENGL 2333.

ENGL 3324 Victorian and Modern Poetry

A study of British poetry from 1832 to the present. Lec 3, Cr 3 Prerequisite: 9 hours of English.

ENGL 3330 English Grammar

Theories of grammar with practical applications. Lec 3, Cr 3 Prerequisite: Nine hours of English.

ENGL 3331 History of the English Language

A study of the history and development of the English language from the Anglo-Saxon period into the 20th century. Lec 3, Cr 3. Prerequisite: 9 hours of English.

ENGL 3343 American Realism and Naturalism

A study of American writing from 1865 to 1925 with an emphasis on fictions, Dreiser, and Anderson. Lec 3, Cr 3. Prerequisite: 9 hours of English.

ENGL 3344 American Poetry to 1900

A study of American poetry from Anne Bradstreet to Emily Dickinson. Lec 3, Cr 3 Prerequisite: 9 hours of English.

ENGL 3346 American Novel

A study of major American novelists and the genre since 1900. Lec 3, Cr 3 Prerequisite: 9 hours of English.

ENGL 4300 Special Topics in English

This course will cover a variety of topics related to English studies and may be repeated once for credit as topics may vary. Lec 3, Cr 3. Prerequisite: Completion of the ENGL 1301 and ENGL 1302 sequence and ENGL 2332 or ENGL 2333.

ENGL 4301 Shakespeare

A study in representative plays in comedy, history, and tragedy. Lec 3, Cr 3 Prerequisite: Nine hours of English.

ENGL 4316 Mexican American Literature

A study of the literature by and about Mexican Americans, with emphasis on the literary techniques and the culture reflected in this literature. Lec 3, Cr 3. Prerequisite: Nine hours of English.

ENGL 4317 Literature by Women

A critical study of literature written by women, focusing on works from 1901 to the present. The course will introduce women's literature and the female literary tradition that has coexisted with, revised, and influenced male models. Lec 3, Cr 3 Prerequisite: 9 hours of English.

ENGL 4318 Science Fiction

A chronological survey of science fiction through a critical study of selected short stories and novels in their literary, social, and philosophical contexts. This course will examine definitions and prototypes of the genre. Lec 3, Cr 3 Prerequisite: Nine hours of English.

ENGL 4322 Creative Writing I

A course in writing poetry. Students will explore the elements of poetry by writing original poems and examining published poems. At the professor's discretion, students may have the opportunities to practice writing in other genres, such as short fiction and short drama. Lec 3, Cr 3. Prerequisite: Nine hours of English.

ENGL 4323 Creative Writing II

A course in writing short fiction. Students will explore the elements of short fiction by writing original stories and examining published stories. At the professor's discretion, students may have the opportunity to practice writing in other genres, such as poetry and short drama. Lec 3, Cr 3. Prerequisite: 9 hours of English.

ENGL 4324 Argument and Persuasion

A course that emphasizes the use of logical conventions and analysis of other rhetorical elements to produce persuasive essays on the current cultural and ethical concerns. Lec 3, Cr 3 Prerequisite: 9 hours of English.

ENGL 4325 Composition Techniques

An advanced course in formal English composition stressing effective communication with special emphasis on the exposition of abstract ideas and internal logic. Lec 3, Cr 3 Prerequisite: Nine hours of English.

ENGL 4328 Introduction to English As a Second Language

A study of the process of learning English as a second language. Special attention is given to problems encountered in reading, writing, and comprehending English. Lec 3, Cr 3 Prerequisite: Nine hours of English.

ENGL 4350 English Studies

A capstone course for senior English majors aimed at integrating students' knowledge of language, literature, and composition. The course also provides guidance in assembling a portfolio and in preparing for the state teacher certification exam in English. Lec 3, Cr 3 Prerequisite: 24 hours of upper-level English.

Engineering (ENGR, ENGRU)

Department of Engineering/College of Science, Math, and Technology • 882-6639 • Dr. Guillermo Weber, Chair • SETB 1.450 A • E-mail: guillermo.weber@utb.edu URL: <http://unix.utb.edu/eng/>

ENGR 1101 Introduction to Engineering

Introduction to engineering as a discipline and a profession. The course includes instruction in the application of mathematical and scientific principles to the solution of practical problems for the benefits of society. Prerequisite: MATH 1412 or concurrent MATH 2413

ENGR 1201 Introduction to Engineering

Engineering as a career, considering the various fields of engineering, history, and professionalism. Basic engineering analysis and problem solving, introducing calculators and computers. Lec 2, Cr 2. Prerequisite: MATH 1316 or MATH 1348 or MATH 2312.

ENGR 1205 Engineering Graphics II

Introduction to spatial relationships, multiview projection and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics. Prerequisite: ENGR 1204.

ENGR 1304 Engineering Graphics I

This course is an introduction to spatial relationships, multiview projection and sectioning, geometric dimensioning and tolerancing, graphical presentation of data, and fundamentals of computer graphics and solid modeling. Prerequisite: Consent of the instructor.

ENGR 2301 Engineering Mechanics I - Statics

This course is a calculus-based study of composition and resolution of focuses, equilibrium of forces system, friction, centroids, and moments of inertia. Prerequisite: PHYS 2325, PHYS 2125, MATH 2413, MATH 2414 and Co-requisite: MATH 3447.

ENGR 2302 Engineering Mechanics II - Dynamics

This course is a calculus-based study of dynamics of rigid bodies, force-mass-acceleration, work-energy, and impulse-momentum computation. Prerequisite: ENGR 2301 and currently enrolled in MATH 2321.

ENGR 2332 Mechanics of Materials

Stresses, deformations, stress-strain relationships, torsions, beams, shafts, columns, elastic deflections in beams, combined loading, and combined stresses are the main topics of this course. Prerequisite: ENGR 2301.

ENGR 3103 Thermodynamics Laboratory

This course includes experiments in laws of thermodynamics, heat transfer, and problem solving. Prerequisite: MATH 2414. Co-requisite: ENGR 3303.

ENGR 3303 Thermodynamics

This course covers the zeroth, first, and second laws of thermodynamics, fluid properties, conduction, convection and radiant heat transfer. Prerequisite: MATH 2414.

ENGR 3304 Mechanics of Materials

This course is on stresses, deformations, stress-stain relationships, torsions, beams, shafts, columns, elastic deflections in beams, combined loading, and combined stresses. Prerequisite: ENGR 2301.

ENGR 3310 Mechatronics I

This course exposes students for the first time in the program to the combination of mechanical engineering, electronic control and systems thinking in the design of products and manufacturing processes.

Prerequisite: ENGR 2301, ENGRU 2410, ENGT 1409, MATH 2321, and MATH-3447.

ENGR 3320 Linear Circuits

Signal and device models and laws used in the analysis of linear circuits are introduced. Topics include Ohm's Law, Kirchoff's Laws, the power law, node and mesh analysis, superposition, Thevinin and Norton equivalents, phasor representation, Laplace transform analysis, and frequency- and s-domain analysis, including pole/zero plots and transfer functions.

Prerequisite: PHYS 2326, PHYS 2126, and MATH 2321.

ENGR 3405 Engineering Materials

This course is an introduction to the structure, properties, processing, destructive and non-destructive testing, and engineering applications of ferrous and non-ferrous metals, plastics, polymers, composites and ceramics. The laboratory includes mechanical and physical testing, metallographic procedures, heat treatment, surface treatment and failure analysis. An emphasis is placed on material selection, testing, and validation. Prerequisite: MATH 2413, CHEM 1311 and CHEM 1111.

ENGR 3421 Electronics I

The electrical characteristic of silicon, fabrication of silicon devices, and operation of bipolar junction diodes and transistors are the main topics of this course. Diode circuits and applications are described, built, and investigated. Transistor biasing is the third topic of this course. Electronic devices are investigated both in the classroom and in the laboratory.

Prerequisite: ENGR 3320 or ELETU 2402 and MATH 2413.

ENGR 4122 Electronics II Laboratory

This is a laboratory course to accompany Electronics II with in-depth experimental studies of operational and discrete amplifiers. Co-requisite: ENGR 4322.

ENGR 4242 Senior Design Project I

This course begins with project definition, task analysis and planning, and project control, for an industry-based major design project. It concludes with the beginning of work on the project. Prerequisite: Senior standing and consent of advisor.

ENGR 4243 Senior Design Project II

This course is the continuation of ENGR 4242. Completion of industry-based design project. Prerequisite: ENGR 4242.

ENGR 4244 Senior Design Project

This course includes project definition, task analysis and planning, and project control, for an industry-based major design project. A second semester of the course includes implementation and completion of the project. This course may be taken two times for a total of four credit hours. Prerequisite: Senior standing and consent of advisor.

ENGR 4308 Design Graphics With Solid Modeling

This course is an introduction to special relationships, multiview projection and sectioning, geometric dimensioning and tolerancing, graphical presentation of data, and fundamentals of computer graphics, and solid modeling. Prerequisite: Consent of advisor.

ENGR 4309 Mechanical Subsystem Design

This course deals with the selection and computer-aided graphical representation of mechanical subsystems for the transmission of mechanical power and/or generation of mechanical motion. Component selection of gears, cams, belt and chain drives, clutches and transmissions will use data sources of contemporary manufacturers ranging from vendor catalogs to computerized databases. Prerequisite: ENGR 2302.

ENGR 4322 Electronics II

The course begins with a study of bipolar junction transistor (BJT) amplifier circuit configurations. Other transistor types, including FET and MOS, are then studied with circuit applications. Differential amplifiers are built and studied, leading to a study of integrated operational amplifiers (OPAMPS) and applications. Active filters are studied and built.

Prerequisite: ENGR 3421.

ENGR 4326 Power Electronics

Power Electronics deals with power diodes and transistors static converters DC power suppliers power transistor circuits silicon-controlled rectifiers classical and modern forced-commutation inverters choppers, cycloconverters, and applications in power. Prerequisite: ENGR 4322

ENGR 4343 Control Systems II

This course is the second part of a two-term sequence on modeling, analysis and control of dynamic systems. This second term emphasizes practical applications of control theory industry. Prerequisite: ENGR 3310 and ENGR 4442.

ENGR 4406 Mechanics III

This course deals with the analysis and applications of fluid mechanics and fluid power to mechanical systems, components and control of hydraulic and pneumatic systems. Prerequisite: ENGR 3304 or ENGR 2332.

ENGR 4407 Manufacturing Process Technologies

This course is an introduction to manufacturing process including metal cutting, measurements and metrology, deformation processes, casting, welding, joining, and composites. Prerequisite: ENGR 3405 and ENGR 4308.

ENGR 4423 High Frequency Engineering

High Frequency Engineering deals thoroughly with the particular problems faced when working with microwave frequencies, from microwave devices to satellite communications. Prerequisite: PHYS 2326, PHYS 2126, MATH 2321, and ENGR 3421.

ENGR 4424 Electric Power and Machinery

Topics of this course include: an overview of electronic power systems from energy sources through generation and distribution to end user motors, principles of electro-magnetism, analysis of three phase systems, and a selection of in-depth studies of transformers, induction and synchronous motors and generators, distribution fault analysis, and alternative energy. Lec 3, Lab 3, Cr 4 Prerequisite: ENGR 3320 or ENGT 1402 OR ENGT 1409, and MATH 2414, or consent of instructor.

ENGR 4425 Analog and Digital Communications

This course is an introduction to telecommunications principles including analysis of modulation and multiplexing, transmission media, switching techniques and modern communications models and standards Prerequisite: ENGR 4322 and PHYS 3490.

ENGR 4441 Control Systems

Classical closed-loop control systems are studied. Major topics Laplace and Z-transforms, second order plants, compensation, proportional-integral-derivative control, continuous and discrete time domain analysis and design, and computer-based design and analytical tools Prerequisite: PHYS 3490.

ENGR 4442 Control Systems I

This course is the first part of a two-term sequence on modeling, analysis and control of dynamic systems. It exposes students to the solution of problems involving mechanical, thermal and electrical systems and their couplings via computational methods and laboratory experimentation. Prerequisite: MEET 3430, MEET 3431, and ENGR 3310.

ENGR 4450 Computational Mechanics

This course is an introduction to numerical methods in engineering. It covers solutions of classical heat transfer and solid mechanics problems using the finite element method. Prerequisite: MEET 3430, MEET 3431, ENGR 2332, ENGR 2321, MATH 3447, and MATH 2321.

ENGRU 2310 Measurements and Instrumentation

This course deals with the theoretical basis for and practical implementation of the current state of the art in engineering measurement and instrumentation useful in mechanical and electrical engineering. Prerequisite: PHYS 2326, PHYS 2126, ENGR 2301, ENGR 2302, MATH 2321 and Co-requisite: ENGR 2332 and ENGT 1409.

Technology (ENGT, ENGTU, ENSCU, ENTC)

Department of Engineering/College of Science, Math, and Technology • 882-6639 • Dr. Guillermo Weber, Chair • SETB 1.450 A • E-mail: guillermo.weber@utb.edu URL: <http://unix.utb.edu/eng/>

ENGT 1101 Introduction to Engineering Technology Engineering

An introduction to the concepts and tools of engineering technology, and engineering technology careers. Includes team based and individual projects in understanding mechanical systems, problem analysis, problem management and problem solving techniques, an introduction to computer usage, communications, visualization graphics and illustration, machine and hand shop tools and safe practices in machine, tool and lab usage. Lec 3, Cr 1. Prerequisite: Concurrent enrollment in ENGL 1301.

ENGT 1407 Digital Fundamentals

Analysis, design, and simulation of combinational and sequential systems using: classical Boolean algebra techniques, laboratory hardware experiments and computer simulation. Introduction to programmable logic devices (PLD's) and application-specific integrated circuits using software tool to the design and analysis of facilitate learning digital concepts and hardware. Lec 3, Lab 3, Cr 4. Prerequisite: MATH 1316 or MATH 1412.

ENGT 1409 Introduction to Electrical Technology

Fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchoff's law, networks, transformers, resonance, phasors, capacitive and inductive and circuit analysis techniques. Lec 3, Lab 3, Cr 4. Prerequisite: MATH 1316 OR MATH 1412 OR MATH 2413, PHYS 1302 or PHYS 1402 or PHYS 2426 or concurrently enrolled, or approval of instructor.

ENGT 2130 Engineering Communications

Application of modern computer tools to analysis and presentation of engineering and technical information. Emphasis on critical thinking techniques in group and communication settings. Lab 3, Cr 1. Prerequisite: ENGL 1301, ENGT 1101, MEET 1301, and ENGL 1302 or concurrent enrollment.

ENGT 2303 Probability and Statistics

Introduction to concepts of variation, randomness, distribution analysis and probability theory with applications in quality control and reliability. Lec 3, Cr 3. Prerequisite: MATH 2413.

ENGT 3320 Engineering Economics

Analysis of the economic performance of Manufacturing systems, analysis of projects and selections from among alternatives. Covers cost classifications, profit and productivity, internal rate of return time value concepts. Lec 3, Cr 3

ENGT 3424 Power Electronics

Prerequisite: ELET 3410 .

ENGT 4140 Classical Foundations

Classical writers of various cultures with a focus on those contributing to modern thought, especially that of science and technology, including Archimedes, Aeschylus, Thucydides, Newton, and others and examples of engineering and technical development in various cultures. Lec 4, Cr 4 Prerequisite: Senior standing and consent of advisor.

ENGT 4241 Senior Design Project I

Project definition, task analysis and planning, project control. Begins work on industry-based major design project. Lab 6, Cr 2. Prerequisite: Senior standing and consent of advisor.

ENGT 4242 Senior Design Project II

Continuation of ENGT 4241. Completion of industry-based design project. Lab 6, Cr 2 Prerequisite: ENGT 4241.

ENGT 4350 Topics in Engineering Technology

Topics vary to meet student and employer needs. May be taken twice for credit provided topics are different. Lec 3, Cr 3

ENGTU 1407 Digital Fundamentals

Analysis, design, and simulation of combinational and sequential systems using: classical Boolean algebra techniques, laboratory hardware experiments and computer simulation. Introduction to programmable logic devices (PLD's) and application-specific integrated circuits using software tool to the design and analysis of facilitate learning digital concepts and hardware. Lec 3, Lab 3, Cr 4. Prerequisite: MATH 1412 or MATH 2413.

ENGTU 2407 Engineering Materials I

Instruction in the making and forming of steel and the classification of steel, cast iron, and aluminum. Topics include mechanical and physical properties, non-destructive testing principles of alloying, selection of metals, iron carbon diagrams, principles of hardening and tempering steel, and the metallurgical aspects of machining. Topics will also include an overview of properties and uses of polymers and ceramics. Prerequisite: CHEM 1311 and CHEM 1111.

ENGTU 2410 Introduction to Manufacturing Processes

Exploration of variety of methods used in manufacturing. Theory and application of processes including but not limited to metal forming, welding, machining, heat treating, plating, assembly procedures, process controls considerations, casting and injection molding. Prerequisite: ENGR 1304 and ENGTU 2407.

ENSCU 1401 21st Century Energy Issues

This course is an introduction to the energy revolution that will shape the geopolitical events of the 21st century. Concepts of energy are explored. Energy source alternatives are presented and studied. Laboratory experiences include spreadsheets, studies of energy and electricity sources and uses, and a field trip. Lec 3, Lab 3, Cr 4. Prerequisite: Qualified for College Algebra via THEA score or MATH 0322 or MATH 0422 with a "C" or better.

ENTC 1191 Special Topics

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student.

Entrepreneur (ENTR)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

ENTR 3320 Global Entrepreneurship

Students should understand how an international business is initially organized, managed, and responds to global crises. Student personally develop a virtual international business from the ground up, learn to manage a global value chain, and identify methods for rapidly responding to various international crises impacting their business. Lec 3, Cr 3.

Prerequisite: Admission to upper division.

ENTR 3324 Cost Management

Basic cost accounting concepts and techniques, with an emphasis on providing information for management decision-making. Topics include job and process costing, cost-volume-profit analysis, budgeting, standard costs and variance analysis, direct costing, cost behavior, and relevant costs. Lec 3, Cr 3. Prerequisite: ACCT 2302 with "C" or better and admission to upper division.

ENTR 3331 International Law

This course covers topics including differences in national legal system, the formation of international law through treaties and practice, and the relationship between international law and domestic law. It may include such topics as immigration law, human rights, intellectual property protection, the settlement of international disputes, and customs law. Lec 3, Cr 3. Prerequisite: BLAW 3337 and admission to upper division.

ENTR 3340 New Venture Creation

A multi-disciplinary approach is needed for the preparation and presentation of a business plan. This course explores evaluating a business opportunity and the skills conducive to venture success including team building, organizing, planning, integrating, and persuading. Lec 3, Cr 3. Prerequisite: Admission to upper division.

ENTR 3372 Consumer Behavior

An interdisciplinary approach to the basic perspectives of consumer behavior is utilized by studying the fields of economics, psychology, sociology and anthropology as they relate to marketing. Emphasis is placed on the fundamental process of motivations, perception and learning, and analysis of individual predispositions and group influences in marketing. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

ENTR 4340 Cross-Cultural Marketing

Cultural variables impact the execution of marketing strategies. This course will also cover the prevalence of the consumption culture in both domestic and foreign markets. Lec 3, Cr 3. Prerequisite: ENTR 3372 and admission to upper division.

ENTR 4360 Entrepreneurial Finance

Topics covered include the development, implementation and control of financial plans, strategies and policies by owner-managers of small and medium sized firms, as well as the analysis of alternatives and decision making. Lec 3, Cr 3. Prerequisite: ENTR 3320, ENTR 3324, ENTR 3340, and FINA 3380, and admission to upper division.

ENTR 4380 Entrepreneurial Management

The natural life cycle of an entrepreneurial business consists of: (1) evaluating the attractiveness of an idea (2) launching the business (3) growing the business and finally, (4) harvesting the profits. The Entrepreneurial Management course examines the entrepreneurial venture as a journey or an adventure. Lec 3, Cr 3. Prerequisite: ENTR 3320, ENTR 3324, ENTR-3331, ENTR 3340, and admission to upper division.

Environmental Sciences (ESCI, ESCIU)

Chemistry & Environmental Sciences Department/College of Science, Math, and Technology • 882-6691 • Dr. Gene Paull, Chair • MO 1.114 • E-mail: gene.paull@utb.edu URL: <http://blue.utb.edu/chemenv/>

ESCI 1101 Introduction to Environmental Science Laboratory

This course provides students an opportunity to learn practical applications for the basic principles learned in the Introduction to Environmental Science course (ESCI 1301). Lab 3, Cr 1. Prerequisite: Credit or concurrent enrollment in ESCI 1301.

ESCI 1301 Introduction to Environmental Science

This course provides students with an introduction to environmental science from various perspectives (regional to global). Topics include: population, environmental health, biodiversity, geology and earth resources, air and water management, sustainability, energy, and environmental policy issues. Lec 3, Cr 3. Prerequisite: Credit or concurrent enrollment in ESCI 1101.

ESCI 3105 Oceanography Laboratory

This course includes the practical application of oceanographic principles, marines water property distribution, rock identification and depositional environment interpretation, geologic and bathometric map interpretation, and geological data analysis. Lab 3, Cr 1. Prerequisite: Concurrently enroll in ESCI 3305 or GEOL 3305.

ESCI 3305 Oceanography

An introduction to the nature and origin of the world's oceans. Topics will cover geological, chemical, physical and biological processes throughout the oceans. Lec 3, Cr 3. Prerequisite: GEOL 1301, GEOL 1103 and (GEOL 1304 and GEOL 1104) or (BIOL 1307 and BIOL 1107), all with a "C" or better. Corequisite: ESCI 3105 or GEOL 3105.

ESCI 3334 Conservation of Natural Resources

A survey of the distribution of natural resources, with special emphasis on new solutions to problem of resource scarcity. Topics include: energy, water, air and food resources, and other selected components of the lithosphere, hydrosphere, atmosphere and biosphere. Economic, demographic, and political issues are considered as they affect natural resources. Lec 3, Cr 3. Prerequisite: ESCI 1301 and ESCI 1101 with "C" or better.

ESCI 3351 Environmental Science Field Methods and Data Analysis

This course will introduce many field and data analysis methods. During the field excursions, students will practice the field methods and collect data for later analysis. Lec 3, Cr 3. Prerequisite: Environmental Science major or minor with junior status and MATH 1342 with "C" or better.

ESCI 4301 Environmental Regulations

An overview of pertinent state, national and international environmental regulations, policies and treaties. Topics include: common law liability, the Clean Air and Water Acts, sustainable development, stratospheric ozone, global warming, endangered species, environmental justice hazardous waste and much more. An emphasis will be placed on U.S./ Mexico specific issues. Lec 3, Cr 3. Prerequisite: ESCI 3334 or GEOG 3334 with "C" or better, or permission of instructor.

ESCI 4325 Environmental Science Internship

This course will give environmental sciences students the opportunity to gain experience by applying by principles and concepts in an actual work-related environment. The student will perform the internship under the supervision of both an environmental sciences faculty member and a collaborating member of the participating internship site. Internship 3, Cr 3. Prerequisite: Junior standing and consent of the instructor.

ESCI 4370 Topics in Environmental Sciences

Specialized lecture content not available in other courses. May be retaken for credit as topics changes but no more than three credit hours may apply toward the Environmental Science major. Lec 3, Cr 3. Prerequisite: Junior standing, completion of 12 credits in Environmental Science.

ESCI 4399 Research Problems in Environmental Sciences

Research under the supervision of an Environmental Sciences faculty member. May be repeated for credit but no more than three semester credit hours may apply toward the Environmental Science major. Students enrolling for ESCI 4399 will present research results in a Department seminar. Lec 3, Cr 3. Prerequisite: Junior standing, completion of three advanced courses in Environmental Science (9 upper-division semester credit hours) and approval of instructor.

ESCIU 2355 Natural Disasters

This course will explore hazardous Earth processes, including landslides, subsidence, coastal processes, earthquakes, volcanic eruptions, as well as the nature and effects of human interaction with the environment. Other topics include air pollution and global changes to the environment. Lec 3, Cr 3.

English as a Second Language (ESOL)

The Language Institute/Division of Workforce Training and Continuing Education • Joel S. Garza, Interim Director • ITEC Campus • E-mail: joel.s.garza@utb.edu URL :<http://wtce.utb.edu/languageinstitute>

ESOL 0231 Beginning Conversational Grammar

This course explores the grammatical foundations of the English language. Students become aware of English syntax so that they can incorporate correct grammatical structures into their ability to speak fluently and write correctly. This course allows students to comprehend basic sentence structure and recognize parts of speech application.

ESOL 0232 Beginning Writing

This course helps students learn the fundamental elements of the writing process by focusing on grammar, sentence structure and development, and text editing. The objective is to prepare students for developing well structured sentences by enhancing their grammar and mechanical skills into the production of correctly written sentences.

ESOL 0233 Beginning Conversation

This course helps students to develop basic oral communication skills. It allows students to practice simple oral expressions in order to gain self-confidence when speaking. Students integrate vocabulary and correct grammatical form into practical conversation using everyday context and various scenarios.

ESOL 0234 Intermediate Conversational Grammar

This course broadens the grammatical concepts and prepares the student for developing more complex writing assignments and oral activities. It also emphasizes the application of grammar and spelling rules in all contexts for accurate writing and oral practice. Prerequisite: ESOL 0231.

ESOL 0235 Intermediate Writing

This course introduces students to the process of paragraph development. It further expands the production of correctly written single sentences by creating connections for developing complete thoughts. It entails a detailed approach to the writing process where students prepare to write sound and coherent paragraphs. Prerequisite: ESOL 0232.

ESOL 0236 Intermediate Conversation

This course enables students to develop oral communication abilities for life skills and academic objectives. Through continuous meaningful oral communication activities, students gain self-confidence and self-esteem when speaking English. Prerequisite: ESOL 0233.

ESOL 0237 High Intermediate Conversational Grammar

This course introduces more complex grammatical concepts for oral and written practice. The content of this course enhances students' ability to accurately produce written statements and papers for personal or academic purposes. Students learn to write and orally express ideas thoroughly and effectively by incorporating correct syntactical and mechanical skills. Prerequisite: ESOL 0234.

ESOL 0238 High Intermediate Writing

This course prepares students to develop complete essays utilizing various writing techniques. Students learn to determine the focus and structure of essays by applying more advanced writing criteria. This course aims at preparing students for university study. Prerequisite: ESOL 0235

ESOL 0239 High Intermediate Conversation

This course gives students stronger communication skills by enhancing their listening and comprehension capacity. The focus is continuous interactive activities that allow students to engage in practical conversation and public speaking skills. Special attention is given to targeted vocabulary and pronunciation fine-tuning. Prerequisite: ESOL 0236

ESOL 0321 Intermediate Conversational Grammar

This course broadens the grammatical concepts and prepares the student for developing writing assignments in various tenses. Spelling rules for verbs and nouns and their irregularities are also covered.

ESOL 0322 High Intermediate Conversational Grammar

This course involves the students in higher level and more complex grammatical elements for oral and written practice. The content of this course also prepares the students to improve his/her capacity to write formally and informally.

ESOL 0323 High Intermediate Reading

This course gives the student higher levels of fluency in English reading while increasing vocabulary and analytical skills.

ESOL 0324 High Intermediate Writing

This course prepares the student to develop complete essays through various writing techniques. At the same time, the student learns to determine the focus and structure of essays by applying fundamental writing criteria.

ESOL 0325 High Intermediate Conversation and Listening Skills

The objective of this course is to give students stronger communication skills by enhancing their listening capacity. At the same time, this course will focus on oral interactive activities for individual or public speaking skills development.

ESOL 0326 Advanced Conversational Grammar

This course poses more complex grammatical concepts with various oral and written activities in order to help students achieve higher listening, writing, and speaking skills.

ESOL 0327 Advanced Writing

This course focuses on the determining factors of writing such as purpose, technique, development along the research and essay writing on controversial issues.

ESOL 0328 Advanced Conversation

This course will help students develop confidence when speaking before a group improve their use of eye contact, posture, gestures, and voice orally present information, ideas, and opinions listen critically and improve their understanding of interpersonal communication.

ESOL 0329 Advanced Reading

This course will expose students to themes and ideas in literary pieces. Students will also develop reading comprehension skills through evaluation of main ideas and topics in conjunction with discussions and interpretations of the selections.

Experientia (EXPL)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Mahmoud K. Quweider, Chair • SETB 1.550 • E-mail: mahmoud.quweider@utb.edu URL: <http://www.cs.utb.edu/english/index.html>

EXPL 2301 Analysis of Learning Outcomes and Competencies

Instruction in the preparation of a portfolio documenting college-level learning gained through non-college experience. Focus is on defining goals, exploring. Prerequisite: Attendance at "prior learning" orientation and student has declared an Associate in Applied Science Degree (AAS).

Finance (FINA)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

FINA 3380 Managerial Finance

Financial decisions which impact the value of the firm include working capital management, capital budgeting, capital structure theory and dividend policy. Lec 3, Cr 3. Prerequisite: ACCT 2301 and ECON 2302 and admission to upper division.

FINA 3381 Money and Banking

The components, nature, functions, creations and destructions of money and credit financial institutions and their functions introduction to monetary theory and policy for the purpose of establishing the framework of the monetary economy. Lec 3, Cr 3. Prerequisite: FINA 3380 and admission to upper division.

FINA 3382 Investment Principles

This course covers the basics of investigating in stocks, bonds, and derivatives as well as portfolio creation, management and performance measurement. The main focus of the course is the trade-off between risk and return. Prerequisite: FINA 3380 and admission to upper division.

FINA 4380 Corporate Finance

This course covers topics in finance managerial not usually covered in a basic managerial finance course such as working capital management, capital structure and dividend policy, derivatives, bankruptcy, mergers, multi-national financial management, and other advanced topics. Lec 3, Cr 3. Prerequisite: FINA 3380 and admission to upper division.

FINA 4385 Financial Institutions and Markets

The dynamics of financial markets and their interaction with suppliers of funds, particularly financial intermediaries. Lec 3, Cr 3 Prerequisite: FINA 3380 and admission to upper division.

FINA 4387 Topics in Finance

The study of significant topics related to Finance Course may be repeated for credit when topic varies. Lec 3, Cr 3 Prerequisite: Will vary depending on specific topics and admission to upper division.

FINA 4389 Commercial Banking

The principles and policies affecting the services, organization and management of funds in the commercial bank policy formulation is emphasized coordination with general economic and money market conditions is covered. Lec 3, Cr 3. Prerequisite: FINA 3380 and admission to upper division.

French (FREN, FRENU)

Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL: <http://blue.utb.edu/mlang/>

FREN 1311 Elementary French I

A course designed to develop the ability to understand, speak, read, and write the French language. Lec 3, Cr 3

FREN 1312 Elementary French II

A continuation of FREN 1311. Lec 3, Cr 3 Prerequisite: FREN 1311 or consent of instructor.

FREN 2311 Intermediate French I

A review of the grammar. Emphasis on reading and writing. Lec 3, Cr 3 Prerequisite: FREN 1312 or equivalent skills.

FREN 2312 Intermediate French II

A continuation of FREN 2311. Lec 3, Cr 3 Prerequisite: FREN 2311 or equivalent skills.

FREN 3330 Direct French Translation (French to English)

This course is a basic orientation in the theory and practice of translating a text from French into English (direct translation), including consideration of both cultural and morpho-syntactical problems. Software programs used by professional translators and interpreters will be introduced. Lec 3, Cr 3. Prerequisite: (FREN 2312 or FREN 2612) and ENGL 1301.

FREN 3337 French Grammar and Composition

This course is a review of advanced grammar issues with emphasis on composition. Lec 3, Cr 3. Prerequisite: (FREN 2312 or FREN 2612) and ENGL 1301.

FREN 4330 Inverse French Translation (English to French)

This course is a basic orientation in the theory and practice of translating a text from English into French (inverse translation), with consideration given to both cultural and morpho-syntactical problems as well as to a review of advanced grammar and composition. Lec 3, Cr 3. Prerequisite: FREN 3330, FREN 3337 and ENGL 1301.

FREN 4335 Topics in French Language, Culture, and Translation

This course consists of topics including but not limited to French language, literature, and culture. It may be taken 3 times for a total of 9 hours when topic varies. Lec 3, Cr 3. Prerequisite: FREN 3330, FREN 3337, and ENGL 1301.

FRENU 2612 Intensive Intermediate French

This is an intensive course covering all contents of FREN 2311 and FREN 2312 in one semester. Lec 6, Cr 6. Prerequisite: FREN 1312 or equivalent skills.

Gender Studies (GENDU)

Behavioral Sciences Department/College of Liberal Arts • 882-8225 • Dr. Virginia V. Wood, Chair • MRCS 293 • E-mail: virginia.v.wood@utb.edu URL: <http://unix.utb.edu/~cla/behsci.html>

GENDU 2301 Introduction to Gender Studies

This course introduces students to the foundations of gender theory and issues, which studies the construction of genders and gender identities through social, psychological, historical, cultural, and physical/ biological perspectives. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302 or ENGL 2311.

GENDU 2302 Introduction to Gender Theories

This course introduces various theories explaining the formation of gender, among them psychoanalysis, feminism, postmodernism, postcolonialism and evolutionary psychology. Lec 3, Cr 3. Prerequisite: ENGL 1301 and ENGL 1302 or ENGL 2311

Geography (GEOG)

Chemistry & Environmental Sciences Department/College of Science, Math, and Technology • 882-6691 • Dr. Gene Paull, Chair • MO 1.114 • E-mail: gene.paull@utb.edu URL: <http://blue.utb.edu/chemenv/>

GEOG 1301 Elements of Physical Geography

The earth's external features landscape development under the influence of volcanism and mountain- building forces, rivers and their work, underground waters, waves and currents, and the wind the principle soil groups as related to landscape and climate. Lec 3, Cr 3.

GEOG 1303 General World Geography

This course includes the study of the major world regions with emphasis on prevailing conditions and developments, including emerging conditions and trends, and the awareness of diversity of ideas and practices to be found in those regions. Lec 3, Cr 3.

GEOG 1304 Geography of Middle America

A regional study of geography of Middle America, this course includes as investigation of the physical, cultural and economic factors of various regions and how these affect present day conditions. Lec 3, Cr 3. Prerequisite: Departmental approval.

GEOG 2301 Economic Geography

Analysis of production at local, regional, and national scales. Agricultural and industrial location and the growth and influence of central places are discussed. Lec 3, Cr 3.

GEOG 2302 Cultural Geography

Study of human culture hearths, the distribution of language and religion, environmental perception, cultural ecology, and human settlement patterns. Lec 3, Cr 3

GEOG 2389 Academic Cooperative

This course will integrate on-campus study with practical hands-on experience in geography. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of human social behavior and/or social institutions. Lec 3, Cr 3. Prerequisite: Departmental approval.

GEOG 3320 Cultural Geography for Educators I

The Cultural geography is the study of the interaction between humans and the natural environment. The course will examine the relationship from the historical past to the present time with major emphasis human cultural diversity. Lec 3, Cr 3.

GEOG 3333 Latin American Geography

A regional study of geography of Mexico, the Caribbean, Central and South America. Includes an investigation of the physical, cultural and economic factors of various regions and how these affect present day conditions. Lec 3, Cr 3.

GEOG 3334 Conservation of Natural Resources

A survey of the distribution of natural resources, with special emphasis on new and novel solutions to problems of resource scarcity. Topics include food, scenic and recreational resources, and other selected components of the lithosphere, hydrosphere, atmosphere and biosphere. Economic, demographic, and political issues are considered as they affect the natural resources. Lec 3, Cr 3. Prerequisite: ESCI 1301 and ESCI 1101 with "C" or better.

GEOG 4310 Earth Science for Educators I

This is the first part of a hands-on Earth Science course designed for education will provide the students with basic theoretical background in Earth Science with hands-on workshops to enable the student to understand the Earth Science processes on the Earth's surface. Lec 3, Cr 3.

GEOG 4320 Earth Science for Educators II

This is the second part of a hands-on Earth Science course designed for education majors enrolled in the EC-8 program. The course will provide the students with a basic theoretical background in Earth Science with hands-on workshops to enable the student to understand the Earth Science processes on the Earth's surface. Lec 3, Cr 3. Prerequisite: GEOL 4310 or GEOG 4310.

GEOG 4440 Geographic Information Systems

This course covers the basics of Geographic Information Systems (GIS) concepts and software such as ArcView and ArcGIS. Special attention will be given to digital data acquisition, processing, data management and generation of base maps for various applications in the field-based sciences. Lec 3, Lab 3, Cr 3.

Geography (GEOG)

Chemistry & Environmental Sciences Department/College of Science, Math, and Technology • 882-6691 • Dr. Gene Paull, Chair • MO 1.114 • E-mail: gene.paull@utb.edu URL: <http://blue.utb.edu/chemenv/>

GEOG 4441 Principles of Remote Sensing

This course will emphasis the application of remote sensing and image analysis in the earth sciences, qualitative and quantitative satellite image and air photo interpretation. Additional emphasis will be placed on the use of computer processing packages. Lec 3, Lab 3, Cr 4.

Geology (GEOL)

Chemistry & Environmental Sciences Department/College of Science, Math, and Technology • 882-6691 • Dr. Gene Paull, Chair • MO 1.114 • E-mail: gene.paull@utb.edu URL: <http://blue.utb.edu/chemenv/>

GEOL 1101 Principles of Earth Sciences Laboratory

Laboratory practice that illustrates the formation of earth materials, processes of plate tectonics and of atmosphere. Lab 3, Cr 1. Prerequisite: GEOL 1301 or may be taken concurrent

GEOL 1103 Physical Geology Laboratory

Laboratory practice which illustrates the types of Earth materials, basic principles of structural geology, processes of hydrosphere and of plate tectonics. Lab 3, Cr 1. Prerequisite: GEOL 1303 or may be taken concurrent

GEOL 1104 Historical Geology Laboratory

Laboratory practice that illustrates the basic principles of stratigraphy, paleontology, origin and evolution of Earth through time. Lab 3, Cr 1. Prerequisite: GEOL 1304 or may be taken concurrent

GEOL 1147 Meteorology Laboratory

This course is a laboratory study of the weather variables, atmospheric motion, precipitation, and topics in modern weather science. Exercises are based on lab component to the meteorology course. Lab 3, Cr 1. Co-requisite: GEOL 1347.

GEOL 1301 Principles of Earth Sciences

Topics are selected from geology, geophysics, meteorology, and oceanography in order to illustrate the philosophy and methods of science. Other topics include earth materials, processes of plate tectonics and atmosphere. Lec 3, Cr 3. Co-requisite: Concurrent enrollment in GEOL 1101 or prior credit with "C" or better.

GEOL 1303 Physical Geology

The classification and analysis of geologic agents responsible for the origin, structure, and sculpturing of the earth's crust, including a comprehensive description of materials comprising the Earth. Lec 3, Cr 3. Co-requisite: Concurrent enrollment in GEOL 1103 or prior credit with "C" or better.

GEOL 1304 Historical Geology

The geologic history of the earth and its inhabitants as revealed by fossil record with emphasis on North America. Lec 3, Cr 3. Co-requisite: Concurrent enrollment in GEOL 1104 or prior credit with "C" or better.

GEOL 1347 Meteorology

This course will introduce the student of the study of the observation and distribution of weather variables, atmospheric motion, precipitation, and topics in modern weather science. Lec 3, Cr 3. Prerequisite: PHYS 1301 with "C" or better. Co-requisite: Concurrent enrollment in GEOL 1147 or prior credit with "C" or better.

GEOL 2309 Mineralogy

A study of the physical and chemical properties of minerals. Lab consists of hand specimen identification of rock formations and ore minerals. Lec 2, Lab 4, Cr 3. Prerequisite: GEOL 1403, CHEM 1312 or concurrent enrollment.

GEOL 2389 Academic Cooperative

This course will integrate on-campus study with practical hands-on experience in geology. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of inanimate objects, processes of matter and energy, and associated phenomena. Lec 3, Cr 3. Prerequisite: Departmental approval.

GEOL 3105 Oceanography Laboratory

This course includes the practical application of oceanographic principles, marine water property distribution, rock identification, and depositional environment interpretation, geologic and bathometric map interpretation, and geological data analysis. Lab 3, Cr 1. Prerequisite: Credit or concurrent enrollment in GEOL 3305 or ESCI 3305.

GEOL 3305 Oceanography

An introduction to the nature and origin of the world's oceans. Topics will cover geological, chemical, physical and biological processes throughout the oceans. Lec 3, Cr 3. Prerequisite: GEOL 1303, GEOL 1103 and (GEOL 1304 and GEOL 1104) or (BIOL 1307 and BIOL 1107) all with "C" or better. Co-requisite: ESCI 3105 or GEOL 3105.

GEOL 3436 Hydrology and Water Resources

This course will explore the circulation of water in earth systems. Surface water processes studied will include runoff, routing, evapotranspiration, infiltration, and flooding. Groundwater process will include the basics of ground water flow, aquifer characteristics, and others. Global national, and regional aspects of water resources management will also be introduced. Lec 3, Lab 3, Cr. 4. Prerequisite: GEOL 1301, GEOL 1103, PHYS 1301 and MATH 2413 all with "C" or better.

GEOL 4310 Earth Science for Educators I

This is the first part of a hands-on Earth Science course designed for education majors enrolled in the EC-8 program. The course will provide the students with basic theoretical background in Earth Science with hands-on workshops to enable the student to understand the Earth Science processes on the Earth's surface. Lec 3, Cr 3. Prerequisite: GEOL 1301, GEOL 1103 and GEOL 1304, GEOL 1104.

GEOL 4320 Earth Science for Educators II

This is the second part of a hands-on Earth Science course designed for education majors enrolled in the EC-8 program. The course will provide the students with a basic theoretical background in Earth Science with hands-on workshops to enable the student to understand the Earth Science processes on the Earth's surface. Lec 3, Cr 3. Prerequisite: GEOL 4310 or GEOG 4310.

GEOL 4335 Geomorphology

Geomorphology is the study of landforms. This class will emphasize the physical, chemical, and biological processes that create and modify landforms. This course covers the history of landform evolution and the climatic and tectonic conditions that influence landform development. Lec 3, Cr 3. Prerequisite: GEOL 4411 with "C" or better.

GEOL 4350 Geoscience Field Excursion

A study of the geology of a selected region Texas or Mexico with several 1-2 day field trips in order to map and study the field trips in order to map and study the field relationship of the geologic features. Special emphasis is given to stratigraphic, geomorphologic, structural and/or tectonic relationships of the designated study area. Lec 3, Cr 3. Prerequisite: GEOL 1303 and GEOL 1103, or GEOL 1304 and GEOL 1104 all with "C" or better, or permission of the instructor.

GEOL 4360 Plate Tectonics

This is upper division geology course designed for environmental science majors. Plate Tectonic processes of past and present will be discussed in detail with an emphasis on their effects on the earth's environment. Student learns about large scale dynamics of the earth's surface that involve growth and shrinkage of oceans, drift of continents, growth and evolution of mountain belts etc. Findings of recent plate tectonics research projects will be incorporated into lectures. Lec 3, Cr 3. Prerequisite: GEOL 1303 and MATH 1412.

GEOL 4411 Sedimentology and Stratigraphy

This course will explore the formation of sediments and sedimentary rocks. Students will learn to interpret depositional environments and sequences of stratigraphic beds using multiple tools. Lec 3, Lab 3, Cr 3. Prerequisite: GEOL 1303, GEOL 1103, GEOL 1304, GEOL 1104 and PHYS 1301 with a "C" or better.

GEOL 4431 Coastal Geology

This course explores the sedimentary features and stratigraphy of the Gulf of Mexico coastline. The exploration of the impact of geology on humans and the impact of humans on the geologic features will be emphasized. Lec 3, Lab 3, Cr 4 Prerequisite: GEOL 4411 with "C" or better.

GEOL 4440 Geographic Information Systems

This course covers the basics of Geographic Information Systems (GIS) concepts and software such as ArcView and ArcGIS. Special attention will be given to digital data acquisition, processing, data management and the generation of base maps for various applications in the field-based sciences. Lec 3, Lab 3, Cr 4.

GEOL 4441 Principles of Remote Sensing

This course will emphasize the application of remote sensing and image analysis in the earth sciences, qualitative and quantitative satellite image and air photo interpretation. Additional emphasis will be placed on the use of computer processing packages. Lec 3, Lab 3, Cr 4.

GEOLU 2355 Natural Disasters

This course will explore hazardous Earth process, including landslides, subsidence, tsunami, earthquakes, volcanic eruptions, hurricanes, tornadoes, and floods, as well as the nature and effects of human interaction with the environment. Lec 3, Cr 3.

GERM 1311 Elementary German I

German (GERM) Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL:<http://blue.utb.edu/mlang/>

A study of the essentials of German grammar, pronunciation, elementary conversation and prose reading. Lec 3, Cr 3

GERM 1312 Elementary German II

A continuation of GERM 1311. Lec 3, Cr 3 Prerequisite: GERM 1311 or equivalent skills.

GERM 2311 Intermediate German I

A review of the German language structure with emphasis on the development of aural comprehension and speaking ability. Selected readings based on everyday subjects and cultural material. Also includes dictation and simple composition exercises. Lec 3, Cr 3. Prerequisite: GERM 1312 or equivalent skills.

GERM 2312 Intermediate German II

A continuation of GERM 2311. Lec 3, Cr 3. Prerequisite: GERM 2311 or equivalent skills.

Government (GOVT)

Government Department/College of Liberal Arts • 882-8890 • Dr. Charles W. Chapman • MRCS 276 • E-mail: cchapman@gu.r.r.com URL:<http://blue.utb.edu/govt/>

GOVT 2301 American and Texas Government

A survey of the fundamental principles of political science of the American system of government, and of the origins, development and structure of the constitutions and government of the United States and Texas. Lec 3, Cr 3

GOVT 2302 American Government and Policy

A survey of the inputs and outputs of the American government including political participation, civil rights and liberties, public economics and foreign policy. Lec 3, Cr 3

GOVT 3301 Citizenship and Community Development

This course develops an understanding of community development as an expression of citizenship. It explores two citizenship traditions: citizenship as a status and citizenship as a practice. It also focuses on the role of democratic deliberation in support of community development. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 3302 Ethics and Public Service

This course is a philosophical inquiry into ethical issues. It focuses on the ethical examination of political behavior and decision-making that impact public service. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 3314 American State and Local Government

This course analyzes the developments, problems and issues facing state and local community governments. Emphasis will be on state and local community development through comparative regional governmental analysis within the United States. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 3322 Introduction to Comparative Politics

This course is a study of similarities and differences between various political systems in the world. It aims to generate a better understanding of international relations and politics. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 3323 Foundations of Public Administration and Service

This course is a survey of public administration in the United States. It highlights a wide variety of topics in public administration, with emphasis on public service. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 3331 Research Methods

This course is a survey of research modeling in political science and government. It is an introduction to research design and reporting, qualitative and quantitative analyses, experimental and survey research, and analysis techniques in SPSS. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 3332 Applied Statistics Public Service

This course illustrates the statistical applications to public service programs. It extends the basic research methods explored in GOVT 3331. Lec 3, Cr 3. Prerequisite: GOVT 3331.

GOVT 3343 Global Politics and International Relations

This course is an introduction to the history and contemporary theory of global politics from the perspective of international relations. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 3363 American Hispanic Politics

A study of the American Hispanic experience. Analyzes political socialization and culture, political participation and behavior, leadership, organizations, and power in the American political system. Lec 3, Cr 3 Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 3373 Contemporary Texas

This course is a survey of contemporary political, and administrative issues confronting Texas. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302

GOVT 3385 Internship

This course is designed for the students seeking credit through an internship placement. The internship must be directly related to government the student must be under direct academic supervision and the student must complete written assignments to be evaluated by the supervising teacher. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4312 Issues in Public Planning

This course is a survey of planning in the public sector. It focuses on program evaluation and accountability, project selection, and performance-based budgeting. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4314 Leadership & Non-Profit Organization

This course focuses on the skills, knowledge, and attitudes in building the leadership of nonprofit organizations. It also addresses topics such as power, leadership styles, supervision, ethics, women and minorities in management, and conflict resolution. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4320 American Constitutional Law: Powers

A study of the allocation of government powers by use of court cases, with special emphasis on the national government and an introduction to the judicial functions of the American legal system. Lec 3, Cr 3 Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4321 American Constitutional Law: Civil Liberties

A study of the limitations of governmental powers in the United States by use of the courts cases, with primary emphasis on civil and political rights. Lec 3, Cr 3 Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4360 The Presidency

This course is a study of the development, structure, powers, and functions of the presidency. Lec 3, Cr 3 Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4363 The Congress

This course is a study of the development and the structure, powers, functions, processes, and influence of Congress. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4365 Public Personnel Administration

This course emphasizes the importance of human resources management in public and nonprofit organizations. It also focuses, on the development and maintenance of public bureaucracy and the proper response to the needs of a democratic society. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4366 American Political Parties and Politics

A study of the history, function and leadership of political parties and the role they play in the operation of national, state, and local governments in the United States and a study of the role of group politics and voting behavior in the American political process. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4367 The Judiciary

This course is a study of the judicial system on local, state, and national levels. It focuses on the relationship between the judiciary and political system, as well as the impact of the judicial decision-making on public policy. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4368 Special Topics in American Government

Significant issues and problems in politics and the political system. Course may be repeated for credit provided different topics are the focus of each class. Lec 3, Cr 3 Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4369 Latin American Politics

A survey of governmental processes in Mexico, the Caribbean, Central, and South America. Examines competing ideologies, group dynamics, relationships between political, economic and social structures and Latin America's role in the international political system. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4370 European Politics

A study of the major democracies of Europe. A comparative study of peoples and their political, social and economic institutions. Generally includes, but is not limited to, Great Britain, France, and Germany. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4371 Contemporary International Issues

This course is a study of important issues in international politics. It focuses on themes, issues, and players in world politics, regional and international conflicts, and the solutions to these conflicts. Lec 3, Cr 3. Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4372 Classical Political Theory

A study of classical political philosophy from Socrates to Machiavelli. Lec 3, Cr 3 Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4373 Modern Political Theory

This course is a study of political philosophy from the 1500s until the present. Lec 3, Cr 3 Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4374 American Public Policy

An analysis of the formation, implementation, and assessment of selected public policies in America. Lec 3, Cr 3 Prerequisite: GOVT 2301, GOVT 2302.

GOVT 4376 Contemporary Issues in Homeland Security

This course examines contemporary issues concerning Homeland Security. It focuses on counter-terrorism, borders and international jurisdiction, immigration, transportation, and public health emergencies. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4378 Middle Eastern Politics

This course is a survey of governmental processes in the Middle East. It focuses on the role of the Middle East in global politics. It also examines the relationships between the political, economic, and social structures and the competing ideologies and group dynamics in this region. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

GOVT 4390 Political Science Senior Seminar

This course will help senior students organize, consolidate and systematically demonstrate their knowledge of American Government, Political Theory, International Relations/Comparative Politics and Public Administration. Lec 3, Cr 3 Prerequisite: GOVT 2301 and GOVT 2302.

Air Conditioning and Refrigeration Technology (CETT, HART, MAIR)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialttech/>

HART 1301 Basic Electricity for HVAC

This course covers principles of electricity as required by HVAC equipment including proper use of test equipment, electrical circuits, and component theory and operation. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

HART 1303 Air Conditioning Control Principles

Control Principles is a basic study of HVAC and refrigeration controls, troubleshooting of control components, use of wiring diagrams to analyze high and low voltage circuits, and a review of Ohm's law as applied to air conditioning controls and circuits. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

HART 1307 Refrigeration Principles

An introduction to the refrigeration cycle, heat transfer theory, temperature/pressure relationship, refrigerant handling, refrigeration components and safety are covered in this course. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

HART 1341 Residential Air Conditioning

A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems are course components. Lec 2, Lab 4, Cr 3. Prerequisite: HART 1301, HART 1307 and departmental approval.

HART 1345 Gas and Electric Heating

Gas & Electric Heating will study the procedures and principles used in servicing heating systems including gas fired furnaces and electric heating systems. Lec 2, Lab 3, Cr 3. Prerequisite: HART 1301, HART 1307 and departmental approval.

HART 1356 EPA Recovery Certification Preparation

This course provides study and training for HVAC refrigerant recovery and recycling EPA certification. Lec 3, Cr 3. Prerequisite: Departmental approval.

HART 1451 Energy Management

Topics covered will be heat transfer and loads, building construction and envelope, energy audit processes and procedures, and remedies for excessive energy usage as it relates to H.V.a.c. and related systems. Lec 3, Lab 3, Cr 4. Prerequisite: Departmental approval.

HART 2301 Air Conditioning and Refrigeration Codes

HVAC standards and concepts with emphasis on the understanding, and documentation of the codes and regulations required for the state mechanical contractors license and local codes will be covered. Lec 3, Cr 3. Prerequisite: HART 1301 and HART 1307 and departmental approval.

HART 2331 Advanced Electricity

Topics addressed will be advanced electrical instruction and skill building in installation and servicing of air conditioning and refrigeration equipment including detailed instruction in motors and power distribution, motor controls, and application of solid state devices. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

HART 2334 Advanced A.C. Controls

Theory and application of electrical devices, electromechanical control, and/or pneumatic controls in commercial equipment will be covered. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

HART 2336 Air Conditioning Troubleshooting

This is an advanced course in application of troubleshooting principles and use of test instruments to diagnose air conditioning and refrigeration components and system problems including conducting performance tests. Lec 2, Lab 4, Cr 3. Prerequisite: HART 1301, HART 1307 and departmental approval.

HART 2338 Air Conditioning Installation and Startup

This course is an applied study of air conditioning system installation, refrigerant piping, condensate disposal, and air cleaning equipment with emphasis on startup and performance testing. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

HART 2341 Commercial Air Conditioning

This course is a study of components, applications, and installation of air conditioning systems with capacities of 25 tons or less. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

HART 2342 Commercial Refrigeration

Commercial Refrigeration covers the theory, installation, maintenance, and service of medium and low temperature applications of typical commercial refrigeration equipment. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

HART 2345 Residential Air Conditioning System Design

This course is a study of the properties of air and results of cooling, heating, humidifying or dehumidifying. Heat gain and heat loss calculations including equipment selection and balancing the air system are also topics. Lec 2, Lab 3, Cr 3. Prerequisite: HART 1301, HART 1307 and departmental approval.

HART 2349 Heat Pumps

Heat pumps equipment, heat pump control circuits, defrost controls, auxiliary heat, air flow, and other topics related to heat pump systems are covered. Lec 2, Lab 2, Cr 3. Prerequisite: HART 1301 and HART 1307 and departmental approval.

HART 2388 Internship- Heating, Air Conditioning, Refrigeration Mechanic and Repairer

This course is a work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Ext 192, Cr 3. Prerequisite: HART 1301 and HART 1307; departmental approval.

HART 2443 Industrial Air Conditioning

Industrial A.C. is a study of equipment components, accessories, applications, and installation of systems rated above 25 tons capacity. Lec 3, Lab 3, Cr 4 Prerequisite: Departmental approval.

HART 2457 Specialized Commercial Refrigeration

This is an advanced course covering the components, accessories, and service of specialized refrigeration units. Lec 3, Lab 3, Cr 4. Prerequisite: Departmental approval.

HART 2488 Internship

This course is a work-based learning experience that enables the student to apply specialized occupational theory, skills and includes a learning plan developed by the instructor and the job supervisor. Ext 192, Cr 3. Prerequisite: Departmental approval.

History (HIST)

History Department/ College of Liberal Arts • 882-8260 • Dr. Helmut Langerbein, Chair • MRCS 314 • E-mail:helmut.langerbein@utb.edu URL:<http://blue.utb.edu/socsci/govt/index.html>

HIST 1301 United States to 1877

Discovery, the colonial period, the American Revolution, establishing the nation, political, territorial and socioeconomic growth the sectional controversy, civil war reconstruction in the South to 1877. Lec 3, Cr 3.

HIST 1302 United States Since 1877

The growth of transportation and industry, the agrarian protest and the movement toward economic and political reform. The creation of an overseas empire, the United States in two world wars the Cold War, and the role of the United States as a dominant world power. Lec 3, Cr 3

HIST 2321 World History

A study of world history to 1650 tracing the rise, decline and renewal of major civilizations, emphasizing those societies which have been in forefront of human change at any one time. Lec 3, Cr 3 Prerequisite: HIST 1301 and HIST 1302.

HIST 2322 World History II

A study of world history since 1650 tracing the rise, decline and renewal of major civilizations, emphasizing those societies which have been in forefront of human change at one time. Lec 3, Cr 3 Prerequisite: HIST 1301 and HIST 1302.

HIST 2380 Mexican-American Studies

This survey course presents the chronological, social-cultural and political-historical foundations that forged the Mexican/American/Hispanic/Chicano heritage. Included in this course are the following: a) elements of pre-Columbian roots, b) Spanish/Caribbean cultural, social and political systems, c) Mexican history and heritage and d) their collective impact on the contemporary Hispanic population in United States. Lec 3, Cr 3 Prerequisite: HIST 1301 and HIST 1302.

HIST 3313 American Colonial Era to 1783

A study of American Colonial history from the founding of the first colony through the American Revolution with emphasis given to the development of American civilization causes, and results of the American Revolution. Lec 3, Cr 3. Prerequisite: 6 hours of lower division history.

HIST 3324 Formative Period of the American Nation, 1783 - 1840

A study of the early years of the American nation from the critical period to the adoption of the constitution and launching of the government through the transformation of American Society by the Jacksonian Era of the Common Man. Lec 3, Cr 3. Prerequisite: 6 hours of lower division history.

HIST 3334 Mexico and the Borderlands Through Independence

This course surveys Mexican history with emphasis on the pre-Columbian Indians, the Conquest, Spanish colonial institutions, and independence. Lec 3, Cr 3. Prerequisite: Six hours of lower division History.

HIST 3335 Mexico Since Independence

This course surveys major developments in the nineteenth and twentieth century in Mexico with emphasis on the early national period, the Reform, the Porfiriato, and the Revolution. Lec 3, Cr 3. Prerequisite: 6 hours of lower division History.

HIST 3340 Texas History

A history of Texas from the Spanish period to the present day. Emphasis will be placed upon the Indians, the role of the Spanish and Mexicans, the period of Anglo American settlement, the revolution, the Republic and the development of the modern state. Lec 3, Cr 3 Prerequisite: HIST 1301 and HIST 1302.

HIST 4303 The Emergence of Modern America, 1877 - 1917

A study of the growth of American business and industry, the emergence of the U.S. as a world power, the populist protest and progressive reform movements. Lec 3, Cr 3. Prerequisite: Six hours of lower division History.

HIST 4313 Twentieth Century America, 1917 To Present

A study of the history of the United States from World War I to the present, emphasis on domestic and foreign affairs in their relationship to and effect on each other. Lec 3, Cr 3. Prerequisite: 6 hours of lower division History.

HIST 4320 Advanced Topics in American History

This course offers an in depth examination of selected topics in American History. Course can be repeated for credit as topic changes for a total of up to 6 credit hours. Lec 3, Cr 3. Prerequisite: Six hours of lower division history.

HIST 4338 American Intellectual Social History

The intellectual perspective includes major historical and cultural ideas which were conceived and used by elites to promote given political and social agendas. The Social History component includes group behavior and participation in such basic areas as: Religion, Political Democracy, Labor Organizations and Reform movements. Lec 3, Cr 3. Prerequisite: HIST 1301 and HIST 1302.

HIST 4343 Era of the Sectional Conflict

United States history from 1840 to 1877 with emphasis upon the development of sectionalism, the breakdown of American political parties, Civil War and Reconstruction. Lec 3, Cr 3 Prerequisite: 6 hours of lower division History.

HIST 4344 United States Diplomatic History

A survey of American foreign policy, its implementations and ratifications, and the interaction between the United States and other nations from 1776 to the present, with special emphasis on the relations with Mexico. Lec 3, Cr 3 Prerequisite: 6 hours of lower division history.

HIST 4345 North American Economic History

A survey of North American Economic growth and development from the pre-colonial era to the present. May be counted as ECON 4345 or HIST 4345. Lec 3, Cr 3. Prerequisite: HIST 1301 and HIST 1302.

HIST 4350 Advanced Topics in Latin American History

This course offers an in depth examination of selected topics in Latin American History. Course can be repeated for credit as topic changes for a total of up to 6 credit hours. Lec 3, Cr 3. Prerequisite: Six hours of lower division history.

HIST 4357 History of Modern Latin America

A study of the cultural and political trends of the Latin American nations since independence. Lec 3, Cr 3. Prerequisite: Six hours of lower division History.

HIST 4360 Advanced Topics in European/ World History

This course offers in depth examination of selected topics in European/ World History. Course can be repeated for credit as topic changes for a total of up to 6 credit hours. Lec 3, Cr 3. Prerequisite: Six hours of lower division history.

HIST 4365 History of the Middle Ages

A study of European Medieval roots to 1500. Lec 3, Cr 3 Prerequisite: Six hours of lower division History.

HIST 4367 History of Early Modern Europe

A study of the transition of European society into modernity in the 16th, 17th, and 18th centuries. Lec 3, Cr 3 Prerequisite: 6 hours of lower division History.

HIST 4369 Nineteenth Century Europe:1789-1914

A study of the political, social and cultural developments in Europe from the French Revolution to the outbreak of World War I. Lec 3, Cr 3. Prerequisite: HIST 1301 and HIST 1302

HIST 4371 History of the Islamic World

A survey of the vast crescent of the Islamic World from North Africa through the Middle East to Indonesia. The study will commence with Mohammed in 622 but concentrate on the challenges posed by the Islamic World in modern times. Lec 3, Cr 3. Prerequisites: HIST 1301, HIST 1302.

HIST 4372 History of Russia

A study of Russian history from the founding of the Kievan state through to today. Special emphasis will be given to the Soviet Era and the current state of the former Soviet republics. Lec 3, Cr 3. Prerequisite: HIST 1301 and HIST 1302.

HIST 4373 History of Spain

An introduction to the rich drama of Spanish history from the early cave painters through Reconquista, Empire, and Generation of 98 European Union. Lec 3, Cr 3 Prerequisite: 6 hours of lower division history.

HIST 4374 History of Asia

A survey of Asian history from earliest times through to today. Special emphasis will be given to the Asian core civilizations of China and India. Lec 3, Cr 3. Prerequisite: HIST 1301 and HIST 1302.

HIST 4379 Modern Europe: 1914- Present

A study of Europe from the commencement of the First World War through to the progressive, increasingly-unified Europe of today. Lec 3, Cr 3. Prerequisite: HIST 1301 and HIST 1302.

HIST 4380 History of World War I and II

A history of the causes, course, and outcomes of the two World Wars. Lec 3, Cr 3 Prerequisite: 6 hours of lower division history.

HIST 4385 Ancient History

A study of the historical foundations of the Middle East, Greece, and Rome. Lec 3, Cr 3. Prerequisite: Six hours of lower division History.

HIST 4390 American History Senior Seminar

This course will help senior students to consolidate their knowledge of American History. The student is challenged to appreciate the flow of American history as major historical themes evolve from Pre-Columbian peoples and civilizations through to the present in the United States. Lec 3, Cr 3. Prerequisite: All lower division requirements and 15 hours of upper division History.

HIST 4392 World History Senior Seminar

This course will help students to consolidate their knowledge of World History. The student is challenged to appreciate the flow of world history as major historical themes evolve from earliest civilization through to the modern day. Lec 3, Cr 3 Prerequisite: All lower division requirements and 15 hours of upper division History.

Medical Office Technology (HITT, MDCA, MRMT, POFM)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

HITT 1301 Health Data Content and Structure

This course provides an introduction to systems and processes for collecting, maintaining, and disseminating primary and secondary health related information. Instruction in delivery and organizational structure will include content of health record, documentation requirements, registries, indices, licensing, regulatory agencies, forms, and screens. Lec 3, Cr 3.

HITT 1305 Medical Terminology I

This course includes the study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialists, and diagnostic procedures. Lec 3, Cr 3.

Health Information Technology (HITT)

Office of Applied Technologies/College of Applied Technology & General Studies • 982-0242 • Dr. Peter Gawenda, Program Director • ITEC C301 • Email: peter.gawenda@utb.edu URL: <http://gemini.utb.edu/pgawenda/batmain.htm>

HITT 3301 Cancer Program Standards and Registry Operations

This course will provide an in-depth introduction to hospital-based and central cancer registries standards and operations. The structure, management and daily operations of cancer registries will be explored in detail. Instruction will primarily focus on topics such as confidentiality, data utilizations, data quality, and the role of standard setting organizations. Lec 3, Cr 3. Prerequisite: AAS HIT or AAS HIM.

HITT 3302 Cancer Disease Management

This course is a comprehensive review of the clinical management of cancer. Diagnostic and staging procedures will be explored. Treatment modalities will also be covered. Upon completing the course, students will know how to determine the types of treatment expected based in site, extent of disease and histology. Lec 3, Cr 3. Prerequisite: AAS HIT or AAS HIM.

HITT 3303 Oncologic Pathophysiology

This course provides an overview of the pathophysiology of cancer, including how it starts, spreads, the role of oncogenes, and the role of environmental factors. The growth and differentiation of cells will be examined in detail. Major primary sites such as breast, lung, colorectal and prostate will also be examined. Lec 3, Cr 3. Prerequisite: AAS HIT or AAS HIM.

HITT 3304 Cancer Statistics and Epidemiology

The purpose of this course is to provide students with an introduction to cancer statistics, descriptive and analytic epidemiology, cancer surveillance, annual report preparation and presentation of cancer data. Furthermore, the use of cancer statistical data for research, marketing and strategic planning will be discussed. Lec 3, Cr 3. Prerequisite: AAS HIT or AAS HIM.

HITT 3305 Cancer Disease Staging

This course introduces the principles of cancer staging. The American Joint Committee on Cancer (AJCC) TNM, Surveillance, Epidemiology and End Results (SEER) Summary Staging and Collaborative Stage are explored, covering extent of disease concepts used to determine treatment and survival and the procedures to conduct patient follow-up. Lec 3, Cr 3. Prerequisite: AAS HIT or AAS HIM.

Kinesiology (HLTH, HLTHU, KINE)

Department of Health and Human Performance/School of Education • 882-8290 • Dr. Zelma Mata, Chair • Gym 203 • E-mail: zelma.mata@utb.edu URL: <http://blue.utb.edu/kinesiology/>

HLTH 3300 Elementary and Secondary School Health

This course focuses in the etiology of the physical, mental, social, and emotional health of young people. Emphasis will be placed on the theory and practice in health education and an overview of the coordinated school health program. Lec 3, Cr 3. Prerequisite: HLTHU 2320.

HLTH 3305 Selected Topics in Health Education

Selected topics in the field are examined with the intent of promoting the study and research of areas not offered in the curriculum. May be repeated one time as long as the topic is different. Prerequisite: HLTHU 2320.

HLTH 4300 Human Disease

This course covers the relationship between the human body and communicable and non-communicable diseases/ The historical aspects of diseases, etiology, prevention and control, prevalence and symptoms are examined. Lec 3, Cr 3. Prerequisite: HLTHU 2320.

HLTH 4305 Community and Consumer Health

Aspect of community health such as political, social, economic, and cultural values are examined. In addition, the study of factors that influence the consumer marketplace for health products and services are investigated.

HLTHU 2320 Personal Health

The course will cover factors and the health issues that influence lifestyle and wellness throughout the lifespan. Emphasis will be placed on the application of knowledge and skills for personal and skills for personal and professional practice.

HLTHU 2325 Nutrition

The course covers the science of nutrition and food dietary choice, weight management, disease prevention and food safety. Identification of nutritional problems and the resources in the community will be examined.

Health Profession Related Sciences (HPRS)

Allied Health Department/School of Health Sciences • 882-5024 • Mr. Grant Olbeter, Coordinator • LHSB 2.436 • E-mail: grant.olbeter@utb.edu

HPRS 1101 Introduction to Health Professions

An overview of the roles of the various members of the health care system, educational requirements, and issues affecting the delivery of health care. Lec 1, Cr 1.

HPRS 1106 Medical Terminology

A study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialties, and diagnostic procedures. Lec 1, Cr 1.

HPRS 1204 Basic Health Profession Skills

A study of the concepts that serve as the foundation for health profession courses. Topics include client handling and safety issues, basic client monitoring, and health documentation. Lec 1, Lab 4, Cr 2.

HPRS 1205 Medical Law/Ethics for Health Professions

Introduction to the relationship between legal aspects and the ethics associated with the health care field. Emphasis on the ethical and legal responsibilities of health care professionals. Lec 2, Cr 2.

HPRS 2300 Pharmacology for Health Professions

A study of drug classifications, actions, therapeutic uses, adverse effects, methods of administration client education, and calculation of dosages. Lec 3, Cr 3.

HPRS 3301 Introduction to the Evolving Healthcare System

Introduces the student to the organizational structure of the U.S. Health Care system. Provides historical perspective to the system evolution from institutional-based to population based care to cost-aware values. Describes the financing mechanisms, primary providers and secondary providers, and consumers of health care. Discusses how technology affects the politics of the system. Discusses the health care system along the Texas-Mexico borders and how cultural influences impacts health care delivery. Lec 3, Cr 3.

HPRS 3302 Medical Law/ Ethics for the Health Professional

Describes the laws and ethical standards that apply to allied health practitioners. Uses case presentations and develops methods for solving legal and or ethical and cultural dilemmas. Discuss pertinent legal cases involving allied health practitioners. Lec 3, Cr 3.

HPRS 3309 Leading and Managing the Healthcare Team

Discusses the concepts of leadership within the context of allied health. Prepares the learner to use problem solving methods to effectively supervise and lead subordinates in a health care setting. Focuses on the economics of managed care, how continuous quality improvement relates to cost-effective care. Develops skills and values necessary for effective teamwork.

HPRS 3313 Physical & Mental Health Throughout the Lifespan

This course provides concepts of growth, development, and mental health through human stages of life, focusing on biological / genetic and environmental influences on the cognitive, physical, and socio-emotional / psychological developmental areas. Course concepts are demonstrated by applying principles and theories to an interaction / observation project and discussion of current lifespan issues.

HPRS 3316 Nutrition Concepts for Allied Health Practitioners

This course is designed to emphasize the importance of nutrition in maintaining health and wellness. The effectiveness of the therapeutic diet as related to specific diseases will be explored. In addition to school-based training, this course provides clinical-based learning experiences.

HPRS 3320 Patient Education in Health Sciences

This course will cover adult learning theories and concepts to develop appropriate teaching materials and materials and grams for patients and their families that enhance client knowledge and skills for health promotion and recovery. Lec 3, Cr 3. Prerequisite: Instructor's approval.

HPRS 3324 Teaching in the Health Sciences

This course will provide an introduction to the principles of teaching to include planning, implementation, assessment and evaluation in health career education. The student will develop an appreciation of the value of vocational/technical education. Lec 3, Cr 3.

HPRS 4300 Pharmacology for Health Professional

This course will provide an overview of the pharmacokinetics and pharmacodynamics of prescription and nonprescription medications. Course content will emphasize drug classifications, drug action, drug administration, ethical and legal issues, and safety. Students will develop an understanding of pharmaceuticals and its impact on the health care industry.

HPRS 4301 Introduction to Health Data Utilization

Surveys the use of computers in the health care industry. The learner will understand the principles of data base management with examples from medical records. Use of computer spreadsheets, graphics programs in managing and presenting data will be taught. Lec 3, Cr 3.

HPRS 4302 Continuous Quality Improvement

Provides basic principles of CQI and its application in health care environments. Provides knowledge, skills, and tools necessary to implement, facilitate, and coordinate CQI activities. This requires experience in a health care setting and moderate computer skills including creating spreadsheets, charts and graphs.

HPRS 4309 Research Methods in Evidenced-Based Healthcare

In this course, students conduct laboratory investigations and fieldwork, use scientific methods during investigations, and make informed decisions using critical thinking and problem solving. The student actively formulates a problem related to health science, designs the research and procedures to be used, and plans a final product that will involve a formal presentation to representatives of the scientific community. The course may be conducted in the classroom settings or as independent seminar.

HPRS 4312 Applied Pathophysiology

This course allows students to conduct laboratory investigations and fieldwork, use scientific methods during investigations, and make informed decisions using critical thinking and problem solving. Students in Pathophysiology study disease processes, and how human systems are affected. Emphasis is placed on prevention and treatment of diseases. Students will differentiate between normal and abnormal physiology. Lec 3, Cr 3.

HPRS 4316 Applied Medical Microbiology

Students in Medical Microbiology study the morphology and physiology of microbes and the relationship between microbes and health maintenance. Emphasis is placed on the role of microbes in infectious diseases. Lec 3, Cr 3. Prerequisite: BIOL 1306, BIOL 2301 or departmental approval.

HPRS 4330 Independent Study

This course will offer the student the opportunity for an in-depth exploration of a topic or a clinical skill in the health sciences. This course may be repeated twice for credit. Prerequisite: Three hours upper level coursework.

HPRS 4334 Issues and Trends in Health Care

This course will address current events, issues and attitudes pertinent to health care. This course may be repeated twice for credit with permission of instructor. Prerequisite: Three hours of upper level coursework.

HPRS 4360 Practicum in Health Services

Students are provided the opportunity to develop a self-directed learning plan. Students should be working in an area where meaningful experiential learning can occur. Students will develop goals and objectives, a learning plan, and evaluate the outcomes of their activities. A summary report of the process is required.

International Business (BMGT, IBUS, MRKG)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

IBUS 1301 Principles of Exports

This course covers export management processes and procedures. Includes governmental controls and compliance, licensing of products, documentation, commercial invoices, and traffic procedures. Emphasizes human and public relations, management of personnel, finance, and accounting procedures. Lec 3, Cr 3.

IBUS 1302 Principles of Imports

This course covers the practices and processes of import management operations. Includes government controls and compliance. Emphasizes the preparation and understanding of import documents such as customs invoices, packing lists, and commercial invoices. Lec 3, Cr 3.

IBUS 1305 Introduction to International Business and Trade

This course will cover the techniques of entering the international marketplace. Emphasis on the impact and dynamics of sociocultural, demographic, economic, technological, and political-legal factors in the foreign trade environment. Topics include patterns of world trade, internationalization of the firm, and operating procedures of the multinational enterprise. Lec 3, Cr 3.

IBUS 2339 International Banking and Trade Finance

This course introduces students to international monetary systems, financial markets, flow of capital, foreign exchange, and financial institutions. It includes risk analysis, export-import payments and financing the preparation of letters of credit, related shipping documentation, electronic fund remittance, and foreign investment financing. Lec 3, Cr 3.

IBUS 2345 Import Customs Regulations

This course outlines the duties and responsibilities of the licensed customs broker. The processes for customs clearance including appraisement, bonded warehouse entry, examination of goods, harmonized tariffs, fees, bonding, penalties, quotas, immediate delivery, consumption, and liquidation, computerized systems, laws, and regulations is included. Lec 3, Cr 3.

IBUS 2380 Coop Education-Intl/ Busi/Trade/Commerce

This course offers career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and students. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Lec 1, Lab 20, Cr 3. Prerequisite: Approval of Coop Coordinator or department chair.

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>

IMED 1111 StoryBoard

This course will introduce the techniques of story boarding which includes organizing a project's content and arranging it in a visual format. Lab 2, Cr 3.

IMED 1416 Internet/ Web Page Design

This course concentrates in the use of Internet servers and the fundamentals of web page design and web site development. Lec 3, Lab 1, Cr 4. Prerequisite: ITSE 1409 or COSC 1336.

IMED 2309 Internet Commerce

This course will be an overview of the Internet as a marketing and sales tool with emphasis on developing a prototype for electronic commerce. Topics include database technology, creating websites in order to collect information, performing, on-line transactions, and generating dynamic content. Lec 3, Cr 3. Prerequisite: COSC 1310 and ITNW 2409

IMED 2441 Advanced Digital Video

Instruction in the use of advanced digital video techniques for post-production. Emphasis on generation and integration of special effects, 2-D animation, and 3-D animation for film, video, CD-ROM, and the Internet. Exploration of new and emerging compression and video streaming technologies. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1310 and ITSE 2413.

IMED 2449 Internet Communications

This course will be an advanced seminar in web server design and maintenance. Topics include scripting, web site planning, testing, security, production, and marketing. Topics include development in the field of Internet communications. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1310 and ITNW 2409.

Interdisciplinary Studies (INDS)

Government Department/College of Liberal Arts • 882-8890 • Dr. Charles W. Chapman • MRCS 276 • E-mail: cchapman@rgv.rr.com URL: <http://blue.utb.edu/govt/>

INDS 3301 Theories of Knowledge

Analysis of humankind's ways of knowing, including empirical and non-empirical methods. Perspectives and issues are drawn from the various sciences and humanities as well as nonacademic sources of knowledge. Lec 3, Cr 3

INDS 3303 Culture and Humanity: Human Diversity Cross Cultural Perspective

Analysis of the diversity of the human experience from a cross-cultural perspective. Particular attention is paid to differing world-views and institutional patterns (e.g., the economy, religion, politics, family, medicine) as well as the role of technology and science within different cultural contexts. Lec 3, Cr 3

INDS 3304 Frontier Studies: The U.S.- Mexico Border

Orientation in the theory and practice of field work (in either English or Spanish) for the analysis of the historical, social, economic, cultural, political, folkloric, and linguistic aspects for the U.S.-Mexico border region. Prospects for the future of the borderlands area are addressed. Lec 3, Cr 3

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>

INEW 2434 Advanced Web Page Programming

This course will cover advanced applications for Web authoring. Topics include Perl Scripts, Common Gateway Interface (CGI), Database Interaction, Active Server Pages, Java Applets, JavaScript, HTML, and/or interactive elements. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1310 and ITSE 1411.

Interpreting (INTG)

Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL: <http://blue.utb.edu/mlang/>

INTG 4366 Interpreting I

A basic orientation in the theory and practice of interpreting English to Spanish and Spanish to English. Emphasis on sight translation and short consecutive interpreting, and also preparation for simultaneous interpreting. Lec 3, Cr 3 Prerequisite: SPAN 3332, SPAN 3333, or approval of instructor.

INTG 4367 Interpreting II

Advanced practice in English to Spanish and Spanish to English consecutive and simultaneous interpreting with close attention to terminology and documentation. Lec 3, Cr 3. Prerequisite: SPAN 3332, SPAN 3333, or approval of instructor.

International Business (INTL)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

INTL 3331 International Law

This course covers a wide range of topics including differences in national legal systems, the formation of international law through treaties and practice, and the relationship between international law and domestic law. It may include such topics as immigration law, human rights, intellectual property protection, the settlement of international disputes, and customs law. Lec 3, Cr 3. Prerequisite: BLAW 3337 and admission for upper division.

INTL 3391 Multimodal Transportation

An overview of the role of transportation in the conduct of commerce. This course examines the various modes of moving goods from the producer to the consumer, including motor, rail, air, water, pipeline, and special carriers. Lec 3, Cr 3. Prerequisite: Admission to upper division.

INTL 3392 Supply Chain Management

The study of the systematic approach to managing the flows of materials and information links between the organization itself and its suppliers, transporters, warehouses, retailers, and customers in a way to maximize the overall value generated. Appropriate concepts and quantitative skills required for effective and efficient management of a supply chain will be studied. Themes encompassed include globalization and the role of e-commerce. Lec 3, Cr 3. Prerequisite: Admission to upper division.

INTL 4361 International Management

The study of current recommended global management practices including managing across cultures and intercultural communication, organizing international operations and decision making, controlling across political and social environments, motivation and leadership across cultures and human resource/labor issues. Lec 3, Cr 3. Prerequisite: MANA 3361 and admission to upper division.

INTL 4371 International Marketing

This course will provide students with an understanding of how to evaluate marketing opportunities in the foreign markets. Emphasis is placed on adapting marketing concepts and strategies to accommodate individual environmental differences in the development of an international marketing plan. Topics may include cross-cultural issues, market-entry strategies, currency markets, international brand development, and consumer motivations. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

INTL 4381 International Finance & Economics

An analysis of international trade, foreign investment, financing, and the factors affecting them in the process of allocating scarce resources to better meet human needs. Prerequisite: FINA 3380 and admission to upper division.

INTL 4387 Global Consumer Behavior

The basic perspectives of consumer behavior vary across cultures and nations. An interdisciplinary approach is utilized by studying various related fields. Emphasis is placed on global differences in motivations, perceptions and learning, as well as group, political and historical influences. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

INTL 4388 International Business Strategy

This is a broad course designed to integrate earlier studies in international business. The rational strategic process of strategy formulation and implementation within the global environment is emphasized, but with recognition of the inevitable effects of emergent or unplanned strategy. Lec 3, Cr 3. Prerequisite: INTL 3331, INTL 3391, INTL 3392 and admission to upper division.

INTL 4393 Topics in International Business

The study of significant topics related to International Business. Course may be repeated for credit when topic varies. Lec 3, Cr 3. Prerequisite: Admission to upper division.

Interdisciplinary Science (ISCIU)

Chemistry & Environmental Sciences Department/College of Science, Math, and Technology • 882-6691 • Dr. Gene Paull, Chair • MO 1.114 • E-mail: gene.paull@utb.edu URL: <http://blue.utb.edu/chemenv/>

ISCIU 1410 Scientific Inquiry I

The first in two semester course sequence that will serve as an introduction to the methods of scientific inquiry. Topics are selected from various fields of the natural sciences to illustrate the history, philosophy, and methods of science. Students will examine problems through directed inquiry in a laboratory setting.

Italian (ITAL)

Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL: <http://blue.utb.edu/mlang/>

ITAL 1311 Elementary Italian I

A course designed to develop fundamental skills in listening comprehension, speaking, reading, and writing, emphasizing conversation, vocabulary acquisition, reading, composition and culture. Lec 3, Cr 3.

ITAL 1312 Elementary Italian II

A continuation of Italian 1311. Lec 3, Cr 3. Prerequisite: ITAL 1311 or consent of instructor.

Professional Office Technology (ITNW, ITSW, POFI, POFT)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

ITNW 1337 Introduction to the Internet

In this course emphasis is on using the World Wide Web to locate, transfer, and publish information. Survey of emerging technologies on the Internet. Lec 3, Cr 3.

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL:<http://www.cs.utb.edu>

ITNW 1492 Special Topics: Networking and Telecommunications

Topics address the recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Lec 3, Lab 2, Cr 4. Prerequisite: ITNW 2409 or instructor's consent.

ITNW 2409 Network Administration for Intranet

This course will enable the student to perform the role of network administrator or system manager in an Intranet network. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1310

ITNW 2454 Internet/ Intranet Server

This course will cover the designing, installing, configuring, maintaining, and managing an Internet server. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1310 and ITNW 2409.

ITNW 2459 Web Server Support & Maintenance

This course will cover the designing, installing, configuring, maintaining, and managing an Internet server. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1310, ITNW 2409, and ITNW 2454.

ITSC 1301 Introduction to Computers

Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources. Explores integration and application in business and other segments in society. Fundamentals of computer problem-solving and programming may be discussed and applied. Examines applications and software relating to a specific curricular area. Lec 2, Lab 2, Cr 3.

ITSC 1407 Unix Operating System I

A study of the UNIX operating system including multi-user concepts, terminal emulation, use of system editor, basic UNIX commands and writing scripts files. Topics include introductory system management concepts. Lec 3, Lab 2, Cr 4. Prerequisite: COSC 1336 or consent of instructor.

ITSC 1409 Integrated Software Applications I

Integration of applications from popular business productivity software suites. Instruction in embedding data, linking and combining documents using word processing, spreadsheets, database, and/or presentation media software. Lec 3, Lab 2, Cr 4.

ITSC 1421 P.C -Operating Systems- Windows

Introduction to window-based microcomputer operating systems. Topics include installation and configuration, file management, memory and storage management, peripheral device control, and use of utilities. Lec 3, Lab 2, Cr 4.

ITSC 1425 Personal Computer Hardware

A study of current personal computer hardware including personal computer assembly and up grading, setup and configuration, and troubleshooting. Local Area Network, hardware and software installation, configuration and troubleshooting will also be covered in this course. Lec 3, Lab 2, Cr 4. Prerequisite: ITSE 1431.

ITSC 2435 Application Problem Solving

Utilization of current application software to solve advanced problems and generate customized solutions, involving project and software specific curricular area. Lec 3, Lab 2, Cr 4. Prerequisite: ITSC 1409.

ITSE 1329 Programming Logic and Design

A disciplined approach to problem-solving with structured techniques and representation of algorithms using appropriate design tools. Discussion of methods for testing, evaluation, and documentation. Lec 3, Cr 3.

ITSE 1350 System Analysis and Design

This course is comprehensive introduction to the planning, design, and construction of computer information systems using the systems development life cycle and other appropriate design tools. Lec 2, Cr 3. Prerequisite: ITSE 2449 or COSC 1437.

ITSE 1411 Web Page Programming

This course will cover the instruction of Internet Web page programming and related graphic design issues including mark-up languages, Web sites, Internet access software, and interactive topics. May include use of HTML, XHTML, XML, PHP, JAVA, or ASP.

ITSE 1418 Introduction to Cobol Programming

Introduction to computer programming using COBOL. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and structures, input/output devices, and files.

ITSE 1431 Introduction to Visual Basic Programming

A introduction to computer programming using Visual BASIC. Emphasis on the fundamentals of structural design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files. Lec 3, Lab 2, Cr 4.

ITSE 1445 Introduction to Oracle S.Q.L

This course will be an introduction to the design and creation of relational databases using Oracle. Topics include storing, retrieving, up dating, and displaying data using Structured Query Language (SQL). Prerequisite: COSC 1310

ITSE 2409 Introduction to Database Programming

Application development using database applications using a structures query language create queries and reports from database tables, and create documentation. Lec 3, Lab 2, Cr 4.

ITSE 2413 Web Authoring

This course will cover the instruction of designing and developing web pages that incorporates text, graphics, and other supporting elements using current technologies and authoring tools. Lec 3, Lab 2, Cr 4.

ITSE 2449 Advanced Visual Basic Programming

Further applications of programming techniques using Visual BASIC. Topics include file access methods, data structures and modular programming, program testing and documentation. Lec 3, Lab 2, Cr 4. Prerequisite: ITSE 1431.

ITSE 2451 Advanced Cobol Programming

Further applications of programming techniques using COBOL, including file access methods, data structures and modular programming, program testing and documentation. Lec 3, Lab 2, Cr 4. Prerequisite: ITSE 1418

ITSE 2456 Oracle Database Administration I

This course will cover the fundamentals of the tasks and functions required of a database administrator using Oracle. Prerequisite: COSC 1310 and ITSE 1445.

Professional Office Technology (ITNW, ITSW, POFI, POFT)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

ITSW 1301 Introduction to Word Processing

This course provides an overview of the production of documents, tables, and graphics. Lec 3, Lab 1, Cr 3. Prerequisite: POFT 1329 or keyboarding proficiency

ITSW 1304 Introduction to Spreadsheets

This course offers instruction in the concepts, procedures, and application of electronic spreadsheets. Lec 3, Cr 3. Prerequisite: POFT 1329 or keyboarding proficiency

ITSW 1307 Introduction to Database (Microsoft Access)

This course offers an introduction to database theory and the practical applications of a database. Lec 3, Cr 3 Prerequisite: POFT 1329 or keyboarding proficiency

ITSW 1310 Introduction to Presentation Graphic Software

This course offers instruction in the utilization of presentation software to produce multimedia presentations. Graphics, text, sound, animation and/or video may be used in presentation development. Lec 3, Lab 1, Cr 3. Prerequisite: POFT 1329 or keyboarding proficiency

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Juan R. Iglesias, Interim Chair • SETB 1.550 • E-mail: juan.iglesias@utb.edu URL:<http://www.cs.utb.edu>

ITSW 1492 Special Topics Networking and Telecommunications

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lec 4, Lab 2, Cr 4. Prerequisite: ITNW 2409 or consent of instructor.

ITSW 2365 Practicum-Data Processing Tech/ Technician

Practical general training and experiences in the workplace. The college with the employer develops and documents an individual plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. The guided external experiences may be paid or unpaid. This course may be repeated if topics and learning outcomes vary. Lec 3, Cr 3. Prerequisite: ITSE 1350 and ITSE 2449 or COSC 1437

Kinesiology (DANC, HLTH, HLTHU, KINE)

Department of Health & Human Performance/School of Education • 882-8290 • Dr. Zelma Mata, Chair • Gym 203 • E-mail: zelma.mata@utb.edu URL: <http://blue.utb.edu/kinesiology/>

KINE 1100	Advanced Life Saving
KINE 1101	Aerobic Dance and Exercise
KINE 1102	Angling & Baitcasting
KINE 1103	Archery
KINE 1104	Badminton
KINE 1105	Ballet I
KINE 1106	Ballet II
KINE 1107	Basketball
KINE 1108	Body Mechanics (Women Only)
KINE 1109	Bowling
KINE 1110	Flag Football
KINE 1111	Folk and Square Dance
KINE 1112	Folklorico
KINE 1113	Golf
KINE 1114	Gymnastics
KINE 1115	Jazz & Modern Dance
KINE 1116	Jogging
KINE 1117	Paddle Tennis
KINE 1118	Pington
KINE 1119	Racquetball
KINE 1120	Sailing
KINE 1121	Self-Defense
KINE 1122	Soccer
KINE 1123	Softball
KINE 1124	Swimming
KINE 1125	Table Tennis
KINE 1126	Tap Dance
KINE 1127	Tennis I
KINE 1128	Tennis II
KINE 1129	Volleyball
KINE 1130	Weight Training
KINE 1131	Wrestling
KINE 1132	Surfing
KINE 1133	Basic Sports Skills

Kinesiology Majors/Minors Only

KINE 1134	Physical Conditioning
KINE 1164	Lifetime Fitness

KINE 1238 Concepts of Fitness for Life

This course is designed to improve the student's knowledge of total well-being with emphasis upon cardiovascular endurance, proper nutrition, weight control, strength and flexibility. Students will assess their own fitness needs, establish realistic goals and evaluate their progress toward reaching these goals. Lec 2, Lab 1, Cr 2.

KINE 1301 Introduction to Sports and Exercise Science

A survey course designed to introduce the prospective kinesiology education major to the history, philosophy, scientific foundations, objectives and current status of sports and exercise in educational and recreational settings. Required for Kinesiology Majors and Minors. Lec 3, Cr 3.

KINE 1304 Personal and Community Health

This is a survey course designed to acquaint the student with the major health issues of today. Includes the study of mental and social health issues, the body systems, nutrition, fitness, disease, drug use and abuse, health care systems and environmental health concerns. Lec 3, Cr 3.

KINE 1306 First Aid/First Responder

Topics of study include cardiopulmonary resuscitation, bleeding and shock, fractures, dislocations and medical emergencies. Upon successful completion of skills and knowledge tests, the student may be certified through the American Red Cross. Lec 3, Cr 3.

KINE 1308 Sports Officiating - Football, Volleyball

Instruction in the rules and techniques of officiating football and volleyball will be given. Opportunities for practice in both the classroom and college intramural setting will be provided. Lec 3, Cr 3.

KINE 1309 Sports Officiating - Basketball/Softball

Instruction in the rules and techniques of officiating basketball and softball will be given. Opportunities for practice in both the classroom and intramural setting will be provided. Lec 3, Cr 3.

KINE 1321 Coaching Athletics

Designed to provide the student with an overview of the many areas of concern involved in coaching major sports. Includes the nature of the coaching profession organizing practices and games psychological and sociological aspects of coaching communications with school personnel, parents and the media and the ethics of coaching. Lec 3, Cr 3.

KINE 1331 P.E. Activities in the Elementary Schools

A study of physical activities suitable for preadolescents from ages 4-12. Activities studied include individual and group games, movement exploration, rhythms, tumbling and fitness. Lec 3, Cr 3.

KINE 2370 Kinesiology (biomechanics)

The study of the science of human motion, including the use of implements and objects involved in the performance of movement. The course is based specifically on biomechanics, musculoskeletal anatomy and neuromuscular physiology. Lec 3, Cr 3. Prerequisite: BIOL 1407 or BIOL 2401.

KINE 3153 Physiology of Exercise and Human Performance Lab

Emphasis on demonstration of lecture concepts through hands on experiences in the lab. Maximal oxygen consumption and aerobic fitness assessment, human thermoregulation, body composition analysis, pulmonary function testing are among the topics explored. Lec 3, Cr 3. Co-requisite: KINE 3353

KINE 3160 Exercise Testing and Prescription Lab

Practical application of concepts discussed in lecture. ACSM client screening, fitness assessment, metabolic equations required for prescription and development of exercise prescriptions using volunteer subjects and cases studies. All methodologies required ACSM certification explored. Lab 1, Cr 1. Co-requisite: KINE 3360.

KINE 3301 Psychology of Sport and Exercise

A study of the effects of psychological factors on performance in sport, as well as the effects of sport-exercise participation on psychological development and wellness. Lec 3, Cr 3. Prerequisite: KINE 1301 and KINE 1306

KINE 3302 Kinesiology Curriculum for Elementary School Students

This course focuses on knowledge and theory related to designing appropriate and optimal physical curriculum for young children. Emphasis will be given to curriculum development and implementation supportive of the Texas Essential Knowledge and Skills (TEKS) for elementary school students. Lec 3, Cr 3. Prerequisite: KINEU 1135.

KINE 3314 Dance for Children and Adolescents

A study of historical foundations and philosophical roots relating to the development of dance in the United States. Includes the forces, controversies, and leaders affecting dance as an integral part of current society. Lec 3, Cr 3.

KINE 3320 History and Principles of Sport and Movement Sciences

Study of the sporting events of early civilizations and their evolution into modern society. Includes the Olympic Games, the European influence on sports in the U.S. and the modern sports movement in the U.S. including intercollegiate and interscholastic sports. Lec 3, Cr 3.

KINE 3330 Coaching of Sports

Study of the coaching profession as a multi-dimensional role in education. Course includes study of the psychological and sociological aspects of coaching use of coaching strategies organizing practices and games communication with school, parents and the media and the ethics of coaching. The use of technology in coaching will also be examined. Lec 3, Cr 3.

KINE 3340 Principles of Wellness and Fitness

Study of the scientific principles of total well-being with emphasis upon physical fitness, proper nutrition, weight control, and stress management. Students will learn to design comprehensive wellness programs for the K-12 public school sector. Lec 3, Cr 3.

KINE 3353 Physiology of Exercise and Human Performance

Basic systematic adaptations to exercise with specific emphasis on the interrelationship of physiological functions of the human body, and the changes resulting from physical activity. Lec 3, Cr 3. Prerequisite: BIOL 2301 and BIOL 2101.

KINE 3360 Exercise Testing and Prescription

Development and implementation of exercise prescription for health-related fitness with specific respect to the following cardiorespiratory endurance, muscular strength and endurance, flexibility and optimal body composition. Client screening, fitness assessment for prescription and metabolic equations following ACSM guidelines included. Lec 3, Cr 3. Prerequisite: KINE 3153 and KINE 3353. Co-requisite: KINE 3160.

KINE 3365 Physiology and Techniques of Strength/ Power Fitness

Advanced concepts in the conditioning of muscular strength, endurance and power are taught. Exercise prescription for health-related fitness for the general public is detailed as well as prescription for athletic performance. In addition, the theory and use of periodization, plyometrics, and interval training for sports are covered. Lec 3, Cr 3. Prerequisite: KINE 3160 and KINE 3360.

KINE 3370 Biomechanics

The study of the advanced principles of human movement scientific principles learned in the course will allow the student to understand how and why the human body moves in the manner that it does. The student will also learn to analyze biomechanical technique in numerous motor skills, as required in teaching and coaching complex movement. Formerly KINE 2370. Lec 3, Cr 3. Prerequisite: BIOL 1407 or BIOL 2401.

KINE 4309 Kinesiology Curriculum for Secondary School Students

This course focuses on knowledge and theory related to designing an appropriate and optimal physical education curriculum for adolescents. Emphasis will be given to curriculum development and implementation supportive of the Texas Essential Knowledge and Skills (TEKS) for middle and high school students. Formerly KINE 3309. Lec 3, Cr 3 Prerequisite: KINEU 1136.

KINE 4310 Measurement Techniques in Physical Exercise and Sports

Course includes knowledge and theory fundamentals of statistical measurement basics. It includes construction, selection, administration and interpretation of performance and knowledge tests for physical activities. Lec 3, Cr 3.

KINE 4311 Psychology of Sport and Exercise

A study of the affects of psychological factors on performance in sport as well as the affects of sport/exercise participation on psychological development and wellness. Formerly KINE 3311. Lec 3, Cr 3.

KINE 4313 Seminar in Sports, Dance and Exercise Science

Selected topics on sports, dance or exercise science. Current trends and theories are included. Course covers skills, legal implications and specific topics in the areas of perceptual motor skills, sports, dance and exercise science that are not available as part of the regular course offerings. Courses may be repeated for credit when topics vary, but not more than nine hours will apply to a bachelor's degree. Lec 3, Cr 3.

KINE 4351 The Adapted Kinesiology Program

Study of adaptations for the exceptional child. Theory and implications of specific disabilities with application to exercise and sports. Characteristics of special population children as related to the physiological basis of movement. Lec 3, Cr 3.

KINE 4355 Pediatric Exercise Physiology

The purpose of this course is to provide knowledge and experience for future professionals in the field of exercise physiology that pertains primarily to children and adolescents. Training protocols and health-related fitness programs tailored to meet the developmental needs of children are covered. Lec 3, Cr 3.

KINE 4356 Motor Development

A study of motor skills and physical development from birth to adulthood with emphasis on childhood. Course includes study of neurological, physiological, intellectual, social and emotional factors that influence gross and fine movement activities. Formerly KINE 3356. Lec 3, Cr 3.

KINE 4360 Clinical Exercise Physiology

Exercise prescription for special populations is covered. Clinical description of specific medical problems is presented as well as their potential impact on the exercise prescription. Groups considered include those afflicted with diabetes, cardiovascular disease, metabolic syndrome, respiratory disorders, arthritis, cancer, HIV, and neuromuscular disorders. Lec 3, Cr 3. Prerequisite: KINE 3160 and KINE 3360.

KINE 4370 Management in Exercise and Health Promotion

Applied knowledge for the operation of fitness centers emphasizing the development of practical skills for management, equipment acquisition and staffing of commercial, corporate and clinical centers. Lec 3, Cr 3. Prerequisite: KINE 3365.

KINE 4380 Exercise Science Internship

The course consists of practical general training and experiences in health-related fitness environments. The structure if the field experience is developed in consultation with the internship site. Prerequisite: KINE 3365, KINE 4355, and KINE 4370.

KINEU 1135 Activities for Elementary School Students

This course provides pre-service physical educators with information and skill development essential for the practical application of activities supportive of the Texas Essential Knowledge Skills (TEKS) for elementary school physical education. Lab 2, Cr 1.

KINEU 1136 Activities for Secondary School Students

This course provides pre-service physical educators with information and skill development essential for the practical application of activities supportive of the Texas Essential Knowledge Skills (TEKS) for secondary school physical education programs. Lab 2, Cr 1.

KINEU 2255 Health and Motor Development for EC-4

This course focuses on motor activities and health skills for young children. It includes the study of physiological, intellectual, social and emotional factors that influence gross and fine motor skills. The course is also designed to acquaint students with health issues for young children. Lec 2, Cr 2. Prerequisite: Admission to Teacher Education

KINEU 2304 Outdoor Education

This course involves and introduction to outdoor adventure activities (such as rock climbing, orienteering, canoeing, backpacking, and camping) as well as an introduction to experiential activity as teaching methodology. Topics covered require academic preparation and active student participation. Lec 3, Cr 3.

Leadership (LEAD, LEADU)

Government Department/College of Liberal Arts • 882-8890 • Dr. Charles W. Chapman • MRCS 276 • E-mail: cchapman@rgv.rr.com URL:<http://blue.utb.edu/govt/>

LEAD 4303 Special Topics in Leadership

This course is an interdisciplinary course that integrates hands-on opportunities to learn leadership through service. It focuses on issues of social justice in our community, especially in areas of non-profit management, healthcare, education, advocacy, and local government. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

LEADU 1301 Introduction to Public Service and Leadership

This course is an introduction to leadership skills and styles. It focuses on the history of leadership, management theories, and organizational behavior. It also places emphasis on conflict resolution and effective communication skills. Lec 3, Cr 3. Prerequisite: GOVT 2301 and GOVT 2302.

Legal Assisting (LGLA, POFL)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

LGLA 1303 Legal Research

This course offers instruction in law library techniques and computer assisted legal research. Lec 3, Cr 3. Prerequisite: Completed 9 hours of LGLA courses with a "C" or better.

LGLA 1305 Legal Writing

This course provides a working knowledge of the fundamentals of effective legal writing. Topics include briefs, legal memoranda, case and fact analysis, citation forms, and legal writing styles. Lec 3, Cr 3. Prerequisite: LGLA 1303

LGLA 1307 Introduction to Law and Legal Profession

This course provides an overview of the law and the legal concepts, systems, and terminology ethical obligations and regulations professional trends and issues with particular emphasis on the paralegal. Lec 3, Cr 3. Prerequisite: POFL 1305 or concurrent enrollment.

LGLA 1317 Law Office Technology

This course introduces students to the computer technology and software applications within the law office. Lec 3, Cr 3. Prerequisite: POFL 1305 (or concurrent enrollment) and POFT 1329 (or keyboarding proficiency.)

LGLA 1345 Civil Litigation

This course presents fundamental concepts and procedures of civil litigation with emphasis on the paralegal's role. Topics include pretrial, trial, and post trial phases of litigation. Lec 3, Cr 3. Prerequisite: POFL 1305, LGLA 1307 and word processing skills.

LGLA 1353 Wills Trusts and Probate Administration

This course presents fundamental concepts of the law of wills, trusts, and probate administration with emphasis on the paralegal's role. Lec 3, Cr 3. Prerequisite: POFL 1305 or concurrent enrollment.

LGLA 1355 Family Law

This course presents fundamental concepts of family law with emphasis on the paralegal's role. Topics include formal and informal marriages, divorce, annulment, marital property, and the parent-child relationship. Lec 3, Cr 3. Prerequisite: POFL 1305 or concurrent enrollment.

LGLA 2303 Torts and Personal Injury Law

This course presents fundamental concepts of tort law with emphasis on the paralegal's role. Topics include intentional torts, negligence, and strict liability. Lec 3, Cr 3 Prerequisite: POFL 1305 and LGLA 1307

LGLA 2307 Law Office Management

This course instructs students in the basic principles and structure of management, administration, and substantive systems in the law office. Law practice technology as applied to paralegals is included. Lec 3, Cr 3. Prerequisite: Completed nine hours of LGLA courses with "C" or better and proficient in Word or WordPerfect.

LGLA 2309 Real Property

This course presents fundamental concepts of real property law with emphasis on the paralegal's role. Topics include the nature of real property, rights and duties of ownership, land use, voluntary and involuntary conveyances, and the recording of and searching for real estate documents. Lec 3, Cr 3. Prerequisite: POFL 1305 and LGLA 1307 or concurrent enrollment.

LGLA 2313 Criminal Law and Procedure

This course instructs students in the procedures from arrest to final disposition, principles of federal and state law, and the preparation of pleadings and motions as applied to paralegals. Lec 3, Cr 3. Prerequisite: Completed 9 hours of LGLA courses with a "C" or better.

LGLA 2333 Advanced Legal Document Preparation

This course instructs students in the preparation of legal documents by paralegals based on hypothetical situations drawn from various areas including real estate, family law, contracts, litigation, and business organizations. Lec 3, Cr 3. Prerequisite: Completed 9 hours of LGLA courses with a "C" or better.

LGLA 2380 Cooperative Education-Paralegal/Legal Assistant

This course offers career-related activities encountered in the students' area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Lec 1, Lab 20, Cr 3. Prerequisite: Approval of department chair or Coop Coordinator.

Air Conditioning and Refrigeration Technology (CETT, HART, MAIR)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

MAIR 1341 Domestic Cooking Equipment

Theory, sequence of operation, components and repair, electrical schematics, and troubleshooting electric components in gas and electronic ranges and microwave ovens are topics of this course. Safety for the gas systems in ranges and high voltage circuitry in microwave ovens will be emphasized. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

MAIR 1345 Dryers, Washers, and Dishwashers

This course covers the theory, sequence of operation, components and repair, electrical schematics, a troubleshooting of components in dryers, washers, and dishwashers. Safety for the electrical and mechanical systems will be emphasized. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

MAIR 1349 Refrigerator, Freezers, Window Air Conditioners

Theory, sequence of operation, components and repair, electrical schematics, and troubleshooting electronic components in air conditioning and refrigeration are course topics. Emphasis will be place on safety for the electrical, mechanical, and sealed systems. Lec 2, Lab 3, Cr 3. Prerequisite: Departmental approval.

MAIR 1391 Major Appliance

Special topics address recently identified events, skills, knowledge, and/or attitudes, and behaviors pertinent to the technology or occupations and relevant to the professional development of the student. Lec 2, Lab 3, Cr 3 Prerequisite: Departmental approval.

Mammography Technology (MAMT)

Allied Health Department/School of Health Sciences • 882-5011 • Mr. Manuel Gavito, Program Director • LHSB 2.436 • E-mail: manuel.gavito@utb.edu

MAMT 3337 Anatomy, Positioning, and Patient Assessment

This course presents the risk factor of breast disease. Content also includes the discussion of the various pathologies identified through mammography and the anatomy and physiology of the breast. Also includes the routine and special projections of the breast. Lec 3, Cr 3. Prerequisite: Consent of instructor.

MAMT 3338 Special Topics in Mammography

This course will include topics, which will address recently identified current events, skills, knowledge, and/or attitudes and behavior pertinent to the technology or occupation, which are relevant to the professional development of the mammography student. Lec 3, Cr 3. Prerequisite: Consent of instructor.

MAMT 4331 Mammography Instrumentation and Modalities

This course discusses the dedicated radiography equipment necessary for breast imaging. Also includes proper technical factors, radiation protection techniques, and proper accessory equipment. Lec 3, Cr 3. Prerequisite: Consent of instructor.

MAMT 4632 Mammographic Practicum

This course provides clinical experience in a mammography facility performing all functions including routine and special mammographic procedures, quality assurance testing and image analysis. Lec 6, Cr 6. Prerequisite: Consent of instructor.

Management (MANA)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

MANA 3303 E-Commerce Strategies

The most important elements for effective commerce through the Internet include strategies and tools within E-Commerce categories, which include Business-to-Consumer, Business-to-Business, Consumer-to-Consumer, technological infrastructure, electronic security, electronic payment mechanisms and virtual communities. Lec 3, Cr 3. Prerequisite: MANA 3361 and admission to upper division.

MANA 3361 Principles of Management

This course is a study of the management functions of planning, organizing, leading and controlling. Emphasis is placed on organizational theory and behavior. Lec 3, Cr 3

MANA 3362 Human Resource Management

Current development within the field of personnel administration are reviewed. A study is made of the concepts, principles, policies and organizational procedures utilized by business institutions in the management of personnel. Covered areas are selection, placement, compensation, morale, labor turnover, collective bargaining, and supervisory activities. Lec 3, Cr 3. Prerequisite: MANA 3361 and admission to upper division.

MANA 3363 Production Management

The concept of the production function and its applicability to all types of business firms, problems which provide background for the integration of scientific decision processes relative to an analysis of production activities and computer applications in the productions/operation environment. Lec 3, Cr 3 Prerequisite: BUSIU 2341 and admission to upper division.

MANA 3392 Supply Chain Management

The systematic approach to managing the flows of materials and information emphasizes links between the organization itself and its suppliers, transporters, and customers. Qualitative skills required for the management of a supply chain will be studied. Themes encompassed include globalization and the role of e-commerce. Lec 3, Cr 3 Prerequisite: MANA 3361 and admission to upper division.

MANA 4350 Business Ethics

This course examines various theories of ethical reasoning used in business to resolve ethical dilemmas. The concepts of integrity, objectivity, independence and other core values in business will be studied.

MANA 4351 International Management

The study of currently recommended global management practices including managing across cultures and intercultural communications, organizing international operations and decisions making, controlling across political and social environments, motivation and leadership across cultures and human resource/labor issues. Lec 3, Cr 3. Prerequisite: MANA 3361 and admission to upper division.

MANA 4360 Organizational Theory and Behavior

A study of the theory of organizational structures and individual and group behavior within organizations. Prerequisite: MANA 3361 and admission to upper division.

MANA 4366 Small Business Management

A study of the special characteristics of small business. Emphasis will be placed on the selecting and starting of a small business and the essential function of management in the first years of operation. Lec 3, Cr 3 Prerequisite: MANA 3361, MARK 3371 and admission to upper division.

MANA 4367 Topics in Management

The study of significant topics related to Management. Course may be repeated for credit when topic varies. Lec 3, Cr 3 Prerequisite: MANA 3361, MARK 3371 and admission to upper division.

Marketing (MARK)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

MARK 3371 Principles of Marketing

The marketing structure as it operates in our economic system. With emphasis on improving the flow of goods and services from producer to consumer. Practical application of principles and techniques designed as a beginning course in marketing. Lec 3, Cr 3.

MARK 3372 Consumer Behavior

An overall view of the basic perspectives of consumer behavior. An interdisciplinary approach is utilized by studying the fields of economics, psychology, sociology and anthropology as they relate to marketing. Emphasis is placed on the fundamental process of motivation, perception and learning, as well as analysis of individual predispositions and group influences in marketing. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

MARK 4371 Sales Management and Personal Selling

The selection, training, compensation, organization, and control of a field sales organization is studied. Primary emphasis is devoted to the selection and training of the sales force for the selling process and making a sales presentation. Lec 3, Cr 3. Prerequisite: MARK 3371, MANA 3361 and admission to upper division.

MARK 4372 Promotion Management

This survey course covers the development and management of an organization's advertising and sales promotional effort. The course includes a review of advertising, production, scheduling, and media buying. Emphasis is on the coordination of media strategy with field sales force and e-commerce activities. Lec 3, Cr 3 Prerequisite: MARK 3371 and admission to upper division.

MARK 4376 Marketing Strategy

Applications of marketing principles to strategy formulation. Topics include: target market selection, market mix development and new product planning. Both consumer and industrial marketing is stressed through the use of cases, readings, and special projects. Recommended as the capstone course in the marketing major. Lec 3, Cr 3. Prerequisite: MARK 3371, MANA 3361 and admission to upper division.

MARK 4377 Topics in Marketing

The study of significant topics related to Marketing. Course may be repeated for credit when topic varies. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

MARK 4378 Marketing Research

Quantitative research procedures and techniques utilized in business today. Problems definition, sources of research data, survey methods, questionnaire design and sampling techniques. Practical application of procedures and techniques is emphasized through class research projects. Lec 3, Cr 3. Prerequisite: MARK 3371, BUSIU 2341 and admission to upper division.

Mathematics (MATH)

Mathematics Department/College of Science, Math, and Technology • 882-6636 • Dr. Jerzy Mogilski, Chair • SETB 2.454 • E-mail: jerzy.mogilski@utb.edu URL: <http://blue.utb.edu/math/>

MATH 0120 Basic Mathematics Lab

This course is intended for students needing a review of arithmetic. This course is designed to prepare students for introductory Algebra (Math 0421). Topics include addition, subtraction, multiplication and division of whole numbers, fractions, and decimals percents data analysis, graphs, and statistics geometry introduction to real numbers and algebraic expressions and applications of these topics. Students will pursue an individualized plan of study under the supervision of a mathematics instructor. Lab 3, Cr 1.

MATH 0321 Introductory Algebra

A first course in algebra designed to prepare students for Intermediate Algebra. Topics include arithmetic and algebra of the real numbers, sets, linear equations, linear inequalities, absolute value equations and inequalities, integer exponents, adding, subtracting, multiplying, dividing and factoring polynomials, adding, subtracting, multiplying and simplifying rational expressions, complex fractions, synthetic division, and applications of these topics. Lec 3, Cr 3.

MATH 0322 Intermediate Algebra

A second course in algebra designed to prepare students for College Algebra. Topics include rational exponents and radicals, radical expressions, complex numbers, quadratic equations and inequalities, linear equations and inequalities, functions, variation, algebra of functions, symmetry, graphing quadratic functions, circles, ellipses, hyperbolas, square roots, and other useful functions, and applications of these topics. Lec 3, Cr 3.

MATH 0421 Introductory Algebra

This is a first course in algebra designed to prepare students for Intermediate Algebra (Math 0422). Topics include review of arithmetic and algebra of real numbers, sets, linear equations, linear inequalities, absolute value equations and inequalities, linear equations in two variables, graphing linear equations in two variables, integer exponents, adding, subtracting, multiplying, dividing, and factoring polynomials, and applications of these topics. Lec 3, Lab 3, Cr 4. Prerequisite: MATH 0120 or MATH 0320 with "C" or better, or appropriate score on the placement exam.

MATH 0422 Intermediate Algebra

This is a second course in algebra designed to prepare students for General Educational Mathematics Core Courses, which include Math 1314, Math 1324, and Math 1332. Topics include review of exponents, polynomials, and factoring, rational expressions, synthetic division, equations of lines, inequalities, and functions, joint and combined variations, linear systems, roots and radicals, quadratic equations, inequalities, and graphs, and applications of these topics. Lec 3, Lab 3, Cr 4. Prerequisite: MATH 0421 or MATH 0321 with "C" or better.

MATH 1314 College Algebra

A college level course in Algebra. Topics include zeros and graphs of polynomials functions, rational functions, inverse functions, exponential functions, logarithmic functions, linear systems of equations in two and three variables, nonlinear systems of equations, second-degree inequalities and systems, linear programming, matrices, determinants, solution of linear systems by matrices and determinants, sequences, series, binomials theorem, mathematical induction, permutations, combinations, probability, and applications of these topics. Lec 3, Cr 3. Prerequisite: MATH 0322 or MATH 0422 with "C" or better equivalent as determined by the Mathematics assessment test.

MATH 1316 Trigonometry

Topics include trigonometric functions, right triangles, radian measure and circular functions, graphs of trigonometric functions, identities, inverse trigonometric functions, trigonometric equations, oblique triangles, complex numbers, and the practical problems. Lec 3, Cr 3. Prerequisite: MATH 1314 with "C" or better, or equivalent as determined by the Mathematics assessment test.

MATH 1324 Business Algebra

This course is designed to meet the needs of students majoring within the School of Business. Topics include those from College Algebra, which apply to business and economics, simple and compound interest, annuities, probability and statistics and linear programming. Lec 3, Cr 3. Prerequisite: MATH 0322 or MATH 0422 with "C" or better.

MATH 1325 Business Calculus

This course is designed to meet the needs of students majoring within the School of Business. Topics include: applications of differential and integral calculus to business and economics, probability and statistics. Lec 3, Cr 3. Prerequisite: MATH 1314 or MATH 1324 with "C" or better.

MATH 1332 Math for Liberal Arts

This course is designed to meet the needs of non-science and non-business majors. The topics covered in this course include sets, logic, elementary number theory, functions, geometric concepts, mathematics of finance, and the introduction to probability and statistics. Lec 3, Cr 3. Prerequisite: MATH 0322 or MATH 0422 with "C" or better, or equivalent as determined by the Mathematics assessment test.

MATH 1342 Elementary Statistics

This course is designed to provide the student with an elementary overview of the nature and uses of descriptive and inferential statistics. Topics include descriptive statistics, measures of central tendency and dispersion, probability, distributions, tests of hypothesis and estimation for large and small samples, linear regression and correlation, comparisons, and analysis of variance. Lec 3, Cr 3. Prerequisite: MATH 1314 with "C" or better, or equivalent as determined by the Mathematics assessment test.

MATH 1348 Analytic Geometry

This course is designed for students with a reasonably sound background in algebra and trigonometry. Topics include basic geometric concepts, vectors, the straight line, the circle, conic sections, transformation of coordinates, curve sketching, transcendental curves, polar coordinates, parametric equations, and solid analytical geometry. Lec 3, Cr 3. Prerequisite: MATH 1316 with "C" or better, or high school Trigonometry, Analysis, and/or Calculus and successfully assessed.

MATH 1412 Pre-Calculus Mathematics

This course is an alternative to MATH 1316 and MATH 1348. Topics include functions and their graphs, trigonometric, exponential and logarithmic functions, vectors, conics, systems of equations, sequences and series, and polar coordinates. Lec 4, Cr 4. Prerequisite: MATH 1314 with "C" or better, or equivalent as determined by the Mathematics assessment test.

MATH 2318 Linear Algebra I

This is an introductory course in linear algebra. Topics include systems of linear equations, vectors in n-space, matrix operations, determinants, and vector spaces. Lec 3, Cr 3. Prerequisite: MATHU 2311 or MATHU 2332 with a minimum grade of "C".

MATH 2321 Differential Equations and Linear Algebra

This course emphasizes solution techniques. Topics include differential equations, vector spaces, linear transformation, matrix/vector algebra, eigenvectors, Laplace Transform and systems of equation. Lec 3, Cr 3. Prerequisite: MATH 2414 with "C" or better.

MATH 2413 Calculus I

This course covers functions, limits, and continuity the derivative differentiation of algebraic functions, the derivative as a rate of change, maximum and minimum problems with applications, Rolle's Theorem, the Mean-Value Theorem, higher derivatives, concavity, techniques of graphing, antiderivative, the definite integral and integration with applications. Lec 3, Lab 2, Cr 4. Prerequisite: MATH 1412 with "C" or better or passing successfully Calculus placement test administered by the Department of Mathematics.

MATH 2414 Calculus II

This course is a continuation of MATH 2413. This course covers the following topics: applications of the definite integral, differentiation, integration, and applications of logarithmic, exponential, trigonometric, hyperbolic functions and their inverses, solving differential equations, various techniques of integration with applications, improper integrals, approximation methods for definite integrals, limits of sequence infinite series, various tests for convergence of a series, power series, Taylor and Maclaurin Series, and application of power series. Lec 3, Lab 2, Cr 4. Prerequisite: MATH 2413 or MATH 2313 with "C" or better.

MATH 3301 History of Mathematics

This course is a study of the historical development of ideas that shape modern mathematical thinking. Although mathematicians are studied, emphasis is placed on mathematical development. Lec 3, Cr 3 Prerequisite: MATH 2313 or MATH 2413 with a minimum grade of "C".

MATH 3310 Survey of Mathematical Concepts and Principles I

This course, designed for students seeking teacher certification, is a study of Domains 1, 2, and 5 of the TExES Examination for grades 4-8 and 8-12. Topics include number concepts, algebra, mathematical processes and perspectives. The goal is to enhance prospective teachers' essential knowledge and skills necessary to teach mathematics. Lec 3, Cr 3. Prerequisite: MATH 2318 with a minimum grade of C.

MATH 3317 Survey of Mathematical Concepts and Principles II

This course, designed for students seeking teacher certification, is a study of Domain 3, 4, and 6 of the TExES Examination for grade 4-8 and 8-12. Topics include geometry, measurement, probability, statistics, instruction, and assessment. The goal is to enhance prospective teacher's essential knowledge and skills necessary to teach mathematics. Lec 3, Cr 3. Prerequisite: MATH 3310 with a minimum grade of C.

MATH 3321 Algebra I

This course provides an introduction to algebraic structures. Topics to be taken from groups, rings and fields. Lec 3, Cr 3. Prerequisite: MATH 2318 with a minimum grade "C".

MATH 3328 Linear Algebra II

This course covers linear transformations, matrix representations of linear transformations, similarity of matrices, orthogonality, least squares problems, the Gram-Schmidt orthogonalization, eigenvalues and eigenvectors, systems of linear differential equations, diagonalization, Hermitian matrices quadratic forms, positive definite matrices. Lec 3, Cr 3. Prerequisite: MATH 2318 with a minimum grade "C".

MATH 3332 Geometry II

Complete overview of Hilbert's axioms (connection, order, parallels, congruence, continuity) convex geometry (convex hull, extreme points, linear programming) projective geometry (collineation, coordination, the Main Theorem, affine spaces). Lec 3, Cr 3. Prerequisite: MATHU 2332 with minimum grade "C".

MATH 3335 Contemporary Math I

This course is designed for students seeking teacher certification EC-4 and 4-8 and providing the necessary skills for teaching mathematics with an emphasis on problem solving and critical thinking. Topics studied from advanced point of view include set theory, mathematical reasoning, elementary number theory, and number systems. Lec 3, Cr 3. Prerequisite: MATH 1314, MATH 1332 or MATH 1324.

MATH 3336 Contemporary Math II

This course is designed for students seeking teacher certification EC-4 and 4-8. This course provides the necessary skills for teaching mathematics EC-8. Selected topics will be studied from an advanced point of view and will include fractions, decimals, percents, statistics, probability, geometry, and measurement. Lec 3, Cr 3. Prerequisite: MATH 3335.

MATH 3339 Topology

This is an introductory course in topology, one of the major branches of modern mathematics. Topics will include sets, mappings, metric spaces, sequences in metric spaces, connectedness, and compactness. Lec 3, Cr 3. Prerequisite: MATHU 2311 with a minimum grade of C.

MATH 3341 Real Analysis

This course presents a rigorous introduction to the elements of real analysis. Topics include sequences, series, functions, limits, continuity, and derivatives. Lec 3, Cr 3. Prerequisite: MATH 2318 with a minimum grade of C.

MATH 3348 Vector Analysis

This course is a study of the application of vector methods to the problems of mathematics and physics. Topics discussed include vector and scalar products, differentiation of vector-valued functions, the divergence theorem, and Stokes theorem. Lec 3, Cr 3. Prerequisite: MATH 3347 with a minimum grade of C.

MATH 3349 Differential Equations

This course concentrates on solving ordinary differential equations by a variety of methods and techniques including Laplace Transforms. Also included in this course are elementary applications problems and solving systems of linear differential equations. Lec 3, Cr 3. Prerequisite: MATH 2314 or MATH 2414 with minimum grade "C".

MATH 3362 Discrete Structures

This course is an introduction to discrete mathematics with minimal mathematics requirements. This course extends the students' mathematical maturity and ability to deal with abstraction: topics include logic and proofs, set theory, relations, functions, algorithms, combinatorics, graph theory, directed graphs and binary trees, ordered sets and lattices. Lec 3, Cr 3. Prerequisite: MATH 1314, MATH 1324, and MATH 1332 with "C" or better.

MATH 3366 Computer Algebra Systems

This is a course in high level programming language. Different programming styles are covered such as functional, rule-based, procedural and object oriented programming. A computer algebra system such as Mathematical, Maple or MatLab is used. Lec 3, Cr 3. Prerequisite: MATH 3347 with a minimum grade of C.

MATH 3379 Fund Math for Science& Engineering

This course covers applications of Mathematics in Chemistry, Physics, Biology, Computer Science, Engineering Technology, and Space Science as described in the NASA mission. The course provides the necessary mathematics skills for pre-service and in-service teachers. This course may be taken by students considering a career in technical or engineering technology programs. The course covers the following major areas: fundamental concepts of operations, the metric system, and measurements fundamental algebraic concepts relations and variations right-triangle trigonometry analytic geometry and peculiar graphs vector and spatial analytic geometry and calculus and differential equations. Lec 3, Cr 3. Prerequisite: MATH 2314 or MATH 2414 and MATH 3349 and CHEM 1312 with a minimum grade of "C".

MATH 3381 Statistics

This is an introductory course to statistics for students whose background includes differential and integral calculus. Topics include the fundamentals of probability theory. In descriptive statistics it covers discrete and continuous distributions, multivariate distributions, sampling distributions and the central limit theorem. In inferential statistics topics include estimation and hypothesis testing. Lec 3, Cr 3. Prerequisite: MATH 2413 with "C" or better.

MATH 3447 Calculus III

Topics include Vectors in space, limits of functions of several variables, directional derivatives of functions of several variables, and multiple integration. Lec 3, Lab 2, Cr 4. Prerequisite: MATH 2314 or MATH 2414 with a minimum grade of "C".

MATH 4321 Algebra II

This course is for students with little experience in algebra who wish to improve their algebraic skills. It is also a contribution to disburden Algebra I. We pick two connected areas in modern algebra on which we look more abstractly, e.g., finite group theory and Galois theory. Lec 3, Cr 3. Prerequisite: MATH 3321 with minimum grade of C.

MATH 4329 Number Theory

This course includes a study of divisibility of integers, prime factorizations, congruence, and Diophantine equations. Lec 3, Cr 3. Prerequisite: MATH 3321 with a minimum grade of C.

MATH 4332 Groups and Geometries

This course is for students with little experience in algebra as well as in geometry. We present incidence geometries, incidence graphs, coset geometries, automorphism of geometries, simplicial complexes, adjacency algebras. The concrete objects of interest will be the projective spaces and designs which play a role in applied mathematics. Lec 3, Cr 3. Prerequisite: MATH 3321 with minimum grade of C.

MATH 4342 Complex Analysis

This course gives rigorous introduction to the theory of functions of a single complex variable. Topics include complex number system, analytic functions, Cauchy-Riemann equation, complex integration, Cauchy's theorem, infinite series, and the residue theorem. Lec 3, Cr 3. Prerequisite: MATH 3341 with minimum grade of C.

MATH 4343 Advanced Calculus

In this course, basic analytical concepts like limits, continuity, differentiability and integrability of real functions in several variables (which students have seen before in the calculus courses) will be considered under a more theoretical point of view. Algebraic as well as topological methods will be used in order to provide the axiomatic setting. In addition, the course discusses the convergence of number and function series. Lec 3, Cr 3. Prerequisite: MATH 3341 with minimum grade of C.

MATH 4361 Problem Solving for Teachers

This course is designed for students seeking teacher certification. Topics will focus on mathematical problem solving using heuristics to investigate problems drawn from Algebra, Geometry, Probability, Statistics, and Calculus. Also emphasized will be Polya's problem solving model. The calculator and computer technology will be used, when appropriate. Lec 3, Cr 3. Prerequisite: MATH 2318 with a minimum grade of C.

MATH 4374 Probability and Statistics

This course introduces the student to the mathematical theory of probability and statistics. Topics include probability, random variables, discrete and continuous probability distributions, expectation and variance. Moments and moment generating functions and the central limit theorem. Lec 3, Cr 3. Prerequisite: MATH 2314 or MATH 2414 with a minimum grade of a "C".

MATH 4391 Special Topic in Mathematics

This course covers special undergraduate topics in the mathematics not offered elsewhere in the department. May be repeated for credit. Lec 3, Cr3. Prerequisite: MATH 2318 with a minimum grade of C.

MATHU 2311 Foundations of Mathematics

The major objective of this course is to develop some skills that are necessary for the upper-level mathematics courses. It includes reading mathematical texts independently, understanding both mathematical English and logical symbolisms, constructing counterexamples, thinking independently, and also understanding and discovering mathematical proofs. The course covers topics in logic and foundations of mathematics such as propositional logic, quantifiers, set theory, proof theory, and recursion theory. Lec 3, Cr 3. Prerequisite: MATH 2414 with a minimum grade of C.

MATHU 2332 Geometry I

Euclidean geometry (congruence axioms and theorems with proofs, polygons), analytics geometry (coordinatization over the real numbers), transformational geometry (basic results in $GL(2, \mathbb{R})$ and $GL(3, \mathbb{R})$), axiomatics introduction into Projective Geometry. Lec 3, Cr 3. Prerequisite: MATH 2414 with a minimum grade of C.

Drafting (ARCE, DFTG, MBST, SRVY)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

MBST 1191 Special Topics in Mason & Tile Setter

Course topics address recently identified current events, skills, knowledges, and/or attitudes and behavior pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lec 1, Cr 1. Prerequisite: Departmental approval.

Machining Technology (MCHN)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

MCHN 1302 Machinist II

A study of different blueprints, with emphasis on mechanical parts and the application of machine shop tools to the production of the components and parts. Includes the determination of operations required based on part geometry, features and tolerance. Application of CAD to production of blueprints. Lec 3, Cr 3

MCHN 1305 Metals and Heat Treatment

Designed for students going into the workforce as CNC Operators, manual machinists, tool designers, or heat treat operators. Topics include properties of metal and heat treatment of metals. Lec 2, Lab 3, Cr 3

MCHN 1320 Precision Tools & Measurement

An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade. Practice of basic layout and piece part measurements while using standard measuring tools. Lec 2, Lab 4, Cr 3. Prerequisite: Departmental approval.

MCHN 1332 Bench Work & Layout

An introduction to bench work and layout. Application of the use theory of tools including, hand tools, micrometers, height gages, pedestal grinders, and layout tools. Includes principles of dimensional measurements and accuracy. Lec 1, Lab 8, Cr 3

MCHN 1338 Machining I

An introduction to machine shop theory, math and terminology, basic bench work, and part layout using a variety of common measuring tools. Application and basic operation of machine tools, such as, band saws, grinders, drill presses, lathes and mills, with common hand tools. Lec 1, Lab 8, Cr 3 Prerequisite: Departmental approval.

MCHN 1341 Basic Machine Shop II

A continuation of Basic Machine Shop I. Lec 1, Lab 8, Cr 3

MCHN 1343 Machine Shop Mathematics

Designed to prepare the student with technical, applied mathematics that will be necessary in future machine shop-related courses. Lec 3, Cr 3 Prerequisite: Departmental approval.

MCHN 1352 Intermediate Machine Shop I

Operation of drills, milling machines, lathes, and power saws. Includes precision measuring techniques and an introduction to CNC machining. Lec 2, Lab 2, Cr 3

MCHN 1354 Intermediate Machine Shop II

Operation of drills, milling machines, lather, and power saw. Includes precision measuring techniques and an introduction of CNC machining. Lec 2. Lab 2, Cr 3.

MCHN 1391 Special Topics: Print Reading

This course covers recently identified current events, skills, knowledge, and/or attitudes and behavior pertinent to technology or occupation and relevant to the professional development of the student, specially as it applies to blueprint reading for the machining trades. Lec 3, Cr 3.

MCHN 2303 Fundamentals of C.N.C Machine Controls

An introduction to G and M codes (RS274-D) necessary to program Computer Numerical Controlled (CNC) machines. Lec 2, Lab 3, Cr 3.

MCHN 2337 Advanced Milling Operation

A continuation of Intermediate Machine Shop I. Includes programming and operation of CNC machines. Lec 1, Lab 3, Cr 2. Prerequisite: MCHN 1341.

Medical Office Technology (HITT, MDCA, MRMT, POFM)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

MDCA 1343 Medical Insurance

This course emphasizes ICD-9 and CPT coding of office procedures for payment/ reimbursement by patient or third party and prevention of insurance fraud. Additional topics may include managed care or medical economics. Lec 3, Cr 3.

Engineering Technology (MEET)

Department of Engineering/College of Science, Math, and Technology • 882-6639 • Dr. Guillermo Weber, Chair • SETB 1.450 A • E-mail: guillermo.weber@utb.edu URL:<http://unix.utb.edu/eng/>

MEET 3333 Mechanical Subsystem Design Mechanical

Selection and computer-aided graphical representation of mechanical subsystems for the transmission of mechanical power and/or generation of mechanical motion. Component selection of gears, cams, belt and chain drives, clutches and transmissions will use data sources of contemporary manufacturers ranging from vendor catalogs to computerized databases.

Lec 2, Lab 3, Cr 3. Prerequisite: ENGR 2302

MEET 3430 Transport Technologies I

This course covers the zeroth, first, and second laws of thermodynamics, fluid properties, conduction, convection and radiant heat transfer.

Prerequisite: MATH 2314.

MEET 3431 Transport Technologies II

Analysis and applications of fluid mechanics and fluid power to mechanical systems, components and control of hydraulic and pneumatic systems.

Prerequisite: MEET 3430 or ENGR 3303.

MEET 4325 Mechanical Power Systems

Technology of prime movers and their operating characteristics plants for generating electric power, internal and external combustion engines, motors and turbines. Lec 2, Lab 3, Cr 3. Prerequisite: MEET 3431.

Manufacturing Engineering Technology (MFET)

Department of Engineering/College of Science, Math, and Technology • 882-6639 • Dr. Guillermo Weber, Chair • SETB 1.450 A • E-mail: guillermo.weber@utb.edu URL:<http://unix.utb.edu/eng/>

MFET 3311 International Quality Assurance Systems

Study of the statistical methods used in international markets for the assurance of product quality. International standards and practices including ISO 9000 will be examined, along with practical fundamentals of control charts, correlation, regression and design of experiments. Lec 3, Cr 3. Prerequisite: ENGTU 2410 and (ENGT 2303 or MATH 1342).

MFET 3320 Product and Process Design

Application of the engineering design and problem solving process for products and Manufacturing processes. Concepts of product life cycle, reliability, reparability, engineering specifications, productivity and product cost will be introduced. Lec 2, Lab 3, Cr 3. Prerequisite: ENGTU 2410.

MFET 3325 Manufacturing Process Planning

Introduction to basic Industrial Engineering functions including process engineering, work analysis, workplace design, and motion studies, line balancing, inventory control and material handling systems. Lec 3, Cr 3. Prerequisite: ENGTU 2410.

MFET 3331 Computer Aided Manufacturing

Introduction to the integration of design and manufacturing in computer-based systems. Applications of engineering design theory and methodology, 2D and 3D graphics, dimensions, tolerances and fits. Extensive use of commercial Computer Aided Design/CAM systems. Lec 2, Lab 3, Cr 3. Prerequisite: ENGTU 2410.

MFET 3332 Robots in Manufacturing

This course deals with the technology and application of robots in a Computer Integrated Manufacturing (CIM) environment by providing understanding of robotics hardware and software. Digital interfacing of robots with other CIM components will be introduced. Robotics cell design and the socio-economic impact of robotics will also be discussed. Lec 2, Lab 3, Cr 3. Prerequisite: ENGTU 2410.

MFET 3341 Electronic Assembly Technology

Basics of assembly equipment and processes for printed circuit board assembly including surface mount, insertion machines, screen printing, soldering, cleaning and testing. Lec 2, Lab 3, Cr 3. Prerequisite: ENGTU 2410.

MFET 3351 Plastic Manufacturing Technology

Focuses on the important relationship between Material properties, molding processes, product design and performance of finished products. Lec 2, Lab 3, Cr 3 Prerequisite: ENGTU 2410.

MFET 4320 Materials and Processes

Introduce concepts needed to understand, develop, and use any material for engineering applications. Learn structures, properties and applications of common materials in electrical engineering. Understand the processes used to create products from various materials. Study current manufacturing process technologies and their integration into today's industry. Lab experiments will determine material properties. Prerequisite: CHEM 1311, INMT 1291, and MATH 1412.

MFET 4321 Designed Experimentation

Application of computer systems to the design and execution of engineering experimentation for product and process design, analysis and problem solving. Covers classical and modern factorial experimentation techniques, response surface analysis, experimental design, execution and data analysis. Lec 3, Cr 3 Prerequisite: MFET 3311.

MFET 4360 International Environmental Issues In Manufacturing

Concepts of pollution prevention, international regulations including ISO 14000 and environmental impact on a global basis as it relates to manufacturing activities. Lec 3, Cr 3 Prerequisite: Senior standing.

Medical Lab Technology (MLAB)

Allied Health Department/School of Health Sciences • 882-5010 • Ms. Matilde Perez Lozano, Program Director • LHSB 2.436 • E-mail: matilde.p.lozano@utb.edu URL: <http://blue.utb.edu/medlabtech/>

MLAB 1166 Practicum

Practical general training and experiences in the workplace. The college and the college employer develop and document an individualized plan for the student. The plan relates to the workplace training and experiences to the student's general and technical course of study. Lab 10, Cr 1.

MLAB 1167 Practicum

Practical general training and experiences in the workplace. The college and the employer develop and document an individualized plan for the student. The plan relates to the workplace training and experiences to the student's general and technical course of study. Lab 10, Cr 1.

MLAB 1201 Introductory to Clinical Laboratory

An introduction to clinical laboratory science, including quality control, laboratory math, safety basic laboratory equipment, laboratory setting, accreditation and certification. Lec1, Lab 4

MLAB 1211 Urinalysis and Body Fluids

An introduction to urinalysis and body fluid analysis, including anatomy and physiology of the kidney, and physical, chemical, and microscopic examination of urine, cerebrospinal fluid, and other body fluids. Lec 1, Lab 4, Cr 2.

MLAB 1227 Coagulation

A course in coagulation theory, procedures, and practical applications. Includes laboratory exercises which rely on commonly performed manual and semi-automated techniques. Lec 1, Lab 2, Cr 2.

MLAB 1331 Parasitology/Mycology

A study of the taxonomy, morphology, and pathogenesis of human parasites and fungi, including the practical application of laboratory procedures. Lec 2, Lab 4, Cr 3

MLAB 1335 Immunology/ Serology

An introduction to the theory and application of basic immunology, including the immune response, principles of antigen-antibody reactions, and the principles of serological procedures. Lec 2, Lab 4, Cr 3.

MLAB 1415 Hematology

Introduction to the theory and practical application of routine and special hematology procedures, both manual and automated red blood and white blood cells maturation sequences, normal and abnormal morphology and associated diseases. Lec 3, Lab 4, Cr 4.

MLAB 2132 Seminar in Medical Laboratory Technology

This course is designed to reinforce didactic information with laboratory methodologies and allow exploration of advanced techniques in medical laboratory technology. Lec 1, Cr 1. Prerequisite: MLAB 1201, MLAB 1415, MLAB 1335, MLAB 2431, MLAB 2501, MLAB 2534, and MLAB 1227.

MLAB 2166 Practicum

Practical general training and experiences in the workplace. The college and the employer develop and document an individualized plan for the student. The plan relates to the workplace training and experiences to the student's general and technical course of study. Lec 0, Lab 10, Cr 1

MLAB 2167 Practicum

Practical general training and experiences in the workplace. The college and the employer develop and document an individualized plan for the student. The plan relates to the workplace training and experiences to the student's general and technical course of study. Lec 0, Lab 10, Cr 1

MLAB 2431 Immunohematology

A study of blood antigens and antibodies. Performance of routine blood banking procedures, including blood group and Rh typing, and antibody screens, antibody identification, cross matching, elution and absorption techniques.

MLAB 2501 Clinical Chemistry

An introduction of the principles and procedures of various tests performed in Clinical Chemistry. Presents the physiological basis for the test, the principle and procedure for the test, and the clinical significance of the test results including quality control and normal values. Also includes basic laboratory techniques, chemical laboratory safety, electrolytes, acid-base balance, proteins, carbohydrates, lipids, enzymes, metabolites, endocrine function, and toxicology. Lec 4, Lab 4, Cr 5.

MLAB 2534 Clinical Microbiology

Instruction in the theory, practical application, and pathogenesis of clinical microbiology, including collection, setup, identification, susceptibility testing and reporting procedures. Lec 4, Lab 4, Cr 5

MLAB 4112 Advanced Hematology

Specialized procedures in hematology with an emphasis on body fluid analysis.

MLAB 4115 Advanced Immunology

Advanced concepts in clinical immunology with an emphasis on specialized tests including HLA system. Abnormalities of the immune system will be emphasized.

MLAB 4303 Medical Laboratory Leadership

An introduction to the leadership roles and responsibilities of the clinical laboratorian in management, supervision and education as well as regulatory and legal aspects of laboratory science.

MLAB 4314 Advanced Immunohematology

Lecture and laboratory stress the detection, identification and characterization of rarer and atypical antigens, antibodies, compatibility testing, blood component therapy and problem solving techniques.

MLAB 4322 Advanced Clinical Chemistry

Discussion of special procedures and instrumentation in the clinical chemistry laboratory including toxicology therapeutic drug monitoring and clinical correction of biochemical results as well as problem solving strategies.

MLAB 4631 Advanced Clinical Microbiology

Lecture and laboratory emphasize fastidious bacteria, fungi, viruses and rickettsia. Disease processes, therapy and prevention as they relate to microbiology will also be emphasized.

Magnetic Resonance Imaging Technology (MRIT)

Allied Health Department/School of Health Sciences • 882-5010 • Dr. John McCabe, Program Director • LHSB 2.436 • E-mail: john.mccabe@utb.edu

MRIT 3330 Special Topics in Magnetic Resonance Imaging Technology

Topics address recently identified current events, skills, knowledge, or occupation and relevant to the professional development of the student.

MRIT 3334 Magnetic Resonance Equipment and Methodology

A study of the actual operational control of magnetic resonance imaging. Theory and application of magnetic resonance imaging equipment and the principles of the patient.

MRIT 3664 Clinical Practicum

Practical workplace clinical experience in MR scanning, patient screening and related activities. This course is competency based rather than time based. If the student needs more time to complete the required competences.

MRIT 4331 Cross-Sectional Anatomy

This course provides the student with a basic knowledge of cross-sectional anatomy. This course provides the foundation needed to recognize anatomic structures in MR images.

International Business (BMGT, IBUS, MRKG)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

MRKG 1311 Principles of Marketing

This course provides an introduction to basic marketing functions, identification of consumer and organizational needs explanation of economic, psychological, sociological, and global issues and description and analysis of the importance of marketing research. Lec 3, Cr 3.

Music-Applied Music (MUAP)

Fine Arts Department/College of Liberal Arts • 882-8247 • Dr. Suezanne Urbis, Chair • E-107A • E-mail: sue.z.urbis@utb.edu URL: <http://blue.utb.edu/finearts/music/home.htm>

MUAP 1187 Applied Music I

This applied music course is individualized instruction in the student's instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: Student must pass an entrance audition before selected members of the music faculty.

MUAP 1188 Applied Music II

This applied music course is individualized instruction in the student's instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: Student must pass MUAP 1187 with "C" or better.

MUAP 1287 Applied Other I

The following courses are lower division applied music courses for music majors seeking teacher certification. The student must pass an entrance audition to gain admission into the first semester of applied music, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Students normally progress to the next higher level each semester. Occasionally it may require more than one semester of study to accomplish this process. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 1, Practicum 10, Cr 2. Prerequisite: Student must pass an entrance audition before selected members of the music faculty.

MUAP 1288 Applied Other II

The following courses are lower division applied music courses for music majors seeking teacher certification. The student perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Students normally progress to the next higher level each semester. Occasionally it may require more than one semester of study to accomplish this process. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 1, Practicum 10, Cr 2. Prerequisite: Students must pass MUAP 1287 with a "C" or better.

MUAP 1387 Applied Other I

The following courses are lower division applied music courses for music majors NOT seeking teacher certification. The student must pass an entrance audition to gain admission into the first semester of applied music, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 3. Prerequisite: Student must pass an entrance audition before selected members of the music faculty.

MUAP 1388 Applied Other II

The following courses are lower division applied music courses for music majors NOT seeking teacher certification. The student perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 3. Prerequisite: Student must pass MUAP 1387 with a “C” or better.

MUAP 2187 Applied Music III

This applied music course is individualized instruction in the student’s instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: Student must pass MUAP 1188 with “C” or better.

MUAP 2188 Applied Music IV

This applied music course is individualized instruction in the student’s instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: Student must pass MUAP 2187 with “C” or better.

MUAP 2287 Applied Other III

The following courses are lower division applied music courses for music majors seeking teacher certification. The student perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Students normally progress to the next higher level each semester. Occasionally it may require more than one semester of study to accomplish this process. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 1, Practicum 10, Cr 2. Prerequisite: Student must pass MUAP 1288 with a “C” or better.

MUAP 2288 Applied Other IV

The following courses are lower division applied music courses for music majors seeking teacher certification. The student perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Students normally progress to the next higher level each semester. Occasionally it may require more than one semester of study to accomplish this process. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 1, Practicum 10, Cr 2. Prerequisite: Student must pass MUAP 2287 with a “C” or better.

MUAP 2387 Applied Other III

The following courses are lower division applied music courses for music majors NOT seeking teacher certification. The student perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 3. Prerequisite: Student must pass MUAP 1388 with a “C” or better.

MUAP 2388 Applied Other IV

The following courses are lower division applied music courses for music majors NOT seeking teacher certification. The student must perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 3. Prerequisite: Student must pass MUAP 2387 with a “C” or better.

MUAP 3101 Applied Music V

This applied music course is individualized instruction in the student’s instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, present a sophomore recital appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: Student must pass MUAP 2188 with a “C” or better and pass sophomore recital.

MUAP 3102 Applied Music Vi

This applied music course is individualized instruction in the student’s instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: The student must pass MUAP 3101 with “C” or higher.

MUAP 3201 Applied Music V

The following courses are upper division applied music courses for music majors seeking teacher certification. The student must have completed four semesters of lower division applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Students must complete their junior or senior recital before student teaching. Lab 1, Practicum 10, Cr 2. Prerequisite: Student must pass MUAP 2288 with a “C” or better.

MUAP 3202 Applied Music VI

The following courses are upper division applied music courses for music majors seeking teacher certification. The student must have completed four semesters of lower division applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Students must complete their junior or senior recital before student teaching. Lab 1, Practicum 10, Cr 2. Prerequisite: Student must pass MUAP 3201 with a “C” or better.

MUAP 3281 Applied Voice V**MUAP 3301 Applied Music V**

This applied music course is individualized instruction in the student's instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 3, Cr 3. Prerequisite: Student must pass MUAP 2288 with "C" or better, and must pass a sophomore recital to be judged by the appropriate music faculty.

MUAP 3302 Applied Music V I

This applied music course is individualized instruction in the student's instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 3, Cr 3. Prerequisite: Student must pass MUAP 3301 with "C" or better.

MUAP 3401 Applied Music V

The following courses are upper division applied music courses for music majors NOT seeking teacher certification. The student must have completed four semesters of lower division applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 4. Prerequisite: Student must pass MUAP 3201 with a "C" or better.

MUAP 3402 Applied Music VI

The following courses are upper division applied music courses for music majors NOT seeking teacher certification. The student must have completed four semesters of lower division applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 4. Prerequisite: Student must pass MUAP 3401 with a "C" or better.

MUAP 4101 Applied Music VII

This applied music course is individualized instruction in the student's instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: Student must pass MUAP 3102 with "C" or better.

MUAP 4102 Applied Music VIII

This applied music course is individualized instruction in the student's instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 1, Cr 1. Prerequisite: Student must pass MUAP 4101 with "C" or better.

MUAP 4201 Applied Music VII

The following courses are upper division applied music courses for music majors seeking teacher certification. The student must have completed four semesters of lower division applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Students must complete their junior or senior recital before student teaching. Lab 1, Practicum 10, Cr 2.

MUAP 4202 Applied Music VIII

The following courses are upper division applied music courses for music majors seeking teacher certification. The student must have completed four semesters of lower division applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The process of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Students must complete their junior or senior recital before student teaching. Lab 1, Practicum 10, Cr 2. Prerequisite: Student must pass MUAP 4201 with a "C" or better.

MUAP 4301 Applied Music V II

This applied music course is individualized instruction in the student's instrument of voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 3, Cr 3. Prerequisite: Students must pass MUAP 3302 with a "C" or better.

MUAP 4302 Applied Music V III

This applied music course is individualized instruction in the student's instrument or voice, intended for music majors seeking teacher certification. Students must perform on a student recital, appear before a faculty jury, be concurrently enrolled in two ensembles and attend a number of live performances approved by the music faculty. Lab 3, Cr 3. Prerequisite: Student must pass MUAP 4301 with "C" or better.

MUAP 4401 Applied Music VII

The following courses are upper division applied music courses for music majors NOT seeking teacher certification. The student must have completed four semesters of lower division applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 4. Prerequisite: Student must pass MUAP 3402 with a "C" or better.

MUAP 4402 Applied Music VIII

The following courses are upper division applied music courses for music majors NOT seeking teacher certification. The student on applied music on the same instrument, presented a sophomore recital, perform on a student recital, appear before the faculty jury, be concurrently enrolled in two ensembles and attend a set number of live performances approved by the Music Faculty. See the Chair of the Fine Arts Department for details. Occasionally it may require more than one semester of study to accomplish this progress. The progress of each student from one semester to another is dependent on the faculty jury held at the conclusion of each semester. Lab 2, Practicum 20, Cr 4. Prerequisite: Student must pass MUAP 4401 with a "C" or better.

Music Ensembles (MUEN)

Fine Arts Department/College of Liberal Arts • 882-8247 • Dr. Suezanne Urbis, Chair • E-107A • E-mail: sue.z.urbis@utb.edu URL: <http://blue.utb.edu/finearts/music/home.htm>

MUEN 1121 Wind Ensemble

The Wind Ensemble studies and performs a wide variety of music representing the literature and genres of wind music throughout history. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1122 Jazz Band

Jazz Band is dedicated to the study and performance of music in the big band tradition. Membership is open to the entire University student population and is determined by permission of the director (s) through audition. Course may be repeated for additional credit. Lab 4, Cr 1.

MUEN 1123 Symphony Orchestra

The symphony Orchestra rehearses and performs symphonic literature composed and arranged for the symphonic or chamber orchestra. Membership is open to the entire University student population. Course may be repeated for additional credit. Lab 4, Cr 1.

MUEN 1131 Brass Ensemble

The Brass Ensemble studies and performs a wide variety of music representing the literature and genres of brass music throughout history. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1132 Percussion Ensemble

The Rio Bravo Percussion Ensemble is a chamber ensemble dedicated to the performance of traditional to contemporary music written expressly for percussion. Membership is determined by permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1133 Trumpet Ensemble

The Trumpet Ensemble studies and performs a wide variety of music representing the literature and genres of trumpet music throughout history. Membership is open to the entire University population and is determined by the permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1134 Flute Ensemble

The Flute Ensemble studies and performs a wide variety of music representing the literature and genres of flute music throughout history. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1135 Jazz Combo

Jazz Combo is dedicated to the study and performance of jazz literature in the small ensemble tradition. Membership is open to the entire University student population and is determined by the permission of the director(s) through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1136 String Ensemble

The String Ensemble is a chamber ensemble that rehearses and performs music from different eras composed and arranged for the string quartet and/or string orchestra. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1137 Guitar Orchestra

The Guitar Orchestra emphasizes basic ensemble performance skills, reading ability, improvisation and repertoire. Membership is determined by permission of the director through audition. Advanced guitar skills required. Course may be repeated for additional credit. Lab 4, Cr 1.

MUEN 1138 Scorpio Consort

The Scorpio Consort is a small ensemble focusing on the music of the Renaissance and early Baroque eras. Members of the group sing and perform on various sizes of the recorder in Renaissance attire. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1139 Mariachi Escorpion

Mariachi Escorpion is dedicated to the study and performance of mariachi music. It is a performance course with emphasis on the different stylistic trends of the mariachi repertoire. Membership is determined by permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1140 Mariachi Luna Azteca

Mariachi Luna Azteca is made of women interested in the study and performance of mariachi music. It is performance course with emphasis on the different stylistic trends of the mariachi repertoire. Membership is determined by permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1141 Chamber Ensembles

Chamber Ensembles offer the student the opportunity to perform without a conductor in small ensemble- such as woodwind or brass quintets, or specialized vocal ensembles- that are coached by a faculty member. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1142 Accompanying

Accompanying introduces students to the skills necessary to be effective collaborative pianists, including sight reading, ensemble playing, score reading and communication skills. Course may be repeated for additional credit. Lab 4, Cr 1.

MUEN 1151 University Choir

The University Choir studies and performs a wide variety of choral music, from madrigals and folk songs to modern arrangements and masterworks. Membership is open to the entire University students population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 1152 Bravo Opera Workshop

The Bravo Opera Company studies and performs a wide variety of music and works of the music theater. Membership is determined by permission of director through audition. Course may be repeated for additional credit. Lec 2, Lab 2, Cr 1.

MUEN 1161 Master Chorale

Master Chorale is an elite choral ensemble open to music and non-music majors through audition and director approval. The Master Chorale studies and performs outstanding choral literature of all eras and styles. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3121 Wind Ensemble

The Wind Ensemble studies and performs a wide variety of music representing the literature and sonority of sounds of the great eras of music history up to the contemporary sounds of today's composers. Membership is determined by permission of director through audition. Course may be repeated for credit. Lab 4, Cr 1.

MUEN 3122 Jazz Band

Jazz Band is dedicated to the study and performance of music in the big band tradition. Membership is open to the entire University student population and is determined by the permission of the director(s) through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3123 Symphony Orchestra

The symphony Orchestra rehearses and performs symphonic literature composed and arranged for the symphonic or chamber orchestra. Membership is open to the entire University student population. Course may be repeated for additional credit. Lab 4, Cr 1.

MUEN 3131 Brass Ensemble

The Brass Ensemble studies and performs a wide variety of music representing the literature and genres of brass music throughout history. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3132 Percussion Ensemble

The Rio Bravo Percussion Ensemble is a chamber ensemble dedicated to the performance of traditional to contemporary music written expressly for percussion. Membership is determined by permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3133 Trumpet Ensemble

The Trumpet Ensembles studies and performs a wide variety of music representing the literature and genres of trumpet music throughout history. Membership is open to the entire University population and is determined by the permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3134 Flute Ensemble

The Flute Ensemble studies and performs a wide variety of music representing the literature and genres of flute music throughout history. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3135 Jazz Combo

Jazz Combo is dedicated to the study and performance of jazz literature in the small ensemble tradition. Membership is open to the entire University student population and is determined by the permission of the director(s) through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3136 String Ensemble

The String Ensemble is a chamber ensemble that rehearses and performs music from different eras composed and arranged for the string quartet and/or string orchestra. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3137 Guitar Orchestra

The Guitar Orchestra emphasizes basic ensemble performance skills, reading ability, improvisation and repertoire. Membership is determined by permission of the director through audition. Advanced guitar skills required. Course may be repeated for additional credit. Lab 4, Cr 1.

MUEN 3138 Scorpio Consort

The Scorpio Consort is a small ensemble focusing on the music of the Renaissance and early Baroque eras. Members of the group sing and perform on various sizes of the recorder in Renaissance attire. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3139 Mariachi Escorpion

Mariachi Escorpion is dedicated to the study and performance of mariachi music. It is a performance course with emphasis on the different stylistic trends of the mariachi repertoire. Membership is determined by permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3140 Mariachi Luna Azteca

Mariachi Luna Azteca is made of women interested in the study and performance of mariachi music. It is a performance course with emphasis on the different stylistic trends of the mariachi repertoire. Membership is determined by permission of the director through audition. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3141 Chamber Ensembles

Chamber Ensembles offer the student the opportunity to perform without a conductor in small ensemble- such as woodwind or brass quintets, or specialized vocal ensembles- that are coached by a faculty member. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3142 Accompanying

Accompanying introduces students to the skills necessary to be effective collaborative pianists, including sight reading, ensemble playing, score reading and communication skills. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3151 University Choir

The University Choir studies and performs a wide variety of choral music, from madrigals and folk songs to modern arrangements and masterworks. Membership is open to the entire University student population. May be repeated for additional credit. Lab 4, Cr 1.

MUEN 3152 Bravo Opera Workshop

The Bravo Opera Company studies and performs a wide variety of music from the opera repertoire and works of musical theatre. Membership is open to the entire University community and is determined by permission of the director through audition. Course may be repeated for additional credit. Lab 4, Cr 1.

MUEN 3161 Master Chorale

Master Chorale is an elite choral ensemble open to music and non-music major through audition and director approval. The Master Chorale studies and performs outstanding choral literature of all eras and styles. May be repeated for additional credit. Lab 4, Cr 1.

Music (MUSI)

Fine Arts Department/College of Liberal Arts • 882-8247 • Dr. Suzanne Urbis, Chair • E-107A • E-mail: sue.z.urbis@utb.edu URL: <http://blue.utb.edu/finearts/music/home.htm>

MUSI 1111 Elementary Sight Singing and Ear Training I

Singing tonal music in treble, bass, and clefs. Aural study, including dictation, of rhythm, melody, and diatonic harmony. Lab 3, Cr 1. Corequisite: MUSI 1211 or consent of instructor.

MUSI 1112 Elementary Sight Singing and Ear Training II

Continuation of MUSI 1111 Elementary Sight Singing & Ear Training I. Lab 3, Cr 1. Prerequisite: MUSI 1111 with a "C" or better. Corequisite: MUSI 1212 or consent of instructor.

MUSI 1114 Keyboard Skills I

This course is designed to teach students keyboardists the requisite skills to interpret and perform works in the jazz idiom. Lab 3, Cr 1 Prerequisite: Advanced keyboard skills.

MUSI 1115 Keyboard Skills II

A continuation of Keyboard Skills I. Lab 3, Cr 1. Prerequisite: MUSI 1114.

MUSI 1162 Diction I

A study of phonetic sounds of the German and Italian languages to promote the ability to sing in those languages, utilizing the international Phonetic Alphabet (IPAM). Lab 2, Cr 1 Prerequisite: READ 0300 or appropriate assessment.

MUSI 1165 Diction II

A continuation of MUSI 1162 with an emphasis on the Spanish and French languages. Lab 2, Cr 1 Prerequisite: MUSI 1162.

MUSI 1166 Woodwind Class I

Introduction to the mechanics and care of the flute, clarinet, and saxophone embouchure, breath control, tonguing and intonation problems, literature, maintenance, and minor repair are emphasized. Lec 3, Cr 1 Prerequisite: MUSI 1211 or consent of the instructor.

MUSI 1168 Brass Class I

A study of the techniques of playing the trumpet and French horn. Topics covered include the embouchure, articulation, breath control, tone production, equipment, brass instrument history, transportation, maintenance and repair. Lab 3, Cr 1 Prerequisite: MUSI 1211 or consent of instructor.

MUSI 1181 Piano Class

Development of piano techniques and musical style in a class situation. This course is intended and usually limited to music majors and minors. Others may be admitted to this course as room permits. This course may be repeated up to four times for credit. In each subsequent taking of this course the level of difficulty increases. Music majors must be enrolled in this course until they pass the piano proficiency exam. Students must pass proficiency before student teaching. Lab 3, Cr 1

MUSI 1183 Voice Class I

Introduction to instruction in the fundamentals of singing, with emphasis on breathing and tone production. Lab 3, Cr 1

MUSI 1184 Voice Class II

Emphasis on voice projection, clarity of tone and song interpretation. Continuation of MUSI 1183. Lab 3, Cr 1 Prerequisite: MUSI 1183.

MUSI 1188 Percussion Class I

Special attention is given to hand position, sticking techniques and tuning of snare, bass and trap drums and timpani. Cymbals and other utility percussion instruments, their uses and effects, will also be studied. Lab 3, Cr 1 Prerequisite: MUSI 1211 or consent of instructor.

MUSI 1189 Strings Class I

Introduction to the fundamentals of the viola, cello and bass, with emphasis on basic technique and bowing. Lab 3, Cr 1 Prerequisite: MUSI 1211 or consent of instructor.

MUSI 1192 Guitar Class I

Development of guitar technique and musical style in a class situation. Lab 3, Cr 1

MUSI 1193 Guitar Class II

Continuation of MUSI 1192. Lab 3, Cr 1 Prerequisite: MUSI 1192.

MUSI 1211 Music Theory I

Analysis and writing of tonal melody and diatonic harmony up to and including the 7th chords. Analysis and writing of small compositional forms. Correlated study at the keyboard. Lec 3, Cr 2. Prerequisite: READ 0320 or appropriate assessment. Must be concurrently enrolled in MUSI 1111.

MUSI 1212 Music Theory II

Continuation of MUSI 1211 Music Theory I. Lec 3, Cr 2. Prerequisite: Must pass MUSI 1211 with "C" or better. Corequisite: Enrollment in the assigned sight singing and ear training course lab (MUSI 1111 or MUSI 1112).

MUSI 1263 Improvisation

Designed to provide background in the art of improvisation and knowledge of basic materials and practices as a foundation for improvising or extemporaneous playing. Lec 1, Lab 2, Cr 2

MUSI 1301 Music Fundamentals

An introduction to the elements of music. Includes study of music reading in notation, rhythm, time signature and meters, scales, key signatures, intervals, and chords. Includes an introduction to sight singing. Lec 3, Cr 3.

MUSI 1306 Music Appreciation

A non technical survey course designed for the intelligent appreciation of traditional musical styles represented throughout history. Recording, videos, and live performances help illustrate the influence of music within the various fine arts. Lec 3, Cr 3.

MUSI 1308 Music Literature I

An introduction to important musical trends, styles, and literature of Western Civilization from the Middle ages to the present. Lec 3, Lab 1, Cr 3. Prerequisite: MUSI 1212 or concurrent enrollment.

MUSI 2111 Advanced Sight Singing and Ear Training I

Singing more difficult tonal music. Aural study, including dictation, of more complex rhythm, and melody. Lab 3, Cr 1. Prerequisite: Must pass MUSI 1112 with "C" or better. Corequisite: MUSI 2211 or consent of instructor.

MUSI 2112 Advanced Sight Singing and Ear Training II

Continuation of MUSI 2111 Advanced Sight Singing & Ear Training I. Lab 3, Cr 1. Prerequisite: Must pass MUSI 2111 with "C" or better. Corequisite: MUSI 2212 or consent of instructor.

MUSI 2166 Woodwind Class II

Introduction to the mechanics and care of double reed instruments (oboe and bassoon) embouchure, breath control, tonguing, literature, maintenance, and minor repair and intonation problems are emphasized. Continuation of MUSI 1166. Lab 3, Cr 1. Prerequisite: MUSI 1211 or consent of instructor.

MUSI 2168 Brass Class II

Introduction to the mechanics and care of the trombone, euphonium and tuba embouchure, articulation, breath control, tone production of equipment, bass instrument history, transposition, maintenance and repair. Continuation of MUSI 1168. Lab 3, Cr 1. Prerequisite: MUSI 1211 or consent of instructor.

MUSI 2211 Music Theory III

The study of figured bass, alto and tenor clefs, elementary formal concepts, intervals, scales, chords structure, chord progressions simple cadences, use of inversions, non-harmonic tones, seventh chords, modulations and harmonization of melodies. Part-writing, sight singing, keyboard and aural skills are also included. Lec 3, Cr 2. Prerequisite: Must pass MUSI 1212 with a "C" or better. Corequisite: Enrollment in the assigned sight singing and ear training course lab (MUSI 1111, MUSI 1112, or MUSI 2111).

MUSI 2212 Music Theory IV

Continuation of MUSI 2211, MUSI Theory III. Lec 3, Cr 2. Prerequisite: Must pass MUSI 2211 with a "C" or better. Corequisite: Enrollment in the assigned sight singing and ear training course lab (MUSI 1111, MUSI 1112, MUSI 2111, or MUSI 2112).

MUSI 2310 Special Topics in Music

A variety of special topics in music. Topics will be of a survey nature and may include: Jazz, Rock, Folk, Contemporary Music, Latin American Music and Texas Border Music. Course may be repeated for credit. Topics will vary. Open to all college students. Lec 3, Cr 3

MUSI 3159 Opera Workshop

A study and performance of music selected from the opera repertoire and works of the music theater. Membership is determined by permission of director through audition. Course may be repeated for additional credit. Lec 2, Lab 2, Cr 1

MUSI 3170 Performance Recital

Public performance of specific applied literature assigned by the students' major applied instructor. This course is intended for the music major NOT seeking teacher certification. Lab 1, Cr 1

MUSI 3211 Orchestration and Arranging

A study of the basic techniques of instrumentation, including ranges, transpositions, and characteristics of band, jazz band and orchestral instruments. This course will also study the basic techniques of vocal arranging. Lec 2, Cr 2. Prerequisite: Must pass MUSI 2212 with a "C" or better and must have passed the Department Piano Proficiency Exam.

MUSI 3289 Introduction to Conducting

An introduction to the basic techniques of conducting. This course is intended both instrumental and choral music majors. Lec 2, Cr 2. Prerequisite: MUSI 1212 with "C" or better.

MUSI 3304 Elementary Music Techniques - General

This general music course provides an introduction to the following elementary music methods and approaches: Kodaly, Orff, Dalcroze, Music Memory, and CM (Comprehensive Musicianship). It also surveys the National Standards in Music Education and the National Assessment of Music Education in the schools. Lec 3, Cr 3. Prerequisite: MUSI 1212 and MUSIU 2308.

MUSI 3305 History and Style of Mariachi

The History and Style of Mariachi will cover the history of mariachi music and its vicissitudes. The course will cover the styles of mariachi music as to the regions and pieces performed by the ensemble. Lec 3, Cr 3. Prerequisite: Must be concurrently enrolled in MUSI 2139 or MUSI 3139.

MUSI 3306 Secondary Choral Techniques

This course provides an introduction to: basic choral literature for intermediate and secondary choirs small ensemble literature solo vocal repertoire jazz/show choir/choreography concert programming counting systems sight-reading methods and texts. It also surveys the rule, regulations, and competition of the University Interscholastic League and the T.B.A. Texas Bandmasters Association. Lec 3, Cr 3. Prerequisite: MUSIU 2308, MUSI 1212, MUSI 3289.

MUSI 3307 Secondary Instrumental Techniques

This course provides an introduction to the following: solo instrumental repertoire concert programming counting systems sight-reading methods and texts jazz band literature and improvisation materials. It also survey the rules, regulations, and competition of the University Interscholastic League and the T.B.A. Texas Bandmasters Association. Lec 3, Cr 3. Prerequisite: MUSI 1308, MUSI 1312, MUSI 3289.

MUSI 3308 Music History II

Music History II is a comprehensive study of musical styles, genres, composers and literature of the Western art music tradition from the seventeenth and eighteenth centuries. Lec 3, Lab 1, Cr 3. Prerequisite: MUSI 2212 with "C" or better.

MUSI 3309 Music History III

Music History III is comprehensive study of musical styles, genres, composers and literature of the Western art music tradition from the nineteenth and twentieth centuries. Lec 3, Lab 1, Cr 3. Prerequisite: MUSI 2212 with "C" or better.

MUSI 3310 Jazz Arranging

This course investigates the various techniques used in composing and arranging for the small and large jazz ensembles. Course topics include: instrumental ranges, transpositions, basic chord voicings and reharmonization. Several written arrangements for the various ensembles common to the genre will be part of the course requirements. Lec 3, Cr 3.

MUSI 3312 Counterpoint and Analysis

A survey of polyphony of the eighteenth through the twentieth centuries with emphasis on creative projects. Lec 3, Cr 3. Prerequisite: Must pass MUSI 2212 with "C" or better and must have passed the Departmental Piano/Music Proficiency Exam.

MUSI 3313 Advanced Jazz Harmony

This course is a study of advanced concepts in jazz harmony and counterpoint. Topics will include the following: reharmonization, superimposition, Coltrane analytical techniques, and advanced improvisation techniques. Lec 3, Cr 3. Prerequisite: MUSI 2212 and MUSI 1263.

MUSI 3363 Intermediate Jazz Improvisation

This course is a continuation of MUSI 1263 Improvisation. Application of the Locrian, Lydian and Phrygian modes, to jazz improvisation will be studied. Additionally the whole-tone, diminished and altered dominant scale application will be studied. Lec 3, Cr 3.

MUSI 3370 Topics in Music Literature

Topics in Music Literature is a study of performance practice and literature applied to various topics in both instrumental and vocal music. Special emphasis will be given to solo literature with additional consideration given to chamber music and teaching literature. Course may be repeated for credit when the topics vary. Lec 3, Cr 3.

MUSI 3380 Music Pedagogy

Music Pedagogy is a program that prepares individuals to provide instruction and tutoring to clients in private and institutional settings specially associated with the individual's area of instrumental/vocal concentration. Lec 3, Cr 3. Prerequisite: Successful completion of Sophomore recital (MUAP 2288).

MUSI 4211 Computer Applications in Music

An introduction to computer programs important to the musician and music educator. Topics covered include MIDI applications, sequencing, music notation, word processors, spreadsheet, classroom management programs, marching drill programs and the Internet. Lec 3, Cr 2. Prerequisite: Must pass MUSI 1211 with a "C" or better or consent of instructor.

MUSI 4289 Advanced Conducting

The study and application of advanced conducting techniques with emphasis on the development of analytical and interpretive skills in both instrumental and choral conducting. Lec 2, Cr 2 Prerequisite: MUSI 3289.

MUSI 4301 Senior Experience in Music

This course provides a capstone experience for the music major. It is designed to make connections of the various elements of the music degree. This course also serves as a review for the TExES teacher certification exam. Lec 3, Cr 3. Prerequisite: Advanced standing in Music and passed senior recital. piano proficiency, all music courses. Acceptance into School of Education .

MUSIU 1105 Mariachi Methods

Mariachi Methods is an intensive study of the principles and methods of mariachi music pedagogy. This course may be repeated for credit when the topic varies. The topics are: Mariachi trumpet, voice, strings/harp, and armonia/guitarron. May be taken six times for a total of six credit hours. Lab 3, Cr 1. Prerequisite: Must be concurrently enrolled in MUSI 2139 or MUSI 3139.

MUSIU 2308 Music History I

Music History I is a study of musical styles, genres, composers, and literature from selected world music cultures and the Western art music tradition from antiquity through the Renaissance. Lec 3, Lab 1, Cr 3. Prerequisite: MUSI 2211 with "C" or better.

MUSIU 2313 Fine Arts in Elementary School

Students will have the opportunity to learn the basic principles, elements, history, techniques and teaching methodologies of the fine arts and apply the knowledge to appropriate strategies for classroom instruction. Lec 3, Cr 3. Prerequisite: The student must be accepted into School of Education.

STING Success Series (NCB)

Student Affairs/Mentoring Program • Alex Salinas, Coordinator • 882-7200 • E-mail: alex.salinas@utb.edu

MNCB 1000 STING Success Series

This course is required for first-time freshmen who have been advised into developmental classes and/or haven't passed all sections of THEA or other. Must be taken during first semester. Required for first time freshmen that are registered in developmental classes and/or deficient in THEA.

Nursing - Bachelor of Science in Nursing (NURS)

Nursing Department/School of Health Sciences • 882-5071 • Dr. Katherine Dougherty, Program Director • LHSB 2.720 • E-mail: kathy.dougherty@utb.edu URL: <http://blue.utb.edu/BSN>

NURS 3207 Nursing in the Community

Overview of the delivery of nursing care in a community-based setting, application of systematic problem-solving process and critical thinking skills. Cr 2 (Credit-by-Escrow). Prerequisite: Admission to BNS Program.

NURS 3303 Nursing of the Family in Psychosocial Crisis

This course is a broad spectrum of psychological phenomena. The content of this course includes psychosocial assessment and intervention strategies. Emphasis is placed on the integration of the teaching process, pharmacology, and nurse- and -client therapeutic relationship within the nursing process framework. Topics included in this course are affective disorder, stress, adaptation, personality disorder, psychoses and anxiety. Cr 3 (Credit-by-Escrow). Prerequisite: Acceptance into program.

NURS 3308 Health Assessment in Nursing Practice

Development of skills and techniques required for a comprehensive health assessment within a legal/ethical framework. Cr 3 (Credit-by-Escrow). Prerequisite: Admission to BSN Program.

NURS 3309 Pharmacology and Client Care

Introduction to the science of pharmacology. Emphasis on the actions, interactions, adverse effects, and nursing implications of each drug classification as it applies to body systems through the lifespan. Cr 3 (Credit-by-Escrow). Prerequisite: Admission to BSN Program.

NURS 3604 Clinical Skills in Nursing

The focus of this course is on the clinical nursing skills associated with the delivery of competent nursing care to clients/patients with varied alternations of their health status. Cr 6 (Credit-by-Escrow). Prerequisite: NURS 3701, NURS 3702, NURS 3303.

NURS 3701 Nursing of the Adult Client with Alterations in Homeostasis

This course focuses on the nursing care of the adult client in a variety of settings and at various stages of the health-illness continuum. Pharmacology, nutrition, comfort, rest, inflammatory and infection, immunity, surgical intervention, oxygenation, circulation, elimination integument cellular growth and thermal regulation are included in this course. Cr 7. Prerequisite: Acceptance into program.

NURS 3702 Nursing of the Childbearing and Childrearing Families

This course focuses on nursing care associated with Childbearing and Childrearing. Topics are centered in the antepartal, postartal, and neonatal periods. Nursing care of children of all ages and various stages of the health-illness continuum is examined. Cr 7 (Credit-by-Escrow). Prerequisite: Acceptance into program.

NURS 3705 Advanced Concepts of Clinical Decision Making

Application of advanced concepts and skills for development of the professional nurse's roles in complex client/nursing situations. Cr 7 (Credit-by-Escrow). Prerequisite: Admission to BSN Program.

NURS 4305 Perspectives in Professional Nursing Practice

This course examines the components of a holistic bio-psychosocial spiritual model of nursing practice in a changing and diverse healthcare environment. Lec 3, Cr 3. Prerequisite: Admission to BNS Program or permission of instructor.

NURS 4307 Transcultural Nursing

This course focuses on theoretical foundations for understanding cultural diversity in health and illness beliefs and behaviors and practical implications of this understanding. The student will gain experience in gaining knowledge and skills in gathering culturally relevant data to assist in the holistic assessment of patients from a variety of cultural backgrounds. Lec 3, Cr 3. Prerequisite: NURS 4305, NURS 4409, NURS 4610, NURS 4309 or permission of instructor.

NURS 4309 Research in Professional Nursing

In this course the student is introduced to the research process. The focus is on the utilization of the research findings in nursing practice. The course provides students with the opportunity to utilize the fundamentals of research as a basis for identifying researchable problems in nursing. This course develops skills in critical thinking through the evaluation of research projects that are guided by and developed through, holistic education and research. Lec 3, Cr 3. Prerequisite: Admission to BSN Program or MSN Bridge Program or permission of instructor.

NURS 4311 Contemporary Issues in Professional Nursing

This course examines contemporary issues and trends affecting the professional nurse and the profession, including the change in the social and cultural attitudes of society. A major focus is an in-depth analysis of topics relevant to nursing today and in the future. The role nurse as the client's advocate is studied. A foundation of this course is the philosophy and theory of holism as a basic for ethical practice. Lec 3, Cr 3 Prerequisite: NURS 4304, NURS 4408, NURS 4610, NURS 4309 or permission of instructor.

NURS 4336 Special Topics

This course focuses on a current health care issue. Topics vary from semester to semester and are offered on a rotating basis. Different topics may be repeated for credit. Lec 3, Cr 3 Prerequisite: Registered Nurse or consent of instructor.

NURS 4406 Health Promotion in Professional Nursing

This course examines health-promotion using the Healthy People 2010 framework. The course explores holistic nursing in health-promotion. Students learn about health-promotion of culturally diverse populations with holistic communication, assessment, and identification of strategies to promote health of individuals/populations. Concepts included are wellness, illness, healing, population-based nursing, and lifestyle modification. Lec 4, Cr 4 Prerequisite: NURS 4305, NURS 4409, NURS 4610, NURS 4309 or permission of instructor.

NURS 4409 Foundations of Holistic Nursing

This course provides a foundation for holistic nursing practice with an emphasis on the biopscho-social-spiritual-theory, caring-healing interventions, nurturing the nurturer, and the nurse as an instrument of healing. Nursing theory, research, ethics, philosophy, and the holistic caring process are introduced from a holistic perspective. This course allows for four (4) semesters hours of credit. Lec 4, Cr 4 Prerequisite: Admission to BNS Program or permission of instructor.

NURS 4610 Professional Nursing in the Community

This course views the community as a major determinant of the health status of its individual members. This course emphasizes role of the professional nurse in the community, aggregate health issues, the epidemiology process and the holistic caring process as it applies to families, aggregates and communities. Lec 3, Clinical 6, Cr 6. Prerequisite: Admission to BSN Program or MSN Bridge Program or permission of instructor.

NURS 4612 Leadership

This course emphasizes a theoretical and experiential approach to identifying the role of the professional nurse in the health-care system. Current theories of leadership, management, and change are related to the practice of professional nursing. Lec 6, Cr 6 Prerequisite: NURS 4304, NURS 4408, NURS 4610, NURS 4309, or permission of instructor.

Technology (CNBT, CRPT, ELPT, ELTN, PFPB, WDWK)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL:http://blue.utb.edu/industrialtech/

PFPB 1345 Com Const & Fixture Setting Construction

This course instructs students in the use of practices and procedures employed by a plumber in the common construction of a commercial building including multi-level drain waste vent systems, water systems, and fixture installation. The student will install the drain water vent, potable water and gas systems common to multi-floor buildings and set and install various types of typical plumbing fixtures. Lec 1, Lab 6, Cr 3

PFPB 1421 Plumbing Maintenance & Repair

This course provides instruction in the practices and procedures employed by a plumber in service work in the field of residential plumbing repairs and includes practice in the area of customer/public relations. The student will identify and repair various types of faucets, leaks in drain and potable water lines, and various plumbing fixtures in addition to practicing general principles of sound customer relations. Lec 2, Lab 2, Cr 3.

PFPB 1452 Blueprint Reading Plumbers

This course covers blueprint reading, sketching, layout/design, isometric drawings, and material take-off sheets of residential and light commercial plumbing systems. Lec 3, Lab 4, Cr 4. Prerequisite: Departmental approval.

PFPB 2301 Piping Fabrication & Installation I

This course will provide skill development opportunities in residential and commercial pipe fabrication and pipe support systems. Lec 1, Lab 6, Cr 3.

PFPB 2408 Piping Standards & Materials

This course is a study of piping standards and specifications, a survey of the plumbing code, the identification and use of various materials and the application of material take-offs. The student will define and identify metallic non metallic pipe and tubing, interpret pipe specifications, describe and identify various types of valves and fitting, explain valve applications, relate the plumbing code to a variety of plumbing applications, and perform mathematical calculation typical to the material take-off process. Lec 3, Lab 4, Cr 4.

PFPB 2409 Residential Const Plumbing I

Skill development in the procedures and techniques employed by a plumber in the rough-in service and top-out stages of a new home or the remodeling of an older home. The student will rough-in drain water and vent pipes, pull copper lines, install gas lines, and set water valves. Lec 3, Lab 4, Cr 4.

Philosophy (PHIL)

Government Department/College of Liberal Arts • 882-8890 • Dr. Charles W. Chapman • MRCS 276 • E-mail: cchapman@rgv.rr.com URL:http://blue.utb.edu/govt/

PHIL 1301 Introduction to Philosophy

Introduction to Philosophy is designed to acquaint students with the range of topics within philosophy and to provide them with general notions of the history of ideas. More specifically, the course will stress critical thinking as the foundation for all philosophical analysis. Topics include epistemology, metaphysics, ethics, and logic. Lec 3, Cr 3

PHIL 1316 History of Judaism

A nonsectarian historical study of the Hebrew people, their literature and their religious concepts from the earliest known period of the time of Christ. Major personalities of the Old Testament and the continuity of Hebrew history are examined. Lec 3, Cr 3

PHIL 1317 History of Christianity

The Christian movement in the Mediterranean world during the first century. The life of Christ, the beginning of the Christian church, the life and letters of Paul, and the general development of the New Testament, from a nonsectarian historical viewpoint. Lec 3, Cr 3

PHIL 2303 Introduction to Logic/Critical Thinking

The course concentrates on syllogistic logic to help the students better understand and critically evaluate arguments. Lec 3, Cr 3. Prerequisite: Students may not be enrolled in any remedial classes. ENGL 1301 with "C" or better.

PHIL 2306 Introduction to Ethics

Analysis of basic principles and methods of evaluating human behavior, including critical examination of both classical and contemporary ethical theories, with emphasis upon their application to personal decision making and contemporary moral issues. Lec 3, Cr 3

Physics (PHYS)

Physics and Astronomy Department/College of Science, Math, and Technology • 882-6779 • Dr. Natalia V. Guevara, Chair • SETB 1.214 • E-mail: natalia.guevara@utb.edu URL: <http://www.phys.utb.edu>

PHYS 1101 General Physics I Lab

Laboratory experiments in classical mechanics, heat, and wave motion. Lab 3, Cr 1 Prerequisite: PHYS 1301 or concurrent enrollment.

PHYS 1102 General Physics Laboratory II

Laboratory experiments in electricity, magnetism, light, and modern physics. Lab 3, Cr 1. Prerequisite: PHYS 1302 or concurrent enrollment.

PHYS 1105 Fundamentals of Musical Acoustics Lab

The following lab topics will be treated: nature of vibrations, relation to music, sound waves and characteristics, vibratory sources of sounds used in music, stretched strings, air columns, percussive instruments and voice, noise, musical scales, electronic recording, and synthesis of sound. Lab 3, Cr 1 Prerequisite: MUSI 1301 or MUSI 1211 or consent of the instructor. Corequisite: PHYS 1305.

PHYS 1110 Conceptual Physics Laboratory

Laboratory experiments in mechanics, heat, electricity and magnetism designed for non-science majors and students in the technology programs. Lab 3, Cr 1. Prerequisite: PHYS 1310 or concurrent enrollment.

PHYS 1111 Introduction to Astronomy Laboratory

Laboratory experiments in introductory astronomy based on observations of stars, planets, and galaxies. Lab 3, Cr 1 Prerequisite: Concurrent enrollment in PHYS 1311.

PHYS 1301 General Physics I

Fundamentals of classical mechanics, heat and thermodynamics, vibratory motion, waves and sound. Lec 3, Cr 3 Prerequisite: High school trigonometry or credit for MATH 1314 and credit for, or registration on MATH 1316.

PHYS 1302 General Physics II

Fundamentals of electricity, magnetism, electromagnetic interaction, light, and modern physics. Lec 3, Cr 3 Prerequisite: PHYS 1301.

PHYS 1305 Fundamentals of Musical Acoustics

The following topics will be treated: nature of vibrations, relation to music, sound waves and characteristics, vibratory sources of sounds used in music, stretched strings, air columns, percussive instruments and voice, noise, musical scales, electronic recording, and synthesis of sound. Lec 3, Cr 3. Prerequisite: MUSI 1301 or MUSI 1211 or consent of the instructor. Corequisite: PHYS 1105.

PHYS 1310 Conceptual Physics

A course designed primarily for non-science majors and students in the technology programs to explain the basic concepts of matter, mechanics, heat, electricity and magnetism with emphasis on applications and problem solving, and to illustrate the philosophy and methods of science. Lec 3, Cr 3. Prerequisite: Concurrent enrollment in PHYS 1110.

PHYS 1311 Introduction to Astronomy

This course is designed as an introduction to the study of Astronomy. Topics included are the formation of the planetary system, birth, and death of stars. Black holes, neutron stars and supernovas, and the current status of research in astronomy are also presented. Lec 3, Cr 3 Prerequisite: Concurrent enrollment in PHYS 1111.

PHYS 2125 University Physics I Laboratory

Laboratory experiments in classical mechanics, including kinematics, dynamics statics, fluids, oscillation, and waves. Lab 3, Cr 1 Prerequisite: MATH 2413 and concurrent enrollment in PHYS 2325.

PHYS 2126 University Physics II Laboratory

Laboratory experiments in thermodynamics, electricity and magnetism, light, and optics. Lab 3, Cr 1 Prerequisite: MATH 2414 and concurrent enrollment in PHYS 2326.

PHYS 2325 University Physics I

This course is the first of a two-semester sequence of course for physics, engineering physics, and computer science majors. The topics addressed will be an introduction to classical mechanics including statics, dynamics, fluids, oscillation, and waves. Lec 3, Cr 3 Prerequisite: MATH 2413 and Concurrent enrollment in PHYS 2125.

PHYS 2326 University Physics II

This is the second course in the two-semester introductory sequence for physics, engineering physics, and computer science majors. The topics addressed will be an introduction to thermodynamics, electricity and magnetism, light, and optics. Lec 3, Cr 3 Prerequisite: PHYS 2325, MATH 2414 and concurrent enrollment in PHYS 2126.

PHYS 3201 Advanced Physics Laboratory I

A course in experimental physics designed to give the student experience with real world apparatus such as lasers, high field magnets, detectors, radioactive sources, vacuum equipment, and sophisticated electronic devices such as lock-in amplifiers and multichannel scalars. The course also emphasizes writing of reports in the formats of the ATP Style Manual. Lab 6, Cr 2. Prerequisite: Junior standing in the Physics Degree Program.

PHYS 3310 Classical Mechanics

A rigorous treatment of particle kinematics and dynamics. Systems of particles and conservation laws. Rigid body motion. Lagrangian mechanics of small oscillations and coupled oscillators. Lec 3, Cr 3 Prerequisite: PHYS 2426, MATH 2314, and must be taken with PHYS 3390.

PHYS 3315 Physics of Biological Systems

This course will teach students how to apply the basic principles of physics to the problems of Life Sciences. Lec 3, Cr 3. Prerequisite: BIOL 1306, BIOL 1106, BIOL 1307, BIOL 1107, PHYS 1301, PHYS 1101, PHYS 1302, PHYS 1102.

PHYS 3320 Thermodynamics

Equilibrium states of single component substances. Changes of state, specific heats, and heat transfer. Thermodynamics laws and functions in quasi equilibrium processes. Analysis of thermodynamic cycle. Lec 3, Cr 3 Prerequisite: PHYS 2326, PHYS 3490 and must be taken with PHYS 3400 or consent of instructor.

PHYS 3400 Modern Physics

Special relativity, Planck's radiation law, elements of quantum theory, atomic and molecular structures and spectra. The atomic nuclear reactions, and an introduction to elementary particles. Lec 3, Lab 3, Cr 4 Prerequisite: PHYS 2326 and PHYS 3490.

PHYS 3490 Mathematics for Scientists and Engineers I

This course studies the application of various mathematical techniques to advanced problems in physics. Topics may include functions of a complex variable, the calculus of residues, integral transformations, the special functions of mathematical physics and partial differential equations with special applications to the heat equation and Schrödinger's equation. Lec 4, Cr 4. Prerequisite: PHYS 2426 or consent of instructor.

PHYS 3492 Mathematics for Scientists and Engineers II

This course is the second of a two semester course that introduces the student to mathematical techniques used in the physical sciences. Topics covered in the second semester include Fourier series, ordinary differential equations, partial differential equations, complex analysis, and integral transforms. Lec 4, Cr 4. Prerequisite: PHYS 3490 or consent of instructor.

PHYS 4300 Undergraduate Research Project

A special laboratory research project, to be carried out under the direction of a faculty member, resulting in a written report. Lec 1, Lab 9, Cr 3.

Prerequisite: Senior standing in the Physics Degree Program and consent of a supervising faculty member.

PHYS 4315 Analysis of Biomolecules by Physical Methods

The course is designed for students in Bachelors of Science in Engineering Physics/ Bioengineering Program and provides basic information on physical methods currently used in bioengineering and biomedical research study physical properties of vitally important macromolecules. Lec 3, Cr 3
Prerequisite: PHYS 3400.

PHYS 4320 Quantum Mechanics

The Schrödinger equation, operators, and perturbation methods. Applications to the harmonic oscillator and the hydrogen atom. Lec 3, Cr 3. Prerequisite: PHYS 3400 and PHYS 3392.

PHYS 4330 Electromagnetic Theory

The theory of electrostatics, electromagnetic, electrical and magnetic properties of materials, electric and magnet fields, electric current, Ohm's law, the Biot-Savart law Maxwell's Equations. Lec 3, Cr 3 Prerequisite: PHYS 3400 and PHYS 3392

PHYS 4340 Solid State Physics

The structural, thermal, electric, and magnetic properties of crystalline solids. Free electron theory of metals. Concept of energy bands and elementary semiconductor physics. Lec 3, Cr 3. Prerequisite: PHYS 3400 and PHYS 3392.

PHYS 4380 Special Topics in Physics

Special topics in physics, arranged for individuals or small groups. May be repeated for credit up to a maximum of six hours. Lec 3, Cr 3. Prerequisite: Instructor's approval.

PHYS 4390 Computational Methods for Engineers and Physicists

This is an introduction to the techniques and use of computers to solve engineering and physical problems. The topics covered include the study of finite difference methods, the implementation of linear algebra problems to solve systems of equations, and the use of Monte Carlo methods, spectrum analysis and techniques of scientific visualization will be covered. Lec 3, Cr 3 Prerequisite: PHYS 3490 and COSC 1336.

Medical Lab Technology (MLAB)

Allied Health Department/School of Health Sciences • 882-5010 • Ms. Matilde Perez Lozano, Program Director • LHSB 2.436 • E-mail: matilde.p.lozano@utb.edu URL: <http://blue.utb.edu/medlabtech/>

PLAB 1223 Phlebotomy

Skill development in the performance of a variety of blood collection methods using proper techniques and universal precautions. Includes vacuum collection devices, syringes, capillary skin puncture, butterfly needles and blood culture, and specimen collection on adults, children and infants. Emphasis on infection prevention, proper patient identification, labeling of specimen and quality assurance, specimen handling, processing, and accessioning. Topics include professionalism, ethics, and medical terminology.

Professional Office Technology (ITNW, ITSW, POFI, POFT)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

POFI 2331 Desktop Publishing

This course offers In-depth coverage of desktop publishing terminology, text editing, and use of design principles. Emphasis on layout techniques, graphics, multiple page displays, and business applications. Lec 3, Lab 1, Cr 3. Prerequisite: ITSW 1301 with a "C" or better.

POFI 2340 Advanced Word Processing

This course covers advanced techniques in merging, macros, graphics, and desktop publishing. Includes extensive formatting for technical documents. Emphasis on business applications. Lec 3, Lab 1, Cr 3. Prerequisite: ITSW 1301 with a grade "C" or better

Computer Information Systems (ARTV, CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

Computer Sciences/CIS Department/College of Science, Math, and Technology • 882-6605 • Dr. Mahmoud K. Quweider, Chair • SETB 1.550 • E-mail: mahmoud.quweider@utb.edu URL:<http://www.cs.utb.edu/english/index.html>

POFI 2431 Desktop Publishing for Office

In-depth coverage of desktop publishing terminology, text editing, and use of design principles to create publishing material using word processing desktop publishing features. Emphasis on layout techniques, graphics, multiple page displays, and business applications. Prerequisite: ITSC 1409

POFI 2431 Desktop Publishing for Office-Laboratory

In-depth coverage of desktop publishing terminology editing, and use of design principles to create publishing material using word processing desktop features. Emphasis on layout techniques, graphics, and multiple page displays. Lec 3, Lab 2, Cr 4.

Legal Assisting (LGLA, POFL)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

POFL 1305 Legal Terminology

This course will instruct students in the correct spelling, pronunciation, and definition of legal terms. It includes an overview of the areas of law and legal professions. The students develop a legal vocabulary and explain fundamental legal concepts, procedures, and terminology. Lec 3, Cr 3.

Medical Office Technology (HITT, MDCA, MRMT, POFM)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

POFM 1300 Medical Coding Basics

This course covers the presentation and application of basic coding rules, principles, guidelines, and conventions utilizing various coding systems. Lec 3, Cr 3.

POFM 1309 Medical Office Procedures

This course provides an introduction to basic medical office skills including telephone techniques, filing and indexing, mail handling, appointment scheduling, travel arrangements, and correspondence, and business transactions. Emphasis is placed on human relations and customer service skills. Lec 3, Cr 3.

POFM 2310 Intermediate Medical Coding

This course covers the assignment and application of ICD, CPT, and HCPCS coding guidelines with emphasis on physician billing and regulatory requirements. Includes code selection for evaluation and Management (E/M) and Medical/Surgical cases. Lec 3, Cr 3. Prerequisite: POFM 1300.

POFM 2380 Coop Education- Medical Admin/ Executive Assistance and Medical Secretary

This course offers career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Lec 1, Lab 20, Cr 3. Prerequisite: Approval of Coop Coordinator or departmental chair.

Professional Office Technology (ITNW, ITSW, POFI, POFT)

Applied Business Technology Department/ College of Applied Technology & General Studies • 882-8211 • Ms. Mary Sullivan, Chair • EDBC 1.534 • E-mail: mary.sullivan@utb.edu URL: <http://blue.utb.edu/business/BTECH.htm>

POFT 1192 Special Topics: Portfolio

This course includes topic addressing recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lec 1, Cr 1. Prerequisite: Approval from department chair.

POFT 1227 Introduction to Keyboarding

This course covers skill development in keyboarding with emphasis on alphabet, number, and symbol keys by touch. Skills can be applied to computers, typewriters, and other equipment with keyboards. Lec 2, Cr 2.

POFT 1301 Business English

This course will provide students with an introduction to practical application of basic language usage skills with emphasis on fundamentals of writing and editing for business. Lec 3, Cr 3.

POFT 1309 Administrative Office Procedures I

This course covers the study of current office procedures including telephone skills, time management, travel and meeting arrangements, mail processing, and other duties and responsibilities in an office environment. The student will develop time management techniques manage in-coming and out-going mail demonstrate appropriate telephone techniques coordinate travel and meeting arrangements and identify the basic skills of an office professional. Lec 3, Cr 3.

POFT 1313 Professional Development Office Personnel

This course covers preparation for the work force including business ethics, team work, professional attire, and promotability. The student will determine necessary skills for seeking and securing employment apply problem-solving techniques to complete tasks attitudes and values that contribute to effective work habits demonstrate how to work effectively as part of a team exhibit business etiquette and identify professional attire. Lec 3, Cr 3.

POFT 1319 Records and Information Management I

This course provides an introduction to basic records and information management. Includes the life cycle of a record, manual and electronic records management, and basic filing procedures and rules. The student will identify the stages in the life cycle of a record file and retrieve records using alphabetic, numeric, geographic, and subject filing systems input, index, code, and cross-reference records use tickler file, requisition, and charge-out procedures and differentiate between manual and electronic filing. Lec 3, Cr 3.

POFT 1325 Business Math and Machine Applications

Skill development in the use of electronic calculators and business math functions. Emphasis on business problem-solving skills using spreadsheets software and/or electronic calculator/keyboard. Lec 3, Cr 3.

POFT 1329 Beginning Keyboarding

This course will provide skill development in the operation of the keyboard by touch applying proper keyboarding techniques. Emphasis is placed on development of acceptable speed and accuracy levels and formatting basic documents. Lec 3, Cr 3.

POFT 2312 Business Correspondence & Communication

This course focuses on the development of writing and presentation skills to produce effective business communications. Lec 3, Cr 3. Prerequisite: POFT 1301 with "C" or better and POFT 1329 or keyboarding proficiency.

POFT 2331 Administrative Systems

This capstone course focuses on the advanced concepts of project management and office procedures utilizing integration of previously learned office skills. Lec 3, Cr 3. Prerequisite: Completed 12 hours of ITSW, ITNW, or POFI courses.

POFT 2380 Cooperative Education-Administrative Assistant/Secretary Science

This course offers career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student, Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Lec 1, Lab 20, Cr 3. Prerequisite: Approval of department chair or Coop Coordinator.

POFT 2381 Cooperative Education-Administrative Assistant/Secretary Science

This course offers career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes lecture components. Lec 1, Lab 20, Cr 3. Prerequisite: Approval of department chair or Coop Coordinator.

Physical Science (PSCI)

Physics and Astronomy Department/College of Science, Math, and Technology • 882-6779 • Dr. Natalia V. Guevara, Chair • SETB 1.214 • E-mail: natalia.guevara@utb.edu URL:<http://www.phys.utb.edu>

PSCI 4210 Physical Sciences for Educators I

This is the first part of hands on physical science course designed for education majors in EC-8 programs. The course will provide the students with basic theoretical background in physical science (properties of matter, mechanics, waves), and will develop skills in physical experimentation. Lec 3, Cr 2. Prerequisite: Three hours of an introductory Science course at an undergraduate level in any discipline, or consent of instructor.

PSCI 4220 Physical Science for Educators II

This is one of two parts of a hands-on physical science course designed for education majors in EC-8 programs. The course will provide the students with basic theoretical and experimental background in electricity, magnetism, and electronics. Lec 3, Cr 2. Prerequisite: Three credit hours of an introductory Science course at an undergraduate level in any discipline, or consent of instructor.

Psychology (PSYC)

Behavioral Sciences Department/College of Liberal Arts • 882-8225 • Dr. Virginia V. Wood, Chair • MRCS 293 • E-mail: virginia.v.wood@utb.edu URL: <http://unix.utb.edu/~cla/behsci.html>

PSYC 2301 Introduction to Psychology

A survey of the scope and methods of psychology cultivation of a scientific attitude toward behavior. Lec 3, Cr 3.

PSYC 2308 Child Psychology

This course investigates the physical, behavioral, mental, emotional and social changes that accompany growth and development during infancy and childhood. Lec 3, Cr 3

PSYC 2314 Lifespan Development

The study of the biological, cognitive and psychosocial changes in development of the individual from conception through maturity to death. Lec 3, Cr 3

PSYC 2317 Statistics of Psychology Education

This course covers measures of central tendency and variability, statistical inference and correlation. May be counted as SOCI 2317 or PSYC 2317. Lec 3, Cr 3 Prerequisite: PSYC 2301.

PSYC 3301 Research Methods in Psychology

Quantitative research methods and techniques used in contemporary psychological research, instruction in the steps involved in the scientific approach to solving problems and in applying the experimental method in the laboratory. Lec 3, Cr 3 Prerequisite: PSYC 2317.

PSYC 3302 Adolescent Psychology

This course investigates the physical, behavioral, mental, emotional and social changes that accompany growth and development in adolescence. Lec 3, Cr 3. Prerequisite: PSYC 2301.

PSYC 3303 Adulthood and Aging

This course investigates the physical, behavioral, mental, emotional and social changes that accompany growth and development during the adult years from maturity to old age. Lec 3, Cr 3. Prerequisite: PSYC 2301.

PSYC 3318 Theories Learning

This course is the study of how behavior of an individual undergoes enduring changes as a result of exposure to events in the environment. The main focus is on classical operant, and observational learning. Lec 3, Cr 3 Prerequisite: PSYC 2301.

PSYC 3322 Biopsychology

In this course, psychology will be approached from the perspective of the human being as a living organism and as part of the biological world. Emphasis will be on how the nervous system, especially the brain, is related to various aspects of behaviors and experiences Lec 3, Cr 3 Prerequisite: BIOL 1306, BIOL 1106 and six hours in advanced PSYC.

PSYC 3324 Health Psychology

This is a relatively new field of psychology that studies mental, emotional and behavioral factors that affect the onset, duration, recovery and prevention of physical illnesses. Lec 3, Cr 3

PSYC 3326 Social Psychology

This course examines how an individual's behaviors and thinking influences and is influenced by the presence of others. Topics include attribution, conformity, persuasion, attitude structure and change, leadership, and prejudice and discrimination. Lec 3, Cr 3. Prerequisite: Six hours of PSYC or SOCI.

PSYC 3343 Tests and Measurements in Psychology

This course looks at theoretical issues and practical problems involved in designing and administering tests and measures such as questionnaires, surveys, aptitude, and achievement tests, personnel selection, and personality inventories. Lec 3, Cr 3 Prerequisite: Six hours of PSYC or three hours of behavioral statistics.

PSYC 3363 Human Sexuality

This course explores the multidimensional nature of human sexuality including the physiological, psychological, and sociological aspects of human sexuality. Lec 3, Cr 3. Prerequisite: PSYC 2301 or SOCI 1301.

PSYC 4302 Advanced Statistics for Psychology

This course reviews and expands on basic principle of statistical analysis with an emphasis on inferential techniques such as analysis of variance and integrated with the use of prepackaged statistical analysis programs such as SPSS. Lec 3, Cr 3. Prerequisite: PSYC 2317, PSYC 3301.

PSYC 4305 Behavior Management and Modification

This course explores the application of various techniques derived from learning theories for the treatment of a wide variety of behavioral and emotional problems in clinical settings decreasing the frequency of undesirable behaviors and increasing the frequency of desirable behaviors in non-clinical settings. Lec 3, Cr 3. Prerequisite: PSYC 3318.

PSYC 4306 Conflict Resolution

An investigation of the nature of conflict and the methods to resolve conflict with an emphasis on collaborative problem solving and mediation. Lec 3, Cr 3 Prerequisite: PSYC 2301.

PSYC 4312 Psychology of Gender

This course asks how biological and cultural factors influence the development of gender roles and identities and stereotypes of masculinity and femininity and how these affect our lives at the personal, social, and institutional levels. Lec 3, Cr 3. Prerequisite: Nine hours of PSYC or SOCI.

PSYC 4313 Abnormal Psychology

This course explores the origins, categories and treatments of mental, emotional and behavioral disorders ranging from relatively mild stress and anxiety disorders to the more severe schizophrenias and organic mental disorders. Lec 3, Cr 3 Prerequisite: Six hours of Psychology. (3000 and 4000 level)

PSYC 4319 Cognitive Processes

This course examines mental activities from an information processing perspective. Topics include perception, pattern recognition, attention, memory, decision making, and problem solving. Lec 3, Cr 3 Prerequisite: PSYC 3301.

PSYC 4322 Sensation and Perception

This course looks at how the sensory nervous system monitors the internal and external environments and how the central nervous system organizes, evaluates and acts on incoming sensory information. Lec 3, Cr 3 Prerequisite: PSYC 2301.

PSYC 4330 Psychology and the Legal Systems

This course provides an interdisciplinary introduction to the field of Forensic Psychology, including basic concepts of the American legal process in civil and criminal cases and application of the science of Psychology in the legal system for the development and implementation of law and policy. Lec 3, Cr 3. Prerequisite: PSYC 3301 or CRIJ 3302 or SOCI 4305

PSYC 4333 Theories of Personality

This is an examination of some of the major theories of how we acquire the distinctive behavioral, mental, and emotional characteristics which make us unique individuals. Lec 3, Cr 3 Prerequisite: Six hours of Psychology.

PSYC 4356 Industrial and Organizational Psychology

This course explores psychological and behavioral factors involved with organizational design and effectiveness leadership, personnel selection, placement, training, promotion retention morale, job satisfaction and productivity. Lec 3, Cr 3. Prerequisite: Six hours of basic Psychology.

PSYC 4360 Clinical and Counseling Psychology

This course introduces the methods of applying psychological principles to the diagnosis and treatment of emotional and behavioral problems and providing help with problems of social adjustment and vocational and educational goals. Lec 3, Cr 3 Prerequisite: Six hours of basic Psychology, including: PSYC 4313 Abnormal Psychology.

PSYC 4363 Systems and Theories in Psychology

This course chronicles the development of psychological thought from the ancient Greeks into modern era in terms of the most influential people and the ideas and theories that they have proposed. This is a capstone course required of psychology majors. Lec 3, Cr 3 Prerequisite: Psychology major with a least 24 hours of PSYC including: PSYC 2301, PSYC 2317, and PSYC 3301.

PSYC 4374 Topics in Psychology

This course is designed to address contemporary developments in psychology. The topics may vary and the course may be repeated twice for credit. Lec 3, Cr 3 Prerequisite: PSYC 2301.

PSYC 4380 Independent Study

This course allows students to arrange a personalized study schedule on a topic of their interest. The topic may be one which is not covered in the above courses or one which goes into more depth than is usually the case. Lec 3, Cr 3 Prerequisite: PSYC 2301.

PSYCU 2102 Orientation for Psychology Majors

This course prepares students for success and services within the psychology major. Topics include: research, ethics, APA style, critical thinking, study skills, civic engagement and professional development. This course is required of all majors. Lec 1, Cr 1. Prerequisite: PSYC 2301.

Radiologic Technology (RADR)

Allied Health Department/School of Health Sciences • 882-5011 • Mr. Manuel Gavito, Program Director • LHSB 2.436 • E-mail: manuel.gavito@uth.edu

RADR 1166 Practicum I - Medical Radiologic Technology

Practical training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 21, Cr 1.

RADR 1167 Practicum II - Medical Radiologic Technology

Practical general training and experiences in the workplace. The college with the employer develops and documents individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 21, Cr 1.

RADR 1201 Introduction to Radiography

This course includes the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for care professionals, and an orientation to the program and the health care system. Lec 2, Cr 2.

RADR 1213 Principles Radiography Imagines I

This course will analyze radiographic image qualities and the effects of exposure variables upon these qualities. Lec 1, Lab 2, Cr 2.

RADR 1267 Practicum-Medical Radiologic Technician

Practical general training and experience in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 20, Cr 2.

RADR 1411 Basic Radiographic Procedures

This course includes an introduction to radiographic positioning terminology, the proper manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy and related pathology. Lec 3, Lab 3, Cr 4.

RADR 2166 Practicum V - Medical Radiologic Technologic

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 21, Cr 1.

RADR 2167 Practicum IV - Medical Radiologic Technologic

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 21, Cr 1.

RADR 2217 Radiographic Pathology

An overview of the disease process and common diseases and their appearance on medical images. Lec 2, Lab 0, Cr 2

RADR 2233 Advanced Medical Imaging

An introduction to the use of computers in medical imaging and survey of specialized imaging modalities. Lec 2, Cr 2.

RADR 2266 Practicum IV - Medical Radiologic Tech

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 20, Cr 2.

RADR 2267 Practicum VII- Medical Radiologic Tech

Practical general training and experiences in the workplace. The college with the employer develops and documents an individualized plan for the student. The plan relates the workplace training and experiences to the student's general and technical course of study. This course may be repeated if topics and learning outcomes vary. Lab 20, Cr 2.

RADR 2305 Principles Radiographic Imaging II

A continuation of the study of radiographic imaging technique formulation, image quality assurance, and the synthesis of all variables in image production. Lec 2, Lab 3, Cr 3

RADR 2309 Radiographic Imaging Equipment

A study of the equipment and physics of x-ray production, basic x-ray circuits, and relate equipment components to the imaging process. Lec 3, Lab 1, Cr 3.

RADR 2313 Radiation Biology and Protection

A study of effects of radiation exposure on biological system, typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure. Lec 3, Lab 0, Cr 3

RADR 2331 Advanced Radiographic Procedures

An advance course including the proper manipulation of equipment positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of advanced anatomy and related pathology. Lec 3, Cr 3.

RADR 2335 Radiologic Technology Seminar

This is a capstone course focusing on the synthesis of professional knowledge, skills, and attitudes in preparation for professional employment and lifelong learning. Lec 3, Cr 3.

Construction Technology (CNBT, CRPT, ELPT, ELTN, PFPB, WDWK)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

RBPT 2320 Residential Energy Conservation Codes

This course covers the use of computer software and code documents to determine compliance with residential energy conservation codes through the gathering of data from building plans and manufactures' specifications. Lec 2, Lab 2, Cr 3. Prerequisite: Departmental approval.

Reading (READ)

Developmental Reading/College of Applied Technology & General Studies • 882-6791 • Dr. Peter B. Gawenda, Interim Dean • SETB 2.342 • E-mail: Peter.Gawenda@utb.edu

READ 0320 College Reading I

This course is a computer-directed instruction based course in which instruction is individualized, and includes self-paced, supplemental small group tutoring. Instructional emphasis is on fundamental vocabulary and comprehension skills. Lab 3, Cr 3. Prerequisite: THEA 150-199, ASSET/A-THEA 33-35, Accuplacer 0-40, Compass 47-65.

READ 0321 College Reading II

This course is an intermediate college reading course that emphasizes instruction and practice of vocabulary and comprehension skills essential for college level reading. Lec 3, Cr 3. Prerequisite: THEA 200-219, ASSET/A-THEA 36-37, Accuplacer 41-67, Compass 66-70 or READ 0320 with "C" or better.

READ 0322 College Reading III

This course is an advanced college reading course emphasizing the instruction and application of study skills and critical reading across various disciplines. This exit-level course is designed to prepare students for reading intensive college level courses. Lec 3, Cr 3. Prerequisite: THEA 220-229, ASSET/A-THEA 38-40, Accuplacer 68-77, Compass 71-80 or READ 0321 with "C" or better.

Nursing - Associate Degree Nursing (RNSG)

Nursing Department/School of Health Sciences • 882-5072 • Mr. Joe R. Lacher, Program Director • LHSB 2.720 • E-mail: joe.lacher@utb.edu

RNSG 1108 Dosage Calculation for Nursing

Dosage Calculations include reading, interpreting and solving calculation problems encountered in the preparation of medications. Includes conversion of measurements within the apothecary, avoirdupois, and metric system. This course lends itself to either a blocked or integrated approach. Course is 8. Lab 3, Cr 1. Prerequisite: Admission to the Associate Degree Nursing Program; BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, MATH 1332 and PSYC 2301.

RNSG 1205 Nursing Skills

Study of the concepts and principles essential for demonstrating competence in the performance of nursing procedures. Topics include knowledge, judgment, skills and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Course is 7 1/2 weeks. Lec 1, Lab 4, Cr 2. Course is a 8 Weeks. Prerequisite: Admission to the Associate Degree Nursing Program; BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, MATH 1332 and PSYC 2301.

RNSG 1210 Introduction to Community-Based Nursing

Overview of the delivery of nursing care in a variety of community-based setting application of systematic problem-solving processes and critical thinking skills, focusing on the examination of concepts and theories relevant to community-based nursing and development of judgment, skills, and professional values within legal/ethical framework. This course lends itself to either a blocked or integrated approach. Lec 2, Cr 2. Prerequisite: RNSG 1108, RNSG 1205, RNSG 1215, RNSG 1413, RNSG 1260.

RNSG 1215 Health Assessment

Development of skills and techniques required for a comprehensive health assessment within a legal/ethical framework. This course lends itself to a blocked approach. Lec 1, Lab 3, Cr 2. Prerequisite: Admission to the Associate Degree Nursing Program; BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, MATH 1314 or MATH 1332, PSYC 2301, or departmental approval. Concurrent enrollment in a clinical RNSG 1260.

RNSG 1251 Care of the Childbearing Family

Study of concepts related to the provision of nursing care of childbearing families. Topics may include selected complications. Topics include knowledge, judgment, skills professional values within a legal/ethical framework. This course lends itself to a blocked approach. Lec 2, Cr 2. Prerequisite: RNSG 2213, RNSG 2163, BIOL 2321, and BIOL 2121.

RNSG 1260 Clinical: Nursing RN: Foundations for Nursing Practice

A health-related work-based learning experience that enables the students to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Clinical 12, Cr 2. Prerequisite: Admission to the Associate Degree Nursing Program; BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, MATH 1332, PSYC 2301, RNSG 1205, and RNSG 1108.

RNSG 1301 Pharmacology

Introduction to the science of pharmacology with emphasis on the actions, interactions, adverse effects, and nursing implications of each drug classification. Topics include the roles and responsibilities of the nurse in safe administration of medications within a legal/ethical framework as it applies to body systems through the lifespan. This course lends itself to either a blocked or integrated approach. Lec 3, Cr 3. Prerequisite: RNSG 1108, RNSG 1205, RNSG 1215, RNSG 1413, and RNSG 1260.

RNSG 1331 Principles of Clinical Decision-Making

Examination of selected principles related to the continued development of the professional nurse as a provider of care, coordinator of care, and member of a profession. Emphasis on clinical decision-making for clients in medical-surgical setting experiencing health problems involving fluid and electrolytes preoperative care pain respiratory disorders and infectious disorders. Discussion of knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to either a blocked or integrated approach. Lec 3, Cr 3. Prerequisite: RNSG 1108, RNSG 1205, RNSG 1215, RNSG 1413, and RNSG 1260. Co-requisite: RNSG 1301, RNSG-1210, RNSG 2260, and RNSG 1347.

RNSG 1347 Concepts of Clinical Decision-Making

Integration of previous knowledge and skills into the continued development of the professional nurse as a provider of care, coordinator, and member of a profession. Emphasis on clinical decision-making for clients in medical-surgical settings experiencing health problems involving gastrointestinal disorders endocrine and metabolic disorders reproduction and sexual disorders musculoskeletal disorders eye-ear-nose-throat disorders and integumentary disorders. Discussion of knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Lec 3, Cr 3. Prerequisite: RNSG 1108, RNSG 1205, RNSG 1215, RNSG 1413, and RNSG 1260. Co-requisite: RNSG 1210, RNSG 1310, RNSG 2260, and RNSG 1331.

RNSG 1413 Foundations for Nursing Practice

Introduction to the role of the professional nurse as a provider of care coordinator of care, and member of a profession. Topics include but are not limited to the fundamental concepts of nursing practice, history of professional nursing, a systematic framework for decision-making, mechanisms of disease, the needs and problems that nurses help patients manage, and basic psychomotor skills. Emphasis on knowledge, judgment, skills, and professional values within a legal/ethical framework. This course leads itself to a blocked approach. Lec 3, Lab 3, Cr 4. Prerequisite: Admission to the Associate Degree Nursing Program; BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, MATH 1332, and PSYC 2301. Corequisite: Concurrent enrollment in a clinical RNSG 1108, RNSG 1205, RNSG 1215, and RNSG 1260.

RNSG 2121 Management of Client Care

Exploration of leadership and management principles applicable to the role of the nurse as provider of care, coordinator of care, and member of the profession. Includes application of knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Lec 1, Cr 1. Prerequisite: RNSG 2201, RNSG 2162, RNSG 1251, RNSG 2161, SPCH 1318, ENGL 1301 and concurrent enrollment in RNSG 2360.

RNSG 2161 Clinical: RN: Care of Childbearing Family

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinical professional. Clinical 6, Cr 1. Prerequisite: RNSG 2213, RNSG 2163, BIOL 2321, BIOL 2121. Corequisite: Concurrent enrollment in RNSG 1251, RNSG 2162 and RNSG 2201.

RNSG 2162 Clinical:RN: Care of Child and Families

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinical professional. Clinical 6, Cr 1. Prerequisite: RNSG 2213, RNSG 2163, BIOL 2321 BIOL 2121. Corequisite: Concurrent enrollment in RNSG 2201, RNSG 1251 and RNSG 2161.

RNSG 2163 Clinical: RN: Mental Health Nursing

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinical professional. Clinical 6, Cr 1. Prerequisite: RNSG 1301, RNSG 1210, RNSG 1331, RNSG 1347, RNSG 2260, BIOL 2321, BIOL 2121, PSYC 2314. Corequisite: RNSG 2213.

RNSG 2166 Practicum

Practical, general workplace training supported by an individual learning plan developed by the employer, college, and students. Clinical 8, Cr 1. Prerequisite: RNSG 2201, RNSG 2162, RNSG 1251, RNSG 1251, RNSG 2161, SPCH 1318, ENGL 1301, RNSG 2441, RNSG 2121, and RNSG 2360.

RNSG 2201 Care of Children and Families

Study of concepts related to the provision of nursing care for children and their families, emphasizing judgment, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Lec 2, Cr 2. Prerequisite: RNSG 2213, RNSG 2163, BIOL 2321, BIOL 2121. Corequisite: SPCH 1318, ENGL 1301, RNSG 2162, RNSG 1251, and RNSG 2161.

RNSG 2213 Mental Health Nursing

Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of client and their families. Lec 2, Cr 2. Prerequisite: RNSG 1301, RNSG 1210, RNSG 1331, RNSG 1347, RNSG 2260, PSYC 2314. Corequisite: BIOL 2321, BIOL 2121, and RNSG 2163.

RNSG 2260 Clinical: RN: Care of Clients With Health Problems

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinical professional. Clinical 12, Cr 2. Prerequisite: RNSG 1108, RNSG 1205, RNSG 1215, RNSG 1413, and RNSG 1260. Corequisite: RNSG 1301, RNSG 1210, RNSG 1331, RNSG 1347, PSYC 2314.

RNSG 2307 Transition to Nursing Practice

Introduction to selected concepts related to the role of the professional nurse as provider of care, coordinator of care, and member of the profession. Reviews of trends and issues impacting nursing and health care today and in the future. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Lec 2, Lab 4, Cr 3. Prerequisite: Admission into the Associate Degree LVN Advancement Placement Program; BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, MATH 1332, PSYC 2301, BIOL 2321, BIOL 2121, ENGL 1301, PSYC 2314. Corequisite: RNSG 1210, RNSG 2461, and SPC

RNSG 2360 Clinical:Nursing RN: Advanced Concepts of Clinical Decision-Making

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision is provided by the clinical professional. Course is 10 Weeks. Clinical 14, Cr 3. Prerequisite: SPCH 1315 or 1318, ENGL 1301, RNSG 1251, RNSG 2161, RNSG 2201, RNSG 2162, RNSG 2213 and RNSG 2163. Corequisite: RNSG 2441 and RNSG 2121.

RNSG 2441 Advanced Concepts of Clinical Decision Making

Application of advanced concepts and skills for development of the professional nurse's roles in complex client/nursing situations. Emphasis on clinical decision-making for clients in medical-surgical settings experiencing health problems involving cardiovascular disorders neurologic disorders liver, biliary and pancreatic disorders renal and urinary disorders hematologic disorders and cancer. Focus given to knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach. Course is 10 weeks. Lec 4, Lab 1, Cr 4. Prerequisite: RNSG 1251, RNSG 2161, RNSG 2201, RNSG 2162, RNSG 2213, RNSG 2163, ENGL 1301, SPCH 1315 or SPCH 1318. Corequisite: RNSG 2360 and RNSG 2121.

RNSG 2461 Clinical: Nursing RN:Transition Nursing Practice

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Clinical 12, Cr 4. Prerequisite: Admission into A.D. Advanced placement. BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, MATH 1332, PSYC 2301, BIOL 2321, BIOL 2121, ENGL 1301, PSYC 2314. Corequisite: RNSG 1210, RNSG 2307, and SPCH 1318.

Respiratory Therapy (RSPT)

Allied Health Department/School of Health Sciences • 882-5010 • Ms. Betty Chong-Menard, Program Director • LHSB 2.436 • E-mail: betty.cmenard@utb.edu

RSPT 1141 Respiratory Home Care/ Rehabilitation

This course will review respiratory home care/rehabilitation equipment, procedures, and patient education. Emphasis will be placed on the treatment of patients in home care and alternate settings. Lab 3, Cr 1. Prerequisite: RSPT 2262, RSPT 1161, and RSPT 1260.

RSPT 1161 Clinical Ii- Respiratory Care Therapy/ Therapist

This course provides a health-related work-based learning experience that enables the student to apply specializes occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Lab 6, Cr 1. Prerequisite: RSPT 1260. Corequisite: HPRS 1205 , RSPT 2135, and RSPT 2139.

RSPT 1241 Respiratory Home Care/Rehabilitation

Designed to develop an understanding of respiratory home care/ rehabilitation equipment, procedures, and patient care, with emphasis on the use of special technology and equipment in the treatment of patients in a subacute and/or long-term patient care setting.

RSPT 1260 Clinical I- Respiratory Care Therapy/ Therapist

This course provides a health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Lab 12, Cr 2. Prerequisite: RSPT 1310 and RSPT 2258. Corequisite : RSPT 1311, RSPT 2305, RSPT 2310, RSPT 2217.

RSPT 1310 Respiratory Care Procedures I

This course provides students with the essential knowledge of the equipment and techniques used in the treatment of pulmonary disease and their clinical application. The following areas are discussed in-depth: oxygen therapy, humidity, and aerosol therapy, hyperinflation therapy, chest physiotherapy, pulse oximetry, arterial puncture, and interpretation. Lec 2, Lab 4, Cr 3. Prerequisite: BIOL 2301, BIOL 2101, BIOL 2302,

BIOL L 2102, HPRS 1101, HPRS 1106, HPRS 1204, ENGL 1301 , and (MATH 1314 or MATH 1332 or higher.) Corequi site: RSPT 2258.

RSPT 1311 Respiratory Care Procedures II

This course provides the student with essential knowledge of airway care and mechanical ventilation. Airway care includes indications, techniques, equipment, and hazards, and complications. Mechanical ventilation includes indications, initiation, modes, clinical application, management, complications, and weaning. Lec 2, Lab 4, Cr 3. Prerequisite: RSPT 1310 and RSPT 2258.

RSPT 2133 Respiratory Care Case Management

Preparation and presentation of the case study. Instruction in the investigation, organization, and presentation of the material, including preparation of questions for group discussion. Lec 1, Cr 1

RSPT 2135 Pediatric Advanced Life Support

This is a comprehensive course designed to develop the cognitive and psychomotor skills necessary for resuscitation of the infant and child. It includes strategies for preventing cardiopulmonary arrest and identification of high risk infants and children. May include certification. Lab 3, Cr 1.

RSPT 2139 Advanced Cardiac Life Support

This is comprehensive course designed to develop the cognitive and psychomotor skills necessary for resuscitation of adult. It includes strategies for managing and stabilizing the cardiopulmonary arrested patient. May include certification. Lab 3, Cr 1.

RSPT 2217 Respiratory Care Pharmacology

This course focuses on the study of pharmacological principles/practices of drugs which affect the cardiopulmonary systems. Emphasis will be places on classification, route of administration, dosages/calculations, and physiological interactions of cardiopulmonary drugs. Lec 2, Cr 2. Prerequisite: BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, HPRS 1101, HPRS 1106, HPRS 1204, MATH 1314 (or MATH 1332 of higher), and ENGL 1301.

RSPT 2230 Examination Preparation

Comprehensive review for selected respiratory care credentialing examinations. Test matrices and exam content areas for selected exams will be presented.

RSPT 2247 Specialties in Respiratory Care

An introduction to areas of interest in which the Respiratory Therapist may find application and/or employment. The depth of instruction will provide the indicate expected outcomes, hazards and methods for hyperbaric oxygen (HBO), extracorporeal membrane oxygenation (ECMO), nitric oxide (NO), sleep studies, national assessment, metabolic monitoring, exercise stress testing, and electroencephalograms. Lec 2, Cr 2.

RSPT 2258 Respiratory Care Patient Assessment

This course provides instruction in the integration of patient examination techniques, clinical lab studies, x-ray, pulmonary function, arterial blood gases, and invasive and non-invasive hemodynamics results in patient assessment. Lec 1, Lab 4, Cr 2. Prerequisite: BIOL 2301, BIOL 2101, BIOL 2302, BIO L 2102, HPRS 1101, HPRS 1106, HPRS 1204, ENGL 1301, and (MATH 1314 or MATH 1332 or higher.) Corequisite: RSPT 1310.

RSPT 2262 Clinical Iii- Respiratory Care Therapy/ Therapist

This course is health-related, work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Lab 12, Cr 2. Prerequisite: RSPT 1161 and RSPT 1260.

RSPT 2305 Pulmonary Diagnostics

The theory and techniques involved in pulmonary function testing, diagnostics with emphasis on blood gas theory and analysis, quality control, oximetry, and capnography, Lec 2, Lab 4, Cr 3.

RSPT 2310 Cardiopulmonary Disease

A discussion of the pathogenesis, pathology, diagnosis, history, prognosis, manifestations, treatment and detection of cardiopulmonary disease. Lec 3, Cr 3

RSPT 2314 Mechanical Ventilation

This course provides an In-depth coverage and application of therapeutic procedures to achieve adequate, spontaneous, and artificial ventilation with emphasis on ventilator classification, methods, principles, and operational characteristics. It includes indications, complications, and physiologic effects/principles of mechanical ventilation. It emphasizes initiation, management, and weaning of ventilatory support. Lec 2, Lab 4, Cr 3.

Prerequisite: RSPT 1310, RSPT 1311, RSPT 2258, RSPT 2305, RSPT 2310, RSPT 1260, RSPT 2217, HPRS 1205, RSPT 2135, RSPT 2139, and RSPT 1161. Corequisite: RSPT 2353, RSPT 2262, and RSPT 2319.

RSPT 2319 Mechanical Ventilation for the Neonatal/Pediatric Patient

This course will provide an in-depth coverage and application of therapeutic procedures to achieve adequate spontaneous and artificial ventilation of the neonatal and pediatric patient. It includes indications, complications and physiological effects of ventilatory support. Lec 2, Lab 4, Cr 3. Prerequisite: RSPT 1311, RSPT 2305, RSPT 2310, and RSPT 2217.

RSPT 2353 Neonatal/Pediatric Cardiopulmonary Care

In this course the student will learn of advanced concepts of acute care, monitoring, and management as applied to the neonatal and pediatric patient. Lec 2, Lab 4, Cr 3. Prerequisite: RSPT 2135, RSPT 2139, and RSPT 1161.

RSPT 2363 Clinical-Respiratory Therapy Technician 4

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

RSPT 3333 Respiratory Care Case Management

Introduction to the role of case manager of the care of cardiopulmonary disorders. Specific practice will be provided in developing case manager skills in the management of asthma and COPD. Lec 1, Lab 6, Cr 3.

RSPT 4210 Polysomnography Instrumentation I

This course is designed to teach the function, operation and design of electroneuro diagnostic equipment. Monitoring devices, electrode application and patient connection will be covered in detail. Lec 2, Cr 2. Prerequisite: BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, ENGL 1301 and HPRS 1106.

RSPT 4215 P.S.G. Instr II

This course will provide an advanced study of waveform characteristics and montage development, filters and PSG electronics. Signal pathways, reference electrodes, impedance checking and filter settings in calibration waves will be covered. Lec 2, Cr 2. Prerequisite: RSPT 4320, RSPT 4210 and RSPT 4221.

RSPT 4221 Clinical Polysomnography-Sleep Staging I

Direct patient diagnostic monitoring will be performed under close supervision in a sleep lab. Differential amplifiers, amplifier calibration, artifact correction and the professional role of the sleep technician will be demonstrated. Lec 16, Cr 2. Prerequisite: BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, ENGL 1301 and HPRS 1106.

RSPT 4314 Mechanical Ventilation for Non RCPs

Understanding ventilator concepts and technology including indications, complications, and troubleshooting. The learner will be required to write a significant paper as part of this course.

RSPT 4319 Mechanical Ventilation of the Neonatal/Pediatric Patient

Preparation to conduct the therapeutic procedures to achieve to achieve adequate spontaneous and artificial ventilation of the neonatal and pediatric patient. Topics include volume, pressure, and fluid ventilation and the indications, complications, and physiological effects ventilator support.

RSPT 4320 Fundamentals of Polysomnography

This course will offer an introduction to the physiology of sleep including sleep neurology, sleep architecture, classification of sleep disorders.

There will be a review of basic cardiac physiology and ECG arrhythmia recognition. Sleep pathologies will be discussed according to etiology, pathophysiology, symptoms, diagnosis, treatment and prognosis. Lec 3, Cr 3. Prerequisite: BIOL 2301, BIOL 2101, BIOL 2302, BIOL 2102, ENGL 1301 and HPRS 1106.

RSPT 4323 Clinical Polysomnography-Sleep Staging II

This is an advanced clinical education in sleep staging rules light, delta and REM sleep scoring and analysis. EEG, EMG, ECG and respiratory events will be discussed in depth with the components of the polysomnogram reports. Lec 16, Cr 3 Prerequisite: RSPT 4320, RSPT 4210 and RSPT 4221.

RSPT 4325 Clinical Simulations in Respiratory Care

A review of the National Board for Respiratory Care Clinical Simulation Examination matrix and practices. The learner will learn techniques used to take this exam and have practice in multiple patient care scenarios.

RSPT 4330 Polysomnography Therapeutic Intervention

In-depth study of the treatments available for sleep apnea will be performed, including CPAP, BIPAP, oxygen therapy, patient adjunctive fitting, surgical intervention and the role of the sleep technician in titration. Special attention will be given to titration algorithms, nocturnal seizure disorder studies, MSLT's and MWT's. Lec 3, Cr 3. Prerequisite: RSPT 4320, RSPT 4210 and RSPT 4221.

RSPT 4333 Issues & Trends in Respiratory Care

Students will discuss current trends in the application of respiratory care with particular attention to procedures that have evidence of improved patient outcomes. Issues concerning the practice of respiratory care will be researched and discussed.

RSPT 4358 Advanced Respiratory Care Patient Assessment

Instruction in the integration of patient examination techniques, clinical lab studies, x-ray, pulmonary function, arterial blood gases, and invasive and non-invasive hemodynamics results in patient assessment. Lec 2, Lab 4, Cr 3.

Sign Language (SGNL)

Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL: <http://blue.utb.edu/mlang/>

SGNL 1301 Beginning American Sign Language I

This course is an introduction to the basic skills needed in the production and comprehension of American Sign Language (ASL), focusing on the manual alphabet, numbers, conversational skills, culturally appropriate behaviors, and ASL grammar. Lec 3, Cr 3.

SGNL 1302 Beginning American Sign Language II

Beginning American Sign Language II develops receptive and expressive ability and allows for recognition and demonstration of more sophisticated grammatical features. Increased fluency and accuracy in finger spelling and numbers is emphasized, along with providing opportunities for interaction within the Deaf community. Lec 3, Cr 3.

Sociology (SOCl)

Behavioral Sciences Department/College of Liberal Arts • 882-8225 • Dr. Virginia V. Wood, Chair • MRCS 293 • E-mail: virginia.v.wood@utb.edu URL: <http://unix.utb.edu/~cla/behsci.html>

SOCl 1301 Introduction to Sociology

The study of human society relationship of culture, social interaction, and group life to personality and human behavior analysis of group structure, social organization, and social process. Lec 3, Cr 3.

SOCl 1306 Social Problems

A survey and analysis of contemporary social problems, their likely causes and how they affect us with consideration of possible solutions that work toward social improvement. Particular attention is given to local problems. Lec 3, Cr 3.

SOCl 2301 Marriage and Family

A functional analysis of the contemporary American family basic sociological in sights, including a brief historical and cross-cultural perspective as well as intensive study of American courtship, marriage, and family institutions. Lec 3, Cr 3. Prerequisite: Sophomore standing recommended.

SOCl 2317 Statistical Methods in Sociology

Measures of central tendency and variability statistical inference correlation and regression. Maybe counted as SOCl 2317 or PSYC 2317. Lec 3, Cr 3. Prerequisite: SOCl 1301.

SOCl 2319 Mexican-American Experience

An introduction to the study of social, political and cultural processes which have shaped the Mexican American community in the United States with emphasis on the experience of Mexican American people in the Rio Grande Valley of Texas. Lec 3, Cr 3

SOCl 3311 El Contexto de la Novela Mexicana

An analysis of 20th century Mexican society and the events that sought to transform it. Within that context, the writer will be viewed as an interpreter of history and the novel as an attempt to define and reconstruct reality. This course will be taught in Spanish. Lec 3, Cr 3. Prerequisite: SOCl 1301, SPAN 2311 and SPAN 2312, or consent of instructor.

SOCl 3313 Criminology

A study of crime, its causes, and its social treatment. Lec 3, Cr 3
Prerequisite: Three hours of Sociology.

SOCl 3323 Hispanics in Global Society

An examination of social, political and cultural processes which have shaped the Mexican American community in the United States an analysis of its relations with other groups in society, its status, aspirations and power. An assessment of present opportunities and prospects for the future. Emphases will be placed on the development and status the development and status of Mexican American in Texas. Lec 3, Cr 3. Prerequisite: SOCl 1301.

SOCl 3324 Sociology of Health

Analysis of basic problems in the maintenance and preservation of health and delivery of health care services by social class. Focus is on environmental course of disease, social-psychological response to illness and family cohesion strain and resources as affected by illness. Lec 3, Cr 3. Prerequisite: Three hours of Sociology.

SOCl 3333 American Communities

This course analyzes the patterns of growth and development of American cities, suburbs, towns, edge cities, and planned communities. Consideration will be given to the demographic, ecological, political, cultural, and technological factors affecting urban communities. Lec 3, Cr 3. Prerequisite: SOCl 1301.

SOCl 3335 Social Theory

This course surveys the major theorists of Sociology's classical era, as well as modern theoretical approaches such as functionalism, neo-Marxism, symbolic interactionism, ethnomethodology, as an exchange network, and feminist theories. Students are encouraged to take this course as soon as possible after choosing Sociology as a major. Lec 3, Cr 3. Prerequisite: SOCl 1301.

SOCl 3363 Gender

This course will survey and analyze the social construction of gender in American society today. The historical and contemporary cultural linking of human traits to a particular sex, the resulting inequality of power between the sexes, and the effects of this on the occupational structure of the family are areas considered in this course. Lec 3, Cr 3. Prerequisite: SOCl 1301.

SOCl 3364 Minorities

This course examines inter-group relations that produce status and power differences for groups defined as minorities. The main focus of the course will be the social and cultural processes that place and maintain American minorities in disadvantaged statuses. Various historical experiences involving African Americans, Mexican Americans, and others, will be surveyed. Notable situations of inter-group conflict in various parts of the world will be reviewed. Lec 3, Cr 3 Prerequisite: SOCl 1301.

SOCl 3373 Mass Communications and Culture

The course provides an overview of media theory and research, and analyzes the ways in which media organization and environmental influences shape mass cultural products. Specific areas of attention include television, movies, books publishing, newspapers, and the internet. Lec 3, Cr 3 Prerequisite: SOCl 1301.

SOCl 3374 Religion in Society

This course will survey and analyze religion in contemporary society. Religion will be examined as an institution that provides a variety of functions for social solidarity and differentiation as well as personal and ethnic identify. Varieties of organizational structure linked to historical factors and social structure will also be analyzed. The adaptation of religious belief to modernity will be assessed within the context of various cultural traditions. Lec 3, Cr 3 Prerequisite: SOCl 1301.

SOCl 3393 Aging

The course considers the social meaning of age and analysis of the basic problems faced by the aged. Issues of health, income, work, religion, leisure, and interpersonal relationships of the aged are addressed. Lec 3, Cr 3 Prerequisite: SOCl 1301.

SOCl 4305 Methods of Social Research

An overview of the use of scientific methods in social research, formulation of research designs, hypothesis testing, sampling, interviewing, observation, coding, use of documents, questionnaires and scales. Emphasis is on interpretation of social data. This is a capstone course for majors. Non-majors are discouraged from enrolling in this course. Lec 3, Cr 3. Prerequisite: SOCl 1301, SOCl 2317, and SOCl 3335.

SOCl 4314 Sociology of Deviance

This course provides a review of theory and research on the nature and extent of deviant behavior. Particular types of individual and subcultural deviance will be addressed. Lec 3, Cr 3 Prerequisite: SOCl 1301 and either SOCl 3335 or CRIJ 3303.

SOCI 4325 Population and Migration

An introduction to the study of human population and migration and their impact on economic resources, the environment, education, health, and social services. An analysis of factors that affect reproduction, life chances, and migration, present trends and prospects for the future. Lec 3, Cr 3 Prerequisite: SOCI 1301, SOCI 2317.

SOCI 4352 Social Inequality

This course addresses research, concepts and theory related to the causes and consequences of inequality in social life. It examines how inequality is built into the structure and culture of major social institutions government, economy, religion, family, education. Lec 3, Cr 3 Prerequisite: SOCI 1301 and one of the following: SOCI 3323, SOCI 3363, SOCI 3364, or SOCI 3335.

SOCI 4375 Organizations and Work

This course examines our organizationally-dominated world through the lens of organization theory. The transformation of world and the major schools of management theory during this century are considered. Lec 3, Cr 3 Prerequisite: SOCI 1301, SOCI 3335.

SOCI 4383 Independent Studies

Designed to offer students the opportunity to gain experience in research or in-depth theoretical/empirical readings in a substantive area not normally covered within standard courses. Research projects or advanced readings will vary according to student interest and faculty availability. Sequential registration for up to nine hours is permitted as topics vary. Lec 3, Cr 3 Prerequisite: Nine hours of SOCI and consent of instructor.

Social Work (SOCW)

Behavioral Sciences Department/College of Liberal Arts • 882-8225 • Dr. Virginia V. Wood, Chair • MRCS 293 • E-mail: virginia.v.wood@utb.edu URL: <http://unix.utb.edu/~cla/behsci.html>

SOCW 2361 Introduction to Social Welfare

This course traces the philosophy and historical development of social welfare as an institution in Europe and America. Included is general overview of social welfare institution, structures and functions including social work concepts, ethics, and practice. A service learning activity of 35 volunteer hours with a social agency is required. Lec 3, Cr 3. Prerequisite: PSYC 2301 or SOCI 1301 and ENGL 1301

SOCW 2362 Social Welfare Institution and Legislation

The development of social welfare institutions in the United States. Pays particular attention is to the structures and the functions of social welfare as an institution, social welfare organizations, historic and current social welfare legislation, gaps in the social welfare systems, and problems of social reforms. Lec 3, Cr 3.

Spanish (SPAN)

Modern Languages Department/College of Liberal Arts • 882-8246 • Mr. Cipriano Cardenas, Chair • MRCS 288 • E-mail: cipriano.cardenas@utb.edu URL: <http://blue.utb.edu/mlang/>

SPAN 1313 Elementary Spanish I

An introduction to the basic principles of grammar, emphasizing pronunciation, oral practice, conversation, and dictation. Also includes simple exercises in composition and easy reading within a cultural framework. Lec 3, Cr 3 Prerequisite: Basic skills in reading, writing, and departmental approval.

SPAN 1314 Elementary Spanish II

Continuation of SPAN 1313. Lec 3, Cr 3 Prerequisite: SPAN 1313 or departmental approval.

SPAN 1373 Basic Spanish for Bilinguals I

An introductory course for students who possess a spoken knowledge of Southwestern U.S. Spanish and who wish to develop competency in reading and writing standard Spanish. Through readings and written assignments, the student will be introduced to the conventions of Spanish grammar and spelling. Through discussion and reading, students will come to appreciate the place of the Mexican American dialect of Spanish within the context of the Hispanic community. Lec 3, Cr 3. Not for Spanish and Bilingual Education majors or minors.

SPAN 1374 Basic Spanish for Bilinguals II

Continuation of SPAN 1373. Lec 3, Cr 3. Prerequisite: SPAN 1373. Not for Spanish and Bilingual Education majors or minors.

SPAN 2311 Intermediate Spanish I

A comprehensive review of Spanish grammar. Lec 3, Cr 3 Prerequisite: SPAN 1314 or departmental approval.

SPAN 2312 Intermediate Spanish II

Continuation of SPAN 2311. Lec 3, Cr 3 Prerequisite: SPAN 2311 or departmental approval.

SPAN 2316 Spanish for Specific Purposes

Additional study designed to meet the specific interest and needs of students pursuing careers other than business, such as education, medical specialties, and technology. Given in Spanish. Lec 3, Cr 3

SPAN 2317 Business Spanish

An introduction to Spanish business correspondence and the translation of commercial documents from English to Spanish. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 1373 or departmental approval.

SPAN 2321 Hispanic Language and Culture I

An introduction to the language, culture, and literature, of the Hispanic world. Given in Spanish. Lec 3, Cr 3

SPAN 2322 Hispanic Language and Culture II

A continuation of SPAN 2321. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321.

SPAN 3301 Spanish Literature (1100 - 1750)

A survey of the literature of Spain from the beginning to 1750. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 3302 Spanish Literature (1750-Present)

A survey of the literature of Spain from the mid-18th century to present. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321, SPAN 2322.

SPAN 3303 Advanced Spanish Composition

Intensive training in Spanish composition, including class publications of material in Spanish. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 3310 Masterpieces of Spanish American Literature I

An investigation of the literary works of the principal narrators, poets and dramatists of Spanish America from the beginning of Spanish Colonialism to Modernism. Analysis of form and content and study of the historical background and literary currents in each work. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 3311 Masterpieces of Spanish American Literature II

An investigation of the literary works of the principal narrators, poets and dramatists of Spanish America from Modernism to the present. Analysis of form and content and study of the historical background and literary currents in each work. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 3330 Advanced Spanish Grammar

A study of grammatical concepts with concentration on basic sentence structure, the paragraph, principles of punctuation, and functional grammar. Course designed for Spanish majors and minors as well as Education Minors in bilingual education. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 3332 Introduction to Spanish/English Translation

A basic orientation in the theory and practice of translating a text from Spanish to English, including consideration of both cultural and morpho-syntactical problems. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322. Crosslisted with TRSP 3332.

SPAN 3333 Introduction to English/Spanish Translation

An orientation in the theory and practice of translating a text from English to Spanish, including consideration of cultural and morpho-syntactical problems. Lec 3, Cr 3. Prerequisite: SPAN 2321 and SPAN 2322 Crosslisted with TRSP 3333.

SPAN 3335 Topics in Translation

Topics in the theory and practice of professional translation between Spanish and English in areas other than business and legal texts, including but not limited to the following: education, medical specialties, and technology. May be repeated two times for a total of 9 hours. Lec 3, Cr 3. Prerequisite: TRSP 3332 or SPAN 3332 and ENGL 1302 or ENGL 2311. Crosslisted with TRSP 3335.

SPAN 4303 Hispanic Civilization

A panoramic view of the political, literary, and cultural history of Spain and the Spanish-speaking countries of America. Recommended as a review for the ExCet examination in Spanish. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 4304 Spanish Lyric Poetry

A survey of lyric poetry from its beginning to the present. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321, SPAN 2322.

SPAN 4305 Cervantes

A study of the principal works of Miguel de Cervantes with emphasis on Don Quijote. Given in Spanish. All readings, examinations, and papers in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321, SPAN 2322.

SPAN 4307 Spanish American Novel

An investigation of the Spanish American novel of the 19th and 20th centuries. Students will become knowledgeable of the literary currents associated with the genre within their historical and social contexts become aware of the key elements of the novel develop the ability to analyze the key elements, identify literary techniques and devices, and develop the ability to articulate the findings of his/her own analysis and criticism. Given in Spanish. Lec 3, Cr 3. Prerequisite: SPAN 2321, SPAN 2322.

SPAN 4309 Contemporary Spanish Literature

A study of the principal literary works of Spanish from the generation of 1898 to the present. Given in Spanish. Lec 3, Cr 3. Prerequisite: SPAN 2321, SPAN 2322.

SPAN 4310 Spanish Phonology and Phonetics

An analysis of the phonetic and phonological systems of the Spanish language. Presentation of the articulatory description of the sounds of the language and introduction to the phonological processes that exist in the language, including stress assignment, syllabification and intonation. Description and analysis of some phonological processes that occur in the major varieties of the language. Given in Spanish. Lec 3, Cr 3. Prerequisite: SPAN 2321, SPAN 2322.

SPAN 4311 The Mexican Novel

The study of the major novels of Mexico from beginning to the present. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 4312 Structure of the Spanish Language

An analysis of sentence structure in Modern Spanish from a generative perspective. Introduction to the goals and methods of generative grammar and a presentation of their relevance to the syntax of Spanish. Topics covered include pronominal deletion, sentence embedding, and sentence topicalization. Given in Spanish. Lec 3, Cr 3

SPAN 4316 Acquisition of the Spanish Language

A review of the basic principles of Spanish grammar. Emphasis on orthography and the acquisition of a formal writing style. Basic orientation in the theory and acquisition of the Spanish language among bilingual Spanish-speaking children. Introduction to the historical evolution of the Spanish language and the role of dialect and register. Discussion of modern techniques and methodologies used in the teaching of Spanish. Taught in Spanish. Lec 3, Cr 3. Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 4317 Spanish Language in Social Context

An analysis of language variation in the Spanish-speaking world. Correlation of social variables and specific linguistic variables. Language attitudes in some Spanish-speaking communities and their ramifications in the processes of language maintenance and shift. Linguistic and social manifestations of language contact, such as, direct transfer and code-switching. Given in Spanish. Lec 3, Cr 3

SPAN 4332 English/Spanish Commercial Translation

Intensive practice in translation from English to Spanish and Spanish to English of commercial, financial, and marketing texts, as well as shipping, insurance, and customs house documents. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321, SPAN 2322, and SPAN 3332 or SPAN 3333. Crosslisted with TRSP 4332.

SPAN 4334 English/Spanish Legal Translation

An analysis of legal language in English and Spanish. Intensive practice in the translation from English to Spanish and Spanish to English of contracts and government regulations, as well as texts relating to international organizations, civil law, and criminal law. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321, SPAN 2322, and SPAN 3332 or SPAN 3333. Crosslisted with TRSP 4334.

SPAN 4368 Children's Literature in Spanish

A broad survey of literary works in Spanish appropriate for the young reader by the principal narrators, poets, and dramatists of the Hispanic World. Given in Spanish. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 4369 Hispanic Theater

A study of selected dramatic works of representative Hispanic authors from a variety of geographical locales and cultures within the Spanish-speaking world. Interpretation and analysis of the aesthetic and ethical dimensions of the works, as well as the creative process that brought them to life on the stage. Given in Spanish. Lec 3, Cr 3. Prerequisite: SPAN 2321, SPAN 2322.

SPAN 4371 Chicano Narrative

A general introduction to short stories and novels written in Spanish by U.S. citizens of Mexican descent. This survey begins with a picaresque novel considered to be a forerunner of today's Chicano novel, continues with post WWII male writers, and ends with a more recent novel by a woman writer exploring feminist issues. Given in Spanish. Lec 3, Cr 3. Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 4373 Studies in Hispanic Culture

Advanced study of topics in Hispanic culture, civilization, language, or literature in areas not generally available as part of regular course offerings. Not repeatable. Given in Spanish. Lec 3, Cr 3. Prerequisite: SPAN 2321 and SPAN 2322.

SPAN 4392 Senior Seminar

Integration, synthesis, and evaluation of the graduating senior's cumulative studies of Hispanic Letters and the Spanish language. Portfolio preparation and evaluation the planning, preparation and writing of a Senior Mini-thesis and a Capstone Examination. Lec 3, Lab 3, Cr 3. Prerequisite: 18 hours in advanced Spanish including SPAN 3301, SPAN 3303, SPAN 3311 and SPAN 3330.

Speech (SPCH)

English and Speech Department/College of Liberal Arts • 882-8239 • Mr. William Harris, Chair • MRCS 204 • E-mail: william.harris@utb.edu URL: <http://unix.utb.edu/~cla/engspch.html>

SPCH 1315 Applied Communication

The focus of this course is the promotion of the student success- in college and life after college- through the adoption of effective communication skills. Special emphasis will be placed on developing skills in listening, interviewing, small group interaction, and public speaking and how those skills enhance student success. Lec 3, Cr 3.

SPCH 1318 Interpersonal Communication

Designed to study communication barriers between individuals based on cultural, physical, and psychological differences. Emphasis will be placed on improving one-to-one communication and small group interaction. Lec 3, Cr 3

SPCH 1342 Speech for the Bilingual Student

Designed for bilingual students who want to improve their English. A study of the sound system, stress patterns, timing, melody, and phraseology of American English. Practice in presenting ideas to an audience. Lec 3, Cr 3

SPCH 2333 Group Communications and Discussion

This course is design to provide students with the necessary skills to participate in decision-making, problem solving, and group discussion effectively. Lec 3, Cr 3. Prerequisite: ENGL 1301, ENGL 1302, and SPCH 1315 or SPCH 1318.

Education - Special Education (SPEA, SPED)

School Specialties Department/School of Education • 882-7678 • Dr. Olivia Rivas, Chair • EDBC 2.208 • E-mail: olivia.rivas@utb.edu URL: <http://blue.utb.edu/education>

SPEA 3390 Introduction to Exceptional Children - A.C.P.

This course examines the philosophical, historical and legal foundations of special education. Emphasis is placed on the characteristics and needs of individuals with disabilities from early childhood through the transition into adulthood. Specific needs for individualization such as assistive technology and related services are addressed. Lec 3, Cr 3 Prerequisite: Alternative Certification Program and departmental approval to enroll student.

SPEA 4320 Legal Roles of Special Education -A.C.P

This course examines legal and ethical issues of special education. Roles and responsibilities of special educators, administrators and related support personnel are discussed in addition to the relationship between assessment and instructional planning for students at different levels (EC-12). An emphasis is placed on collaboration during key transition periods. Lec 3, Cr 3 Prerequisite: Alternative Certification Program and departmental approval to enroll student, SPEA 3390 or taken concurrently.

SPEA 4330 Problems in Language & Literacy for Individuals With Special Needs- A.C.P

This course examines monolingual and bilingual language development and literacy acquisition for students at different levels (EC-12), with emphasis on common communication disorders. Emphasis will be placed on assessment of culturally and linguistically diverse populations, the need for assistive technology and social skills interventions. Lec3, Cr 3

SPEA 4380 Classroom Instruction for Individuals With Special Needs- A.C.P

This course will examine assessment and instructional methods, techniques and strategies used in special education to promote academic performance in all content areas including math, language arts and reading. Emphasis is placed on facilitating achievement in a variety of settings and situations for students at different levels (EC-12). Lec 3, Cr3 Prerequisite: Alternative Certification Program and departmental approval to enroll student. SPEA 4330 or taken concurrently.

SPED 3390 Introduction to Exceptional Children

This course is an introduction to the physical and psychological characteristics of the exceptional child. Emphasis is on the theory, characteristics, and educational planning for learners with special needs. Prerequisite: Admission to Teacher Education.

SPED 4313 Directed Teaching - Generic Special Education

This course must be taken by all undergraduate students working toward special education certification. The course requires observing and teaching in a public school special education classroom all day, Monday through Friday, for six weeks. This work is done under the direction of a fully certified teacher of the class to which the student is assigned and under the supervision of a college professor who observes and evaluates the student's process. Seminars and individual conferences are a required part of the course. Lec 3, Cr 3 Prerequisite: 18 hours of upper level special education courses. Approval by the Teacher Education Committee. Students must also be enrolled in EDCI 4311, EDSC 4398 or EDSC 4641.

SPED 4320 Legal Roles and Responsibilities of the Special Educator

This course examines the legal and ethical issues of special education. The roles and responsibilities of special educators, administrators, and related support personnel are discussed in addition to the relationship between assessment and instructional planning for students at different levels (EC-12). An emphasis is placed on the need for collaboration during key transition periods in an individual's life . Prerequisite: SPED 3390 or may be taken concurrently.

SPED 4330 Problems in Language and Literacy for Individuals With Special Needs

This course examines monolingual and bilingual language development and literacy acquisition for students at different levels (EC-12), with an emphasis on common communication disorders. Issues related to assessment, such as the needs of culturally and linguistically diverse populations, will be addressed. Related issues and common problems such as the need for assistive technology or social skills interventions will also be addressed. Lec 3, Cr 3. Prerequisite: SPED 3390 or may be taken concurrently.

SPED 4380 Classroom Instruction for Individuals with Special Needs

This course will examine the assessment and instructional methods, techniques and strategies used in special education to promote an individual's academic performance in all content areas including math, language arts, and reading. An emphasis is placed on facilitating achievement in a variety of settings and situations for students at different levels (EC-12). Prerequisite: SPED 4320 and SPED 4330.

SPED 4386 Modifications Inclusive Setting

For General Education Teachers. This course focuses on instructional and behavioral strategies for teaching students with mild/moderate disabilities in inclusive settings. Emphasis is placed on techniques and strategies that enhance language and literacy development. Modifications related to language arts, mathematics, and science instruction, as well as various behavior management strategies, are addressed. Lec 3, Cr 3.

SPED 4395 Practicum in Generic Special Education

This course will examine the special education methods, techniques and strategies used with individuals with disabilities in a variety of school settings for students at different levels (EC-12). Classroom practice with behavior management, assessment techniques and instructional planning for individuals with disabilities will be emphasized. Field experience with collaboration and consultation models will also be included. Lec 3, Cr 3. Prerequisite: SPED 4380.

Drafting (ARCE, DFTG, MBST, SRVY)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

SRVY 2348 Plane Surveying

This course covers the use of surveying instruments and field books, basic measuring procedures, vertical and horizontal control, traverse closure, and surveying terminology and calculations. Students will gain familiarity with history of land owners in Texas. Lec 2, Lab 3, Cr 3.

Service Management (SVMM)

Business Administration Department/ School of Business • 882-5809 • Dr. Rafael Otero, Chair • EDBC 2.542 • E-mail: rafael.otero@utb.edu URL: <http://blue.utb.edu/business/Index.htm>

SVMM 3303 E-Commerce Strategies

The most important elements for effective commerce through the Internet include strategies and tools within E-Commerce categories, which include Business-to-Consumer, Business-to-Business, Consumer-to-Consumer, technological infrastructure, electronic security, electronic payment mechanisms and virtual communities. Lec 3, Cr 3. Prerequisite: MANA 3361 and admission to upper division.

SVMM 3372 Consumer Behavior

An interdisciplinary approach to the basic perspectives of consumer behavior is utilized by studying the fields of economics, psychology, sociology and anthropology. Emphasis is placed on the fundamental process of motivation, perception and learning, as well as analysis of individual predispositions and group influences in marketing. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

SVMM 4320 Logistics Marketing

The target consumer market determines the appropriate supply chain strategy. Decisions on selecting the appropriate channel of distribution and logistics systems, abetted by information technology and internet vehicles, will be stressed. Special attention will be given to the application of logistics marketing models to service business. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

SVMM 4360 Customer Relationship

The basic theories and methodology of customer relationship marketing include identifying profitable customers, understanding their needs, and building a bond with them by developing customer-centric products and services providing customer value. Lec 3, Cr 3. Prerequisite: MARK 3371, SVMM 3372, and admission to upper division.

SVMM 4371 Sales Management and Personal Selling

The selection, training, compensation, organization, and control of a field sales organization is studied. Primary emphasis is devoted to the selection and training of the sales force for the selling process and making a sales presentation. Lec 3, Cr 3. Prerequisite: BUSIU 2341, MANA 3361, MARK 3371, and admission to upper division.

SVMM 4372 Promotion Strategy

The development and management of an organization's promotional effort is the focus of this survey course. It includes a review of advertising, sales promotions, public relations, personal selling and direct marketing. Emphasis is placed on this coordination and integration of promotional strategy with sales force activities. Lec 3, Cr 3. Prerequisite: MARK 3371 and admission to upper division.

SVMM 4376 Marketing Strategy

Marketing principles are applied to strategy formulation. Topics include target market selection, market mix development and new product planning. Both consumer and industrial marketing are stressed through the use of cases, readings, and special projects. This course is recommended as the capstone course in the Service Marketing Management major. Lec 3, Cr 3. Prerequisite: MANA 3361, MARK 3371, and admission to upper division.

SVMM 4378 Marketing Research

Quantitative research procedures and techniques are utilized in business today. Topics include problem definition, sources of research data, survey methods, questionnaire design and sampling techniques. Practical application of procedures and techniques is emphasized through class research projects. Lec 3, Cr 3. Prerequisite: BUSIU 2341, MARK 3371, and admission to upper division.

SVMM 4380 Service Marketing Strategy

The role of service in marketing strategy includes the service customer and experience, the service operation, the service employees and alternative service strategies. This course provides an exploration of the nature of service organizations, their marketing mix, and the principles that guide their marketing. Lec 3, Cr 3. Prerequisite: MARK 3371, SVMM 3303, SVMM 3372, SVMM 4372, SVMM 4376, and admission to upper division.

SVMM 4390 Retail Marketing Policies

The many facets of retailing include the development of retail strategies, retail consumer behavior, product considerations, store location and layout, merchandise management, the buying function, promotional strategy, personal selling, management of human resources, controlling the retail operation and consumer services. Emphasis is given to retail marketing strategy design and problems. Lec 3, Cr 3. Prerequisite: MARK 3371, SVMM 3372, and admission to upper division.

SVMM 4395 Service Marketing Seminar

Contemporary topics and issues in service marketing are covered concentration will be on one or more of the major service industries, such as health services, hospitality and tourism, professional services or cause marketing. Lec 3, Cr 3. Prerequisite: MARK 3371, SVMM 3372, and admission to upper division.

Computer Information Systems (CIST, IMED, INEW, ITSC, ITSE, ITNW, ITSW, POFI, TECT)

*Computer Sciences/CIS Department/College of Science, Math, and Technology *882-6605 *Dr. Juan R. Iglesias, Interim Chair *SETB 1.550 *E-mail: juan.iglesias@utb.edu URL: <http://www.cs.utb.edu>*

TECT 3301 Foundations of Technology Training

Study of principles and methods of classroom and laboratory control, teaching and integrating career oriented into educational goals. Lec 3, Cr 3.

TECT 3302 Psychology of Technology Training

The history and system of adolescent and adult psychology. Current research in learning and learner motivation, especially in relation to various aspects of educational processes in technological/ industrial settings. Lec 3, Cr 3.

TECT 3303 Training Methods in Industry

An organized course designed to provide instruction and guidance by trained resource persons in selected topics related to technology. The course may be repeated with different topics. Six hours may be applied to an undergraduate degree.

TECT 4304 The Trainer and Consultant for Technology Education

The course is designed to allow students to apply professional experiences, previously applied education principles, and knowledge along with skills acquired in the BAT and BAAS, to the consultancy process by identifying an instructional need, developing a training plan and implementing training solutions. Prerequisite: TECT 3301 or departmental approval.

Translation Studies in Spanish (TRSP)

*Modern Languages Department/College of Liberal Arts *882-8246 *Mr. Cipriano Cardenas, Chair *MRCS 288 *E-mail: cipriano.cardenas@utb.edu URL: <http://blue.utb.edu/mlang/>*

TRSP 3332 Introduction to Spanish/English Translation

A basic orientation in the theory and practice of translating a text from Spanish to English, including consideration of both cultural and morpho-syntactical problems. Introduction to software programs used by professional translators and interpreters. Lec 3, Cr 3 Prerequisite: SPAN 2321 and SPAN 2322. Crosslisted with SPAN 3332.

TRSP 3333 Introduction to English / Spanish Translation

An orientation in the theory and practice of translating a text from English to Spanish, including consideration of cultural and morpho-syntactical problems. Lec 3, Cr 3. Prerequisite: SPAN 2321 and SPAN 2322. Crosslisted with SPAN 3333.

TRSP 3335 Topics in Translation

Topics in the theory and practice of professional translation between Spanish and English in areas other than business and legal texts, including but not limited to the following: education, medical, specialties, and technology. May be repeated two times for a total of 9 hours. Lec 3, Cr 3. Prerequisite: Six hours of Freshmen English and TRSP 3332 or SPAN 3332. Crosslisted with SPAN 3335.

TRSP 4332 Commercial Translation

Intensive practice in translation from English to Spanish and Spanish to English of commercial, financial, and marketing texts, as well as shipping, insurance, and customs house documents. Lec 3, Cr 3 Prerequisite: SPAN 2321, SPAN 2322, and TRSP/SPAN 3332 or TRSP/SPAN 3333. Crosslisted with SPAN 4332.

TRSP 4334 Legal Translation

An analysis of legal language in English and Spanish. Intensive practice in the translation from English to Spanish and Spanish to English of contracts and government regulations, as well as texts relating to international organizations, civil law and criminal law. Lec 3, Cr 3 Prerequisite: SPAN 2321, SPAN 2322, SPAN/TRSP 3332 or SPAN/TRSP 3333. Crosslisted with SPAN 4334.

TRSP 4366 Interpreting I

A basic orientation in the theory and practice of interpreting English to Spanish and Spanish to English on sight translation and short consecutive interpreting, and also preparation for simultaneous interpreting. Lec 3, Cr 3 Prerequisite: SPAN/TRSP 3332 and SPAN/TRSP 3333 or approval of instructor. Crosslisted with INTG 4366.

TRSP 4367 Interpreting II

Advanced practice in English to Spanish and Spanish to English consecutive and simultaneous interpreting with close attention to terminology and documentation. Conference interpretation. Lec 3, Cr 3 Prerequisite: SPAN/TRSP 3332 and SPAN/TRSP 3333 or approval of instructor. Crosslisted with INTG 4367.

Sales and Marketing Techniques (TRVM)

Chemistry & Environmental Sciences Department/College of Science, Math, and Technology • 882-6691 • Dr. Gene Paull, Chair • MO 1.114 • E-mail: gene.paull@utb.edu URL: <http://blue.utb.edu/chemenv/>

TRVM 1345 Travel & Tourism

A study of marketing, sales techniques, promotions, and advertising theories as applied to the travel and tourism industry exposes students to the marketing mix relating to market segmentation, market planning, advertising, and other communication techniques with emphasis on role playing, and consumer buying behavior, and product-service mix will be addressed. Lec 3, Cr 3. Prerequisite: Departmental approval.

University Experience (UNIV)

Julie Larson, Coordinator • 882-8855 • MRCS 326 • E-mail: julie.larson@utb.edu

UNIV 1101 The University Experience

The purpose of the course is to acclimate students to academic, personal, career, social, and recreational opportunities at the university and in the community to develop lifelong learning skills in students and to help students cope successfully with the demands of the university through the use of challenges and opportunities in and out of the classroom. This one hour course covers the essential topics. Lec 1, Cr 1.

UNIV 1301 The University Experience

The purpose of the course is to acclimate students to academic, personal, career, social, and recreational opportunities at the university and in the community to develop lifelong learning skills in students and to help students cope successfully with the demands of the university through the use of challenges and opportunities in and out of the classroom. This three-hour course will cover the above topics comprehensively. Lec 3, Cr 3.

Auto Mechanics (AUMT, VHPA)

Industrial Technology Department/College of Science, Math, and Technology • 982-0273 • Mr. Patrick Wade, Chair • TTC 303 • E-mail: pat.wade@utb.edu URL: <http://blue.utb.edu/industrialtech/>

VHPA 1301 Auto Parts Nomenclature

This course is an overview of automotive parts, principles of operation, and location on the vehicle. Lec 3, Cr 3. Prerequisite: AUMT 1301

VHPA 1391 Special Topics

Topics address recently identified current events skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Lec 3, Cr 3

VHPA 1441 Auto Parts Counter Sales

Skill development in communication, sale and merchandising of auto parts to vehicle owners and repair technicians with an emphasis on customer relations, communication, sales, and merchandising skills are course topics. Lec 4, Cr 4 Prerequisite: AUMT 1405

VHPA 2331 Auto Parts Management

This course is a study in managing the inventory of a parts department using manual and computerized programs. Topics include store orders, inventory control practices, database management, and physical inventory. Lec 3, Cr 3 Prerequisite: VHPA 1301

Nursing - Vocational Nursing (VNSG)

Nursing Department/School of Health Sciences • 882-5073 • Ms. Karen Fuss-Sommer, Program Director • LHSB 2.720 • E-mail: karen.fuss@utb.edu URL: <http://ntmain.utb.edu/lvnprogram>

VNSG 1119 Leadership and Professional Development

This course offers a study of the importance of professional growth. Covered topics include the role of the licensed vocational nurse in the multi-disciplinary health care team, professional organizations and continuing education. Lec 1, Cr 1.

VNSG 1160 Clinical I-B

A health-related work-based learning experience that enables that the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Cr 1. Prerequisite: Admission into program and co-requisite: VNSG 1226.

VNSG 1226 Gerontology

This course offers an overview of the normal physical, psychosocial and cultural aspects of the aging process. This course addresses common disease processes of aging, and offers exploration of attitudes toward care of the older adult. Lec2, Cr 2. Prerequisite: Admission into Program and co-requisite: VNSG 1160.

VNSG 1227 Essentials of Medication Administration

General principles of medication administration including determination of dosage, preparation, safe administration, and documentation of multiple forms of drugs. Instruction includes various systems of measurement. Lec 2, Cr 2.

VNSG 1231 Pharmacology

Fundamentals of medication and their diagnostic, therapeutic, and curative effects. Includes nursing interventions utilizing the nursing process. Lec 2, Cr 2.

VNSG 1238 Mental Illness

Study of human behavior with emphasis on emotional and mental abnormalities and mode of treatment incorporating the nursing process. Lec 2, Cr 2.

VNSG 1261 Clinical II

A health-related work based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervisions is provided by the clinical professional. Cr 2. Prerequisite: Successful completion of Level I courses. Corequisite: VNSG 1330.

VNSG 1262 Clinical III

A health-related work based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Cr 2. Prerequisite: Successful completion of Level I courses. Corequisite: VNSG 1334.

VNSG 1304 Foundations of Nursing

This course offers an introduction to the nursing profession including history, standards of practice, legal and ethical issues, and role of the vocational nurse. Covered topics include mental health, therapeutic communication, cultural and spiritual diversity, nursing process and holistic awareness. Lec 3, Cr 3. Prerequisite: Admission into program.

VNSG 1330 Maternal-Neonatal Nursing

Utilization of the nursing process in the assessment and management of the childbearing family. Emphasis on the bio-psycho-socio-cultural needs of the family during the phases of pregnancy, childbirth, and the neonatal period including abnormal conditions. Lec 3, Cr 3. Co-requisite: VNSG 1261.

VNSG 1334 Pediatrics

Study of childhood diseases and childcare from infancy through adolescence incorporating basic aspects of normal growth and development. Focus on the care of the well and ill child utilizing the nursing process. Lec 3, Cr 3. Co-requisite: VNSG 1262.

VNSG 1360 Clinical I-A

A health-related work based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Cr 3. Prerequisite: Admission into program and co-requisite: VNSG 1502.

VNSG 1429 Medical/Surgical Nursing I

This course covers the application of the nursing process to the care of adult patients experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings. Lec 4, Cr 4. Prerequisite: Successful completion of level I courses. Corequisite: VNSG 2461.

VNSG 1432 Medical/Surgical Nursing II

This course is a continuation of Medical-Surgical Nursing I with application of the nursing process to the care of the adult patient experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings. Lec 4, Cr 4. Prerequisite: Successful completion of level I courses. Corequisite: VNSG 2462.

VNSG 1502 Applied Nursing Skills I

Introduction to and application of primary nursing skills. Emphasis on utilization of nursing process and related scientific principles of safety, body mechanics, infection-control, asepsis and sterile technique. Lec 2, Lab 3, Cr 5. Co-requisite: VNSG 1360.

VNSG 2461 Clinical IV

A health-related work based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Cr 4. Prerequisite: Successful completion of Level I courses and corequisite: VNSG 1429.

VNSG 2462 Clinical V

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Cr 4. Prerequisite: Successful completion of level I courses and co-requisite: VNSG 1432.

Construction Technology (CNBT, CRPT, ELPT, ELTN, PFPB, WDWK)

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WDWK 1313 Cabinet Making

This course covers basic design, construction, and installation of base and wall cabinets for residential kitchens and bathrooms and safety in the use of hand and power tools (portable and stationary) typical to cabinet construction and installation. The course will provide for proper finish-work skill development in sanding, sealing, staining, and other techniques. Lec 2, Lab 3, Cr 3.

(WMGT)

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WMGT 1166 Practicum

This course entails practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Pr 10, Cr 1. Prerequisite: Departmental approval.

WMGT 2166 Practicum

This course entails practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Pr 10, Cr 1. Prerequisite: Departmental approval.