“My biggest asset has been the Del Mar College Foundation. They’ve provided scholarship money, which has enabled me to come to Del Mar because I had no money for school. I set my goals high and strive to do well so that people who are in negative lifestyles, such as the one I fell into after becoming addicted to drugs, can look upon me and say, ‘He did it. I can do that too.’ That’s one of my dreams in life … to inspire others.”

Allen Roberts

Del Mar College Human Services major
<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE DESCRIPTIONS</td>
</tr>
<tr>
<td>Listed by Subject Prefix</td>
</tr>
</tbody>
</table>

| ABDR - Auto Body Repairer | CTEC - Chemical Laboratory Technology |
| ACCT - Accounting for Transfer Programs | CTMT - Computer Tomography Technology |
| ACNT - Accounting for Technical Programs | CVIR - Cardiovascular Interventional Radiology |
| AERM - Aircraft Mechanic/Technician Airframe | CVOP - Commercial Vehicle Operation |
| ARCE - Architectural Engineering | DAAC - Alcohol/Drug Abuse Counseling |
| ARCH - Architecture | DANC - Dance |
| ARTS - Art | DEMR - Diesel Engine Mechanic and Repairer |
| ARTV - CAD/CADD Drafting and/or Design Technology/Technician | DFTG - Drafting Technology |
| AUMT - Automotive Mechanic Technician | DHYG - Dental Hygiene |
| AVNC - Avionics | DMSO - Diagnostic Medical Sonography |
| BCIS - Business Computer Information Systems | DNTA - Dental Assisting |
| BIOL - Biology | DRAM - Drama |
| BIOM - Biomedical Technology | DSAE - Diagnostic Sonography Adult Echocardiography |
| BITC - Biotechnology | DSVT - Diagnostic Sonography Vascular Technology |
| BMGT - Business Administration and Management, General | ECON - Economics |
| BNKG - Banking and Finance | EDUC - Education |
| BUSA - Investments and Securities | EMSP - Emergency Medical Services Professions |
| BUSG - Business, General | ENGL - English |
| BUSI - Business | ENGR - Engineering |
| CBFM - Building/Property Maintenance and Manager | EPCT - Environmental Pollution Control Technology/Technician |
| CDEC - Child Development/Early Childhood | ESOL - English for Speakers of Other Languages |
| CETT - Computer Engineering Technology | FIRS - Fire Science/Firefighting |
| CHEF - Culinary Arts/Chef Training | FIRT - Fire Technology |
| CHEM - Chemistry | FMLD - Individual and Family Development Studies, General |
| CJCR - Criminal Justice/Corrections | FREN - French |
| CJLE - Criminal Justice/Law Enforcement | FSEM - Freshman Seminar |
| CJSA - Criminal Justice Studies | GAME - Game Technology and Simulation |
| CMSW - Clinical and Medical Social Work | GEOG - Geography |
| CNBT - Construction Engineering Technology/Technician | GEOL - Geology |
| CNSE - Construction Equipment Service | GERM - German |
| COMG - Communications, General | GERS - Gerontological Services |
| COMM - Communication | GISC - Geographic Information Science and Cartography |
| COSC - Computer Science | GOVT - Government |
| CPMT - Computer Maintenance Technology | HAMG - Hotel/Motel Management |
| CRJ - Criminal Justice Transfer | HART - Heating, Air Conditioning, Refrigeration Technology |
| CRTR - Court Reporting | HEMR - Heavy Equipment Maintenance and Repair |
| CSIR - Computer System Installer and Repairer | HIST - History |
| CSME - Cosmetologist |  |
### COURSE DESCRIPTIONS

**Listed by Subject Prefix, continued**

<table>
<thead>
<tr>
<th>Subject Prefix</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HITT</td>
<td>Health Information Technology</td>
</tr>
<tr>
<td>HMSY</td>
<td>Homeland Security</td>
</tr>
<tr>
<td>HPRS</td>
<td>Health Professions and Related Sciences, Other</td>
</tr>
<tr>
<td>HRPO</td>
<td>Human Resources Management</td>
</tr>
<tr>
<td>HUMA</td>
<td>Humanities</td>
</tr>
<tr>
<td>IFWA</td>
<td>Institutional Food Workers and Administrators</td>
</tr>
<tr>
<td>IMED</td>
<td>Instructional Media Technology</td>
</tr>
<tr>
<td>INMT</td>
<td>Industrial Manufacturing Technology</td>
</tr>
<tr>
<td>INSR</td>
<td>Insurance and Risk Management</td>
</tr>
<tr>
<td>ITCC</td>
<td>Information Technology-Cisco Certification</td>
</tr>
<tr>
<td>ITDF</td>
<td>Information Technology/Digital Forensics</td>
</tr>
<tr>
<td>ITNW</td>
<td>Information Technology/Networking</td>
</tr>
<tr>
<td>ITSC</td>
<td>Information Technology/Software Computing</td>
</tr>
<tr>
<td>ITSE</td>
<td>Information Technology/Software Engineering</td>
</tr>
<tr>
<td>ITSW</td>
<td>Information Technology/Software Security</td>
</tr>
<tr>
<td>ITSY</td>
<td>Computer and Information Systems Security</td>
</tr>
<tr>
<td>JAPN</td>
<td>Japanese</td>
</tr>
<tr>
<td>KINE</td>
<td>Kinesiology</td>
</tr>
<tr>
<td>LGLA</td>
<td>Legal Studies/Law</td>
</tr>
<tr>
<td>LMGT</td>
<td>Logistics and Materials Management</td>
</tr>
<tr>
<td>LOTT</td>
<td>Laser Optical Technology</td>
</tr>
<tr>
<td>LTCA</td>
<td>Long Term Care Administrator</td>
</tr>
<tr>
<td>MAIR</td>
<td>Maintenance, Appliance Installer and Repairer</td>
</tr>
<tr>
<td>MAMT</td>
<td>Mammography Technology</td>
</tr>
<tr>
<td>MATH</td>
<td>Mathematics</td>
</tr>
<tr>
<td>MCHN</td>
<td>Machining</td>
</tr>
<tr>
<td>METL</td>
<td>Metallurgy</td>
</tr>
<tr>
<td>MLAB</td>
<td>Medical Laboratory Technology</td>
</tr>
<tr>
<td>MRIT</td>
<td>Magnetic Resonance Imaging Technology</td>
</tr>
<tr>
<td>MRKG</td>
<td>Marketing</td>
</tr>
<tr>
<td>MRM</td>
<td>Medical Transcription</td>
</tr>
<tr>
<td>MSCI</td>
<td>Military Science</td>
</tr>
<tr>
<td>MUAP</td>
<td>Music, Applied</td>
</tr>
<tr>
<td>MUEN</td>
<td>Music Ensembles</td>
</tr>
<tr>
<td>MUSB</td>
<td>Music Business</td>
</tr>
<tr>
<td>MUSC</td>
<td>Music, Sound Recording Technology</td>
</tr>
<tr>
<td>MUSI</td>
<td>Music</td>
</tr>
<tr>
<td>NDTE</td>
<td>Nondestructive Testing</td>
</tr>
<tr>
<td>NMITT</td>
<td>Nuclear Medicine Technology</td>
</tr>
<tr>
<td>OSHT</td>
<td>Occupational Safety and Health Technology</td>
</tr>
<tr>
<td>OTHA</td>
<td>Occupational Therapy Assistant</td>
</tr>
<tr>
<td>PHIL</td>
<td>Philosophy</td>
</tr>
<tr>
<td>PHRA</td>
<td>Pharmacy Technology</td>
</tr>
<tr>
<td>PHYS</td>
<td>Physics</td>
</tr>
<tr>
<td>PLAB</td>
<td>Phlebotomy</td>
</tr>
<tr>
<td>PMHS</td>
<td>Psychiatric/Mental Health and Retardation</td>
</tr>
<tr>
<td>POFI</td>
<td>Business/Office Automation/Technology/Data Entry</td>
</tr>
<tr>
<td>POF</td>
<td>Professional Office Legal</td>
</tr>
<tr>
<td>POFM</td>
<td>Medical Administrative/Executive Assistant and Medical Secretary</td>
</tr>
<tr>
<td>POF</td>
<td>Administrative Assistant/Secretarial Science, General</td>
</tr>
<tr>
<td>PSTR</td>
<td>Pastry (Chef)</td>
</tr>
<tr>
<td>PSYC</td>
<td>Psychology</td>
</tr>
<tr>
<td>PTAC</td>
<td>Process Technology</td>
</tr>
<tr>
<td>PTHA</td>
<td>Physical Therapist Assistant</td>
</tr>
<tr>
<td>PTRT</td>
<td>Petroleum Technology/Technician</td>
</tr>
<tr>
<td>QCTC</td>
<td>Quality Control Technology/Technician</td>
</tr>
<tr>
<td>Radio/TV (see COMM)</td>
<td></td>
</tr>
<tr>
<td>RADR</td>
<td>Radiologic Technology</td>
</tr>
<tr>
<td>READ</td>
<td>Reading</td>
</tr>
<tr>
<td>RELE</td>
<td>Real Estate</td>
</tr>
<tr>
<td>RNSG</td>
<td>Registered Nurse Education</td>
</tr>
<tr>
<td>RSPT</td>
<td>Respiratory Therapy</td>
</tr>
<tr>
<td>RSTO</td>
<td>Restaurant Operations</td>
</tr>
<tr>
<td>SCIT</td>
<td>Science Technology</td>
</tr>
<tr>
<td>SCWK</td>
<td>Social Work</td>
</tr>
<tr>
<td>SGNL</td>
<td>Sign Language Interpreter (Transfer)</td>
</tr>
<tr>
<td>SLNG</td>
<td>Sign Language Interpreter</td>
</tr>
<tr>
<td>SLPS</td>
<td>Security and Loss Prevention Services</td>
</tr>
<tr>
<td>SOCI</td>
<td>Sociology</td>
</tr>
<tr>
<td>SOCW</td>
<td>Social Work</td>
</tr>
<tr>
<td>SPAN</td>
<td>Spanish</td>
</tr>
<tr>
<td>SPCH</td>
<td>Speech</td>
</tr>
<tr>
<td>SPCR</td>
<td>Special Communication and Rhetorical</td>
</tr>
<tr>
<td>SRGT</td>
<td>Surgical Technology</td>
</tr>
<tr>
<td>SRVY</td>
<td>Survey Technology/Surveying</td>
</tr>
<tr>
<td>TECA</td>
<td>Texas Early Childhood Articulation</td>
</tr>
<tr>
<td>TECM</td>
<td>Technical Mathematics</td>
</tr>
<tr>
<td>Television (see COMM)</td>
<td></td>
</tr>
<tr>
<td>VNSG</td>
<td>Vocational Nurse Education</td>
</tr>
<tr>
<td>WLDG</td>
<td>Welding Applied Technology</td>
</tr>
</tbody>
</table>
Course Numbering System

All Del Mar College courses are identified with letter abbreviations followed by a set of numbers. Courses are alphabetized in this catalog according to their abbreviations; see the Index of Courses in the back of this Catalog to locate a specific subject. The numbers in parentheses after the course title indicates the number of lecture hours, lab hours and credits respectively. For example, CHEM 2401, Quantitative Analysis (2-6-4) meets for two lecture hours and six lab hours a week in a regular semester and awards four semester hours of credit.

Four-Digit Numbers

Del Mar College has adopted the Texas Common Course Numbering System for most academic courses and the Workforce Education Course Numbering System for occupational and technical courses. These four-digit numbers were developed to simplify the process of transferring credits from Del Mar College to other Texas colleges and universities and to ensure the maximum credit possible for each transfer student. These numbers are approved by the Texas Higher Education Coordinating Board.

In the four-digit common course numbers the first digit usually indicates the level of the course: 0 - developmental, 1 - freshman and 2 - sophomore level. Some exceptions to this rule exist. (These courses will not count toward fulfilling the 18-hour sophomore requirement for graduation with an associate degree: MSCI 2371 and 2372) The second digit indicates the credit value in semester hours. The third and fourth digits are used to differentiate courses or as an indicator of course sequence.

Assessment Levels

The Del Mar College faculty has established specific Assessment Levels for every college-level course. These levels refer to diagnosed abilities in the basic skills of reading, English and mathematics. They are listed as prerequisite Assessment Levels at the end of most course descriptions. Using Biology 2428 as an example, R3, E3, M2 means this course requires the student to have reading and English Assessment Levels of 3 (college level), while mathematics assessment may be at level 2 (intermediate developmental level). Level 1 denotes basic developmental level. If no R, E, or M is listed, the assessment level defaults to Level 1.

Students must meet the assessment levels shown for each course either by placement testing or by previous course work.

Scores

ACT and SAT scores more than five years old will not be used for course placement in English, reading, or math.

Please refer to the Assessment Levels chart on the following page to see how scores are used.

ACT - American College Test
COMPASS - Computer Assisted Assessment
TAKS - Texas Assessment of Knowledge and Skills
TASP - Texas Academic Skills Program
THEA - Texas Higher Education Assessment
SAT - Scholastic Aptitude Test (taken before March 2005)
SAT1 - Scholastic Aptitude Test (taken March 2005 or later)
# COURSE DESCRIPTIONS

## ASSESSMENT LEVELS CHART

<table>
<thead>
<tr>
<th>DEVELOPMENTAL</th>
<th>DEVELOPMENTAL</th>
<th>COLLEGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>READING</strong></td>
<td><strong>READING</strong></td>
<td><strong>No Reading Course</strong></td>
</tr>
<tr>
<td>Level 1</td>
<td>Level 2</td>
<td>Level 3</td>
</tr>
<tr>
<td>THEA or TASP</td>
<td>THEA or TASP</td>
<td>THEA or TASP</td>
</tr>
<tr>
<td>100-199</td>
<td>200-229</td>
<td>230+</td>
</tr>
<tr>
<td>COMPASS</td>
<td>COMPASS</td>
<td>COMPASS</td>
</tr>
<tr>
<td>01-65</td>
<td>66-83</td>
<td>84-100</td>
</tr>
<tr>
<td>ACT (R)</td>
<td>ACT (R)</td>
<td>ACT (R)</td>
</tr>
<tr>
<td>0-14</td>
<td>15-18</td>
<td>19+</td>
</tr>
<tr>
<td>SAT (V) or SAT1 (Reading)</td>
<td>SAT (V) or SAT1 (Reading)</td>
<td>SAT (V) or SAT1 (Reading)</td>
</tr>
<tr>
<td>200-419</td>
<td>420-499</td>
<td>500+</td>
</tr>
<tr>
<td>ACCUPLACER (Reading)</td>
<td>ACCUPLACER (Reading)</td>
<td>ACCUPLACER (Reading)</td>
</tr>
<tr>
<td>0-65</td>
<td>66-80</td>
<td>81+</td>
</tr>
<tr>
<td>TAKS (English Language Arts)</td>
<td>TAKS (English Language Arts)</td>
<td>TAKS (English Language Arts)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2200+ and essay of 3 or 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WRITING AND ENGLISH</strong></th>
<th><strong>WRITING AND ENGLISH</strong></th>
<th><strong>WRITING AND ENGLISH</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Level 2</td>
<td>Level 3</td>
</tr>
<tr>
<td>THEA or TASP</td>
<td>THEA or TASP</td>
<td>THEA or TASP</td>
</tr>
<tr>
<td>100-199</td>
<td>200-229</td>
<td>230+</td>
</tr>
<tr>
<td>COMPASS</td>
<td>COMPASS</td>
<td>COMPASS</td>
</tr>
<tr>
<td>Essay 0-6 and 01-51</td>
<td>Essay 0-6 and 52-81</td>
<td>Essay 0-6 and 82-100</td>
</tr>
<tr>
<td>SAT (E)</td>
<td>SAT (E)</td>
<td>SAT (E)</td>
</tr>
<tr>
<td>0-14</td>
<td>15-18</td>
<td>19+</td>
</tr>
<tr>
<td>SAT (V) or SAT1 (Reading)</td>
<td>SAT (V) or SAT1 (Reading)</td>
<td>SAT (V) or SAT1 (Reading)</td>
</tr>
<tr>
<td>200-419</td>
<td>420-499</td>
<td>500+</td>
</tr>
<tr>
<td>ACCUPLACER (Writing)*</td>
<td>ACCUPLACER (Writing)*</td>
<td>ACCUPLACER (Writing)*</td>
</tr>
<tr>
<td>0-59 and writing sample of 4 or less</td>
<td>60-79 and writing sample of 5</td>
<td>and writing sample of 6</td>
</tr>
<tr>
<td>TAKS (English Language Arts)</td>
<td>TAKS (English Language Arts)</td>
<td>TAKS (English Language Arts)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2200+ and essay of 3 or 4</td>
</tr>
</tbody>
</table>

*If a student's objective score does not correspond to the writing sample, the student should see the Chair of the English Department for placement.*

<table>
<thead>
<tr>
<th><strong>MATHEMATICS</strong></th>
<th><strong>MATHEMATICS</strong></th>
<th><strong>MATHEMATICS</strong></th>
<th><strong>Ask advisor.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Level 2</td>
<td>Level 3</td>
<td>(M3)</td>
</tr>
<tr>
<td>THEA or TASP</td>
<td>THEA or TASP</td>
<td>THEA or TASP</td>
<td>270+ or 230-269</td>
</tr>
<tr>
<td>100-150</td>
<td>151-199</td>
<td>200-269</td>
<td>and 70+ on</td>
</tr>
<tr>
<td>COMPASS</td>
<td>COMPASS</td>
<td>COMPASS</td>
<td>departmental</td>
</tr>
<tr>
<td>(PA) 01-43</td>
<td>(PA) 44-100</td>
<td>(A) 51-75</td>
<td>examination</td>
</tr>
<tr>
<td>(PA) 01-50</td>
<td>(PA) 44-100</td>
<td>(A) 51-75</td>
<td>(A) 76-100</td>
</tr>
<tr>
<td>ACT (M)</td>
<td>ACT (M)</td>
<td>ACT (M)</td>
<td>(CA) 1-45</td>
</tr>
<tr>
<td>0-12</td>
<td>13-15</td>
<td>16-19</td>
<td>20+</td>
</tr>
<tr>
<td>SAT (M) or</td>
<td>SAT (M)</td>
<td>SAT (M)</td>
<td>500+</td>
</tr>
<tr>
<td>200-310</td>
<td>311-459</td>
<td>460-499</td>
<td></td>
</tr>
<tr>
<td>SAT1 (M)</td>
<td>SAT1 (M)</td>
<td>SAT1 (M)</td>
<td></td>
</tr>
<tr>
<td>0-50</td>
<td>51-62</td>
<td>63-85</td>
<td>86+</td>
</tr>
<tr>
<td>ACCUPLACER (Elementary Algebra)</td>
<td>ACCUPLACER (Elementary Algebra)</td>
<td>ACCUPLACER (Elementary Algebra)</td>
<td></td>
</tr>
<tr>
<td>TAKS (Mathematics)</td>
<td>TAKS (Mathematics)</td>
<td>TAKS (Mathematics)</td>
<td>2200+</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTIONS

Exemptions from All or Some Assessment Requirements

| ACT taken within 5 years with composite of 23+ | exemptions from Reading and Writing English 19+ | Exempt from Math Mathematics 19+ |
| SAT taken before March 2005 and within 5 years with total verbal and math of 1070+ | Verbal 500+ | Mathematics 500+ |
| SAT1 taken March 2005 or later with total reading and math of 1070+ | Reading 500+ | Mathematics 500+ |
| 11th Grade TAKS taken within 3 years | ELA 2200+ with writing sample 3+ | Mathematics 2200+ |

Earned Degrees - A student who has graduated with a baccalaureate degree with a Texas public institution of higher education.

COURSE DESCRIPTIONS

ABDR - Auto Body Repairer

ABDR 1311. VEHICLE MEASUREMENT AND DAMAGE REPAIR PROCEDURES (1-7-3) 47.0603
Introduction to damaged vehicle measurement and alignment systems. Assessment Levels: R1, E1, M1.

ABDR 1323. FRONT AND REAR WHEEL ALIGNMENT (1-7-3) 47.0603
Fundamentals of vehicle steering components including theory, diagnosis and alignment of front and rear discussion of tire rotation and balancing. Assessment Levels: R1, E1, M1.

ABDR 1331. BASIC REFINISHING (1-7-3) 47.0603
Introduction to terms, trade practices, hand tools, power tools, current refinishing products, shop safety and equipment used in the automotive refinishing industry. Painting of trim and replacement parts included. Emphasis on surface preparation. Introduction to masking techniques. Assessment Levels: R1, E1, M1.

ABDR 1349. AUTOMOTIVE PLASTIC AND SHEET MOLDED COMPOUND REPAIR (1-7-3) 47.0603
A comprehensive course in repair of interior and exterior plastics including the use of various types of adhesives and state-of-the-art plastic welding. Assessment Levels: R1, E1, M1.

ABDR 1419. BASIC METAL REPAIR (2-6-4) 47.0603
Basic current metal working techniques, shop safety, proper tool usage, product application and skill development utilizing various body features including metal principles. Assessment Levels: R1, E1, M1.

ABDR 1441. STRUCTURAL ANALYSIS AND DAMAGE REPAIR I (2-6-4) 47.0603
Skill development in the roughing and shaping procedures on automotive sheet metal necessary to make satisfactory minor body repairs. Emphasis on the alignment of component parts such as doors, hood, front-end assemblies and deck lids. Emphasis on composing a damage report or estimate of repair procedures of doors, hoods, deck lids and front end assemblies. Assessment Levels: R1, E1, M1.
ABDR 1455. MINOR METAL REPAIR (2-6-4) 47.0603
Sheet metal alignment principles using mechanical and hydraulic equipment. Emphasis on attachment devices used to straighten and align exterior body panels. Prerequisites: ABD 1331, 1419. Assessment Levels: R1, E1, M1.

ABDR 1458. INTERMEDIATE REFINISHING (2-6-4) 47.0603
Mixing and spraying of automotive topcoats. Emphasis on formula ingredient, reducing, thinning and special spraying techniques. Introduction to partial panel refinishing techniques and current industry paint removal techniques. Assessment Levels R1, E1, M1.

ABDR 2441. MAJOR COLLISION REPAIR AND PANEL REPLACEMENT (2-6-4) 47.0603
Instruction in preparation of vehicles for repair including removal and reinstallion of fenders, bumper, trims, head and door liners, locks, handles, fascia, headers, doors, tailgates, deck lids, hatches and hoods. Interpreting information from damage reports, planning repair sequences, selecting appropriate tools and organizing removed parts for reinstallation. Special emphasis on developing safe work habits. Prerequisites: ABD 1331, 1419. Assessment Levels: R1, E1, M1.

ABDR 2449. ADVANCED REFINISHING (CAPSTONE) (2-6-4) 47.0603
Skill development in multistage refinishing including base coat/clear coat techniques. Further development in identification of problems and solutions in color matching and partial panel refinishing. Assessment Levels: R1, E1, M1.

ACCT - Accounting for Transfer Programs

ACCT 2301. PRINCIPLES OF ACCOUNTING I - FINANCIAL (3-0-3) 5203015104
Accounting concepts and their application in transaction analysis and financial statement preparation; analysis of financial statements and asset and equity accounting in proprietorships, partnerships and corporations. Introduction to cost behavior, budgeting, responsibility accounting, cost control and product costing. Prerequisite: 24 semester hours credit, or permission of the instructor. Assessment Levels: R3, E2, M2.

ACCT 2302. PRINCIPLES OF ACCOUNTING II - MANAGERIAL (3-0-3) 5203015104

ACNT - Accounting for Technical Programs

ACNT 1178. SEMINAR (1-0-1) 52.0302
Topics address current events, skills and technologies relevant to a career in accounting. Included will be a study of workplace diversity, technology, teamwork, cultural factors, technical writing skills, interviewing skills and resume preparation. Utilizes the Internet and other resources to explore career opportunities. Requires concurrent enrollment in ACNT 2268.

ACNT 1303. INTRODUCTION TO ACCOUNTING I (3-0-3) 52.0302
Study of analyzing, classifying and recording business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations and payroll. (Recommended for students who do not have high school accounting or related work experience. Also recommended as a preparatory course for ACCT 2301.)
ACNT 1311. INTRODUCTION TO COMPUTERIZED ACCOUNTING (3-0-3) 52.0302
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. Prerequisite: ACNT 1303 with a minimum grade of “C” or permission of instructor.

ACNT 1313. COMPUTERIZED ACCOUNTING APPLICATIONS (3-0-3) 52.0302
Study of utilizing the computer to develop and maintain accounting record keeping systems, make management decisions and process common business applications with emphasis on utilizing a spreadsheet and/or database package/program. Prerequisite: ACNT 1303 with a minimum grade of “C.”

ACNT 1329. PAYROLL AND BUSINESS TAX ACCOUNTING (3-0-3) 52.0301
Study of payroll procedures, taxing entities and reporting requirements of local, state and federal taxing authorities in a manual and computerized environment. (10-key touch system will be taught.) Prerequisite: ACNT 1303 or permission of instructor.

ACNT 1331. FEDERAL INCOME TAX: INDIVIDUAL (3-0-3) 52.1601
Study of the laws currently implemented by the Internal Revenue Service, providing a working knowledge of preparing taxes for the individual.

ACNT 1347. FEDERAL INCOME TAX FOR PARTNERSHIPS AND CORPORATIONS (3-0-3) 52.1601
Introduction to the tax laws as currently implemented by the Internal Revenue Service providing a working knowledge of preparing taxes for a partnership, sub chapter S and corporation. Prerequisite: ACNT 1331 or permission of instructor. Assessment Levels: R2, E2, M2.

ACNT 1391. SPECIAL TOPICS IN ACCOUNTING (CAPSTONE) (3-0-3) 52.0301
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. Capstone course and should be taken towards the end of the program. Assessment Levels: R2, E2, M2.

ACNT 2268. PRACTICUM-ACCOUNTING TECHNOLOGY/TECHNICIAN AND BOOKKEEPING (CAPSTONE) (0-18-2) 52.0302
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Requires concurrent enrollment in ACNT 1178, Seminar. Should be taken towards the end of the program. Assessment Levels: R2, E2, M2.

AERM - Aircraft Mechanic/Technician Airframe
AERM 1203. SHOP PRACTICE (1-4-2) 47.0607
Introduction to shop safety; the correct use of hand tools, equipment and precision measurement, identification of aircraft hardware and the fabrication of fluid lines and tubing. Emphasis on procedures for testing, heat treating and inspection of aircraft structures. Assessment Levels: R1, E1, M1.

AERM 1205. WEIGHT AND BALANCE (1-4-2) 47.0607
Introduction to Federal Aviation Administration (FAA) required subjects relating to the weighing of aircraft, the performance of weight and balance calculations and appropriate maintenance record entries. Assessment Levels: R1, E1, M1.

AERM 1208. FEDERAL AVIATION REGULATIONS (1-4-2) 47.0607
A course in the use and understanding of the Federal Aviation Administration and aircraft manufacturers’ publications, forms and records; and the exercise of mechanic privileges within prescribed limitations. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

AERM 1210. GROUND OPERATIONS (1-4-2) 47.0607
An introductory course in fuels, servicing methods and safety procedures, aircraft movement, securing and operations of aircraft, external power equipment, aircraft cleaning and corrosion control. Assessment Levels: R1, E1, M1.

AERM 1241. WOOD, FABRIC AND FINISHES (1-3-2) 47.0607
A course in the use and care of various covering materials, finishes and wood structures including approved methods and procedures. Safety also addressed. Assessment Levels: R1, E1, M1.

AERM 1243. INSTRUMENT AND NAVIGATION/COMMUNICATION (2-1-2) 47.0607
Study of aircraft instruments and electronic flight instrument systems including testing and installing instruments; inspecting, checking and troubleshooting navigation communication systems; and inspecting and repairing antennas and electronic equipment installations. Assessment Levels: R1, E1, M1.

AERM 1253. AIRCRAFT WELDING (1-3-2) 47.0607
Skill development in repair procedures for steel, magnesium, brass and aluminum materials used in aircraft assembly and selection and application of appropriate methods of welding, brazing and soldering steel, magnesium, brass and aluminum. Fundamentals of safety procedures also addressed. Assessment Levels: R1, E1, M1.

AERM 1254. AIRCRAFT COMPOSITES (1-4-2) 47.0607
Comprehensive concepts of the inspection and repair of composite, fiberglass, honeycomb and laminated structural materials including doors, windows, bonded structures and interior furnishings. Safety procedures will also be addressed. Assessment Levels: R1, E1, M1.

AERM 1315. AVIATION SCIENCE (2-4-3) 47.0607
Fundamentals of mathematics, physics and drawing as they apply to aircraft principles and operations as required by the Federal Aviation Administration for airframe and power plant mechanics. Assessment Levels: R1, E1, M1.

AERM 1340. AIRCRAFT PROPELLERS (2-4-3) 47.0608
Fundamentals of propeller design, function and construction. Skill development in inspection, servicing and repair of fixed-pitch, constant-speed and feathering propellers and governing systems. Instruction in removal, balancing and installation of propellers and fundamentals of safety are also addressed. Assessment Levels: R1, E1, M1.

AERM 1347. AIRFRAME AUXILIARY (2-3-3) 47.0607
Topics address airframe auxiliary systems including the operation and repair of position and warning system, cabin atmospheric control systems, ice and rain control systems for aircraft and engines and fire detection and protection systems. Assessment Levels: R1, E1, M1.

AERM 1349. HYDRAULIC, PNEUMATIC, AND FUEL SYSTEMS (2-4-3) 47.0607
Skill development in inspecting, servicing, and maintaining aircraft fluid systems including hydraulics, pneumatics, and fuel. Application of basic concepts through detailed maintenance procedures. R1, E1, M1.

AERM 1350. LANDING GEAR SYSTEMS (2-3-3) 47.0607
General principles of inspection, servicing, overhaul and repair of fixed and retractable landing gear systems and the operation and repair of position and warning systems. Includes coverage of systems, components, operation and fundamentals of safety procedures. Assessment Levels: R1, E1, M1.

AERM 1351. AIRCRAFT TURBINE ENGINE THEORY (3-1-3) 47.0608
General principles of theory, history and servicing of turbine engines to include lubrication, instrumentation, auxiliary power units and exhaust systems. Fundamentals of safety procedures are also addressed. Assessment Levels: R1, E1, M1.
AERM 1352. AIRCRAFT SHEET METAL (1-6-3) 47.0607
Skill development in inspection and repair of sheet metal structures including forming, lay out, and bending of sheet metal and identification, selection, and installation of rivets and fasteners. Fundamentals of safety procedures also addressed. Assessment Levels: R1, E1, M1.

AERM 1357. FUEL METERING AND INDUCTION SYSTEMS (2-4-3) 47.0608
Skill development of fuel metering and induction systems used on reciprocating and turbine engines including fuel metering systems, carburetors, induction systems, heat exchangers and cooling systems. Fundamentals of safety procedures will also be addressed. Assessment Levels: R1, E1, M1.

AERM 1392. SPECIAL TOPICS (3-1-64)
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.

AERM 1414. BASIC ELECTRICITY (3-4-4) 47.0607
Study of aircraft electrical systems and their requirements including the use of ammeter, voltmeter and ohmmeter; series and parallel circuits; inductance and capacitance; magnetism; converting alternating current (AC to direct current DC); controlling devices; maintenance and servicing of aircraft batteries; and reading and interpreting aircraft electrical diagrams to include solid devices and logic functions. Assessment Levels: R1, E1, M1.

AERM 1444. AIRCRAFT RECIPROCATING ENGINES (4-1-4) 47.0608
Study of reciprocating engines and their development, operating principles and theory. Instruction in engine instruments, lubricating and exhaust systems. Fundamentals of safety will also be addressed. Assessment Levels: R1, E1, M1.

AERM 1445. AIRFRAME ELECTRICAL SYSTEMS (3-4-4) 47.0607
Study of airframe electrical systems including installation, removal, disassembly and repair of electrical components and related wiring. Assessment Levels: R1, E1, M1.

AERM 1456. AIRCRAFT POWER PLANT ELECTRICAL (3-4-4) 47.0608
General principles of theory, operation and maintenance of powerplant electrical systems including ignition, starting and fire protection systems. Fundamentals of safety procedures will also be addressed. Assessment Levels: R1, E1, M1.

AERM 1491. SPECIAL TOPICS (3-3-96)
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.

AERM 1492. SPECIAL TOPICS (3-3-96)
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.

AERM 2164. PRACTICUM (OR FIELD EXPERIENCE) -- AIRFRAME MECHANICS AND AIRCRAFT MAINTENANCE TECHNOLOGY/TECHNICIAN (0-10-1) 47.0607
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Assessment Levels: R1, E1, M1.

AERM 2231. AIRFRAME INSPECTION (CAPSTONE) (1-3-2) 47.0607
In depth coverage of methods and procedures to perform airframe conformity and air worthiness inspections (including one hundred hour inspections) in accordance with Federal Aviation regulations and manufacturer’s service information. Safety procedures will also be addressed. Assessment Levels: R1, E1, M1.
AERM 2333. ASSEMBLY AND RIGGING (2-4-3) 47.0607
Comprehensive study of the assembly and rigging of fixed and rotary-wing aircraft including structural alignment, balancing and rigging of control systems and assembly of aircraft components. Fundamentals of safety procedures are also addressed. Assessment Levels: R1, E1, M1.

AERM 2351. AIRCRAFT TURBINE ENGINE OVERHAUL (2-4-3) 47.0608
Comprehensive study in inspection, disassembly, reassembly and replacement of gas turbine engines, sections and components including operational troubleshooting, analysis and safety. Assessment Levels: R1, E1, M1.

AERM 2352. AIRCRAFT POWER PLANT INSPECTION (CAPSTONE) (2-4-3) 47.0608
In-depth coverage of methods and procedures to perform powerplant conformity and airworthiness inspections (including one hundred hour inspections) in accordance with Federal Aviation Regulations and manufacturer’s information. Safety procedures will also be addressed. Assessment Levels: R1, E1, M1.

AERM 2359. ADVANCED COMPOSITE REPAIR (1-4-3) 47.0607
Advanced study and practical application of composite repair, processes, and tooling. Includes complex repair and manufacturing techniques.

ARCE - Architectural Engineering
ARCE 1342. CODES, SPECIFICATIONS AND CONTRACT DOCUMENTS (3-1-3) 04.0901
Study of ordinances, codes and legal documents as they relate to specifications and drawing. Discussion of owner-architect-contractor responsibilities, duties and legal relationships. Assessment Levels: R2, E1, M2.

ARCE 1352. STRUCTURAL DRAFTING (2-4-3) 04.0901
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 American Institute of Steel Construction and the American Concrete Institute. Prerequisite ARCE 2344, DFTG 1409. Assessment Levels: R2, E1, M2.

ARCE 2344. STATICS AND STRENGTH OF MATERIALS (3-0-3) 04.0901
Internal effects of forces acting upon elastic bodies and the resulting changes in form and dimensions. Includes stress, shear, bending moments and simple beam design. Assessment Levels: R2, E1, M3.

ARCE 2352. MECHANICAL AND ELECTRICAL SYSTEMS (3-1-3) 04.0901
The properties of building materials (assemblies), specifications, codes, vendor references and uses of mechanical, plumbing, conveying and electrical systems as related to architecture for residential and commercial construction. Prerequisites: ARCH 1315 and 2312, sophomore standing. Assessment Levels: R2, E1, M2.

ARCH - Architecture
ARCH 1301. ARCHITECTURAL HISTORY I (3-0-3) 04.0801.51.02
Study of the history of architecture from the ancient civilizations through Baroque. Emphasis on the relationship of culture, geography, climate, natural resources and materials of the methods of construction. Assessment Levels: R2, M1, E2.

ARCH 1302. ARCHITECTURAL HISTORY II (3-0-3) 04.0801.51.02
Study of the history of architecture during the 18th, 19th and 20th century. Emphasis on the relationship of culture, geography, climate, natural resources and materials to the methods of construction. Assessment Levels: R2, E2, M1.
ARCH 1311. INTRODUCTION TO ARCHITECTURE (3-0-3) 04.0201.5902
Introduction to the elements of the architectural profession. The study of architecture as an integral component of a complex world. Examination of societal and environmental contexts and appropriate responses. Assessment Levels: R2, E2, M1.

ARCH 1315. ARCHITECTURAL COMPUTER GRAPHICS (2-4-3) 15.1303.5211
Introduction to computer graphics systems with emphasis on architectural design applications. Use of the computer as a design drawing tool to achieve conceptual knowledge and computing skills for design communication. Prerequisites: Drafting skills. Assessment Levels: R2, E1, M2.

ARCH 1470. ARCHITECTURAL DELINEATION (2-6-4) 48.0102.5102
Representational drawing using various media. Emphasis on principles of light, shade, proportion, line and tonal quality. Subjects include the human figure, architectural interiors and exteriors, landscapes and cityscapes. Emphasis on black and white media. Assessment Levels: R1, E1, M1.

ARCH 2312. ARCHITECTURAL TECHNOLOGY I (3-1-3) 15.0101.5111
Introduction to the properties, specifications and application of materials related to Architectural structures. Emphasis on the methods of construction and the effect of design. Discussion of basic materials as components of assemblies and systems, including wood framing, steel framing, concrete, site work, finishing materials and procedures and weather and moisture protection. Assessment Levels: R2, E2, M2.

ARCH 2470. ARCHITECTURAL DESIGN STUDIO I (CAPSTONE) (1-8-4) 04.02010.5402
Introduction to architectural design addressing issues of perception, conceptual design, structural order, materials, application of three dimensional processes of architectural design. Prerequisites: ARTS 1311 and credit or corequisite in ARCH 2312. Assessment Levels: R3, E3, M3.

ARTS - Art

ARTS 1301. ART APPRECIATION (3-0-3) 50.0703.5126
Designed to help students develop an understanding of the visual arts through a basic survey of art mediums, visual elements such as line and color and a basic history of art. Slide lectures, gallery and museum tours, artist demonstrations and art films discussed. Assessment Levels: R3, E3, M1.

ARTS 1303. ART HISTORY I (3-0-3) 50.0703.5226
Chronological survey of the history of art from prehistoric times through the Gothic Age. Slide lectures with discussion and use of library art sources. Assessment Levels: R3, E3, M1.

ARTS 1304. ART HISTORY II (3-0-3) 50.0703.5226
Chronological survey of the history of art from Pre-Renaissance through the 1980s (Op, Pop, Minimalism). Slide lectures with discussion and use of library art sources. Prerequisite: ARTS 1303. Assessment Levels: R3, E3, M1.

ARTS 1311. DESIGN I (3-3-3) 50.0401.5326
Basic course in the fundamentals of design, involving the primary principles and elements of two-dimensional design. Assessment Levels: R1, E1, M1.

ARTS 1312. DESIGN II (3-3-3) 50.0401.5326
Continuation of ARTS 1311. Concerns the fundamentals of art with emphasis on three-dimensional concepts. Prerequisite: ARTS 1311. Assessment Levels: R1, E1, M1.

ARTS 1316. DRAWING I (3-3-3) 50.0705.5226
Fundamentals of drawing from a variety of subject matter as a basis for subsequent artistic interpretation; media includes: pencil, conte crayon, charcoal and others; topics and terminology: studies in contour drawing, gesture, value and composition. Assessment Levels: R1, E1, M1.
ARTS 1317. DRAWING II (3-3-3) 50.0705.5226
Continuation of ARTS 1316 with major emphasis on artistic anatomical structural systems of the human form and compositional arrangement. Media includes pen and ink, brush and others. Assessment Levels: R1, E1, M1.

ARTS 1325. DRAWING AND PAINTING FOR NONMAJORS (3-3-3) 50.0708.5126
Survey for nonmajors of the history and philosophy of art in conjunction with initial exploratory activities with art materials. Assessment Levels: R1, E1, M1.

ARTS 2311. DESIGN III COMPUTER APPLICATIONS IN ART (3-3-3) 50.0401.5326
Introduction to making art on the Macintosh computer. No computer experience required. In-depth investigation into two-dimensional design using computers to explore imaginative solutions to design problems. Prerequisite: ARTS 1311. Assessment Levels: R1, E1, M1.

ARTS 2312. DESIGN IV ANIMATION ARTS (3-3-3) 50.0401.5326
Introduction to the development of animation movement and visual storytelling skills. Includes all aspects of animation production, from concept development and production design to completion of a finished piece. Prerequisite: ARTS 2311. Assessment Levels: R1, E1, M1.

ARTS 2316. PAINTING (3-3-3) 50.0708.5226
Basic course in acrylic or oil painting including formal considerations of still-life, figure and landscape compositions. Includes instruction in elements and principles of composition, media, tools and technique. Prerequisites: ARTS 1311, 1316, or permission of the instructor. Assessment Levels: R1, E1, M1.

ARTS 2323. LIFE DRAWING I (3-3-3) 50.0705.5326
Introduction to the concepts and methods of drawing the figure. Various drawing media, including mixed media, are explored. Prerequisites: ARTS 1316, 1317. Assessment Levels: R1, E1, M1.

ARTS 2324. LIFE DRAWING II (3-3-3) 50.0705.5326
Continuation of ARTS 2323 with emphasis on using color and mixed media. Prerequisite: ARTS 2323 or permission of instructor. Assessment Levels: R1, E1, M1.

ARTS 2326. SCULPTURE I (3-3-3) 50.0709.5126
Studio course exploring sculptural approaches in a variety of media including clay, wood and found object constructions. Prerequisites: ARTS 1311, 1312, 1316, 1317, or permission of the instructor. Assessment Levels: R1, E1, M1.

ARTS 2327. SCULPTURE II (3-3-3) 50.0709.5126
Continuation of ARTS 2326 with an emphasis on individual expression. Exploration of sculptural approaches in various media including wood, metal and mixed media. Prerequisite: ARTS 2326 or permission of the instructor. Assessment Levels: R1, E1, M1.

ARTS 2333. PRINTMAKING I (3-3-3) 50.0710.5126
Practice in the making and printing of etchings, lithographs, wood cuts, silkscreen and other selected print media. Prerequisite: ARTS 1311. Assessment Levels: R1, E1, M1.

ARTS 2334. PRINTMAKING II (3-3-3) 50.0710.5126
Continuation of ARTS 2333; emphasis on media not used in the first semester. Prerequisite: ARTS 2333. Assessment Levels: R1, E1, M1.

ARTS 2346. CERAMICS I (3-3-3) 50.0711.5126
Fundamentals of basic pottery and glazing with an emphasis on functional design and decoration. Handbuilding and wheel throwing techniques introduced with supportive experiences of kiln stacking and firing processes. Assessment Levels: R1, E1, M1.
ARTS 2347. CERAMICS II (3-3-3) 50.0711.5126
Continuation of ARTS 2346 with emphasis on functional and expressive design. Emphasis given to development of wheel throwing skills. Various firing methods considered. Prerequisite: ARTS 2346 or permission of the instructor. Assessment Levels: R1, E1, M1.

ARTS 2348. DIGITAL ART I (3-3-3) 50.0402.5126
Studio Art course exploring potential of computer hardware and software medium for visual, conceptual and practical use in the Visual Arts. Emphasis on theory and practice of advertising (commercial) art. Includes planning layout, developing messages, selecting media and executing advertising art. Fundamentals of computer graphics introduced. Prerequisite: ARTS 1311, 2311. Assessment Levels: R1, E1, M1.

ARTS 2349. DIGITAL ART II (3-3-3) 50.0402.5126
Continuation of ARTS 2348. Prerequisite: ARTS 2348. Assessment Levels: R1, E1, M1.

ARTS 2356. PHOTOGRAPHY I (3-3-3) 50.0605.5126
Basic course in black and white photography with emphasis on equipment, film processing and producing finished prints. Course includes concepts and methods of traditional and contemporary photography. Student must supply manual/adjustable 35mm camera, photographic paper, film and other supplies as needed. Assessment Levels: R1, E1, M1.

ARTS 2357. PHOTOGRAPHY II (3-3-3) 50.0605.5226
Continuation of ARTS 2356 with emphasis on creativity and using various mediums, which may include digital camera and image manipulation software. Student must supply cameras, paper, film and other supplies as needed. Prerequisite: ARTS 2356 or permission of the instructor. Assessment Levels: R1, E1, M1.

ARTS 2366. WATERCOLOR I (3-3-3) 50.0708.5326
Basic fundamentals of watercolor painting, including wet-on-wet, dry brush and glazing. Composition and color theory are stressed as well as working from life. Assessment Levels: R1, E1, M1.

ARTS 2389. ACADEMIC COOPERATIVE (1-5-3) 24.0103.5212
An on-site museum experience, to complete various projects, which may include unpacking artwork, exhibition installation, making labels, computer data entry and research. Students meet during one of two orientation sessions (to be announced) and will work at the museum for six hours weekly. Must provide own transportation to and from the museum. Prerequisites: ARTS 1301, 1303, or 1304.

ARTV – CAD/CADD Drafting and/or Design Technology/Technician

ARTV 1302. INTRODUCTION TO TECHNICAL ANIMATION AND RENDERING (2-4-3) 15.1302
Basic study of technical computer models and animation. Prerequisite: DFTG 1409. Assessment Levels: R2, E2, M2.

AUMT - Automotive Mechanic Technician

AUMT 1305. INTRODUCTION TO AUTOMOTIVE TECHNOLOGY (1-7-3) 47.0604
Introduction to the automotive industry including automotive history, safety practices, shop equipment and tools, vehicle subsystems, service publications, fasteners, professional responsibilities and automotive maintenance. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

AUMT 1307. AUTOMOTIVE ELECTRICAL SYSTEMS (1-7-3) 47.0604
An overview of automotive electrical systems including topics in operational theory, testing, diagnosis and repair of batteries, charging and starting systems and electrical accessories. Emphasis on electrical schematic diagrams and service manuals. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 1310. AUTOMOTIVE BRAKE SYSTEMS (1-7-3) 47.0604
Operation and repair of drum / disc type brake systems. Emphasis on safe use of modern equipment. Topics include brake theory, diagnosis and repair of power, manual, antilock brake systems and parking brakes. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 1316. AUTOMOTIVE SUSPENSION AND STEERING SYSTEMS (1-7-3) 47.0604
Theory and operation of automotive suspension and steering systems including tire and wheel problem diagnosis, component repair and alignment procedures. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 1319. AUTOMOTIVE ENGINE REPAIR (CAPSTONE) (1-7-3) 47.0604
Fundamentals of engine operation, diagnosis and repair including lubrication systems and cooling systems. Emphasis on overhaul of selected engines, identification and inspection, measurements and disassembly, repair and reassembly of the engine. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 1345. AUTOMOTIVE HEATING AND AIR CONDITIONING (1-7-3) 47.0604
Theory of automotive air conditioning and heating systems. Emphasis on the basic refrigeration cycle and diagnosis and repair of system malfunctions. Covers Environmental Protection Agency guidelines for refrigerant handling and new refrigerant replacements. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 2301. AUTOMOTIVE MANAGEMENT (3-0-3) 47.0604
Instruction in human relations, customer relations and customer satisfaction. Emphasis on management techniques and building relationships between the service department and the customer. Assessment Levels: R1, E1, M1.

AUMT 2313. AUTOMOTIVE DRIVE TRAIN AND AXLES (1-7-3) 47.0604
Study of automotive clutches, clutch operation devices, standard transmissions, transaxles and differentials with emphasis on the diagnosis and repair of transmissions and drive lines. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 2317. AUTOMOTIVE ENGINE PERFORMANCE ANALYSIS I (1-7-3) 47.0604
Theory, operation, diagnosis and repair of basic engine dynamics, ignition systems and fuel delivery systems. Use of basic engine performance diagnostic equipment. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 2321. AUTOMOTIVE ELECTRICAL LIGHTING AND ACCESSORIES (1-7-3) 47.0604
Repair of automotive electrical subsystems, lighting, instrumentation and accessories. Emphasis on accurate diagnosis and proper repair methods using various troubleshooting skills and techniques. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 2325. AUTOMOTIVE AUTOMATIC TRANSMISSION AND TRANSMISSION (1-7-3) 47.0604
Study of the operation, hydraulic principles and related circuits of modern automatic transmissions and automatic transaxles. Diagnosis, disassembly and assembly procedures with emphasis on the use of special tools and proper repair techniques. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

AUMT 2328. AUTOMOTIVE SERVICE (1-7-3) 47.0604
Mastery of automotive vehicle service and component systems repair. Emphasis on mastering current automotive competencies covered in related theory courses. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 2334. AUTOMOTIVE ENGINE PERFORMANCE ANALYSIS II (1-7-3) 47.0604
Diagnosis and repair of emission systems, computerized engine performance systems and advance ignition and fuel systems; and proper use of advanced engine performance diagnostic equipment. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AUMT 2437. AUTOMOTIVE ELECTRONICS (2-6-4) 47.0604
Topics address electrical principles, semiconductor and integrated circuits, digital fundamentals, microcomputer systems and electrical test equipment as applied to automotive technology. May be taught manufacturer specific. Assessment Levels: R1, E1, M1.

AVNC - Avionics

AVNC 1303. INTRODUCTION TO AVIATION ELECTRONIC SYSTEMS (2-4-3) 47.0609
Introduction to the relationship between aviation electronic systems and aircraft flight and navigational systems with emphasis on the operation and function of the systems. Assessment Levels: R1, E1, M1.

AVNC 1306. FAA REGULATIONS FOR AVIONICS CERTIFIED REPAIR STATION (3-0-3) 47.0609
Practical experience in the day-to-day operations of a Federal Aviation Administration Certified Repair Station. Students will perform tasks which will include completion of FAA forms and records, maintenance of technical data and servicing equipment. Assessment Levels: R1, E1, M1.

AVNC 1343. AVIATION ELECTRICAL AND ELECTRONIC SYSTEMS INSTALLATION (2-4-3) 47.0609
A comprehensive study of and practical experience in the installation of avionic systems in aircraft, mounting electronic equipment, construction and installation of electrical wiring and cables, proper use of tools, selection of materials, and safety. Assessment Levels: R1, E1, M1.

AVNC 2304. FOUNDATIONS IN AVIONICS EQUIPMENT COMPONENT LEVEL REPAIRS (2-4-3) 47.0609
In-depth study of common circuit designs found in modern avionics equipment as well as a study of the electronics theory needed to troubleshoot these circuits. Assessment Levels: R1, E1, M1.

AVNC 2352. AVIATION PULSED RF EQUIPMENT COMPONENT LEVEL REPAIR (2-4-3) 47.0609
Skills development in component level repair of modern aviation pulsed Radio Frequency (RF) systems. Emphasis on equipment block diagram and specialized test equipment will be covered. Assessment Levels: R1, E1, M1.

AVNC 2345. AVIATION NAVIGATIONAL EQUIPMENT COMPONENT LEVEL REPAIR (2-4-3) 47.0609
Skills development in component level repair of modern aviation navigational systems including Very High Frequency Omni Range (VOR), Instrument Landing Systems (ILS), and Automatic Direction Finding (ADF) systems. Emphasis on equipment block diagram and specialized test equipment will be covered in detail. Assessment Levels: R1, E1, M1.
AVNC 2355. ADVANCED AVIATION ELECTRONICS TROUBLESHOOTING (CAPSTONE) (2-4-3) 47.0609
Capstone course designed for students to demonstrate acquired knowledge of avionics systems as well as display techniques required to troubleshoot those systems. The student will face component level repair scenarios. Assessment Levels: R1, E1, M1.

BCIS - Business Computer Information Systems

BCIS 1305. BUSINESS COMPUTER APPLICATIONS (2-4-3) 521202.5404
Course discusses business computer terminology, hardware, software, operating systems and information systems relating to the business environment. The main focus of this course is on business applications of software, including word processing, spreadsheets, databases, presentations graphics and business-oriented utilization of the Internet. Prerequisite: Keyboarding proficiency. Assessment Levels: R3.

BCIS 2390. SYSTEM ANALYSIS AND DESIGN (2-3-3) 52.1203.5104
Analysis of business information needs and preparation of specifications and requirements for appropriate data system solutions. Includes instruction in information requirements analysis, specification development and writing, prototype evaluation and network application interfaces. Topics include methods, tools and techniques to analyze, design and implement a computerized information system. Course may be offered as ITSE 1350. Prerequisite: ITSE 1402 or COSC 1436. Assessment Levels: R3.

BIOL - Biology

Students majoring in the biological sciences should take courses from the major’s track sequence (BIOL 1406 and 1407) to fulfill the Natural Science Core Curriculum requirement. For transfer to some senior universities, students should instead take the sequence BIOL 1406, 1411 and 1413 (see biology advisory for details). Nonscience majors desiring to fulfill the Natural Science Core Curriculum requirement with biology may take courses from the major’s or nonscience major’s sequences. See the full list of Natural Science options in the Core Curriculum section of this Catalog.

BIOL 1108. FUNDAMENTALS OF CELL BIOLOGY LABORATORY (0-3-1) 2601015103
Optional laboratory to accompany BIOL 1308, if a laboratory course is desired or required. BIOL 1308 when accompanied by BIOL 1108 is equivalent to BIOL 1408. Topics include those from BIOL 1308. This laboratory course cannot be used to fulfill the laboratory requirement for any course except BIOL 1308. Prerequisite or corequisite: BIOL 1308. Assessment Levels: R3, E3, M1.

BIOL 1109. DIVERSITY AND ENVIRONMENT LABORATORY (0-3-1) 2601015103
Optional laboratory to accompany BIOL 1309, if a laboratory course is desired or required. BIOL 1309 when accompanied by BIOL 1109 is equivalent to BIOL 1409. Topics include those from BIOL 1309. This laboratory course cannot be used to fulfill the laboratory requirement for any course except BIOL 1309. Prerequisite or corequisite: BIOL 1309. Assessment Levels: R3, E3, M1.

BIOL 1308. GENERAL BIOLOGY: FUNDAMENTALS OF CELL BIOLOGY (OPTIONAL SEPARATE LABORATORY) (3-0-3) 2601015103
BIOL 1408. GENERAL BIOLOGY: FUNDAMENTALS OF CELL BIOLOGY (LABORATORY INCLUDED) (3-3-4) 2601015103
Scientific method, chemical properties of life, cells and organelles, metabolism, photosynthesis, respiration, cell division, genetics, molecular genetics and genetic engineering. Designed primarily to be the first biology course for nonscience majors. BIOL 1308 when accompanied by BIOL 1108 is equivalent to BIOL 1408. If a laboratory course is required, student should take either BIOL 1408 or BIOL 1308 accompanied by BIOL 1108 (Fundamentals of Cell Biology Laboratory). Credit given for only one of BIOL
1308, 1406, or 1408. May be taken independently from BIOL 1309/1409. Assessment Levels: R3, E3, M1.

BIOL 1309. GENERAL BIOLOGY: DIVERSITY AND ENVIRONMENT (OPTIONAL SEPARATE LABORATORY). (3-0-3) 2601015103

BIOL 1409. GENERAL BIOLOGY: DIVERSITY AND ENVIRONMENT (LABORATORY INCLUDED) (3-3-4) 2601015103

Intended primarily for non-science majors. Diversity, structure and life cycles of monerans, protists, fungi, plants, animals (including humans); population genetics, evolution, principles of ecology and global ecology. BIOL 1309 when accompanied by BIOL 1109 is equivalent to BIOL 1409. If a laboratory course is required, student should take either BIOL 1409 or 1309 accompanied by BIOL 1109 (Diversity and Environment Laboratory). Credit given for only one of BIOL 1309, 1407, or 1409. Assessment Levels: R3, E3, M1.

BIOL 1371. INTRODUCTION TO ANATOMY AND PHYSIOLOGY (3-0-3) 2607075103

An introductory course in human anatomy and physiology. Principles of anatomical structure and function of human body. Emphasizing terminology, including spelling, definitions and pronunciations. Recommended for students who plan to take BIOL 2401, but who lack sufficient high school or college science backgrounds. With advisor’s approval, counts as elective hours toward Associate in Arts degree and certain Associate in Applied Science degrees. Does not satisfy the natural sciences requirement for the AA or AAS degree and does not apply toward the AS degree. Assessment Levels: R2, E2, M1.

BIOL 1406. BIOLOGICAL CONCEPTS I - CELLULAR AND MOLECULAR (3-3-4) 2601015103

Provides a foundation in biological concepts for students majoring in the sciences. Includes fundamentals of molecular biology, cell structure and function, cellular respiration, photosynthesis, cell reproduction, genetics and biotechnology. Students should take courses from the major’s track sequence (BIOL 1406, 1407, 1411 and 1413) or the non-science major’s sequence (BIOL 1308/1408 and 1309/1409) but not both. Credit given for only one of BIOL 1308, 1406, or 1408. Prerequisite: One year each of high school biology and chemistry, or concurrent enrollment in Chemistry 1411. Assessment Levels: R3, E3, M2.

BIOL 1407. BIOLOGICAL CONCEPTS II - EVOLUTION, DIVERSITY, STRUCTURE, FUNCTION AND ENVIRONMENT (3-3-4) 2601015103

Provides a foundation in biological concepts for students majoring in the sciences. Includes evolution, origin and history of life, classification and diversity of life; plant and animal structures, functions and life cycles; behavior, ecology and global ecology. Recommended for students majoring in the biological sciences and related disciplines. Required instead of BIOL 1411 and BIOL 1413 for certain programs (see biology advisor for details). Credit given for only one of BIOL 1309, 1407, or 1409. Prerequisite: BIOL 1406 or equivalent, or instructor’s permission. Assessment Levels: R3, E3, M2.

BIOL 1411. GENERAL BOTANY (3-3-4) 2603015103

Introduction to the structure, function, diversity and ecology of plants; global ecology and ecosystems. Recommended for students majoring in the biological sciences and related disciplines. Required with BIOL 1413 instead of 1407 in some programs (see biology advisor for details). Prerequisite: BIOL 1406. Assessment Levels: R3, E3, M2.

BIOL 1413. GENERAL ZOOLOGY (3-3-4) 2607015103

A panorama unveiling the diversity, evolutionary history, structure, function and reproductive processes of the major animal phyla. Emphasis on evolution and ecology and the dynamic ways in which species adapt to their environments. Recommended for students majoring in the biological sciences and related disciplines. Required with BIOL 1411 instead of 1407 in some programs (see biology advisor for details). Prerequisite: BIOL 1406. Assessment Levels: R3, E3, M2.
BIOL 2106. ENVIRONMENTAL BIOLOGY LABORATORY (0-3-1) 0301035101
Optional laboratory to accompany BIOL 2306, if a laboratory course is desired or required. Topics include those from BIOL 2306. Cannot be used to fulfill the laboratory requirement for any course except BIOL 2306. Prerequisite or corequisite: BIOL 2306. Assessment Levels: R3, E3, M2.

BIOL 2306. ENVIRONMENTAL BIOLOGY (OPTIONAL SEPARATE LABORATORY) (3-0-3) 0301035101
Study of humans and sustainability, ecological principles, sustaining biodiversity, natural resources, population ecology and environmental economics. Counts towards AA or AS degree in biology if accompanied by BIOL 2106. Prerequisite: BIOL 1309 or 1407. Assessment Levels: R3, E3, M2.

BIOL 2401. HUMAN ANATOMY AND PHYSIOLOGY I (3-3-4) 2607075103
Study of the structure and function of the human body. Course includes anatomical terminology and principles of cell biology followed by an in-depth study of tissues and the integumentary, skeletal, muscular and nervous systems. Prerequisite: One year high school biology (or 4 semester hours college biology) and one year high school chemistry (or 4 semester hours college chemistry); or BIOL 1371. Assessment Levels: R3, E3, M2.

BIOL 2402. HUMAN ANATOMY AND PHYSIOLOGY II (3-3-4) 2607075103
Continuation of the study of the structure and function of the human body. Detailed study of special senses and the endocrine, urinary, cardiovascular, respiratory, digestive and reproductive systems and human development. Prerequisite: BIOL 2401. Assessment Levels: R3, E3, M2.

BIOL 2416. GENETICS (3-4-4) 2608045103
Study of the principles of molecular and classical genetics and the function and transmission of hereditary material. Includes studies of the following topics: Mendelian Patterns of Inheritance, Molecular Genetics (including nucleic acid structure, replication and protein synthesis, gene and chromosomal mutations, gene expression, regulations of gene activity, genetic engineering, recombinant DNA and biotechnology) and Population Genetics. Recommended for students majoring in the biological sciences and related disciplines. Prerequisites: BIOL 1407 and CHEM 1412, or their equivalents, or instructor’s permission. Assessment Levels: R3, E3, M3.

BIOL 2418. INVERTEBRATE ZOOLOGY (3-3-4) 2607015224
Survey of invertebrates; emphasis on phylogeny, morphology, life history and ecology of local forms. Prerequisite: Eight semester hours of General Biology or equivalent. Assessment Levels: R3, E3, M2.

BIOL 2420. MICROBIOLOGY AND CLINICAL PATHOLOGY (3-3-4) 2605035103
Study of microorganisms; emphasis on microbe morphology and physiology; principles of disinfection, sterilization, immunity and pathogenicity. This course is intended for pre-nursing and associate-degree nursing majors, dental hygiene, pre-medical technology, respiratory therapy and surgical technology majors. Students may take this nonmajor’s course (BIOL 2420) or the major’s track course (BIOL 2421) but not both. Prerequisites: one year of high school biology (or 4 semester hours of biology) and CHEM 1406 or equivalent. Assessment Levels: R3, E2, M2.

BIOL 2421. MICROBIOLOGY (3-3-4) 2605035103
Foundations in microbiological concepts for students majoring in the biological sciences and others majoring in sciences that require an emphasis in biology (pre-medical, pre-dental, pre-veterinary medicine, pre-pharmacy, etc.) are provided. Topics of study are the morphology, physiology, taxonomy, ecological associations, infection and immunity of bacteria, fungi, protists and viruses. Laboratory includes the handling and pure-culture techniques needed for the isolation, growth and taxonomic elucidation...
of various microbes. Students may take this major’s track course (BIOL 2421) or the nonmajor’s course (BIOL 2420) but not both. Prerequisites: BIOL 1406 and CHEM 1412 or their equivalents or instructor’s permission. Assessment Levels: R3, E3, M3.

BIOL 2428. VERTEBRATE ZOOLOGY (3-3-4) 2607015303
Evolution of chordate structure as evidenced by comparative morphology and embryology of vertebrates; for biology majors, pre-medical and pre-dental students. Prerequisite: BIOL 1407 or 1413, or equivalent. Assessment Levels: R3, E3, M2.

BIOM - Biomedical Technology
BIOM 1309. APPLIED BIOMEDICAL EQUIPMENT TECHNOLOGY (2-4-3) 15.0401
Introduction to biomedical instrumentation as related to anatomy and physiology. Detailed coverage of anatomical systems that use medical equipment for monitoring diagnosis, and treatment. Assessment Levels: R1, E1, M1.

BIOM 1315. MEDICAL EQUIPMENT NETWORKS (2-4-3) 15.0401
Identification of basic principles of medical equipment networking. Hardware, software, and connectivity issues of medical equipment in healthcare facilities will be covered. Assessment Levels: R1, E1, M1.

BIOM 1341. MEDICAL CIRCUITS/TROUBLESHOOTING (2-4-3) 15.0401
Development of skills in logical isolation of troubles in malfunctioning medical electronic circuits and utilization of appropriate test equipment. Assessment Levels: R1, E1, M1.

BIOM 1355. MEDICAL ELECTRONIC APPLICATIONS (2-4-3) 15.0401
Presentation of sensors, transducers, and supporting circuits used in medical instrumentation devices. Assessment Levels: R1, E1, M1.

BIOM 2331. BIOMEDICAL CLINICAL INSTRUMENTATION (2-4-3) 15.0401
Study of theory, application, and principles of operation of instruments commonly used in a medical laboratory. Assessment Levels: R1, E1, M1.

BIOM 2335 PHYSIOLOGICAL INSTRUMENTS I (2-4-3) 15.0401
Electrocardiographic equipment. Emphasis on the theory of operation, circuit analysis, and troubleshooting techniques including physiology of the cardiovascular system. Assessment Levels: R1, E1, M1.

BIOM 2337. RESPIRATORY EQUIPMENT MAINTENANCE (3-0-3) 15.0401
Principles of operation, theory, and maintenance of respiratory equipment. Assessment Levels: R1, E1, M1.

BIOM 2339. PHYSIOLOGICAL INSTRUMENTS II (2-4-3) 15.0401
Graphic display recording devices. Includes defibrillators and multi-purpose diagnostic equipment. Assessment Levels: R1, E1, M1.

BITC - Biotechnology
BITC 1311. INTRODUCTION TO BIOTECHNOLOGY (2-3-3) 41.0101
An introduction to biotechnology including career exploration, history and applications of DNA/RNA technology molecular biology, bioethics, and laboratory safety. The course is supplemented with laboratory exercises, demonstrations and field trips that illustrate the basic techniques of biotechnology including laboratory topics and finally the course concludes with a consideration of bioethical issues relating to this powerful new technology. One year of high school biology and one year of high school chemistry or BIOL 1406, or the equivalent, or Departmental approval. Assessment Levels: R3, E2, M2.
BITC 1370. INTRODUCTION TO BIOCHEMISTRY (2-4-3) 41.0101
Course covers the structure, function, and cellular metabolism of various biomolecules. The course will deal with the intra-and intermolecular conversion of biomolecules. Knowledge in this area is directly applicable to the fields of analysis and processing of biomolecules and their pertinence to biotechnology as it relates to biopharmaceuticals, biodiagnostics, fermentation, and bio-manufacturing. Prerequisite: BITC 1311. Assessment Levels: R3, E3, M3.

BITC 1402. BIOTECHNOLOGY LABORATORY METHODS AND TECHNIQUES (3-4-4) 41.0101
Emphasis is on researching information on the computer, laboratory operations and management, equipment and instrumentation, quality control techniques, and safety procedures. Lecture emphasis will be on biochemistry and bioorganic topics including drug discovery. Laboratory practice will be in lab safety, preparing buffer solutions, performing organic chemistry techniques that are used in industry, and the design of enzyme and protein assays. Prerequisite: BITC 1311, MATH 1314, BIOL 1406 and CHEM 1411 (or concurrent enrollment). Assessment Levels: R3, E3, M2.

BITC 1445. MEDICAL BIOTECHNOLOGY. (3-4-4) 41.0101
This course applies to medicine and medical research, and includes molecular mechanisms underlying diseases such as cancer, diabetes, heart disease, and AIDS. Course covers the applications of biotechnology to the diagnosis and treatment of disease as well as the development of drugs and therapeutic agents, and emphasizes research and medical-related biotechnology methods and laboratory procedures. Assessment Levels: R3, E3, M3.

BITC 1491. INTRODUCTION TO BIOMANUFACTURING (3-4-4) 41.0101
This is a foundation course for the field, introducing basic documentation and standard operating procedures which are commonly used in accordance with Federal Drug Administration guidelines. Upstream processing, which includes the growth and maintenance of cell cultures, use of equipment such as the biological safety cabinet and fermentor, preparation of primary cell cultures, cell preservation techniques, Elisa techniques are all covered. Prerequisite: BITC 1311 or Departmental approval. Assessment Levels: R3, E3, M3.

BITC 2350. BIOINFORMATICS (3-0-3) 41.0101
Current topics in bioinformatics and computational biology, and includes methods for high-throughput data collection, storing, and accessing biological data. Course covers programs and algorithms used to analyze data. Prerequisite: BITC 1311. Assessment Levels: R3, E3, M3.

BITC 2411. BIOTECHNOLOGY LABORATORY INSTRUMENTATION (3-4-4) 41.0101
Lecture will discuss theory, applications, and operation of various analytical instruments with an emphasis on protein purification in both an R&D laboratory and a bio-manufacturing facility. Laboratory exercises will focus on quantitative and qualitative analyses by chromatography, centrifugation, spectrophotometry, and electrophoresis. An introduction to protein bioinformatic tools is included. Prerequisite: BITC 1402 or Departmental approval. Assessment Levels: R3, E3, M2.

BITC 2431. CELL CULTURE TECHNIQUES (3-4-4) 41.0101
Study of cell culture techniques, the laboratory emphasizes the principles and practices of initiation, cultivation, maintenance, and the preservation of cell lines including applications such as transfection and project management. Basic immunology including ELISAs and Western Blots are also taught. Prerequisites: BITC 1311 or Departmental approval. Assessment Levels: R3, E3, M3.

BITC 2441. MOLECULAR BIOLOGY TECHNIQUES (3-4-4) 41.0101
An introduction to the theory and laboratory techniques in molecular biology with an emphasis on DNA replication, transcription, gene expression and regulation, recombinant DNA and RNA techniques such as transformation, RT-PCR, Northern blots,
microarray analysis and DNA bioinformatic tools. Prerequisites: BIOL1406, BITC 1402 or Departmental approval. Assessment Levels: R3, E3, M3.

BITC 2486. INTERNSHIP-BIOLOGY TECHNICIAN/BIOTECHNOLOGY LABORATORY TECHNICIAN (0-20-4) 41.0101
The experience can be internal to the college where the student prepares kits for the Biotechnology Program for distribution under the supervision of a trained DMC instructor. Activities include designing laboratory protocols for classroom use. Or the experience can be external to the college, where the student is mentored and supervised by a workplace employee. This may be paid or unpaid experience. This course may be repeated if topics and learning outcomes vary. (Capstone for Biotechnology certificate or elective for AAS degree). Prerequisites: Assigned by the College. Assessment Levels: R3, E3, M3.

BITC 2487. INTERNSHIP-BIOLOGY TECHNICIAN/BIOTECHNOLOGY LABORATORY TECHNICIAN (0-20-4) 41.0101
This is an experience external to the college for an advanced student in a specialized field involving a written agreement between the educational institution and a business or industry partner. Mentored and supervised by a workplace employee, the student achieves objectives that are developed and documented by the college that directly relate to specific occupational outcomes. This may be paid or unpaid experience. This course may be repeated if topics and learning outcomes vary. (Capstone course for Biotechnology AAS degree). Assessment Levels: R3, E3, M3.

BMGT - Business Administration and Management, General

BMGT 1174. SEMINAR (1-0-1) 52.0201
Topics address current events, skills and technologies relevant to a career in management or marketing. Included will be a study of workplace diversity, technology, teamwork, cultural factors, technical writing skills and resume preparation. Utilizes the Internet and other resources to explore career opportunities. Requires concurrent enrollment in related practicum.

BMGT 1264. PRACTICUM - OPERATIONS MANAGEMENT AND SUPERVISION (CAPSTONE) (0-18-2) 52.0205
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Requires concurrent enrollment in BMGT 1174.

BMGT 1301. SUPERVISION (3-0-3) 52.0201
Study of the role of the supervisor. Managerial functions as applied to leadership, counseling, motivation and human skills are examined. Course is designed for those who aspire to be supervisors as well as those practicing managers who wish to supplement their work experience.

BMGT 1309. INFORMATION AND PROJECT MANAGEMENT (3-0-3) 52.0201
Critical path methods for planning and controlling projects. Includes time / cost tradeoffs, resource utilization, stochastic considerations, task determination, time management, scheduling management, status reports, budget management, customer service, professional attitude and project supervision.

BMGT 1323. PURCHASING (3-0-3) 52.0202
Study of the purchasing process and the basis of sound purchasing decisions; materials management; selection and evaluation of suppliers / vendors; price, quality and value determinants; and issues that require legal or ethical consideration.

BMGT 1327. PRINCIPLES OF MANAGEMENT (3-0-3) 52.0201
Concepts, terminology, principles, theories and issues in the field of management.
BMGT 1331. PRODUCTION AND OPERATIONS MANAGEMENT (3-0-3) 52.0205
Fundamentals of the various techniques used in the practice of production management to include location, design and resource allocation.

BMGT 2268. PRACTICUM - BUSINESS ADMINISTRATION AND MANAGEMENT, GENERAL (0-18-2) 52.0201
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Assessment Levels: R2, E2, M2.

BMGT 2303. PROBLEM SOLVING AND DECISION MAKING (CAPSTONE) (3-0-3) 52.0201
Decision making and problem solving processes in organizations, utilizing logical and creative problem solving techniques. Application of theory is provided by experiential activities such as small group discussions, case studies and the use of other managerial decision aids.

BMGT 2309. LEADERSHIP (CAPSTONE) (3-0-3) 52.0201
Concepts of leadership and its relationship to management. Prepares the student with leadership and communication skills needed to motivate and identify.

BMGT 2368. PRACTICUM-BUSINESS ADMINISTRATION AND MANAGEMENT, GENERAL (0-30-3) 52.0201
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student.

BNKG - Banking and Finance
BNKG 1303. PRINCIPLES OF BANK OPERATION (3-0-3) 52.0803
Overview of the fundamental banking functions and the role regulation in the banking industry. Explanation of financial products and services to various markets.

BNKG 1305. TELLER TRAINING (3-0-3) 52.0803
Application of the functions related to negotiable instruments, cash control, handling money and balancing. Explanation of compliance and regulation issues affecting bank tellers.

BNKG 1340. MONEY AND FINANCIAL MARKETS (3-0-3) 52.0803
Monetary policy and its related effects on financial intermediaries. Includes financial markets, regulatory functions and structures. Addresses investment and funds management.

BNKG 1343. LAW AND BANKING (3-0-3) 52.0803
An introduction to basic sources of law and banking regulation. Emphasis on the laws relating to contracts, negotiable instruments, secured transactions and consumer credit.

BNKG 1345. CONSUMER LENDING (3-0-3) 52.0803
Study of the different types of consumer loans. Identify the federal regulations and state laws pertaining to collection and serving of a consumer loan and relate consumer credit to the lending process.

BNKG 1349. COMMERCIAL LENDING (CAPSTONE) (3-0-3) 52.0803
Overview of the commercial lending market and process. Emphasis on credit analysis, evaluation, federal regulation and state laws related to business and industrial lending.

BNKG 1351. SELLING BANK/FINANCIAL PRODUCTS AND SERVICES (3-0-3) 52.0803
Characteristics and benefits of bank/financial products and services. Emphasis on the personal selling process and quality customer service. Application of personal selling, cross-selling and related product benefits to individual customer needs.
BNKG 1356. ANALYZING FINANCIAL STATEMENTS (3-0-3) 52.0803
Study of the process of evaluating financial statements, cash flow and ratio analysis of individuals and businesses. Emphasis on the relationship of comparative analysis and industry standards.

BUSA - Investments and Securities
BUSA 1313. INVESTMENTS (3-0-3) 52.0807
Overview of the theory and mechanics of business investment decisions and management of business financial assets using quantitative management techniques. Topics include time value of money, cash flow, capital budgeting, sources of funds, break-even analysis and investment decisions.

BUSG - Business, General
BUSG 1341. SMALL BUSINESS FINANCING (3-0-3) 52.0703
Study of the financial structure of a small business. Topics address business finance, including where the funds come from and what they are used for; budgeting including planning and preparing, record keeping, taxation, insurance and banking.

BUSG 2309. SMALL BUSINESS MANAGEMENT (3-0-3) 52.0703
Starting and operating a small business. Includes facts about a small business, essential management skills, how to prepare a business, plan, financial needs, marketing strategies and legal issues.

BUSI - Business
BUSI 1301. BUSINESS PRINCIPLES (3-0-3) 5201015104
Introduction to the role of business in modern society. Includes overview of business operations, analysis of the specialized fields within the business organization and development of a business vocabulary.

BUSI 2302. LEGAL ENVIRONMENT OF BUSINESS (3-0-3) 2201015224
Role of law and government regulations in business and society. Includes legal reasoning, sources of law, social policy and legal institutions and laws relating to antitrust protection, security regulations, consumer protection, environmental protection, worker health and safety and employment discrimination. Assessment Levels: R3, E3, M1.

CBFM - Building/Property Maintenance and Manager
CBFM 1321. INDUSTRIAL SCAFFOLDING AND RIGGING (3-0-3) 46.0408
Introduction to elevated work situations including ladders, rigging, scaffolding, work platforms, aerial lifts and personal protective equipment such as fall restraints. Assessment Levels: R1, E1, M1.

CBFM 2317. MECHANICAL MAINTENANCE (2-3-3) 46.0401
General principles of mechanical and electrical systems as related to inspection, repair and preventative maintenance of facility equipment. Assessment Levels: R1, E1, M1.

CDEC - Child Development/Early Childhood
CDEC 1166. PRACTICUM I – CHILD CARE PROVIDER/ASSISTANT (0-8-1) 19.0709
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites or concurrent enrollment: TECA 1311, CDEC 1313, and CDEC 1319 or CDEC 1356.

CDEC 1313. CURRICULUM RESOURCES FOR EARLY CHILDHOOD PROGRAMS (3-1-3) 19.0709
Study of the fundamentals of curriculum design and implementation in developmentally appropriate programs for children. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

CDEC 1319. CHILD GUIDANCE (3-0-3) 19.0709
An exploration of guidance strategies for promoting pro-social behaviors with individual and groups of children. Emphasis on positive guidance principles and techniques, family involvement and cultural influences. Practical application through direct participation with children. Assessment Levels: R1, El, M1.

CDEC 1321. THE INFANT AND TODDLER (3-1-3) 19.0709
Study of appropriate infant and toddler programs (birth to age 3), including an overview of development, quality routines, appropriate environments, materials and activities, and teaching/guidance techniques. Assessment Levels: R1, El, M1.

CDEC 1356. EMERGENT LITERACY FOR EARLY CHILDHOOD (3-0-3) 19.0709
Exploration of principles, methods and materials for teaching young children language and literacy through a play-based integrated curriculum. Prerequisites: CDEC 1313 and TECA 1354. Assessment Levels: R1, El, M1.

CDEC 1358. CREATIVE ARTS FOR EARLY CHILDHOOD (3-0-3) 19.0709
Exploration of principles, methods and materials for teaching children music, movement, visual arts and dramatic play through process-oriented experiences to support divergent thinking. Prerequisites: CDEC 1313, TECA 1354. Assessment Levels: R1, El, M1.

CDEC 1359. CHILDREN WITH SPECIAL NEEDS (3-0-3) 19.0709
Survey of information regarding children with special needs including possible causes and characteristics of exceptionalities, intervention strategies, available resources, referral processes, the advocacy role, and legislative issues. Prerequisite: TECA 1354. Assessment Levels: R1, El, M1.

CDEC 1394. SPECIAL TOPICS IN CHILD CARE PROVIDER/ASSISTANT (3-4-4) 20.0201
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. Assessment Levels: R1, El, M1.

CDEC 1396. SPECIAL TOPICS IN CHILD CARE AND SUPPORT SERVICES MANAGEMENT (3-1-3) 19.0708
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. Assessment Levels: R1, El, M1.

CDEC 2166 PRACTICUM II – CHILD CARE PROVIDER/ASSISTANT (0-8-1) 19.0709
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites CDEC 1166 or departmental approval.

CDEC 2307. MATH AND SCIENCE FOR EARLY CHILDHOOD (3-0-3) 19.0709
Exploration of principles, methods and materials for teaching children math and science concepts and process skills through discovery and play. Prerequisites: CDEC 1313 and TECA 1354. Assessment Levels: R1, El, M1.

CDEC 2326. ADMINISTRATION OF PROGRAMS FOR CHILDREN I (3-1-3) 19.0708
Application of management procedures for early child care education programs. Includes planning, operating, supervising and evaluating programs. Topics cover philosophy, types of programs, policies, fiscal management, regulations, staffing, evaluation and communication. Assessment Levels: R1, El, M1.
CDEC 2328. ADMINISTRATION OF PROGRAMS FOR CHILDREN II (3-1-3) 19.0708
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 parent education/partnerships, and technical applications in programs. Assessment Levels: R1, E1, M1.

CDEC 2341. THE SCHOOL AGE CHILD (3-1-3) 19.0709
Study of appropriate programs for the school age child (5 to 13 years), including an overview of development, appropriate environments, materials, and activities and teaching/guidance techniques. Assessment Levels: R1, E1, M1.

CDEC 2386. INTERNSHIP - CHILD CARE PROVIDER/ASSISTANT (CAPSTONE) (0-12-3) 19.0709
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. Prerequisites: TECA 1311, 1354, CDEC 1313, 1356. Assessment Levels: R1, E1, M1.

CETT - Computer Engineering Technology

CETT 1304. HIGH-RELIABILITY SOLDERING (2-4-3) 15.1201
Instruction in this course will teach high reliability soldering, desoldering, circuitry repair, plated-thru-hole repairs, conformal coating removal, basic EOS ESD control, surface mount device (SMD) installation, removal and replacement using hand held systems or reflow workstations.

CETT 1402. ELECTRICITY PRINCIPLES (2-6-4) 15.0501
Principles of electricity as required by VAC technicians including proper use of test equipment, A/C and D/C circuits and component theory and operation. Assessment Levels: R1, E1, M1.

CETT 1403. DC CIRCUITS (3-4-4) 15.1201
Study of the fundamentals of direct current including Ohm’s law, Kirchhoff’s laws and circuit analysis techniques. Emphasis on circuit analysis of resistive networks and DC measurements. Assessment Levels: R1, E1, M1.

CETT 1405. AC CIRCUITS (3-4-4) 15.1201
Study of the fundamentals of alternating current including series and parallel electricity in AC circuits; analyze AC circuits using appropriate mathematical formulas; troubleshoot various AC circuits using schematic diagrams; and apply and interpret basic principles of magnetism. Prerequisite: CETT 1403. Assessment Levels: R1, E1, M1.

CETT 1415. DIGITAL APPLICATIONS (3-4-4) 15.0301
Investigation of combinational and sequential logic elements and circuits with emphasis on design and troubleshooting of combinational and sequential circuits. Assessment Levels: R1, E1, M1.

CETT 1429. SOLID STATE DEVICES (3-4-4) 15.1201
Study of diodes, transistor characteristics and other semiconductor devices, including analysis of static and dynamic characteristics, biasing techniques and thermal. Prerequisite: CETT 1405. Assessment Levels: R1, E1, M1.

CETT 1441. SOLID STATE CIRCUITS (3-4-4) 15.1201
Study of various semiconductor devices incorporated in circuits and their applications. Emphasis on circuit construction, measurements and analysis. Prerequisite: CETT 1429. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

CETT 2388. INTERNSHIP-COMPUTER ENGINEERING TECHNOLOGY/TECHNICIAN (1-8-2) 15.1201

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. Prerequisite: minimum of 50 hours toward CNET degree. Assessment Levels: R1, E1, M1.

CHEF - Culinary Arts/Chef Training

CHEF 1301. BASIC FOOD PREPARATION (2-3-3) 12.0503

Study of the fundamental principles of food preparation and cookery to include Brigade System, cooking techniques, material handling, heat transfer, sanitation, safety, nutrition and professionalism. Assessment Levels: R1, E1, M1.

CHEF 1305. SANITATION AND SAFETY (3-0-3) 12.0503

Study of personal cleanliness; sanitary practices in food preparation; causes, investigation, control of illness caused by food contamination (Hazard Analysis Critical Control Points); and workplace safety standards. Assessment Levels: R1, E1, M1.

CHEF 1314. A LA CARTE COOKING (2-3-3) 12.0503

Course in a la carte or “cooking to order” concepts. Topics include menu and recipe interpretation and conversion, organization of work station, employment of appropriate cooking methods, plating and saucing principles. Prerequisites: CHEF 1301, 1410, 2302. Assessment Levels: R1, E1, M1.

CHEF 1341. AMERICAN REGIONAL CUISINE (2-3-3) 12.0503

Study of the development of regional cuisines in the United States with emphasis on the similarities in production and service systems. Application of skills to develop, organize and build a portfolio of recipe strategies and production systems. Prerequisites: CHEF 1301, 1410, 2302. Assessment Levels: R1, E1, M1.

CHEF 1345. INTERNATIONAL CUISINE (2-3-3) 12.0503

Study of classical cooking skills associated with the preparation and service of international and ethnic cuisines. Topics include similarities between food production systems used in the United States and other regions of the world. Prerequisites: CHEF 1301, 1410, 2302. Assessment Levels: R1, E1, M1.

CHEF 1380. COOPERATIVE EDUCATION-CULINARY ARTS/CHEF TRAINING (1-20-3) 12.0503

Career-related activities encountered in the student’s area of specialization-offered through an individualized agreement among the College, employer and student. Under supervision of the College and the employer, combines classroom learning with work experience. Includes a lecture component. Prerequisite: CHEF 1301.

CHEF 1410. GARDE MANGER (3-3-4) 12.0503

Study of specialty foods and garnishes. Emphasis on design, techniques and display of fine foods. Prerequisite: CHEF 1301. Assessment Levels: R1, E1, M1.

CHEF 2302. SAUCIER (2-3-3) 12.0503

Instruction in the preparation of stocks, soups, classical sauces, contemporary sauces, accompaniments and the pairing of sauces with a variety of foods. Prerequisites: CHEF 1301, 1410. Assessment Levels: R1, E1, M1.

CHEF 2332. BUFFET THEORY AND PRODUCTION (2-3-3) 12.0503

Advanced concepts in the construction of inedible display items. Emphasis on buffet production, presentation and service. Prerequisites: CHEF 1301, 1410, 2302. Assessment Levels: R1, E1, M1.

CHEF 2336. CHARCUTERIE (2-3-3) 12.0503

Advanced concepts in the construction of sausages, pates and related forced meat preparations. Prerequisites: CHEF 1301, 1410, 2302. Assessment Levels: R1, E1, M1.
CHEF 2341. ADVANCED CULINARY COMPETITION (2-3-3) 12.0503
Skill development for culinary competition by offering advanced experience in salon presentations as well as hot food. Prerequisites: CHEF 1301, 1410, 2302 and PSTR 1301. Assessment Levels: R1, E1, M1.

CHEF 2380. COOPERATIVE EDUCATION-CULINARY ARTS/CHEF TRAINING (1-20-3) 12.0503
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, combines classroom learning with work experience. Includes a lecture component. Prerequisites: CHEF 1301, 1380.

CHEF 2381. COOPERATIVE EDUCATION-CULINARY ARTS/CHEF TRAINING (CAPSTONE) (1-20-3) 12.0503
Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the College, employer and student. Under supervision of the College and the employer, combines classroom learning with work experience. Includes a lecture component. Prerequisites: CHEF 1301, 1380, 1410, 2302, 2380. Assessment Levels: R3, E3, M3.

CHEM - Chemistry

CHEM 1405. INTRODUCTORY CHEMISTRY I (3-4-4) 4005015103
First semester of chemistry for students in nonscience and/or technical applied science majors and for majors in some baccalaureate nursing programs. Introduction to the fundamental principles of inorganic and organic chemistry, including measurements, matter and energy, atomic theory, reactions, stoichiometry and chemical formulas of both inorganic and selected organic compounds. Credit not given for both this course and CHEM 1406 or 1411. Assessment Levels: R3, E2, M2.

CHEM 1406. BASIC CHEMISTRY (3-3-4) 4005015103
Fundamentals of inorganic, organic and physiological chemistry; recommended for students in nursing or other programs requiring a one-semester lab course in chemistry; credit not given for both this course and CHEM 1405 or 1411. Assessment Levels: R3, E2, M2.

CHEM 1407. INTRODUCTORY CHEMISTRY II (3-4-4) 4005015103
Second semester of chemistry for students in nonscience and/or technical applied science majors and for majors in some baccalaureate nursing programs. Continuation of the fundamentals of inorganic and organic chemistry, including selected biochemistry concepts, gases, liquids and solids, solutions, chemical equilibria, oxidation/reduction, electrochemistry and nuclear chemistry. Credit not given for both this course and CHEM 1412. Prerequisites: CHEM 1405 or 1406, or permission of the department chairperson. Assessment Levels: R3, E3, M2.

CHEM 1411. GENERAL INORGANIC CHEMISTRY I (3-4-4) 4005015203
First semester of freshman chemistry for students in science, engineering, or medicine. Introduction to the principles of chemistry, including the study of metals, nonmetals, compounds, chemical formulas and equations, stoichiometry, gas laws, atomic structure, chemical bonding, thermochemistry, periodic properties and trends and the electrolytic behavior of solutions. Laboratory emphasis on the quantitative approach. Prerequisite: Concurrent enrollment or credit in MATH 1314 or equivalent. Assessment Levels: R3, E3, M3.

CHEM 1412. GENERAL INORGANIC CHEMISTRY II (3-4-4) 4005015203
Continuation of the study of chemical principles with an emphasis on properties of solutions including colligative effects, chemical thermodynamics, reaction kinetics, chemical equilibrium, acid/base properties and equilibria, electrochemistry and nuclear chemistry. Credit not given for both this course and CHEM 1407. Prerequisites: CHEM 1411 and MATH 1314 or equivalent. Assessment Levels: R3, E3, M3.
CHEM 2123. ORGANIC CHEMISTRY LABORATORY I (0-4-1) 4005045203
Techniques and practice of organic chemistry laboratory. Prerequisite: Registration for CHEM 2323 or permission of instructor and department chair. Assessment Levels: R3, E3, M3.

CHEM 2125. ORGANIC CHEMISTRY LABORATORY II (0-4-2) 4005045203
Continuation of CHEM 2123, including multistep syntheses and qualitative organic analysis. Prerequisite: Registration for CHEM 2325 or permission of instructor and department chair. Assessment Levels: R3, E3, M3.

CHEM 2323. ORGANIC CHEMISTRY I (3-0-3) 4005045203
Principles and techniques of organic chemistry; bonding, molecular structure and properties, nomenclature, thermodynamics and kinetics, stereochemistry, organic reactions and syntheses. Prerequisite: CHEM 1412 and registration for CHEM 2123 or permission of instructor and department chair. Assessment Levels: R3, E3, M3.

CHEM 2325. ORGANIC CHEMISTRY II (3-0-3) 4005045203
Continuation of CHEM 2323; IR, UV and NMR spectroscopy, survey of properties, preparations and reactions of important functional groups, introduction to biochemistry. Prerequisites: CHEM 2123, 2323 and registration for CHEM 2125 or permission of instructor and department chair. Assessment Levels: R3, E3, M3.

CHEM 2401. QUANTITATIVE ANALYSIS (2-6-4) 4005025103
Theory and practice in analytical techniques such as gravimetric, volumetric, electrometric, chromatographic and spectrophotometric analysis. Prerequisites: CHEM 1411, 1412. Assessment Levels: R3, E3, M3.

CJCR - Criminal Justice/Corrections

CJCR 1304. PROBATION AND PAROLE (3-0-3) 43.0113
Survey of the structure, organization, and operation of probation and parole services. Emphasis on applicable state statutes and administrative guidelines. Assessment Levels: R2, E2, M1.

CJCR 1340. MANAGING FEMALE OFFENDERS (3-0-3) 43.0102
Study of women as offenders, criminal lifestyles, corrections for women, crimes committed by women against children and women and drugs. Includes causative factors related to offenses. Assessment Levels: R2, E2, M1.

CJCR 1400. BASIC JAIL COURSE (3-3-4) 43.0102
Provides instruction in human relations, observation, evaluation of prisoners, booking procedures, classification, mug shots, fingerprinting, strip searches, meals, medical services, visitation, inmates rights and privileges, detention areas, key, knife and tool control, disturbances, riots, fire procedures and release procedures. Taught in accordance with the current TCLEOSE instructor guides provided by the Commission for course #1005.

CJCR 2325. LEGAL ASPECTS OF CORRECTIONS (3-0-3) 43.0102
Study of the operation, management and legal issues affecting corrections. Analysis of constitutional issues involving rights of the convicted, as well as civil liability of correctional agencies and staff. Assessment Levels: R2, E2, M1.

CJLE - Criminal Justice/Law Enforcement

CJLE 1245. INTERMEDIATE CRIME SCENE INVESTIGATION (CAPSTONE) (2-0-2) 43.0107
Topics include objectives, preparations, procedures, and methods of crime scene search; value of crime scene sketches and their relationship to crime scene photographs; fingerprints as physical evidence, fingerprint identification and classification, types of impressions and techniques for locating and developing impressions. Assessment Levels: R2, E2, M1.
COURSE DESCRIPTIONS

CJLE 1249. INTERMEDIATE ARREST, SEARCH AND SEIZURE (2-0-2) 43.0107
Probable cause; detention and arrest; exceptions to search warrant requirements; principles of preparing valid search warrants; pretrial suppression hearings; and civil liability for improper arrests, searches, and seizures.

CJLE 1259. INTERMEDIATE SPANISH FOR LAW ENFORCEMENT (2-0-2) 43.0107
Practical Spanish communication skills for law enforcement. Meets the requirements as established by the Texas Commission on Law Enforcement (TCLEOSE) Course 2110.

CJLE 1303. BASIC TELECOMMUNICATION CERTIFICATION (3-0-3) 43.0107
Topics include overview of law enforcement functions, history of public safety communications, federal laws regulating public safety communications, radio communication systems, radio operations, fire and EMS dispatch considerations, telephone operations, law enforcement information systems, communication records, logs and documentation, legal issues, emergency management, police emergency situations, 911 computer aided dispatch, media relations, stress management and crisis intervention. Assessment Levels: R2, E2, M1.

CJLE 1358. RIGHTS OF PRISONERS (3-0-3) 43.0107
Legal rights of convicted offenders incarcerated in state and federal penal institutions. Emphasizes constitutional principles, case law, and federal and state statutes concerning prisoner rights. Assessment Levels: R2, E2, M1.

CJLE 1394. SPECIAL TOPICS IN LAW ENFORCEMENT SCIENCE (3-0-3) 43.0107
Topics address recently identified current events, skills, knowledge, and/or attitudes 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. (Community policing)

CJLE 1506. BASIC PEACE OFFICER I (3-8-5) 43.0107
Basic preparation for a new peace officer taken in conjunction with Basic Peace Officer II, III and IV to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy. Prerequisite: approval of department advisor. Assessment Levels R2, E2, M1.

CJLE 1512. BASIC PEACE OFFICER II (3-8-5) 43.0107
Basic preparation for a new peace officer taken in conjunction with Basic Peace Officer I, III and IV to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy. Prerequisite: approval of department advisor. Assessment Levels R2, E2, M1.

CJLE 1518. BASIC PEACE OFFICER III (3-8-5) 43.0107
Basic preparation for a new peace officer taken in conjunction with Basic Peace Officer I, II and IV to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy. Prerequisite: approval of department advisor. Assessment Levels R2, E2, M1.

CJLE 1524. BASIC PEACE OFFICER IV (3-8-5) 43.0107
Basic preparation for a new peace officer taken in conjunction with Basic Peace Officer I, II and III to satisfy the Texas Commission on Law Enforcement (TCLEOSE) approved Basic Peace Officer Training Academy. Prerequisite: approval of department advisor. Assessment Levels R2, E2, M1.

CJLE 2333. ADVANCED COMMUNICATIONS (3-0-3) 43.0107
Advanced course in emergency communications including financing and funding alternatives, interagency and jurisdictional/political considerations, technical system designs, public education, database development for computer aided dispatch and 911 and communication center management. Assessment Levels: R2, E2, M1.
COURSE DESCRIPTIONS

CJSA - Criminal Justice Studies

CJSA 1251. USE OF FORCE (2-0-2) 43.0104
Study of the use of force including introduction to and statutory authority for the use of force, force options, deadly force, and related legal issues. Fulfills the Texas Commission on Law Enforcement (TCLEOSE) Use of Force Intermediate Certificate requirement. This course was designed to be repeated multiple times to improve student proficiency.

CJSA 1302. PRIVATE SECURITY OFFICER TRAINING (3-0-3) 43.0109
Critical study of the provisions of the Texas Private Investigators and Private Security Agencies Act. Topics include the impact of the code on procedures and policies, judicial interpretation of statutes and related procedures, and rules and regulations. Satisfies the requirements for Commissioned Security Officer Skill Certification.

CJSA 1308. CRIMINALISTICS I (3-0-3) 43.0104
Introduction to the field of criminalistics. Topics include the application of scientific and technical methods in the investigation of crime including location, identification and handling of evidence for scientific analysis. Assessment Levels: R2, E2, M1.

CJSA 1313. COURT SYSTEMS AND PRACTICES (3-0-3) 43.0104
The judiciary in the criminal justice system; structure of the American court system; prosecution; right to counsel, pre-trial release; grand juries; adjudication process; types and rules of evidence; sentencing.

CJSA 1317. JUVENILE JUSTICE SYSTEM (3-0-3) 43.0104
Study of the juvenile justice process to include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies, and theories concerning delinquency.

CJSA 1322. INTRODUCTION TO CRIMINAL JUSTICE (3-0-3) 43.0104
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 and corrections. Assessment Levels: R2, E2, M1.

CJSA 1327. FUNDAMENTALS OF CRIMINAL LAW (3-0-3) 43.0104
Study of the nature of criminal law; philosophical and historical development; major definitions and concepts; classification of crime; elements of crimes and penalties using Texas statutes as illustrations; criminal responsibility. Assessment Levels: R2, E2, M1.

CJSA 1342. CRIMINAL INVESTIGATION (3-0-3) 43.0104
Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation.

CJSA 1351. USE OF FORCE (3-0-3) 43.0104
Study of the use of force including introduction to and statutory authority for the use of force, force options, deadly force, and related legal issues. This course was designed to be repeated multiple times to improve student proficiency. Assessment Levels: R2, E2, M1.

CJSA 1359. POLICE SYSTEMS AND PRACTICES (3-0-3) 43.0104
The police profession; organization of law enforcement systems; the police role; police discretion; ethics; police-community interaction; current and future issues.

CJSA 1393. SPECIAL TOPICS IN CRIMINAL JUSTICE STUDIES (2-2-3) 43.0104
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. (Crime Scene Photography)
CJSA 2300. LEGAL ASPECTS OF LAW ENFORCEMENT (3-0-3) 43.0104
Police authority; responsibilities; constitutional constraints; laws of arrest, search, and seizure; police liability.

CJSA 2302. POLICE MANAGEMENT SUPERVISION AND RELATED TOPICS (3-0-3) 43.0103
Techniques and theories regarding dealing with people, their performance and problems. Topics include basic supervision, leadership, time, management, first-line supervision and management by objectives. Assessment Levels: R2, E2, M1.

CJSA 2323. CRIMINALISTICS II (2-4-3) 43.0104
Theory and practice of crime scene investigation. Topics include report writing, blood and other body fluids, document examination, etchings, casts and molds, glass fractures, use of microscope, and firearms identification.

CJSA 2331. CHILD ABUSE: PREVENTION AND INVESTIGATION (3-0-3) 43.0104
Forms of child abuse and neglect and the traits of typical abusers. Includes strategies to investigate abuse, interview victims and witnesses, document evidence in accordance with state law and conduct case studies. Assessment Levels: R2, E2, M1.

CJSA 2332. CRIMINALISTICS III (2-4-3) 43.0104
Study of the practical aspects of criminalistics procedures. Topics include crime scene investigation, collecting and presenting evidence, and testifying in court.

CJSA 2334. CONTEMPORARY ISSUES IN CRIMINAL JUSTICE (CAPSTONE) (3-0-3) 43.0104
Series of lectures and class participation exercises presenting selected topics currently confronting criminal justice personnel and the public they serve. Assessment Levels: R2, E2, M1.

CJSA 2371. POLICE COMMUNITY RELATIONS (3-0-3) 43.0103
Overview of the role of progressive police activity and the individual officer in achieving and maintaining positive public support, human relations and information relationships necessary in policing a complex society, including community policing concepts. Assessment Levels: R2, E2, M1.

CJSA 2373. HOMICIDE INVESTIGATION (2-2-3) 43.0104
Instruction and practical skill development in the investigation of homicides and other deaths. Includes the preliminary investigation, the crime scene, investigative duties, documentation, and identification of suspects. The course is designed to provide hands-on investigative practices in addition to theory and lecture. Assessment Levels: R2, E2, M1.

CMSW - Clinical and Medical Social Work

CMSW 1313. ASSESSMENT AND SERVICE DELIVERY (3-1-3) 51.1503
Study of interviewing and assessment instruments and approaches for working with multicultural population. Emphasis on service delivery systems. Topics include awareness of commonly used assessments, ethical standards of practice, awareness of multicultural issues and competence in service delivery. Assessment Levels: R1, E1, M1.

CMSW 1323. THE EXCEPTIONAL PERSON (3-0-3) 51.1503
Study of physical, intellectual, and learning disabilities, sensory deficits, and the exceptionally gifted individual throughout the lifespan. Includes educational approaches and an introduction to the continuum of service delivery systems for various disabilities and conditions. Assessment Levels: R1, E1, M1.

CMSW 1341. BEHAVIORAL MODIFICATION AND COGNITIVE DISORDERS (3-0-3) 51.1503
In depth study of the theories and principles of behavioral science and skill development in the methods of modifying and controlling behavior in clinical and personal settings. Assessment Levels: R1, E1, M1.
CNBT-Construction Engineering Technology/Technician

CNBT 2435. COMPUTER-AIDED CONSTRUCTION SCHEDULING (3-3-4) 15.1001
Advanced construction scheduling utilizing computer scheduling software to perform various scheduling procedures. Prerequisite: DFTG 1405. Assessment Levels: R2, E1, M2.

CNSE - Construction Equipment Service

CNSE 1311. CRANING PRINCIPLES (3-1-3) 490202
Fundamentals of craning principles used by equipment operators. Topics include types of cranes, cables, jobs, rigging, techniques, types of lifts and safety concerns when making a lift. Assessment Levels: R1, E1, M1.

COMG - Communication, General

COMG 1391. SPECIAL TOPICS IN COMMUNICATIONS, GENERAL (3-0-3) 09.0101
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. Assessment Levels: R1, E1, M1.

COMM - Communication

JOURNALISM

COMM 1129. NEWS PUBLICATIONS I (0-3-1) 0904015406
Required work on the staff of at least one of the student publications for prescribed periods under faculty supervision. Prerequisite: Consent of the instructor. Assessment Levels: R3, E3, M1.

COMM 1130. NEWS PUBLICATIONS II (0-3-1) 0904015406
Required work on the staff of at least one of the student publications for prescribed periods under faculty supervision. Prerequisite: Consent of the instructor. Assessment Levels: R3, E3, M1.

COMM 1307. INTRODUCTION TO MASS COMMUNICATION (3-0-3) 0901025106
Introductory survey of mass communication media, their purpose and methods of operation for understanding mass communication media in modern society. Assessment Levels: R3, E3, M1.

COMM 1316. BASIC NEWS PHOTOGRAPHY (3-2-3) 0904015506
Introduction to basic news photographic techniques using 35mm and digital cameras; a review of recent photographic trends, studies in visual design and use of images in the media, in particular newspapers, magazines and Web sites. Student must furnish own camera. Digital cameras preferred. Assessment Levels: R2, E2, M1.

COMM 1336. TELEVISION PRODUCTION I (3-1-3) 1002025206
Development of basic skills in a television studio environment, including the use of cameras, audio console, video switcher, acting as talent, limited script preparation and one linear editing exercise. Open to nonmajors. Must be eligible for ENGL 1301. Assessment Levels: R3, E3, M1.

COMM 1337. TELEVISION PRODUCTION II (3-3-3) 1002025206
Development of advanced skills in a television studio environment. In addition, basic skills development in the use of a computer-based character generator, ENG equipment (field camera and portable lights), linear video editing and introduction to non-linear video editing. Prerequisite: COMM 1336. Assessment Levels: R3, E3, M1.
COMM 2129. NEWS PUBLICATIONS III (0-3-1) 0904015406
Required work on the staff of at least one of the student publications for prescribed periods under faculty supervision. Prerequisite: Consent of the instructor. Assessment Levels: R3, E3, M1.

COMM 2130. NEWS PUBLICATIONS IV (0-3-1) 0904015406
Required work on the staff of at least one of the student publications for prescribed periods under faculty supervision. Prerequisite: Consent of the instructor. Assessment Levels: R3, E3, M1.

COMM 2303. AUDIO/RADIO PRODUCTION (3-1-3) 1002025106
Introduction to audio operations and procedures, use of control room equipment (audio console, 4-track hard drive work station, 8-track computer work station, reel-to-reel and cassette recorders) and program production and techniques. Open to nonmajors. Must be eligible for ENGL 1301. Assessment Levels: R3, E3, M1.

COMM 2305. EDITING AND LAYOUT (3-0-3) 0904015306
Working knowledge of editing for print media, from editing copy to making layout and designs for newspaper, magazine and yearbooks. Emphasis on the use of computer systems to include pagination, scanning, layout and design and typography for print and multimedia. Includes problems and responsibilities of news editing. May include serving as editors producing periodicals for publication. Introduction to magazines and yearbook production and computer programs used in print media. Prerequisites: COMM 1307, ENGL 1302 with minimum grades of “C.” Assessment Levels: R3, E3, M1.

COMM 2311. NEWS GATHERING AND WRITING I (3-3-3) 0904015706
Basic principles of journalism; fundamentals of news gathering, accurate reporting and feature writing for the mass media. Includes computers, World Wide Web and Internet to gather information for the school newspaper, magazine, or a community newspaper. Prerequisites: COMM 1307, ENGL 1301 with a minimum of “C” average. Assessment Levels: R3, E3, M1.

COMM 2324. PRACTICUM IN ELECTRONIC MEDIA (3-0-3) 0907015306
Production project or supervised internship with a media professional: Student responsible for assigned projects from initial concept through finished production; intern assignments in radio or television stations, advertising agencies, audiovisual, or industrial studios, with or without remuneration and / or scholarship aid, nine to ten hours per week practical experience and weekly meetings with instructor. Prerequisites: COMM 1307, 1336, 1337, 2303, 2331 with minimum average of “C” and permission of instructor. Assessment Levels: R3, E3, M1.

COMM 2325. PRACTICUM IN ELECTRONIC MEDIA (3-0-3) 0907015306
Production project or supervised internship with a media professional: Student responsible for assigned projects from initial concept through finished production; intern assignments at radio or television stations, advertising agencies, audiovisual, or industrial studios, with or without remuneration and / or scholarship aid, nine to ten hours per week practical experience and weekly meetings with instructor. Prerequisites: COMM 1307, 1336, 1337, 2303, 2331 with minimum average of “C” and permission of instructor. Assessment Levels: R3, E3, M1.

COMM 2327. PRINCIPLES OF ADVERTISING (3-0-3) 0909035106
Introduction to fundamentals of advertising with emphasis on creating advertising for newspapers, radio and television. Focus on the development of a marketing plan. (not sophomore level) Assessment Levels: R2, E2, M1.

COMM 2330. INTRODUCTION TO PUBLIC RELATIONS (3-0-3) 0909025106
Principles, history, theory, ethics and practice of public relations in a variety of organizational settings; elements of strategic management of public relations and case studies in public relations. Assessment Levels: R3, Ê3, M1.
COMM 2331. RADIO/TELEVISION ANNOUNCING (3-0-3) 0907015406
Development of voice and articulation skills; presenting radio and television scripts. News, public service announcements, commercials, interviewing and weather presentation before a blue wall on-camera with additional off-camera work assigned; scripts written by the performer. Open to nonmajors. Must be eligible for ENGL 1301. Assessment Levels: R3, E3, M1.

COMM 2339. WRITING FOR RADIO, TELEVISION AND FILM - (SPRING) (3-0-3) 0904025106
Structuring and scripting of materials used in radio, television and film; covering the style, forms and content for effective communication. Short filmstrip/multimedia scripts, news, commercials and PSA scripts written by students. Final project is a 30-minute documentary or fictional script created by student. All in-class work is done on computers. Open to nonmajors. Prerequisites: ENGL 1301, 1302. Assessment Levels: R3, E3, M1.

COSC - Computer Science

COSC 1301. MICROCOMPUTER APPLICATIONS - INTRODUCTION TO COMPUTERS AND INFORMATION SCIENCES (3-1-3) 11.0101.5207
Overview of computer information systems. Introduces computer hardware, software, procedures, systems and human resources and explores their integration and application in business and other segments in society. The fundamentals of computer problem solving and programming in a higher level programming language may be discussed and applied. Overview of word processing, spreadsheets, database, Internet, e-mail and presentation graphics will be presented. Course is offered with a substantial lab component for non-computer majors to fulfill computer degree requirements at many upper-level universities. May be concurrently offered as an Internet course. Assessment Levels: R3.

COSC 1309. LOGIC DESIGN (3-1-3) 11.0101.5107
Discipline approach to problem solving with structured techniques and representation of algorithms using pseudo code and graphical tools. Discussion of methods for testing, evaluation and documentation. Assessment Levels: R2.

COSC 1436. PROGRAMMING FUNDAMENTALS I (3-3-4) 11.0201.5507
(Replaces COSC 1415.) Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays and the mechanics of running, testing and debugging. This course assumes computer literacy. Topics include coverage of language syntax, data and file structures, input/output devices and disks/files. Prerequisites: ITSC 1301 or COSC 1301 or concurrent enrollment. Assessment Levels: R3.

COSC 1437. PROGRAMMING FUNDAMENTALS II (3-3-4) 11.0201.5607
Review of control structures and data types with emphasis on structured data types. Applies the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques and an introduction to software engineering. Topics include methods, tools and techniques for file access, declaring abstract data types, structures, classes, function and class templates, overloading operators and functions, inheritance and array and linked-list processing. Course may be offered as ITSE 2431. Prerequisite: COSC 1436 or ITSE 1402. Assessment Levels: R3.

COSC 2425. COMPUTER ORGANIZATION AND MACHINE LANGUAGE (3-3-4) 11.0201.5407
Syntax and semantics of a typical assembly language; macros and macroprocessors; design, construction and execution of assembly language programs; data representation; and addressing techniques. Topics include an introduction to processor (CPU) architecture, related hardware, processor instruction set, macros and procedures, registers, memory addressing, stack and using Assembly language procedures with high-level
languages. Course offered only in the Spring semester. Course held only in the evenings during even-numbered years and only during the day in odd-numbered years. Course may be offered as ITSE 2437. Prerequisite: COSC 1436 or ITSE 1402 and COSC 1437, or ITSE 2431 or 2449, or permission of the instructor. Assessment Levels: R3.

COSC 2430. ADVANCED STRUCTURED LANGUAGES WITH COMPUTER GRAPHICS (3-3-4) 11.0101.5307
Further applications of programming techniques. Topics may include file access methods, data structures and modular programming, program testing and documentation and other topics not normally covered in an introductory computer programming course. Advanced topics include principles and techniques of computer graphics, two-dimensional viewing, three-dimensional viewing, perspective, hidden-surface removal, object construction and computer graphics application software. Prerequisites: COSC 1436 or equivalent and MATH 1314 or equivalent. Assessment Levels: R3.

COSC 2436. PROGRAMMING FUNDAMENTALS III (3-3-4) 11.0201.5707
Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees and graphs) and algorithmic analysis. Course offered only in the Fall semester. Course held only in the evenings during even-numbered years and only during the day in odd-numbered years. Prerequisites: COSC 1437 or ITSE 2431. Assessment Levels: R3.

CPMT - Computer Maintenance Technology
CPMT 1443. MICROCOMPUTER ARCHITECTURE (3-4-4) 47.0105
Computer characteristics and subsystem operations, timing, control circuits and internal input/output controls. Prerequisite: CPMT 1445. Assessment Levels: R1, E1, M1.

CPMT 1445. COMPUTER SYSTEMS MAINTENANCE (3-4-4) 47.0104
Functions of the components within a computer system. Development of skills in the use of test equipment and maintenance aids. Assessment Levels: R1, E1, M1.

CPMT 1449. COMPUTER NETWORKING TECHNOLOGY (3-4-4) 47.0104
Networking fundamentals, terminology, hardware, software and network architecture. Includes local and wide area networking concepts and networking installations and operations. Assessment Levels: R1, E1, M1.

CPMT 2333. COMPUTER INTEGRATION (2-4-3) 47.0104
Integration of hardware, software, and applications. Customization of computer systems for specific applications such as engineering, multimedia, or data acquisition. Assessment Levels: R1, E1, M1.

CPMT 2437. MICROCOMPUTER INTERFACING (3-4-4) 47.0104
Concepts and terminology involved in interfacing the internal architecture of the microcomputer with commonly used external devices. Prerequisite: CPMT 1443. Assessment Levels: R1, E1, M1.

CPMT 2449. ADVANCED COMPUTER NETWORKING TECHNOLOGY (3-4-4) 47.0104
Network technology emphasizing network operating systems, network connectivity, hardware and software. Includes implementation, troubleshooting and maintenance of LAN and/or WAN network environments. Prerequisites: ITSY 1427 and CPMT 1449. Assessment Levels: R1, E1, M1.

CRIJ - Criminal Justice Transfer
CRIJ 1301. INTRODUCTION TO CRIMINAL JUSTICE (3-0-3) 4301045124
History, philosophy and ethical considerations of criminal justice; the nature and impact of crime; and an overview of the criminal justice system, including law enforcement and court procedures. Assessment Levels: R3, E3, M1.
COURSE DESCRIPTIONS

CRIJ 1306. COURT SYSTEMS AND PRACTICES (3-0-3) 2201015424

CRIJ 1310. FUNDAMENTALS OF CRIMINAL LAW (3-0-3) 2201015324
Study of criminal law, its philosophical and historical development, major definitions and concepts, classifications and elements of crime, penalties using Texas statutes as illustrations and criminal responsibility. Assessment Levels: R3, E3, M1.

CRIJ 1313. JUVENILE JUSTICE SYSTEM (3-0-3) 4301045224
Study of the juvenile justice process to include specialized juvenile law, role of the juvenile law, role of the juvenile courts, role of police agencies, role of correctional agencies and theories concerning delinquency. Assessment Levels: R3, E3, M1.

CRIJ 2301. COMMUNITY RESOURCES IN CORRECTIONS (3-0-3) 4301045324
Introductory study of the role of the community in corrections; community programs for adults and juveniles; administration of community programs; legal issues; future trends in community treatment. Prerequisite: CRIJ 1301. Assessment Levels: R3, E3, M1.

CRIJ 2313. CORRECTIONAL SYSTEMS AND PRACTICES (CAPSTONE) (3-0-3) 4301045424
Corrections in the criminal justice system; organization of correctional systems; correctional role; institutional operations; alternatives to institutionalization; treatment and rehabilitation; current and future issues. Prerequisites: CRIJ 1301, 1306. Assessment Levels: R3, E3, M1.

CRIJ 2314. CRIMINAL INVESTIGATIONS (3-0-3) 4301045524
Investigative theory; collection and preservation of evidence; sources of information; interview and interrogation; uses of forensic sciences; case and trial preparation. Prerequisite: CRIJ 1301. Assessment Levels: R3, E3, M1.

CRIJ 2323. LEGAL ASPECTS OF LAW ENFORCEMENT (3-0-3) 4301045624
Police authority; responsibilities; constitutional constraints; laws of arrest, search and seizure; police liability. Prerequisite: CRIJ 1301. Assessment Levels: R3, E3, M1.

CRIJ 2328. POLICE SYSTEMS AND PRACTICES (3-0-3) 4301045724
The police profession; organization of law enforcement systems; the police role; police discretion; ethics; police-community interaction; current and future issues. Prerequisite: CRIJ 1301. Assessment Levels: R3, E3, M1.

CRTR - Court Reporting

CRTR 1191. SPECIAL TOPICS IN COURT REPORTING (1-0-1) 22.0303
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. Learning outcomes/objectives are determined by local occupational need and business and industry trends. Corequisite: CRTR 2186. Must see program advisor.

CRTR 1202. LAW AND LEGAL TERMINOLOGY (2-1-2) 22.0303
Instruction in civil and criminal judicial systems (discovery, trial and appellate processes), and the legal terms used in court reporting. Must see program advisor.

CRTR 1207. MACHINE SHORTHAND SPEEDBUILDING (1-4-2) 22.0303
Continued development of real-time shorthand skills through readback, machine practice, and transcription. This course is designed to be repeated to meet program standards. Corequisite: CRTR 1210. Must see program advisor.

CRTR 1210. REAL-TIME COURT REPORTING II (1-4-2) 22.0303
Continued development of computer and machine shorthand skills necessary for writing real-time for production of projects and assignments. Corequisite: CRTR 1205. Must see program advisor.
CRTR 1257. LITERARY/JURY CHARGE DICTATION I (1-4-2) 22.0303
Skills necessary to develop speed and accuracy in writing and transcribing literary/jury charge dictation. This course is designed to be repeated to meet program standards. Corequisite: CRTR 2218. Must see program advisor.

CRTR 1304. MACHINE SHORTHAND I (2-4-3) 22.0303
Instruction in general principles of real-time machine shorthand theory and skill building through readback of dictation notes, machine practice and transcription. This course is designed to be repeated to meet program requirements. Corequisite: CRTR 1308. Must see program advisor.

CRTR 1308. REAL-TIME COURT REPORTING I (2-4-3) 22.0303
Development of computer and machine shorthand skills necessary for writing real-time for production of projects and assignments. Corequisite: CRTR 1304. Must see program advisor.

CRTR 1312. COURT REPORTING COMMUNICATIONS I (2-3-3) 22.0303
Study of basic rules of English grammar, spelling, punctuation, capitalization and proofreading skills as they apply to court reporting. Must see program advisor.

CRTR 1359. LITERARY/JURY CHARGE DICTATION II (2-4-3) 22.0303
Continued skill development necessary for speed and accuracy in writing and transcribing literary/jury charge dictation. Corequisite: CRTR 2319. Must see program advisor.

CRTR 2186. INTERNSHIP-COURT REPORTER (CAPSTONE) (0-6-1) 22.0303
Work based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan developed by the college and the employer. Corequisite: CRTR 1191. Must see program advisor.

CRTR 2206. MEDICAL COURT REPORTING (2-1-2) 22.0303
Introduction to medical terms and anatomy in court reporting. Must see program advisor.

CRTR 2218. TESTIMONY DICTATION I (1-4-2) 22.0303
Skills necessary for developing speed and accuracy in the writing of testimony. This course is designed to be repeated to meet program standards. The student will write and transcribe two-voice and live dictation of testimony material. Corequisite: CRTR 1257. Must see program advisor.

CRTR 2301. INTERMEDIATE MACHINE SHORTHAND (2-4-3) 22.0303
Continued development of real-time machine shorthand skills through readback, machine practice and transcription. This course is designed to be repeated multiple times to meet program standards. Corequisite: CRTR 2310. Must see program advisor.

CRTR 2303. ADVANCED MACHINE SHORTHAND (2-4-3) 22.0303
In-depth coverage of real-time machine shorthand theory and continued skill building through readback, machine practice and transcript production. This course may be repeated multiple times until machine shorthand standards are met. Corequisite: CRTR 2337. Must see program advisor.

CRTR 2310. REAL-TIME COURT REPORTING III (2-4-3) 22.0303
Enhancement of skills necessary for writing real-time theory and dictation practice using computer-aided technology and instructional interaction. Corequisite: CRTR 2301. Must see program advisor.

CRTR 2312. COURT REPORTING PROCEDURES (2-3-3) 22.0303
Instruction in the role of the court reporter in court proceedings and/or depositions. Must see program advisor.

CRTR 2313. COURT REPORTING TECHNOLOGY II (2-4-3) 22.0303
Instruction in the operation, maintenance and assembly of a computer-aided real-time transcription system, including the computer functions necessary for transcript production. Must see program advisor.
COURSE DESCRIPTIONS

CRTR 2319. TESTIMONY DICTATION II (2-4-3) 22.0303
Continued skill development necessary for speed and accuracy in transcription of testimony. This course is designed to be repeated to meet program standards. The student will write and transcribe two-voice and live dictation of testimony material. Corequisite: CRTR 1359. Must see program advisor.

CRTR 2331. CERTIFIED SHORTHAND REPORTER (CSR) AND REGISTERED PROFESSIONAL REPORTER (RPR) (2-4-3) 22.0303
Preparation for taking the Texas CSR and the RPR examinations through the use of mock examinations. This course is designed to be repeated. Corequisite: CRTR 2435. Must see program advisor.

CRTR 2337. REAL-TIME COURT REPORTING IV (2-4-3) 22.0303
Further development of skills necessary for real-time theory and dictation practice using computer-aided technology and instructional interaction. Topics include real-time dictionary maintenance. Corequisite: CRTR 2303. Must see program advisor.

CRTR 2341. COURT REPORTING TECHNOLOGY III (CAPSTONE) (2-4-3) 22.0303
Continued instruction in the operation of computer-aided transcription system(s) including dictionary building and transcription projects. Must see program advisor.

CRTR 2435. ACCELERATED MACHINE SHORTHAND (3-4-4) 22.0303
Mastery of high-speed dictation including readback, machine practice and transcription. This course may be repeated multiple times until machine shorthand standards are met. Corequisite: CRTR 2331. Must see program advisor.

CSIR - Computer System Installer and Repairer
CSIR 1403. TELECOMMUNICATIONS SYSTEMS INSTALLER (3-4-4) 47.0103
This course reviews fundamentals of telecommunications media, including terminology, rules and regulations, safety procedures, industry standards and protocols, installation, connectorization, maintenance, and troubleshooting. General principles of customer services within a technical environment are also studied. The competencies acquired are summarized in a comprehensive project covering network, telephone and coaxial wiring, fiber optics cables, satellite television systems, structural wiring, and “smart house” concepts. Assessment Levels: R1, E1, M1.

CSIR 1455. INDUSTRY CERTIFICATIONS (3-4-4) 47.0103
Preparation for the certifications required by industry. Prerequisite: CPMT 1443. Assessment Levels: R1, E1, M1.

CSIR 1459. DIGITAL DATA COMMUNICATIONS (3-4-4) 47.0103
Introduction to the theory and troubleshooting skills needed in the digital data communications field.

CSIR 2351. FIBER OPTIC COMMUNICATION SYSTEM INSTALLATION AND REPAIR (2-4-3) 47.0103
Focus on installation, and repair of fiber optic communication system including networks and peripherals. Topics include fiber optic technology, state-of-the-art networking systems; installation/repair of fiber optic systems and testing equipment. Assessment Levels: R1, E1, M1.

CSME - Cosmetologist
CSME 1310. INTRODUCTION TO HAIRCUTTING AND RELATED THEORY (1-8-3) 12.0403
Introduction to the theory and practice of hair cutting. Topics include terminology, implements, section haircutting and finishing techniques. Assessment Levels: R1, E1, M1.
CSME 1330. ORIENTATION TO NAIL TECHNOLOGY (1-8-3) 12.0403
Overview of the fundamental skills and knowledge necessary for the field of nail technology. Assessment Levels: R1, E1, M1.

CSME 1405. FUNDAMENTALS OF COSMETOLOGY (2-8-4) 12.0403
Course in the basic fundamentals of cosmetology. Topics include service preparation, manicure, facial, chemical services, shampoo, haircut, wet styling, and comb out. Assessment Levels: R1, E1, M1.

CSME 1451. ARTISTRY OF HAIR; THEORY AND PRACTICE (2-8-4) 12.0403
Instruction in the artistry of hair design. Topics include theory, techniques and application of hair design. Assessment Levels: R1, E1, M1.

CSME 1453. CHEMICAL REFORMATION AND RELATED THEORY (2-8-4) 12.0403
Presentation of the theory and practice of chemical reformation including terminology, application, and workplace competencies. Assessment Levels: R1, E1, M1.

CSME 2310. ADVANCED HAIRCUTTING AND RELATED THEORY (1-8-3) 12.0403
Advanced concepts and practice of haircutting. Topics include haircuts utilizing scissors, razor and/or clippers. Assessment Levels: R1, E1, M1.

CSME 2337. ADVANCED COSMETOLOGY TECHNIQUES (1-8-3) 12.0403
Mastery of advanced cosmetology techniques including hair designs, professional cosmetology services and workplace competencies. Assessment Levels: R1, E1, M1.

CSME 2401. PRINCIPLES OF HAIR COLORING AND RELATED THEORY (2-8-4) 12.0403
Presentation of the theory, practice, and chemistry of hair color. Topics include terminology, application and workplace competencies related to hair color. Assessment Levels: R1, E1, M1.

CSME 2439. ADVANCED HAIR DESIGN (2-8-4) 12.0403
Advanced concepts in the theory and practice of hair design. Assessment Levels: R1, E1, M1.

CSME 2441. PREPARATION FOR THE STATE LICENSING EXAMINATION (CAPSTONE) (2-8-4) 12.0403
Preparation for the state licensing examination. Assessment Levels: R1, E1, M1.

CTEC - Chemical Laboratory Technology

CTEC 1113. INTRODUCTION TO CHEMICAL TECHNOLOGY (1-0-1) 41.0301
Introduction to the educational and professional requirements of the chemical technician. Topics include safety, industrial site visits, chemical literature and computer applications. Assessment Levels: R1, E1, M1.

CTEC 1205. CHEMICAL CALCULATIONS I (1-2-2) 41.0301
Parallels and supports college-level applied general chemistry. Emphasis on solving problems in exercises and lab experiments. Prerequisite: one year of high school chemistry. Corequisite: SCIT 1414. Assessment Levels: R2, E1, M3.

CTEC 1206. CHEMICAL CALCULATIONS II (1-2-2) 41.0301
Parallels and supports college-level applied general chemistry. Emphasis on solving problems in exercises and lab experiments. Prerequisites: CTEC 1205, current or previous enrollment in SCIT 1415. Assessment Levels: R2, E1, M3.

CTEC 1441. APPLIED INSTRUMENTAL ANALYSIS I (3-4-4) 41.0301
Overview of instrumental chemical analysis. Topics include chromatography, spectrophotometry and/or electroanalytical chemistry. Prerequisites: SCIT 1543 or consent of instructor. Assessment Levels: R3, E2, M3.
COURSE DESCRIPTIONS

CTEC 2286. INTERNSHIP - CHEMICAL TECHNOLOGY/TECHNICIAN
(1-8-2) 41.0301
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. Prerequisites: CTEC 2431, 2545, SCIT 2402. Assessment Levels: R3, E3, M3.

CTEC 2287. INTERNSHIP - CHEMICAL TECHNOLOGY/TECHNICIAN
(1-6-2) 41.0301
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. Assessment Levels: R1, E1, M1.

CTEC 2333. COMPREHENSIVE STUDIES ON CHEMICAL TECHNOLOGY (CAPSTONE) (1-8-3) 41.0301
Course requiring a special lab research project. Prerequisites: CTEC 2431, 2545, SCIT 2402. Assessment Levels: R3, E3, M3.

CTEC 2431. APPLIED INSTRUMENTAL ANALYSIS II (3-4-4) 41.0301
Study of advanced topics in instrumental analysis. Topics include atomic absorption, inductively coupled plasma, nuclear magnetic resonance, gas chromatography/mass spectrometry, liquid chromatography and infrared spectroscopy. Assessment Levels: R3, E3, M3.

CTEC 2545. UNIT OPERATIONS (3-6-5) 41.0301
Instruction in the principles of chemical engineering and process equipment. Emphasis on scale-up from laboratory bench scale to pilot plant. Prerequisites: CHEM 1407, CTEC 1206, SCIT 2401 or equivalent courses. Assessment Levels: R3, E3, M3.

CTMT - Computed Tomography Technology

CTMT 2164. PRACTICUM: COMPUTER TOMOGRAPHY TECHNOLOGY
(0-7-1) 51.0907
An intermediate or advanced health professions work-based instruction that gains practical experience in the discipline, enhances skills and integrates knowledge. Emphasis on practical work experience for which the student has already acquired theoretical knowledge and basic skills. Direct supervision by the clinical professional, generally a clinical preceptor. Assessment Levels: R3, E3, M3.

CTMT 2236. COMPUTED TOMOGRAPHY EQUIPMENT AND METHODOLOGY (2-0-2) 51.0911
Skill development in the operation of computed tomographic equipment, focusing on routine protocols, image quality, quality assurance and radiation protection. Assessment Levels: R3, E3, M3.

CTMT 2332. PRINCIPLES OF COMPUTED TOMOGRAPHY (3-0-3) 51.0911
In-depth coverage of computed tomography imaging techniques. Image quality assurance and radiation protection are emphasized. Assessment Levels: R3, E3, M3.

CTMT 2460. CLINICAL - RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-12-4) 51.0911
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. Assessment Levels: R3, E3, M3.

CTMT 2563. CLINICAL - RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-15-5) 51.0911
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. Assessment Levels: R3, E3, M3.
CVIR - Cardiovascular Interventional Radiology

CVIR 2164. CARDIOVASCULAR INTERVENTIONAL RADIOLOGY (0-7-1) 51.0907
An intermediate or advanced health professions work-based instruction that gains practical experience in the discipline, enhances skills and integrates knowledge. Emphasis on practical work experience for which the student has already acquired theoretical knowledge and basic skills. Direct supervision by the clinical professional, generally a clinical preceptor. Assessment Levels: R3, E3, M3.

CVOP - Commercial Vehicle Operation

CVOP 2201. FEDERAL MOTOR CARRIER SAFETY REGULATIONS (2-0-2) 49.0205
Overview of Federal Motor Carrier Safety Regulations and their application to the commercial vehicle operator. Presentation of the Federal Motor Carrier Safety Regulations including driver’s record of duty status, physical requirements, drug and/or alcohol testing, safety requirements of equipment and safety procedures. Assessment Levels: R1, E1, M1.

DAAC - Alcohol/Drug Abuse Counseling

DAAC 1166. PRACTICUM (OR FIELD EXPERIENCE) ALCOHOL/DRUG ABUSE COUNSELING (0-7-1) 51.1501
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. The guided external experiences may be paid or unpaid. This course may be repeated if topics and learning outcomes vary. Prerequisites: DAAC 1311, 2354 and approval of Human Services program director for assignment to specific practicum. Assessment Levels: R1, E1, M1.

DAAC 1304. PHARMACOLOGY OF ADDICTION (3-0-3) 51.1501
Describes the psychological, physiological, and sociological effects of mood-altering substances and behaviors. Emphasizes pharmacological effects of tolerance, dependence/withdrawal, cross addiction, and drug interaction. Assessment Levels: R1, E1, M1.

DAAC 1305. CO-OCCURRING DISORDERS (3-0-3) 51.1501
Provides students with an understanding of co-occurring psychiatric and substance abuse disorders and their impact on the individual, family, and community. Includes an integrated approach to address the issues accompanying the illness. Assessment Levels: R1, E1, M1.

DAAC 1309. ASSESSMENT SKILL OF ALCOHOL AND OTHER DRUG ADDICTIONS (3-1-3) 51.1501
Examines procedures and tools used to identify and assess a client’s strengths, weaknesses, problems, and needs. Assessment Levels: R1, E1, M1.

DAAC 1311. COUNSELING THEORIES (3-0-3) 51.1501
Examination of the major theories and current treatment modalities used in the field of counseling. Assessment Levels: R1, E1, M1.

DAAC 1317. BASIC COUNSELING SKILLS (3-0-3) 51.1501
Course is designed to facilitate development of the basic communication skills necessary to develop an effective helping relationship with clients. Includes the utilization of special skills to assist individuals, families, or groups in achieving objectives through exploration of a problem and its ramifications; examination of attitudes and feelings; consideration of alternative solutions; and decision making. Assessment Levels: R1, E1, M1.
DAAC 1319. INTRODUCTION TO ALCOHOL AND OTHER DRUG ADDICTIONS. (3-0-3) 51.1501
Provides an overview of causes and consequences of addiction as they relate to the individual, family, community, and society. Overview of alternatives regarding prevention, intervention, and treatment. Includes explanation of competencies and requirements for licensure in Texas. Identifies addiction issues related to diverse populations. Assessment Levels: R1, E1, M1.

DAAC 2166. PRACTICUM (OR FIELD EXPERIENCE) ALCOHOL/DRUG ABUSE COUNSELING (0-7-1) 51.1502
Practicum 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. The guided external experiences may be paid or unpaid. This course may be repeated if topics and learning outcomes vary. Prerequisites: DAAC 1166, 1311, 2354 and approval of Human Services program director for assignment to specific practicum. Assessment Levels: R1, E1, M1.

DAAC 2301. THERAPEUTIC COMMUNITIES IN CRIMINAL JUSTICE SETTINIGS (3-0-3) 51.1501
Provides an overview of the use of therapeutic communities as an approach in rehabilitation of incarcerated substance abusers. Assessment Levels: R1, E1, M1.

DAAC 2307. ADDICTED FAMILY INTERVENTION (3-1-3) 51.1501
The family as a dynamic system focusing on the effects of addiction on family roles, rules and behavior patterns. Includes the effects of mood altering substances, behaviors and therapeutic alternatives as they relate to the family from a multicultural and transgenerational perspective. Assessment Levels: R1, E1, M1.

DAAC 2341. COUNSELING ALCOHOL AND OTHER DRUG ADDICTIONS (3-1-3) 51.1501
Special skills and techniques in the application of counseling skills for the Alcohol and Other Drug (AOD) client. Development and utilization of treatment planning management. Includes review of confidentiality and ethical issues. Prerequisite: DAAC 1319. Assessment Levels: R1, E1, M1.

DAAC 2343. CURRENT ISSUES (3-0-3) 51.1501
Current issues in addiction counseling. Includes special populations, dual diagnosis, ethics, gambling and infectious diseases associated with addiction counseling. Prerequisites: DAAC 1311. Assessment Levels: R1, E1, M1.

DAAC 2354. DYNAMICS OF GROUP COUNSELING (3-0-3) 51.1501
Exploration of group counseling skills, techniques and stages of group development. Assessment Levels: R1, E1, M1.

DAAC 2363. CLINICAL – SUBSTANCE ABUSE/ADDICTION COUNSELING. 51.1501
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. Prerequisite: DAAC 2354. Assessment Levels: R1, E1, M1.

DANC - Dance

DANC 1141. BALLET I (1-2-1) 5003015226
Barre and centre technique work with movement exploration and choreographic studies. Opportunities to perform are provided. Assessment Levels: R1, E1, M1.

DANC 1142. BALLET II (1-2-1) 5003015226
Continuation of beginning course with more intricate barre work and longer combinations in the centre. Technical development and artistic growth. Assessment Levels: R1, E1, M1.
DANC 1145. MODERN DANCE I (1-2-1) 5003015226
Technique and choreographic studies based on the use of space/shape, time, force/flow. Opportunities to perform. Assessment Levels: R1, E1, M1.

DANC 1146. MODERN DANCE II (1-2-1) 5003015226
Technique and choreographic studies based on interpretation of literature, art and music. Opportunity for participation in various performances. Assessment Levels: R1, E1, M1.

DANC 1147. JAZZ DANCE I (1-2-1) 5003015226
Technique and choreographic studies based on various jazz styles, rhythmic awareness and combinations of steps into patterns. Opportunities to perform. Assessment Levels: R1, E1, M1.

DANC 1148. JAZZ DANCE II (1-2-1) 5003015226
Continuation of beginning course with more complex combinations and opportunities for performance of the student’s own choreography as well as that of others. Assessment Levels: R1, E1, M1.

DANC 1151. DANCE PERFORMANCE I (1-2-1) 5003015226
Rehearsal and performance in the staging of various dance pieces for the Fall Dance Ensemble concerts. Assessment Levels: R1, E1, M1.

DANC 1152. DANCE PERFORMANCE II (1-2-1) 5003015226
Rehearsal and performance in the staging of various dance pieces for the Spring Dance Ensemble concerts. Assessment Levels: R1, E1, M1.

DANC 2303. DANCE APPRECIATION (3-0-3) 5003015226
Study and appreciation of various dance styles and periods. Exposure to basic dance technique, history and aesthetics. Assessment Levels: R2, E2, M1.

DEMR - Diesel Engine Mechanic and Repairer

DEMR 1229. PREVENTATIVE MAINTENANCE (1-3-2) 47.0605
Introductory course designed to provide the basic knowledge of proper servicing practices. Content includes record keeping and condition of major systems. Assessment Levels: R1, E1, M1.

DEMR 1230. STEERING AND SUSPENSION I (1-4-2) 47.0605
Study of design, function, maintenance and repair of steering and suspension systems. Emphasis on troubleshooting and repair of failed components. Assessment Levels: R1, E1, M1.

DEMR 1301. SHOP SAFETY AND PROCEDURES (2-4-3) 47.0605
Study of shop safety, rules, basic shop tools and test equipment. Assessment Levels: R1, E1, M1.

DEMR 1313. FUEL SYSTEMS (1-7-3) 47.0605
In-depth coverage of fuel injector pumps and injection systems with emphasis on rebuilding and calibration. Assessment Levels: R1, E1, M1.

DEMR 1317. BASIC BRAKE SYSTEMS (1-7-3) 47.0605
Introduction to the basic principles of brake systems of diesel powered equipment. Emphasis on maintenance, repairs and troubleshooting. Assessment Levels: R1, E1, M1.

DEMR 1327. TRACTOR TRAILER SERVICE AND REPAIR (1-7-3) 47.0605
Introduction to a familiarization with components and systems related to tractor trailer service. Emphasis on records required by the Department of Transportation. Assessment Levels: R1, E1, M1.

DEMR 1405. BASIC ELECTRICAL SYSTEMS (2-6-4) 47.0605
Introduction to the basic principles of electrical systems of diesel powered equipment with emphasis on starters, alternators, batteries and regulators. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

DEMR 1406. DIESEL ENGINE I (2-6-4) 47.0605
Introduction to the basic principles of diesel engines and systems. Assessment Levels: R1, E1, M1.

DEMR 1416. BASIC HYDRAULICS (2-6-4) 47.0605
Identifies various components used in hydraulic systems; evaluate hydraulic components by inspection and testing; and understand hydraulics, theory, circuits and application. Assessment Levels: R1, E1, M1.

DEMR 1421. POWER TRAIN I (2-6-4) 47.0605
Introduction to fundamentals, repair and theory of power trains including clutches, transmissions, drive shafts and differentials. Emphasis on inspection and repair. Assessment Levels: R1, E1, M1.

DEMR 1449. DIESEL ENGINE II (2-6-4) 47.0605
In-depth coverage of disassembly, repair, identification, evaluation and reassembly of diesel engines. Assessment Levels: R1, E1, M1.

DEMR 2334. ADVANCED DIESEL TUNE-UP AND TROUBLESHOOTING (CAPSTONE) (1-7-3) 47.0605
Advanced concepts and skills required for tune-up and troubleshooting procedures of diesel engines. Emphasis on the science of diagnostics with a common sense approach. Assessment Levels: R1, E1, M1.

DEMR 2432 ELECTRONIC CONTROLS (2-6-4) 47.0605
Advanced skills in diagnostic and programming techniques of electronic control systems. Assessment Levels: R1, E1, M1.

DFTG - Drafting Technology

DFTG 1405. TECHNICAL DRAFTING (3-4-4) 15.1301
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 process. Assessment Levels: R1, E1, M1.

DFTG 1409. BASIC COMPUTER-AIDED DRAFTING (3-4-4) 15.1302
Introduction to basic computer-aided drafting. Emphasis is placed on setup, creating and modifying geometry; storing and retrieving predefined shapes, placing rotating and scaling objects, adding text and dimensions, using layers, coordinating systems and plot/print to scale. Prerequisite: DFTG 1405. Assessment Levels: R2, E1, M2.

DFTG 1417. ARCHITECTURAL DRAFTING-RESIDENTIAL (3-4-4) 15.1303
Architectural drafting procedures, practices, and symbols. Preparation of detailed working drawings for residential structures. Emphasis on light frame construction methods. Prerequisite: DFTG 1409. Assessment Levels: R2, E1, M2.

DFTG 2308. INSTRUMENTATION DRAFTING (2-4-3) 15.1305
Principles of instrumentation applicable to industrial applications, fundamentals of measurement and control devices, currently used ISA (Instrument Society of America) symbology, basic flow sheet layout and drafting practices. Prerequisite: DFTG 1409. Assessment Levels: R2, E1, M2.

DFTG 2312. TECHNICAL ILLUSTRATION (2-4-3) 15.1302
Pictorial drawing including isometrics, obliques, perspectives, charts and graphs. Emphasis on rendering and using different media. Prerequisite: DFTG 2317. Assessment Levels: R2, E1, M2.

DFTG 2317. DESCRIPTIVE GEOMETRY (2-4-3) 15.1301
Graphical solutions to problems involving points, lines and planes in space. Prerequisite: DFTG 1409. Assessment Levels: R2, E1, M2.
DFTG 2321. TOPOGRAPHICAL DRAFTING (2-4-3) 15.1302
Plotting of surveyors field notes. Includes drawing elevations, contour lines, plan and profiles and laying out traverses. Prerequisites: DFTG 1409, 2317. Assessment Levels: R2, E1, M2.

DFTG 2323. PIPE DRAFTING (2-4-3) 15.1302
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. Prerequisite: DFTG 2317. Assessment Levels: R2, E1, M2.

DFTG 2340. SOLID MODELING/DESIGN (2-4-3) 15.1302
Computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work. Prerequisite: DFTG 1409. Assessment Levels: R2, E2, M2.

DFTG 2386. INTERNSHIP (CAPSTONE) (0-15-3) 15.1301
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. Prerequisites: MATH 1316, DFTG 1409, ARCE 1352, ARCH 2312. Assessment Levels: R2, E2, M3.

DFTG 2402. MACHINE DRAFTING (3-4-4) 15.1306
Production of detail and assembly drawings of machines, threads, gears, cams, tolerances and limit dimensioning, surface finishes and precision drawings. Prerequisite: DFTG 1409. Assessment Levels: R2, E1, M2.

DHYG - Dental Hygiene

DHYG 1123. DENTAL HYGIENE PRACTICE (CAPSTONE) (1-0-1) 51.0602
Emphasis on the laws governing the practice of dentistry and dental hygiene, moral standards and the ethical standards established by the dental hygiene profession. Practice settings for the dental hygienist including office management, employment considerations, resume preparation for job interviewing. Assessment Levels: R3, E3, M2.

DHYG 1207. GENERAL AND DENTAL NUTRITION (2-0-2) 51.0602
General nutrition and nutritional biochemistry with emphasis on the effects of nutrition, dental health, diet and application of counseling strategies. Assessment Levels: R3, E3, M2.

DHYG 1211. PERIODONTOLOGY (2-1-2) 51.0602
Normal and diseased periodontium including the structural, functional and environmental factors. Emphasis on etiology, pathology, treatment modalities and therapeutic and preventive periodontics. Assessment Levels: R2, E2, M2.

DHYG 1227. PREVENTIVE DENTAL HYGIENE CARE (2-1-2) 51.0602
The dental hygienist in the dental health care system emphasizing the basic concepts of disease prevention and health promotion. Communication and behavior modification skills are utilized to facilitate the role of the dental hygienist as an educator. Prerequisite: DHYG 1431. Assessment Levels: R3, E2, M2.

DHYG 1239. GENERAL AND ORAL PATHOLOGY (2-0-2) 51.0602
Disturbances in human body development, diseases of the body, and disease prevention measures with emphasis on the oral cavity and associated structures. Assessment Levels: R3, E2, M2.

DHYG 1301. OROFACIAL ANATOMY, HISTOLOGY AND EMBRYOLOGY (2-3-3) 51.0602
Histology and embryology of oral tissues, gross anatomy of the head and neck, tooth morphology and individual tooth identification. Assessment Levels: R3, E3, M2.
COURSE DESCRIPTIONS

DHYG 1304. DENTAL RADIOLOGY (2-4-3) 51.0602

DHYG 1315. COMMUNITY DENTISTRY (2-3-3) 51.0602
Principles and concepts of community public health and dental health education emphasizing community assessment, educational planning, implementation, and evaluation including methods and materials used in teaching dental health education in various community settings. Assessment Levels: R3, E3, M2.

DHYG 1319. DENTAL MATERIALS (2-3-3) 51.0602
Physical and chemical properties of dental materials including the application and manipulation of the various materials used in dentistry. Assessment Levels: R3, E2, M2.

DHYG 1335. PHARMACOLOGY FOR THE DENTAL HYGIENIST (3-0-3) 51.0602
Classes of drugs and their uses, actions, interactions, side effects, contraindications and systemic and oral manifestations with emphasis on dental applications. Assessment Levels: R3, E3, M2.

DHYG 1431. PRECLINICAL DENTAL HYGIENE (2-6-4) 51.0602
Foundational knowledge for performing clinical skills on patients with emphasis on procedures and professionalism for performing comprehensive oral prophylaxis. Assessment Levels: R3, E2, M2.

DHYG 2201. CONTEMPORARY DENTAL HYGIENE CARE I (2-0-2) 51.0602
Dental hygiene care for the medically or dentally compromised patient including supplemental instrumentation techniques. Prerequisites: DHYG 1227 and 1361. Assessment Levels: R3, E3, M2.

DHYG 2231. CONTEMPORARY DENTAL HYGIENE CARE II (2-0-2) 51.0602
Continuation of Contemporary Dental Hygiene Care I. Dental hygiene care for the medically or dentally compromised patient including advanced instrumentation techniques. Prerequisites: DHYG 2201 and 2362. Assessment Levels: R3, E3, M2.

DHYG 2362. CLINICAL DENTAL HYGIENIST (0-15-3) 51.0602
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. Prerequisites: DHYG 1227, 1361. Assessment Levels: R3, E3, M2.

DHYG 2363. CLINICAL DENTAL HYGIENIST (CAPSTONE) (0-15-3) 51.0602
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. Prerequisites: DHYG 2201, 2362. Assessment Levels: R3, E3, M2.

DMSO - Diagnostic Medical Sonography

DMSO 1110. INTRODUCTION TO SONOGRAPHY (1-1-1) 51.0910
Introduction to the profession of sonography and the role of the sonographer. Emphasis on medical terminology, ethical/legal aspects, written and verbal communication, and
professional issues relating to registry, accreditation, professional organizations and history of the profession. Assessment levels: R3, E3, M3.

**DMSO 1166. PRACTICUM: DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-7-1) 51.0910**
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student.

**DMSO 1302. BASIC ULTRASOUND PHYSICS (3-0-3) 51.0910**
Basic acoustical physics and acoustical waves in human tissue. Emphasis on ultrasound transmission in soft tissue, attenuation of sound energy, parameters affecting sound transmission and resolution of sound beam.

**DMSO 1342. INTERMEDIATE ULTRASOUND PHYSICS (3-0-3) 51.0910**
Continuation of Basic Ultrasound Physics. Includes interaction of ultrasound with tissues, mechanics of ultrasound production and display, various transducer designs and construction, quality assurance, bioeffects, image artifacts. May introduce methods of Doppler flow analysis. Prerequisite: DMSO 1302.

**DMSO 1351. SONOGRAPHIC SECTIONAL ANATOMY (3-0-3) 51.0910**
Sectional anatomy of the male and female body. Includes anatomical relationships of organs, vascular structures and body planes and quadrants.

**DMSO 1360. CLINICAL - DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-16-3) 51.0910**
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.

**DMSO 1366. PRACTICUM I (OR FIELD EXPERIENCE) - DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-24-3) 51.0910**
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: DMSO 1360.

**DMSO 1405. SONOGRAPHY OF ABDOMINOPELVIC CAVITY (3-3-4) 51.0910**
Normal and pathological abdominal and pelvic structures as related to scanning techniques, patient history and laboratory data, transducer selection and scanning protocols.

**DMSO 2101. ULTRASOUND INSTRUMENTATION (1-0-1) 51.0910**
Fundamentals of pulse-echo ultrasound systems. Includes components and function, display system, scan converter, and hard copy units. Emphasis on Doppler production and display, safety, and performance issues. Assessment levels: R3, E3, M3.

**DMSO 2253. SONOGRAPHY OF SUPERFICIAL STRUCTURES (2-1-2) 51.0910**
Detailed study of normal and pathological superficial structures as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Prerequisites: DMSO 1351, 1405.

**DMSO 2255. ECHOCARDIOGRAPHY PROFESSIONALISM AND REGISTRY REVIEW (2-1-2) 51.0910**
Knowledge, skills and professional values within a legal and ethical context addressing emerging technologies and professional development as it relates to the field of echocardiography. Ergonomic techniques and equipment applications associated with technological advances in the field of echocardiography. Registry review techniques and registry preparedness. Assessment levels: R3, E3, M3.
DMSO 2257. ADVANCED ULTRASOUND PROFESSIONALISM AND REGISTRY REVIEW (2-1-2) 51.0910
Sonographic profession principles and scope of practice including legal and ethical issues for the sonographer. Department management procedures. Laboratory will include application of advanced techniques and instrumentation. Ergonomics of scanning and injury prevention. Essential concepts of registry preparation. Assessment levels: R3, E3, M3.

DMSO 2266. PRACTICUM II (OR FIELD EXPERIENCE) - DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-18-2) 51.0910
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: DMSO 1360, 1366.

DMSO 2351. DOPPLER PHYSICS (3-1-3) 51.0910
Doppler and hemodynamic principles relating to arterial and venous imaging and testing. Prerequisites: DMSO 1302, 1342.

DMSO 2366. PRACTICUM III (OR FIELD EXPERIENCE) - DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-24-3) 51.0910
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: DMSO 1360, 1366, 2266.

DMSO 2405. SONOGRAPHY OF OBSTETRICS/GYNECOLOGY (3-3-4) 51.0910
Detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient history and laboratory data, transducer selection and scanning protocols. Prerequisites: DMSO 1351, 1405.

DNTA - Dental Assisting
DNTA 1166. PRACTICUM (OR FIELD EXPERIENCE) DENTAL ASSISTANT (0-9-1) 51.0601
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Assessment Levels: R1, E1, M1.

DNTA 1167. PRACTICUM (OR FIELD EXPERIENCE) DENTAL ASSISTANT (0-9-1) 51.0601
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: DNTA 1166. Assessment Levels: R1, E1, M1.

DNTA 1202. COMMUNICATION AND BEHAVIOR IN THE DENTAL OFFICE (2-0-2) 51.0601
Provides for better understanding of human interaction in the dental office. Studies motivation and learning experiences as related to health professionals, and human behavior. Assessment Levels: R1, E1, M1.

DNTA 1251. DENTAL OFFICE MANAGEMENT (0-8-2) 51.0601
The study of business office procedures, including telephone management, appointment control, receipt of payment for dental services, completion of third-party reimbursement forms, supply inventory maintenance, data entry for charges and payments, record management (manage recall systems), federal and state guidelines regarding health care providers and operating basic business equipment. Assessment Levels: R1, E1, M1.

DNTA 1305. DENTAL RADIOLOGY I (2-3-3) 51.0601
Introduction to radiation physics, protection, the operation of radiographic equipment, exposure, processing and mounting of dental radiographs. Specific federal and state
safety and standard practices for the classroom and lab settings will be practiced. Assessment Levels: R1, E1, M1.

DNTA 1311. DENTAL SCIENCE (2-3-3) 51.0601
Anatomical systems with emphasis placed on head and neck anatomy. Topics include the physiology and morphology of the deciduous and the permanent teeth along with basic dental terminology. Assessment Levels: R1, E1, M1.

DNTA 1315. CHAIRSIDE ASSISTING (2-3-3) 51.0601
Pre-clinical chairside assisting procedures, instrumentation, infection and hazard control protocol, equipment safety and maintenance. Assessment Levels: R1, E1, M1.

DNTA 1341. DENTAL LABORATORY PROCEDURES (2-3-3) 51.0601
Dental laboratory procedures including skills associated with chairside assisting; pouring, trimming, and polishing study casts, preliminary impressions, and fabrication provisional restorations. Prerequisite: DNTA 1401. Assessment Levels: R1, E1, M1.

DNTA 1345. PREVENTIVE DENTISTRY (2-4-3) 51.0601
The study and prevention of dental diseases, and community dental health. Assessment Levels: R1, E1, M1.

DNTA 1347. ADVANCED DENTAL SCIENCE (2-3-3) 51.0601
Anatomical systems with emphasis on pharmacology, oral pathology, and developmental abnormalities. Prerequisite: DNTA 1311. Assessment Levels: R1, E1, M1.

DNTA 1349. DENTAL RADIOLOGY IN THE CLINIC (2-3-3) 51.0601
The practical application of exposing, processing, and mounting diagnostically acceptable radiographs obtained by utilizing various radiographic techniques. Prerequisite: DNTA 1305. Assessment Levels: R1, E1, M1.

DNTA 1353. DENTAL ASSISTING APPLICATIONS (2-3-3) 51.0601
Dental assisting techniques with emphasis on four-handed dentistry and utilization of tray setups for general practice and specialty procedures. Prerequisite: DNTA 1353. Assessment Levels: R1, E1, M1.

DNTA 1401. DENTAL MATERIALS (2-6-4) 51.0601
Structure, properties and procedures related to dental materials. Includes safety and American Dental Association regulated standard precautions. Assessment Levels: R1, E1, M1.

DNTA 2166. PRACTICUM (OR FIELD EXPERIENCE) DENTAL ASSISTANT (0-9-1) 51.0601
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: DNTA 1167. Assessment Levels: R1, E1, M1.

DNTA 2250. ADVANCED DENTAL ASSISTING APPLICATIONS (CAPSTONE) (2-1-2) 51.0601
An advanced study of dental assisting techniques with emphasis on four-handed dentistry utilization of tray setups for specific general practice and specialties procedures. Prerequisite: DNTA 1353. Assessment Levels: R1, E1, M1.

DNTA 2252. ADVANCED DENTAL RADIOLOGY (2-1-2) 51.0601
Advanced radiographic procedures for specific and special needs patients. Prerequisite: DNTA 1349. Assessment Levels: R1, E1, M1.

DRAM - Drama
Credit limited to a total of six (6) semester hours in the following courses: DRAM 1120, 1121 and 1323.

DRAM 1120. THEATRE PRACTICUM I - TECHNICAL (2-2-1) 5005065326
Beginning activity and participation in technical aspects of theatre production, including scenery construction, scene painting, stage lighting and properties. May be repeated for up to two credits. Assessment Levels: R1, E1, M1.
DRAM 1121. THEATRE PRACTICUM II - TECHNICAL (2-2-1) 5005065326
Beginning activity and participation in technical aspects of theatre production, including costume construction, sewing, cutting, draping and patterning. May be repeated for up to two credits. Assessment Levels: R1, E1, M1.

DRAM 1310. INTRODUCTION TO THEATRE (3-0-3) 5005015126
Study and appreciation of various aspects of theatre, including elements of dramatic theory, principles of theatrical performance and types of dramatic literature. Assessment Levels: R3, E3, M1.

DRAM 1320. THEATRE PRACTICUM I - REHEARSAL AND PERFORMANCE (3-3-3) 5005065326
Rehearsal and performance in the staging of varied productions. Prerequisite: Audition for and casting in the semester production. Assessment Levels: R1, E1, M1.

DRAM 1321. THEATRE PRACTICUM II - FIELD STUDIES (3-3-3) 5005065326
An interactive practicum in theatre introducing students firsthand to performance and theory of the professional theatre. Alternating topics offered on rotating basis. May include studies in New York, Chicago, Orlando, or Las Vegas. Prerequisite: Enrollment and full payment in the Field Studies Program. Assessment Levels: R1, E1, M1.

DRAM 1322. STAGE MOVEMENT (2-2-3) 5005065426
Various movement techniques to improve alignment, control, balance, flexibility and expressiveness. Includes a student-created movement-based public performance. Assessment Levels: R1, E1, M1.

DRAM 1323. SHAKESPEARE PRODUCTION - TECHNICAL (3-3-3) 5005065326
Practical technical theatre experience in the production of a Shakespeare play. Assessment Levels: R1, E1, M1.

DRAM 1330. STAGE CRAFT I - INTRODUCTION TO TECHNICAL THEATRE (2-3-3) 5005025126
Study and application of the art and craft of technical theatre with a concentration in scenery construction, scene painting and lighting execution. Theory applied to the actual practice of stage craft. Assessment Levels: R2, E2, M1.

DRAM 1341. MAKEUP (2-2-3) 5005025226
Design and execution of makeup for the purpose of creating believable characters. Additional materials and supplies are required. Assessment Levels: R1, E1, M1.

DRAM 1342. INTRODUCTION TO COSTUME (2-2-3) 5005025326
Study and application of costume design principles, construction techniques and costume technology. Includes introduction to costume history, design as it relates to costumes, patterning, cutting and draping. Additional materials and supplies are required. Assessment Levels: R2, E2, M1.

DRAM 1351. ACTING I (3-0-3) 5005065126
Study and practice of basic techniques of acting, including role analysis, rehearsal discipline and playing action; performance of selected scenes from dramatic literature. Assessment Levels: R2, E1, M1.

DRAM 1352. ACTING II (3-0-3) 5005065126
Continued study of acting techniques with emphasis on movement and rehearsal techniques and discipline; performance of selected scenes from dramatic literature. Prerequisite: DRAM 1351 or permission of instructor. Assessment Levels: R2, E1, M1.

DRAM 2331. STAGE CRAFT II - INTRODUCTION TO STAGE DESIGN (2-3-3) 5005025126
Study and application of stage design, concentrating on design elements and functions, color theory, rendering, drafting, computer-aided design and model making. Assessment Levels: R2, E2, M1.
DRAM 2336. VOICE FOR THE THEATRE (3-0-3) 5005065226
Study and practice of vocal techniques, emphasizing understanding and application of the voice as a basic acting tool for creative and effective communication. Assessment Levels: R2, E1, M1.

DRAM 2351. ACTING III - SHAKESPEARE PRODUCTION - PERFORMANCE (3-3-3) 5005065126
Rehearsal and performance experience in the staging of a Shakespeare play. Prerequisite: Audition for and casting in the semester production. Assessment Levels: R1, E1, M1.

DRAM 2361. HISTORY OF THEATRE I (3-0-3) 5005055126
The study of the development of theatre art from primitive man through the mid-17th century. Prerequisite: Sophomore standing. Assessment Levels: R2, E2, M1.

DRAM 2363. HISTORY OF MUSICAL THEATRE (3-0-3) 5005055126
This course traces the historical development of a distinctive theatre genre - the musical. Emphasis on assigned readings in the text, viewing taped productions, attending live productions and oral and written reports on the viewings. Assessment Levels: R2, E2, M1.

DRAM 2366. DEVELOPMENT OF THE MOTION PICTURE I (3-2-3) 5006025126
An examination of the history of motion pictures and their effect on our society as well as their contributions to our culture. The course covers the origin of silent films through the films of 1949. Emphasis on the analysis of the visual and aural aspects of selected motion pictures, dramatic aspects of narrative films and historical growth and sociological effect of film as art. Assessment Levels: R2, E2, M1.

DRAM 2367. DEVELOPMENT OF THE MOTION PICTURE II (3-2-3) 5006025126
An examination of the history of motion pictures and their effect on our society as well as their contributions to our culture. The course covers the films of 1950 to the present. Emphasis on analysis of the visual and aural aspects of selected motion pictures, dramatic aspects of narrative films and historical growth and sociological effect of film as art. Assessment Levels: R2, E2, M1.

DSAE - Diagnostic Sonography Adult Echocardiography
DSAE 1303. INTRODUCTION TO ECHOCARDIOGRAPHY TECHNIQUES (3-1-3) 51.0910
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.

DSAE 1360. CLINICAL – DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-16-3) 51.0910
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.

DSAE 1364. PRACTICUM I (OR FIELD EXPERIENCE) - DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-24-3) 51.0910
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student.

DSAE 1415. PRINCIPLES OF ADULT ECHOCARDIOGRAPHY (3-2-4) 51.0910
Introduction to cardiovascular anatomy and physiology, including hemodynamics and spatial relationships of the normal adult heart. Topics include anatomical correlation of 2-D, M-Mode and Doppler sonographic imaging. Scanning techniques are correlated and taught in the laboratory sessions.
DSAE 2255. ECHOCARDIOGRAPHY PROFESSIONALISM AND REGISTRY REVIEW (2-1-2) 51.0910
Knowledge, skills and professional values within a legal and ethical context addressing emerging technologies and professional development as it relates to the field of echocardiography. Ergonomic techniques and equipment applications associated with technological advances in the field of echocardiography. Registry review techniques and registry preparedness. Assessment Levels: R3, E3, M3.

DSAE 2267. PRACTICUM II (OR FIELD EXPERIENCE) - DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-18-2) 51.0910
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student.

DSAE 2337. ECHOCARDIOGRAPHIC EVALUATION OF PATHOLOGY II (3-1-3) 51.0910
A continuation of Echocardiographic Evaluation of Pathology I with emphasis on cardiac disease. A discussion of quantitative measurements and application of 2-D, M-Mode, Doppler and recognition of the sonographic appearances of cardiac disease is stressed.

DSAE 2368. PRACTICUM III (OR FIELD EXPERIENCE) - DIAGNOSTIC MEDICAL SONOGRAPHY/SONOGRAPHER AND ULTRASOUND TECHNICIAN (0-24-3) 51.0910
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student.

DSAE 2404. ECHOCARDIOGRAPHIC EVALUATION OF PATHOLOGY I (3-4-4) 51.0910
Adult acquired cardiac pathologies. Topics include cardiovascular pathophysiology, quantitative measurements, and the application of 2-D, M-Mode, and Doppler. Recognition of the sonographic appearances of cardiovascular disease is stressed.

DSVT - Diagnostic Sonography Vascular Technology
DSVT 2200. VASCULAR TECHNOLOGY APPLICATIONS (2-1-2) 51.0910
Non-invasive vascular technology. Includes 2-D imaging, Doppler, phethysmography, and segmental pressures. Emphasizes protocols for performing basic venous and arterial imaging and non-imaging exams. Prerequisites: DMSO 1351, 1405, 2253, 2405. Assessment Levels: R3, E3, M3.

ECON - Economics
ECON 2301. PRINCIPLES OF MACROECONOMICS (3-0-3) 4506015125
History, development and application of macroeconomic and microeconomic theory underlying the production, distribution and exchange of goods and services including the utilization of resources, analysis of value and prices, national income analysis, fiscal policies, monetary and banking theory and policy, distribution of income, labor problems, international economics and economics systems. Attention given to the application of economic principles to economic problems. Assessment Levels: R3, E3, M2.

ECON 2302. PRINCIPLES OF MICROECONOMICS (3-0-3) 4506015125
Continuation of history, development and application of macroeconomic and microeconomic theory underlying the production, distribution and exchange of goods and services including the utilization of resources, analysis of value and prices, national income analysis, fiscal policies, monetary and banking theory and policy, distribution of income, labor problems, international economics and economics systems. Attention given to the application of economic principles to economic problems. Assessment Levels: R3, E3, M3.
EDUC - Education
EDUC 1301. INTRODUCTION TO THE TEACHING PROFESSION (2-2-3) 13.0101.5109
Enriched, integrated pre-service course and content experience for students interested in a teaching career. This field-based course is an introduction to and analysis of the culture of schooling and classrooms. Lab provides the student with opportunities to participate in field observations at all levels of P-12 schools with varied and diverse student populations; a minimum of 16 hours must be in classrooms. Course content is aligned with the State Board of Educator Certification Pedagogy and Professional Responsibilities Standards (2 lec., 2 lab). Students will be required to submit and pass a criminal background search as prescribed by the program and college. Assessment Levels: R3, E3, M2.

EDUC 2301. INTRODUCTION TO SPECIAL POPULATIONS (2-2-3) 13.1001.5109
Enriched, integrated, pre-service course and content experience that provides an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic and academic diversity and equity with an emphasis on factors that facilitate learning. Lab provides the student with opportunities to participate in field observations at all levels of P-12 schools with varied and diverse student populations; a minimum of 16 hours must be in classrooms. The field-based course content is aligned with the State Board for Educator Certification (SBEC) Pedagogy and Professional Responsibilities (PPR) Standards. (2 lec., 2 lab). Students will be required to submit to and pass a criminal background search as prescribed by the program and college. Assessment Levels: R3, E3, M2.

EMSP - Emergency Medical Services Professions
EMSP 1145. BASIC TRAUMA LIFE SUPPORT (1-0-1) 51.0904
Intense skill development in emergency field management, systematic rapid assessment, resuscitation, packaging and transportation of patients. Includes experience necessary to meeting initial certification requirements. Prerequisite: EMSP 1355.

EMSP 1147. PEDIATRIC ADVANCED LIFE SUPPORT (1-0-1) 51.0904
A course in a system of protocols for management of the pediatric patient experiencing difficulties in medical and/or trauma related emergencies. Prerequisites: EMSP 2330, 2434.

EMSP 1149. PRE-HOSPITAL TRAUMA LIFE SUPPORT (1-0-1) 51.0904
Intense skill development in emergency field management, systematic rapid assessment, resuscitation, packaging and transportation of patients. Includes experience necessary to meet initial certification requirements. Prerequisite: EMSP 1355.

EMSP 1305. EMERGENCY CARE ATTENDANT (2-2-3) 51.0904
Theory and skills of immediate life saving care. Meets the requirements for certification as an Emergency Care Attendant (ECA).

EMSP 1355. TRAUMA MANAGEMENT (2-3-3) 51.0904
A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with traumatic injuries. Prerequisites: Concurrent enrollment in EMSP 1438 and 1456. Assessment Levels: R2, E2.

EMSP 1438. INTRODUCTION TO ADVANCED PRACTICES (3-2-4) 51.0904
An exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of the hospital. Prerequisite: EMSP 1501. Assessment Levels: R2, E2.

EMSP 1456. PATIENT ASSESSMENT AND AIRWAY MANAGEMENT (3-2-4) 51.0904
A detailed study of the knowledge and skills required to reach competence in performing patient assessment and airway management. Prerequisite: EMSP 1501. Assessment Levels: R2, E2.
EMSP 1501. EMERGENCY MEDICAL TECHNICIAN BASIC (3-7-5) 51.0904
Introduction to the level of Emergency Medical Technician (EMT) Basic. Includes all the skills necessary to provide emergency medical care at a basic life support level with an ambulance service or other specialized services. Corequisite: EMSP 2160.

EMSP 2135. ADVANCED CARDIAC LIFE SUPPORT (1-0-1) 51.0904
Skill development for professional personnel practicing in critical care units, emergency departments, paramedic ambulances. Establishes a system of protocols for management of the patient experiencing cardiac difficulties. Prerequisites: EMSP 2348, 2444.

EMSP 2160. CLINICAL (0-6-1) 51.0904
A basic, intermediate, or 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 (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. Corequisite: EMSP 1501.

EMSP 2243. ASSESSMENT BASED MANAGEMENT (CAPSTONE) (1-4-2) 51.0904
Designed to provide for teaching and evaluating comprehensive, assessment-based patient care management. Prerequisites: EMSP 2330, 2434. Assessment Levels: R2, E2.

EMSP 2261. CLINICAL (0-8-2) 51.0904
A basic, intermediate, or 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 (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience.

EMSP 2262. CLINICAL (0-7-2) 51.0904
A basic, intermediate, or 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 (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. Prerequisite: EMSP 2261.

EMSP 2263. CLINICAL (0-11-2) 51.0904
A basic, intermediate, or 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 (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. Prerequisite: EMSP 2262.

EMSP 2330. SPECIAL POPULATIONS (2-3-3) 51.0904
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. Prerequisites: EMSP 1438, 1456, 2348, 2444. Assessment Levels: R2, E2.

EMSP 2338. EMS OPERATIONS (2-3-3) 51.0904
A detailed study of the knowledge and skills necessary to reach competence to safely manage the scene of an emergency.

EMSP 2348. EMERGENCY PHARMACOLOGY (2-2-2) 51.0904
All aspects of the utilization of medications in treating emergency situations. Designed to compliment Cardiology, Special Populations and Medical Emergency courses. Display command of general pharmacological terminology, general drug mechanisms, administration routes and procedures and drug dose calculations. Demonstrate understanding of the pharmacodynamics, pharmacokinetics, indications, contraindica-
tions, possible side effects and common drug interactions of a variety of medications used in out-of-hospital medical care. Prerequisites: EMSP 1438 and 1456. Assessment Levels: R2, E2.

**EMSP 2434. MEDICAL EMERGENCIES (3-3-4) 51.0904**
A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with medical emergencies. Prerequisites: EMSP 1438, 1456, 2348, 2444. Assessment Levels: R2, E2.

**EMSP 2444. CARDIOLOGY (3-3-4) 51.0904**
A detailed study of the knowledge and skills necessary to reach competence in the assessment and management of patients with cardiac emergencies. Prerequisites: EMSP 1438 and 1456. Assessment Levels: R2, E2.

**EMSP 2460. CLINICAL (0-15-4) 51.0904**
Basic, intermediate, or advanced type of health professions work-based instruction that helps students synthesize new knowledge, apply previous knowledge, or gain experience managing workflow. Practical experience simultaneously related to theory. Close and/or direct supervision provided by the clinical professional (faculty or preceptor), generally in a clinical setting. Clinical education is an unpaid learning experience. Can be used as a substitute for EMSP 2261. Prerequisite: current certification as an EMT-Basic.

**ENGL - English**

**ENGL 0305. BASIC WRITING AND MECHANICS I (3-0-3) 3201085312**
For students who do not meet the prerequisites for ENGL 0307 or 1301 or who need help in improving skills. Review of grammar and mechanics; practice in writing sentences, paragraphs and short essays; improvement of reading skills. Emphasis on composition skills in English. Must be taken concurrently with ENGL 0306. Not counted toward graduation. Assessment Levels: R1, E1, M1.

**ENGL 0306. BASIC WRITING AND MECHANICS II (3-1-3) 3201085312**
For students who do not meet the prerequisites for ENGL 0307 or 1301 or who need help in improving skills. Review of grammar and mechanics; practice in writing sentences, paragraphs and short essays; improvement of reading skills. Emphasis on grammar, syntax and mechanics of English. Must be taken concurrently with ENGL 0305. One-hour lab required. Not counted toward graduation. Assessment Levels: R1, E1, M1.

**ENGL 0307. ENGLISH IMPROVEMENT (3-1-3) 3201085312**
For students who do not meet the prerequisites for ENGL 1301. Major emphasis on improving skills in the composition of paragraphs and essays. Some emphasis on reading skills. Students are required to take a departmental essay exam at the end of the semester. One-hour lab required. Not counted toward graduation. Offered as an online course in some semesters. Students enrolling in ENGL 0307 are required to enroll in FSEM 0101. Assessment Levels: R2, E2, M1.

**ENGL 1301. COMPOSITION I (3-1-3) 2304015112**
Composition course providing instruction in the writing and analysis of expository prose; emphasis on rhetorical principles and basic organizational modes. One-hour lab required. Offered as a telecourse and an online course in some semesters. Assessment Levels: R3, E3, M1.

**ENGL 1302. COMPOSITION II (3-0-3) 2304015112**
Continuation of ENGL 1301 with emphasis on the writing of analytical essays, which may include literary analysis; preparation of the investigative paper. Offered as a telecourse and an online course in some semesters. Prerequisite: ENGL 1301. Assessment Levels: R3, E3, M1.

**ENGL 2307. CREATIVE WRITING I (3-0-3) 23.0501.51 12**
Study of genre, style and technique in short stories, drama, nonfiction and poetry; emphasis on creative writing projects that capture the mood and purpose of literary
ENGL 2311. TECHNICAL AND BUSINESS WRITING (3-0-3) 2311015112
Practical writing for business and technical fields (engineering, computer programming, radio-television, management, etc.); emphasis on correspondence, reports and proposals; useful aspects of organization, audience adaptation, style, mechanics and computer-assisted writing explored. Offered as an online course in some semesters. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2321. BRITISH LITERATURE (3-0-3) 2308015112
Study of selected British authors and masterpieces; emphasis on historical, generic and thematic connections. Attention given to writing about literature. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2322. BRITISH LITERATURE I: BEGINNINGS THROUGH THE 18TH CENTURY (3-0-3) 2308015112
Study, in chronological order, of the major works, their authors and the trends in British literature through the Eighteenth Century; first half of the standard survey course. Attention given to writing about literature. Offered as an online course in some semesters. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2323. BRITISH LITERATURE II: 19TH AND 20TH CENTURIES (3-0-3) 2308015112
Study, in chronological order, of the major works, their authors and the trends in British literature of the Romantic, Victorian and Modern periods; continuation of ENGL 2322. Attention given to writing about literature. Offered as an online course in some semesters. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2326. AMERICAN LITERATURE (3-0-3) 2307015112
Study of selected American authors and masterpieces; emphasis on historical, generic and thematic connections. Attention given to writing about literature. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2327. AMERICAN LITERATURE I: BEGINNINGS THROUGH 1865 (3-0-3) 2307015112
Chronological study of the major writers, works and trends in American literature through the American Romantic Period; first half of the standard survey course. Attention given to writing about literature. Offered as an online course in some semesters. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2328. AMERICAN LITERATURE II: 1865 TO THE PRESENT (3-0-3) 2307015112
Chronological study of the major writers, works and trends in American literature from Realism through Post-Modernism; continuation of ENGL 2327. Attention given to writing about literature. Offered as an online course in some semesters. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2332. WORLD LITERATURE I (3-0-3) 1601045213
Study of selected world masterpieces beginning with Greek and Latin authors in translation; emphasis on historical, generic and thematic connections. Attention given to writing about literature. Offered as an online course in some semesters. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2333. WORLD LITERATURE II (3-0-3) 1601045213
Study of selected world masterpieces after 1000 A.D.; emphasis on historical, generic and thematic connections. Attention given to writing about literature. Offered as an online course in some semesters. Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

ENGL 2341. FORMS OF LITERATURE (3-0-3) 16.0104.5113
The study of literary genre, including, but not limited to, poetry, fiction, drama and film in an exploration of women’s writings about women throughout history and of
women’s creative silences; diverse cultural, ethnic and gender perspectives, including those found in American and British works; emphasis on thematic and historical connections to women’s lives. Prerequisites: ENGL 1301, 1302. Assessment Levels: R3, E3, M1.

**ENGL 2351. MEXICAN-AMERICAN LITERATURE (3-0-3) 05.0203.5525**

A survey of Mexican-American/Chicano/a literature including fiction, non-fiction, poetry and drama created by prominent Mexican-American authors; emphasis on historical, generic and thematic connections. Prerequisites: ENGL 1301, 1302. Assessment Levels: R3, E3, M1.

**ENGL 2370. INTRODUCTION TO LITERATURE (3-0-3) 2301017112**

Introduction to literary analysis and scholarship for the intermediate writer. Emphasis placed upon the genres of literature, literary research and the composition of expository and analytical prose. (Does not fulfill the Del Mar College core curriculum requirement for AA and AS degrees.) Prerequisites: ENGL 1301 and 1302. Assessment Levels: R3, E3, M1.

**ENGR - Engineering**

Additional pre-engineering courses are listed under Physics. ENGR 2305 and 2323 are applicable only to 2+2 program at Texas A&M University-Kingsville.

**ENGR 1201. INTRODUCTION TO ENGINEERING (2-0-2) 1401015110**

Introduction to engineering as a discipline and a profession. Includes instruction in the application of mathematical and scientific principles to the solution of practical problems for the benefit of society. Assessment Levels: R3, E2, M3.

**ENGR 1304. ENGINEERING GRAPHICS I (2-3-3) 15.1301.5111**

Methods of graphical communications, working drawings for design and production, data analysis, technical reports, computer graphics. Equal emphasis on computer-assisted design and traditional mechanical drafting techniques. Prerequisite: MATH 1316 by course credit or by examination. Assessment Levels: R3, E1, M3.

**ENGR 2301. ENGINEERING MECHANICS I (3-1-3) 14.1101.5210**

Vector algebra and calculus; force vectors; free body diagrams; equilibrium of particles; center of gravity and centroid; equivalent force systems; equilibrium of rigid bodies; structural analysis (trusses); frames and distributed loads, including shear and bending moment diagrams; friction, moments of inertia; virtual work, kinematics of particles, kinetics of particles, particle work and energy. Prerequisites: PHYS 2425, MATH 2315. Assessment Levels: R3, E1, M3.

**ENGR 2302. ENGINEERING MECHANICS II (3-1-3) 14.1101.5310**

Vector calculus, review of particle dynamics, rigid body dynamics, mechanical vibrations. Prerequisites: PHYS 2425 and concurrent enrollment in or completion of MATH 2316. Assessment Levels: R3, E1, M3.

**ENGR 2304. PROGRAMMING FOR ENGINEERS (2-3-3) 1102015207**

Computational techniques associated with elementary mathematical problems from the fields of science, engineering and statistics; emphasis on C++ language and computer use. Prerequisite: MATH 2313 or concurrent enrollment. Assessment Levels: R3, E1, M3.

**ENGR 2305. CIRCUITS I FOR ELECTRICAL ENGINEERING (2-2-3) 1410015110**

Basic concepts in electrical engineering requiring the use of a variety of instruments; simple methods of communication in engineering including sketching, network diagramming, graphing and oral and written reports. Prerequisite: MATH 2313. Assessment Levels: R3, E1, M3.
ENGR 2323. NETWORK ANALYSIS I (3-0-3)
(Formerly listed as ENGR 2375.) Introduction to linear network analysis techniques; phasor analysis and sinusoidal steady-state response; single-phase and polyphase circuits. Prerequisites: ENGR 2305, credit or concurrent enrollment in MATH 2315. Assessment Levels: R3, E1, M3.

EPCT - Environmental Pollution Control Technology/ Technician

EPCT 1341. PRINCIPLES OF INDUSTRIAL HYGIENE (3-1-3) 15.0507
Basic concepts in threshold limits, dose response, and general recognition of occupational hazards, including sampling statistics, calibration, and equipment use. Study of the control of occupational hazards and sample collection and evaluation methods.

EPCT 1401. HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE TRAINING (HAZWOPER) (3-3-4) 15.0507
Minimum certification requirements of a hazardous waste site worker as found in 29CFR-1910.120 and 40CFR.264 and 265.15. Assessment Levels: R1, E1, M1.

EPCT 2331. INDUSTRIAL HYGIENE APPLICATIONS (3-1-3) 15.0507
Study of the industrial environment and its relation to worker’s health. Provides training in anticipation, recognition, evaluation and controlling health hazards—particularly chemical, physical, biological and ergonomic factors existing in the workplace and having injurious effects on workers. Also introduces training in instrumentation used in monitoring and measuring health hazards in the workplace and covers current issues in industrial hygiene. Assessment Levels: R1, E1, M1.

EPCT 2333. ENVIRONMENTAL TOXICOLOGY (3-0-3) 15.0507
Review of the research determining systematic health effects of exposures to chemicals. Risk factors, routes of entry, control measures and acute and chronic effects. Assessment Levels: R1, E1, M1.

ESOL - English for Speakers of Other Languages

ESOL STUDENTS MUST BE INTERVIEWED BY AN ESOL FACULTY MEMBER.

The following courses require a Comprehensive English Language Test (CELT) for speakers of English as a second language. The student may not enroll for more than three semesters of ESOL courses ending in the digits 1, 2, 3, or 4.

ESOL 0305. BASIC WRITING AND MECHANICS I (3-0-3) 3201085412
For ESOL students who do not meet the prerequisites for ENGL 0307 or 1301 or who need specialized ESOL help in improving skills. Review of grammar and mechanics with emphasis on skills required for ESOL students. Paragraph writing, sentence structure and improvement of reading skills are also emphasized. Must be taken concurrently with ESOL 0306. Prerequisite: CELT scores of 70. Assessment Levels: R1, E1, M1.

ESOL 0306. BASIC WRITING AND MECHANICS II (3-1-3) 3201085412
For ESOL students who do not meet the prerequisites for ENGL 0307 and 1301 or who need specialized ESOL help in improving skills. Review of grammar and mechanics, practice in writing sentences and paragraphs, improvement of reading skills. Emphasizes grammar, syntax and mechanics of English. Must be taken concurrently with ESOL 0305. One-hour lab required. Prerequisite: CELT scores of 70. Assessment Levels: R1, E1, M1.

ESOL 0307. WRITING IMPROVEMENT (3-1-3) 3201085412
Major emphasis on improving skills in the composition of paragraphs and essays with a focus on the difficulties with the written language specific to the ESOL student. One-hour lab required. Assessment Levels: R2, E2 (or minimum grade of “C” in ESOL 0305
and 0306), M1. ESOL students who successfully complete ESOL 0307 take sections of English 1301 and English 1302 reserved for international students.

**ESOL 0308. GRAMMAR FOR WRITING IMPROVEMENT (3-1-3)**

3201085712

Study of grammar skills needed for college-level composition, including pronoun agreement and reference, revision of fragments, comma splices and run-on sentences, use of commas and other forms of punctuation, subject-verb agreement in complex sentence structures, and sentence variety. One hour lab required. Assessment Levels: R1, E2, M0.

**ESOL 0309. ACADEMIC SPEAKING (3-1-3) 3201085512**

Study of speaking skills needed for using and understanding standard American English in academic activities, including presentation of narratives, descriptions, and structured argument. Assessment Levels: R2, E2, M1.

**ESOL 0311. BEGINNING READING (3-1-3) 3201085212**

A beginning ESOL course in reading with emphasis on simple reading, spelling and vocabulary. Individualized instruction. One-hour lab required. May be taken with ESOL 0312, 0313 and 0314. Prerequisite: CELT score of 0-12. Assessment Levels: R1, E1, M1.

**ESOL 0312. BEGINNING VOCABULARY, PRONUNCIATION AND WRITING (3-1-3) 3201085612**

A course focusing on vocabulary development, pronunciation practice and writing simple English sentences. May be taken with ESOL 0311, 0313 and 0314. Prerequisite: CELT scores of 0-12. Assessment Levels: R1, E1, M1.

**ESOL 0313. BEGINNING GRAMMAR (3-1-3) 3201085712**

Introduction to basic English grammar. Emphasis on correct verb forms, parts of speech, sentence order, prepositions, capitalization and punctuation. One-hour lab required. May be taken with ESOL 0311, 0312 and 0314. Prerequisite: CELT scores of 0-12. Assessment Levels: R1, E1, M1.

**ESOL 0314. BEGINNING CONVERSATION (3-1-3) 3201085512**

A course consisting of conversational practice with emphasis on vocabulary, pronunciation, simple sentence structure and intonation patterns. One-hour lab required. May be taken with ESOL 0311, 0312 and 0313. Prerequisite: CELT scores of 0-12. Assessment Levels: R1, E1, M1.

**ESOL 0321. INTERMEDIATE READING (3-1-3) 3201085212**

A continuation of ESOL 0311. Develops reading skills and comprehension skills at levels appropriate for intermediate ESOL students. One-hour lab required. May be taken with ESOL 0322, 0323 and 0324. Prerequisite: ESOL 0311 or CELT scores of 13-25. Assessment Levels: R1, E1, M1.

**ESOL 0322. INTERMEDIATE VOCABULARY, PRONUNCIATION AND WRITING (3-1-3) 3201085612**

A continuation of ESOL 0312. Vocabulary skills, both written and oral, as well as writing short, simple paragraphs. One-hour lab required. May be taken with ESOL 0321, 0323 and 0324. Prerequisite: ESOL 0312 or CELT scores of 13-25. Assessment Levels: R1, E1, M1.

**ESOL 0323. INTERMEDIATE GRAMMAR (3-1-3) 3201085712**

A review of the basic structures of English grammar. Production of complex English sentences. One-hour lab required. May be taken with ESOL 0321, 0322 and 0324. Prerequisite: ESOL 0313 or CELT scores of 13-25. Assessment Levels: R1, E1, M1.

**ESOL 0324. INTERMEDIATE CONVERSATION (3-1-3) 3201085512**

A continuation of ESOL 0314. Emphasis on idiomatic speech, everyday vocabulary development and listening comprehension. One-hour lab required. May be taken with ESOL 0321, 0322 and 0323. Prerequisite: ESOL 0314 or CELT scores of 13-25. Assessment Levels: R1, E1, M1.
ESOL 0341. ADVANCED READING (3-1-3) 3201085212
A continuation of ESOL 0331. Designed to develop critical reading skills for college-bound ESOL students. Figurative language, inference and deduction are presented and practiced. One-hour lab required. May be taken with ESOL 0342, 0343 and 0344. Prerequisite: CELT scores of 37-69. Assessment Levels: R1, E1, M1.

ESOL 0342. ADVANCED COMPOSITION (3-1-3) 3201085612
Elements of organization, thesis statement and appropriate supporting details are included in this course. Multi-paragraph essays will be produced. A book report is required. One-hour lab required. May be taken with ESOL 0341, 0343 and 0344. Prerequisite: CELT scores of 37-69. Assessment Levels: R1, E1, M1.

ESOL 0343. ADVANCED GRAMMAR (3-1-3) 3201085712
Review of essential and finer points of the grammar of formal written English. Emphasis placed on active production and error analysis of standard English. One-hour lab required. May be taken with ESOL 0341, 0342 and 0344. Prerequisite: CELT scores of 37-69. Assessment Levels: R1, E1, M1.

ESOL 0344. ADVANCED CONVERSATION (3-1-3) 3201085512
Designed for advanced ESOL speakers to provide development and practice in high level speaking and oral presentation skills. An oral book report, an oral report on a personal interview and an oral report on a current social issue of the student’s choice is required. One-hour lab required. May be taken with ESOL 0341, 0342 and 0343. Prerequisite: CELT scores of 37-69. Assessment Levels: R1, E1, M1.

ESOL 0354. PRONUNCIATION (3-1-3) 3201085512
A course designed to provide instruction and practice in enunciation, intonation, stress, pacing and other components of English pronunciation. Lab required. Assessment Levels: R1, E1, M1.

FIRS - Fire Science/Firefighting
FIRS 1103. FIREFIGHTER AGILITY/FITNESS PREPARATION (1-2-2) 43.0203
Physical ability testing methods. Rigorous training in skills and techniques needed in typical fire department physical ability tests. Assessment Levels: R1, E1, M1.

FIRS 1301. FIREFIGHTER CERTIFICATION I (2-3-3) 43.0203
Introduction to firefighter safety and development. Includes Texas Commission on Fire Protection Rules and Regulations, firefighter safety, fire science, personal protective equipment, self contained breathing apparatus and reports and records as they pertain to the fire service. First in series of courses designed for certification as a basic structural firefighter in Texas. Assessment Levels: R1, E1, M1.

FIRS 1319. FIREFIGHTER CERTIFICATION IV (2-3-3) 43.0203
Study of equipment, tactics and procedures used in forcible entry, ventilation, salvage and overhaul. Fourth in series of courses designed for certification as a basic structural firefighter in Texas. Assessment Levels: R1, E1, M1.

FIRS 1407. FIREFIGHTER CERTIFICATION II (2-6-4) 43.0203
Study of basic principles and skill development in handling fire service hose and ladders. Includes basic fire service hose and ladders, basic building construction, distribution system of water supply, emergency service communications, procedures and equipment. Second in a series of courses designed for certification as a basic structural firefighter in Texas. Assessment Levels: R1, E1, M1.

FIRS 1413. FIREFIGHTER CERTIFICATION III (2-4-4) 43.0203
Designed to identify the general principles of fire apparatus, including pump operations, fire streams and public operations. Third in a series of course designed for certification as a basic firefighter in Texas. Assessment Levels: R1, E1, M1.
FIRS 1423. FIREFIGHTER CERTIFICATION V (3-4-4) 43.0203
Study of ropes and knots, rescue procedures and techniques and hazardous materials. Fifth in a series of courses for certification as a basic structural firefighter in Texas. Assessment Levels: R1, E1, M1.

FIRS 1429. FIREFIGHTER CERTIFICATION VI (4-0-4) 43.0203
Study of fire inspection techniques and practices, public transportation and fire cause and determination. Includes fire protection systems, wildland fires and pre-incident planning. Sixth course in a series of courses designed for certification as a basic structural firefighter in Texas. Assessment Levels: R1, E1, M1.

FIRS 1433. FIREFIGHTER CERTIFICATION VII (CAPSTONE) (2-6-4) 43.0203
In-depth study and practice of simulated emergency operations and hands-on live fire training exercises, including incident command procedures and combined operations using proper extinguishing methods with an emphasis on safety. Seventh and last course in series designed for certification as a basic structural firefighter in Texas. Assessment Levels: R1, E1, M1.

FIRS 2344. DRIVER/OPERATOR-PUMPER (3-3-3) 43.0203

FIRT - Fire Technology
FIRT 1202. PLAN EXAMINER I (2-1-2) 43.0202
Introduction to examination of plans submitted for approval by businesses, industry, or other regulated entities. Includes applicable codes and/or standards that meet certification requirements of the Texas Commission on Fire Protection. Demonstrate the ability to evaluate building plans according to rules, regulations, standards and codes and list code deficiencies. Licensure/Certification Agency: Texas Commission on Fire Protection.

FIRT 1301. FUNDAMENTALS OF FIRE PROTECTION (3-0-3) 43.0202
Study of the philosophy, history and fundamentals of public and private fire protection. Topics include statistics of fire and property loss, agencies involved in public and private protection, legislative development, departmental organization, training and staffing. Assessment Levels: R2, E1, M1.

FIRT 1303. FIRE AND ARSON INVESTIGATION I (3-0-3) 43.0101
In-depth study of basic fire and arson investigation practices. Emphasis on fire behavior principles related to fire cause and origin determination. Assessment Levels: R2, E2, M2.

FIRT 1307. FIRE PREVENTION CODES AND INSPECTIONS (3-0-3) 43.0101
Study of local building and fire prevention codes. Emphasis on fire prevention inspections, practices and procedures. Assessment Levels: R1, E1, M1.

FIRT 1309. FIRE ADMINISTRATION I (3-0-3) 43.0202
Introduction to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer. Assessment Levels: R2, E1, M1.

FIRT 1315. HAZARDOUS MATERIALS I (3-0-3) 43.0201
In-depth study of mitigation practices and techniques to effectively control hazardous material spills and leaks. Prerequisite: CHEM 1405. Assessment Levels: R2, E1, M1.

FIRT 1329. BUILDING CODES AND CONSTRUCTION (3-0-3) 43.0201
Examination of building codes requirements, construction types and building materials. Topics include walls, floorings, foundations and various roof types and the associated dangers of each. Assessment Levels: R1, E1, M1.
FIRT 1333. FIRE CHEMISTRY I (3-0-3) 43.0201
Introduction to the chemical nature and properties of inorganic compounds as related to the fire service. Topics include fundamental laws of chemistry, states of matter, gas laws, chemical bonding and thermodynamics with applications to various industrial processes. Assessment Levels R1, E1, M1

FIRT 1335. INTRODUCTION TO INDUSTRIAL FIRE PROTECTION (3-0-3) 43.0201
Specific concerns and safeguards related to business and industrial organization and development, plan/layout, fire prevention programs, extinguishing factors and techniques, hazardous situations and prevention methods. Assessment Levels R1, E1, M1.

FIRT 1338. FIRE PROTECTION SYSTEMS (3-0-3) 43.0201
Study of fire detection, alarm and extinguishing systems. Assessment Levels: R1, E1, M1.

FIRT 1340. FIRE INSPECTOR II (2-3-3) 43.0202
Study of fire protection rules, procedures and inspection practices to meet the Texas Commission on Fire Protection requirements for Fire Inspector II. Process a permit applying the appropriate codes, rules, hazard identification processes, building processes, emergency plans and fire protection systems. Prerequisite: FIRT 1008/1408. Licensure/Certification Agency: Texas Commission on Fire Protection.

FIRT 1342. FIRE OFFICER I (3-1-3) 43.0201
Focuses on the requirements necessary for Fire Officer I certification as established by the Texas Commission on Fire Protection. Ability to identify various fire department organizational structures, human resource management, community and governmental relationships and administrative functions for the implementation of departmental policies and procedures; perform preliminary fire investigation; deploy assigned resources; and integrate a safety plan to ensure a safe work environment for firefighters. Licensure/Certification Agency: Texas Commission on Fire Protection.

FIRT 1343. FIRE OFFICER II (3-1-3) 43.0201
Focuses on the requirements necessary for Fire Officer II certification as established by the Texas Commission on Fire Protection. Ability to identify the organizational structure of local government; evaluate member performance; and prepare and present public education programs and news releases. Conduct fire inspections at the company level; investigate fires to determine origin and preliminary cause; identify duties involved in supervising multi-unit emergency operations; and review injury, accident and health exposure reports. Licensure/Certification Agency: Texas Commission on Fire Protection.

FIRT 1345. HAZARDOUS MATERIALS II (3-0-3) 43.0201
Continuation of Hazardous Materials I. Topics include radioactive materials and radiation; poisons and toxicology; cryogenics, oxidizers, corrosives, flammable solids; hazards of Class A fuels, plastics and organic and inorganic peroxides and water reactivity; and polymerization and polymerizing substances. Assessment Levels: R2, E1, M1.

FIRT 1347. INDUSTRIAL FIRE PROTECTION (3-0-3) 43.0201
Study of industrial emergency response teams and specific concerns related to business and industrial facilities. Assessment Levels: R2, E2, M1.

FIRT 1349. FIRE ADMINISTRATION II (3-0-3) 43.0202
In-depth study of fire service management as pertaining to budgetary requirements, administration, organization of divisions within the fire service and relationships between the fire service and outside agencies. Assessment Levels: R2, E1, M1.

FIRT 1353. LEGAL ASPECTS OF FIRE PROTECTION (3-0-3) 43.0202
Study of the rights, duties, liability concerns and responsibilities of public fire protection agencies while performing assigned duties. Prerequisites: FIRT 1309, 1329. Assessment Levels: R2, E2, M1.
FIRT 1408. FIRE INSPECTOR I (3-4-4) 43.0202
Study of fire inspection including rules, codes and field inspection practices to meet certification requirements of the Texas Commission on Fire Protection. Select and limit applicable rules and regulations; select and apply appropriate codes; list different types of construction and allowable occupancy classifications; and describe building service equipment and process. Describe and list possible hazards; list different types of fire protection systems and water supplies; and demonstrate field proficiency in inspection practices. Licensure/Certification Agency: Texas Commission on Fire Protection.

FIRT 2305. FIRE INSTRUCTOR I (3-0-3) 43.0202
Outlines instructor qualities and responsibilities, identify principles of learning and teaching, demonstrate methods and techniques of teaching and produce teaching aids. Assessment Levels: R3, E2, M1.

FIRT 2309. FIREFIGHTING STRATEGIES AND TACTICS (3-0-3) 43.0202
Analysis of the nature of fire problems and selection of initial strategies and tactics including an in-depth study of efficient and effective use of manpower and equipment to mitigate the emergency. Assessment Levels: R2, E1, M1.

FIRT 2331. STRATEGIES AND TACTICS II (CAPSTONE) (3-0-3) 43.0202
Continuation of Firefighting Strategies and Tactics I. Emphasis on use of incident command in large-scale command problems and other specialized fire problems. Assessment Levels: R2, E2, M1.

FIRT 2333. FIRE AND ARSON INVESTIGATION II (3-0-3) 43.0202
Continuation of Fire and Arson I. Topics that will be studied will include reports, courtroom demeanor and expert witnesses. Prerequisite: FIRT 1303. Assessment Levels: R2, E2, M1.

FIRT 2345. HAZARDOUS MATERIALS III (3-0-3) 43.0201
Study of the chemical characteristics and behavior of various materials. Topics include storage, transportation, handling hazardous emergency situations and the most effective methods of hazard mitigation. Assessment Levels: R2, E2, M2.

FIRT 2351. COMPANY FIRE OFFICER (CAPSTONE) (3-1-3) 43.0201
A capstone course covering fire ground operations and supervisory practices. Includes performance evaluation of incident commander, safety officer, public information officer and shift supervisor duties. Assessment Levels: R1, E1, M1.

FMLD - Individual and Family Development Studies, General
FMLD 1301. INTRODUCTION TO INTERGENERATIONAL PROFESSIONS (3-0-3) 19.0701
Skill development in the promotion of health, safety and nutritional needs of elders and children. Topics include activities that promote intergenerational interaction, strategies for meeting the needs of adults and children in the care and service setting, ethics and professionalism. Assessment Levels: R1, E1, M1.

FREN - French
FREN 1411. BEGINNING FRENCH I (3-2-4) 1609015113
Fundamental skills in listening comprehension, speaking, reading and writing, including basic vocabulary, grammatical structures and culture. Assessment Levels: R3, E3, M1.

FREN 1412. BEGINNING FRENCH II (3-2-4) 1609015113
Fundamental skills in listening comprehension, speaking, reading and writing, including basic vocabulary, grammatical structures and culture. Prerequisite: FREN 1411. Assessment Levels: R3, E3, M1.
FREN 2311. INTERMEDIATE FRENCH I (3-0-3) 1609015213
Review and application of skills in listening comprehension, speaking, reading and writing. Emphasizes conversation, vocabulary acquisition, reading, composition and culture. Prerequisites: FREN 1411 and 1412, satisfactory score on placement test or approval of instructor. Assessment Levels: R3, E3, M1.

FREN 2312. INTERMEDIATE FRENCH II (3-0-3) 1609015213
Review and application of skills in listening comprehension, speaking, reading and writing. Emphasizes conversation, vocabulary acquisition, reading, composition and culture. Prerequisites: FREN 2311, satisfactory score on placement test or permission of instructor. Assessment Levels: R3, E3, M1.

FSEM - Freshman Seminar
FSEM 0101. FRESHMAN SEMINAR (1-0-1) 3201015212
Designed to help students develop skills and habits needed for success in college. Emphasis placed on goal setting, time management, effective listening and note-taking, reading and organizing information for study purposes, remembering information, thinking critically, preparing to take examinations and using the library for research. Introduction to the resources, policies and procedures of the College. Recommended for all students. Required for any student enrolled in ENGL 0307. Assessment Levels: R1, E1, M1.

GAME – Game Technology and Simulation
GAME 1304. LEVEL DESIGN (2-4-3) 10.0304
Introduction to the tools and concepts used to create levels for games and simulations. Incorporates level design, architecture theory, concepts of critical path and flow, balancing, play testing and storytelling. Includes utilization of toolsets from industry titles. Suggested prerequisite: ITSE 1402.

GAME 1406. DESIGN AND CREATION OF GAMES (3-3-4) 10.0304
Introduction to game and simulation development. Includes analysis of existing applications and creation of a game using an existing game engine. In-depth coverage of the essential elements of game design. Also covers an overview of cultural history of electronic games, survey of the major innovators and examination of the trends and taboos that motivate game design. Suggested prerequisite: ITSE 1402.

GAME 1494. SPECIAL TOPICS IN ANIMATION, INTERACTIVE TECHNOLOGY, VIDEO GRAPHICS AND SPECIAL EFFECTS (3-3-4) 10.0304
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. Suggested prerequisite: ITSE 1402.

GAME 2341. GAME SCRIPTING (2-4-3) 10.0304
Scripting languages with emphasis on game concepts and simulations. Prerequisite: ITSE 1402.

GAME 2402. MATHEMATICAL APPLICATIONS FOR GAME DEVELOPMENT (3-3-4) 10.0304
Presents applications of mathematics and science in game and simulation programming. Includes the utilization of matrix and vector operations, kinematics and Newtonian principles in games and simulations. Also covers code optimization. Suggested prerequisite: ITSE 1402, MATH 1314.
GAME 2459. GAME AND SIMULATION GROUP PROJECT (CAPSTONE)  
(3-3-4) 10.0304
Creation of a game and/or simulation project utilizing a team approach. Includes animation, titles, visualization of research results, modeling with polygon frames, curves and surfaces, 3D text and animation with keyframes, paths (objects and curves), morphing, vertex keys, skeletons and lattices. Suggested prerequisite: ITSE 1402.

GEOG - Geography
GEOG 1301. PHYSICAL GEOGRAPHY (3-0-3) 4507015325
Study of a number of interdisciplinary sciences that give a general insight into the nature of man’s environment; survey of combination of the earth’s form, its relation to the atmosphere, meteorology, etc. Assessment Levels: R3, E3, M1.

GEOG 1302. CULTURAL GEOGRAPHY (3-0-3) 4507015325
Human factors which affect man-land relationship; concept of culture, culture areas; population growth and migrations, types of economic activity, urban and transportation geography. Credit not allowed for both this course and GEOG 1303. Assessment Levels: R3, E3, M1.

GEOG 1303. WORLD REGIONAL GEOGRAPHY (3-0-3) 4507015325
Survey of the cultures of the world, including essential physical geography. Credit not allowed for both this course and GEOG 1302. Also offered as an online course. Assessment Levels: R3, E3, M1.

GEOG 1305. GEOGRAPHY OF NORTH AMERICA (3-0-3) 4507015325
Regional study of the geographical aspects of North America, including peoples, climate and landforms. Assessment Levels: R3, E3, M1.

GEOG 2312. ECONOMIC GEOGRAPHY (3-0-3) 4507015225
A survey of computer-based GIS concepts and components. Course includes topics on attributive (descriptive) and spatial (locational) information, digitizing, base maps, spatial database design-management and application and training in a GIS lab. Assessment Levels: R3, E3, M2.

GEOL - Geology
GEOL 1103. PHYSICAL GEOLOGY LABORATORY (0-3-1) 4006015103
Recognition, distribution and origin of common minerals and rocks; experience with maps, aerial photographs, remote sensing images and field applications. GEOL 1303 recommended companion course. Assessment Levels: R3, E3, M2.

GEOL 1303. PHYSICAL GEOLOGY (3-0-3) 4006015103
Internal and plate-boundary processes, earthquakes, spreading, subduction and mountain-building; surface processes of gravity, water and wind; earth resources, landscapes and nearshores. GEOL 1103 recommended companion course. Assessment Levels: R3, E3, M2.

GEOL 1404. EARTH HISTORY (3-3-4) 4006015103
Introduction to geologic time; relative and absolute dating methods; stratigraphic principles; origin of the universe, solar system, atmosphere, oceans, life; changes on the earth’s surface and development of organisms through geologic time. Prerequisite: GEOL 1303 or permission of instructor. Assessment Levels: R3, E3, M2.

GEOL 1447. METEOROLOGY (3-3-4) 4006015103
Comprehensive study of weather phenomena and weather and climate research topics. Includes a study of solar and terrestrial radiation, nature of the atmosphere and atmospheric circulation, atmospheric optics, air pressure, humidity, saturation and stability, clouds and precipitation, winds, pressure systems, fronts, weather systems of middle latitudes, thunderstorms and tornadoes, tropical weather systems, weather radar, weather analysis and forecasting, climate and climate change. Assessment Levels: R3, E3, M2.
GEOL 2409. MINERALOGY AND CRYSTALLOGRAPHY (3-3-4) 4006015203
The study, classification and identification of minerals and their internal and external structures, physical and chemical properties, occurrences and uses. Prerequisites: Three hours of chemistry or GEOL 1303 or instructor’s permission. Assessment Levels: R3, E3, M3.

GERM - German
GERM 1411. BEGINNING GERMAN I (3-2-4) 1605015113
Fundamental skills in listening comprehension, speaking, reading and writing, including basic vocabulary, grammatical structures and culture. Assessment Levels: R3, E3, M1.

GERM 1412. BEGINNING GERMAN II (3-2-4) 1605015113
Fundamental skills in listening comprehension, speaking, reading and writing, including basic vocabulary, grammatical structures and culture. Prerequisite: GERM 1411. Assessment Levels: R3, E3, M1.

GERM 2311. INTERMEDIATE GERMAN I (3-0-3) 1605015213
Review and application of skills in listening comprehension, speaking, reading and writing. Emphasizes conversation, vocabulary acquisition, reading, composition and culture. Prerequisites: GERM 1411 and 1412, satisfactory score on placement test or approval of instructor. Assessment Levels: R3, E3, M1.

GERM 2312. INTERMEDIATE GERMAN II (3-0-3) 1605015213
Review and application of skills in listening comprehension, speaking, reading and writing. Emphasizes conversation, vocabulary acquisition, reading, composition and culture. Prerequisites: GERM 2311, satisfactory score on placement test or permission of instructor. Assessment Levels: R3, E3, M1.

GERS - Gerontological Services
GERS 1301. INTRODUCTION TO GERONTOLOGY (3-0-3) 30.1101
Overview of the social, psychological and biological changes that accompany aging and an overview of the implications of these changes for the individual, as well as for the larger society. Assessment Levels: R1, E1, M1.

GISC - Geographic Information Science and Cartography
GISC 1302. UNDERSTANDING GEOGRAPHIC INFORMATION SYSTEMS (2-4-3) 45.0702
Theory and application of geographic information science (GIS). Includes an overview of the general principles of GIS and practical experience in its use. Assessment Level: R3.

GISC 1311. INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS) (2-4-3) 45.0702
Introduction to basic concepts of vector GIS using several industry specific software programs including nomenclature cartography and geography.

GISC 1421. INTRODUCTION TO RASTER-BASED GEOGRAPHIC INFORMATION SYSTEMS (GIS) (3-3-4) 45.0702
Introduction to raster-based GIS sets including raster-based information such as images of photographs, acquisition of such data and processing and merging with vector data. Course offered only in the Spring semester. Suggested prerequisite: ITSC 1405. Prerequisite: GISC 1311.

GISC 1491. SPECIAL TOPICS IN CARTOGRAPHY (3-3-4) 45.0702
Topics address recently identified current events, skills, knowledge, 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. Course offered only in the Fall semester. Prerequisites: ITSW 1407, GISC 1311.
GISC 2301. DATA ACQUISITION AND ANALYSIS IN GEOGRAPHIC INFORMATION SYSTEMS (GIS) (2-4-3) 45.0702
Study of management of geographic information, system life cycles and costs and benefits. Topics include demographic management and institutional issues such as data providers, data management, combination of attribute and graphical data, information and storage and access, Texas and national standards for spatial data; and applications of GIS for demographic modeling and analysis. Course offered only in the Fall semester. Prerequisite: GISC 1421.

GISC 2311. GEOGRAPHIC INFORMATION SYSTEMS (GIS) APPLICATIONS (2-4-3) 45.0702
Application of GIS technology to real workplace applications from public and private sectors. Completion of Global Positioning System (GPS) fieldwork required for lab exercises. Course offered only in the Spring semester. Prerequisite: GISC 1311.

GISC 2420. INTERMEDIATE GEOGRAPHIC INFORMATION SYSTEMS (GIS) (3-3-4) 45.0702
Focus on the study of spatial data structures and the display, manipulation and analysis of geographic information. Study on the technical aspects involved in spatial data handling, analysis and modeling. Includes theories and procedures associated with the implementation and management of GIS projects. A variety of GIS software packages will be used in the laboratory. Course offered only in the Spring semester. Prerequisite: GISC 1311.

GISC 2459. WEB-SERVED GEOGRAPHIC INFORMATION SYSTEMS (GIS) (3-3-4) 45.0702
Delivery of geographic data via the Internet. Includes composition of the map features distributed and introduction on the use of markup languages to customize web-based Geographic Information Systems (GIS). Course offered only in the Spring semester. Prerequisite: GISC 1311.

GOVT - Government

Students who have taken a government course at another college or university should contact an advisor or the Department of Social Sciences before enrolling in a Del Mar College government course.

GOVT 2301. AMERICAN GOVERNMENT I: FEDERAL AND TEXAS CONSTITUTIONS (3-0-3) 4510025125 (TCCN: 2301)
United States and Texas constitutions; federalism; civil liberties and rights; political socialization and public opinion; political parties; interest groups; political participation, including voting; electoral processes; the media. Note: GOVT 2301 will complete the Texas requirement in government for those who already have three semester hours in U.S. Government and need three additional semester hours that include the government, history and constitution of Texas. Students who have taken a government course at another college or university should contact an advisor or the Department of Social Sciences before enrolling in a Del Mar College government course. Also offered as a telecourse and an online course. Prerequisite: ENGL 1301 and 1302 or ENGL 1301 and concurrent enrollment in ENGL 1302. Assessment Levels: R3, E3, M1.

GOVT 2302. AMERICAN GOVERNMENT II: FEDERAL AND TEXAS TOPICS (3-0-3) 4510025125 (TCCN: 2302)
Legislative, executive and judicial functions at national and state levels; bureaucracies; local governments; domestic policy, including finances, regulations and services; foreign policy. Also offered as a telecourse and an online course. Students who have taken a government course at another college or university should contact an advisor or the Department of Social Sciences before enrolling in a Del Mar College government course. Prerequisite: ENGL 1301 and 1302 or ENGL 1301 and concurrent enrollment in ENGL 1302. Assessment Levels: R3, E3, M1.
GOVT 2304. INTRODUCTION TO POLITICAL SCIENCE (3-0-3) 4510015225
Topics covered include comparative government, international relations, traditional political theory and empirical political theory. Examination of the subjects of public law and public administration and exploration of careers in the field. Students who have taken a government course at another college or university should contact an advisor or the Department of Social Sciences before enrolling in a Del Mar College government course. Assessment Levels: R3, E3, M1.

GOVT 2311. MEXICAN-AMERICAN POLITICS (3-0-3) 0502035425
Topics covered include historical, cultural, socioeconomic and constitutional issues that pertain to the study of Mexican Americans in the United States. Other topics such as political participation, governmental institutions, and public policies, as related to Mexican Americans, will also be addressed. State, local, regional and national issues will be examined. Students who have taken a government course at another college or university should contact an advisor or the Department of Social Sciences before enrolling in a Del Mar College government course. Assessment Levels, R3, E3, M1.

HAMG - Hotel/Motel Management
HAMG 1313. FRONT OFFICE PROCEDURES (3-1-3) 52.0901
Study of the flow of activities and functions in today’s lodging operation. Topics include a comparison of manual, machine assisted and computer-based methods for each front file function.

HAMG 1317. RECREATIONAL SERVICES (3-0-3) 52.0901
The study of guest recreation and entertainment including available space requirements, cost of operation and maintenance, layout and design and direct and indirect benefits.

HAMG 1321. INTRODUCTION TO HOSPITALITY INDUSTRY (3-0-3) 52.0901
Introduction to the elements of the hospitality industry.

HAMG 1340. HOSPITALITY LEGAL ISSUES (3-0-3) 52.0901
Course in legal and regulatory requirements that impact the hospitality industry. Topics include Occupational Safety and Health Administration (OSHA), labor regulations, tax laws, tip reporting, franchise regulations and product liability laws. Prerequisite: HAMG 1321.

HAMG 1342. GUEST ROOM MAINTENANCE (3-1-3) 52.0901
Demonstrates the working relationship in the lodging industry between housekeeping and maintenance.

HAMG 2301. PRINCIPLES OF FOOD AND BEVERAGE OPERATIONS (3-0-3) 52.0901
Introduction to food, beverage and labor cost controls with an overview of the hospitality industry from procurement to marketing. Examination of cost components including forecasting, menu planning and pricing, logistical support, production, service, purchasing and quality assurance.

HAMG 2307. HOSPITALITY MARKETING AND SALES (3-0-3) 52.0901
Identification and application of the core principles of marketing and their impact on the hospitality industry. Assessment Levels: M2.

HAMG 2330. CONVENTION AND GROUP MANAGEMENT AND SERVICES (3-0-3) 52.0901
Course in the scope of various segments of the convention market. Exploration of individual needs and methods and techniques to provide better service to conventions and groups. Assessment Levels: R1, E1, M1.
HAMG 2332. HOSPITALITY FINANCIAL MANAGEMENT (CAPSTONE) (3-0-3) 52.0901
Methods and application of financial management within the hospitality industry. Primary emphasis on sales accountability, internal controls and report analysis. Assessment Levels: R2, E2, M2.

HAMG 2381. HOSPITALITY ADMINISTRATION AND MANAGEMENT COOPERATIVE EDUCATION (CAPSTONE) (1-20-3) 52.0901
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. Prerequisites: HAMG 1313 and 1342. Assessment Levels: R2, E2, M2.

HAMG 2388. INTERNSHIP - HOSPITALITY ADMINISTRATION AND MANAGEMENT (0-18-3) 52.0901
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. Prerequisites: HAMG 1313, 1321. Assessment Levels: R2, E2, M2.

HART - Heating, Air Conditioning, Refrigeration Technology

HART 1301. BASIC ELECTRICITY FOR HVAC (1-7-3) 15.0501
Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits and component theory and operation. Assessment Levels: R1, E1, M1.

HART 1351. ENERGY MANAGEMENT (1-7-3) 15.0503
Study of basic heat transfer theory; sensible and latent heat loads; building envelope construction; insulation, lighting and fenestration types; and conducting energy audit procedures. The course also develops energy audit recommendations based on local utility rates, building use and construction. Laboratory activities include developing energy audit reports, installing energy saving devices and measuring energy consumption. Assessment Levels: R1, E1, M1.

HART 1401. BASIC ELECTRICITY FOR HVAC (2-6-4) 15.0501
Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits and component theory and operation. Assessment Levels: R1, E1, M1.

HART 1403. A/C CONTROL PRINCIPLES (2-6-4) 15.0501
A basic study of electrical, pressure and temperature controls including motor starting devices, operating relays and troubleshooting safety controls and devices. Emphasis on use of wiring diagrams to analyze high and low voltage circuits. A review of Ohm’s law as applied to A/C controls and circuits. Prerequisite: HART 1407. Assessment Levels: R1, E1, M1.

HART 1407. REFRIGERATION PRINCIPLES (2-6-4) 15.0501
Introduction to the refrigeration cycle, basic thermodynamics, heat transfer, temperature/pressure relationship, safety, refrigeration containment and refrigeration components. Assessment Levels: R1, E1, M1.

HART 1441. RESIDENTIAL AIR CONDITIONING (2-6-4) 15.0501
Study of components, applications and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair and charging of air conditioning systems. Prerequisites: HART 1403, MAIR 1449. Assessment Levels: R1, E1, M1.

HART 1445. GAS AND ELECTRIC HEATING (2-6-4) 15.0501
Study of the procedures and principles used in servicing heating systems including gas fired and electric furnaces. Prerequisites: HART 1403, MAIR 1449. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

HART 2301. AIR CONDITIONING AND REFRIGERATION CODES (2-3-3) 15.0501
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. Assessment Levels: R1, E1, M1.

HART 2302. COMMERCIAL AIR CONDITIONING SYSTEM DESIGN (1-7-3) 15.0501
Advanced study in essential elements of commercial air conditioning contracting including duct systems design and/or material takeoff; weight estimating; equipment selection using manufacturers catalog data; job cost eliminating, scheduling, preparation of shop drawings and submittals. Prerequisite: HART 1403. Assessment Levels: R1, E1, M1.

HART 2331. ADVANCED ELECTRICITY FOR HVAC (2-3-3) 15.0501
Advanced electrical instruction and skill building in installation and servicing of air conditioning and refrigeration equipment including detailed instruction motors and power distribution, motors, motor controls, and application of solid state devices. Prerequisite: HART 1403. Assessment Levels: R1, E1, M1.

HART 2338. AIR CONDITIONING INSTALLATION AND STARTUP (CAPSTONE) (1-7-3) 15.0501
Study of air conditioning system installation, refrigerant piping, condensate disposal and air cleaning equipment with emphasis on startup and performance testing. Assessment Levels: R1, E1, M1.

HART 2341. COMMERCIAL AIR CONDITIONING (1-7-3) 15.0501
Study of components, applications and installation of air conditioning systems with capacities of 25 tons or less. Assessment Levels: R1, E1, M1.

HART 2342. COMMERCIAL REFRIGERATION (CAPSTONE) (1-7-3) 15.0501
Theory of and practical application in the maintenance of commercial refrigeration; high, medium and low temperature applications and ice machines. Prerequisites: HART 1403, MAIR 1449. Assessment Levels: R1, E1, M1.

HART 2345. RESIDENTIAL AIR CONDITIONING SYSTEMS DESIGN (1-7-3) 15.0501
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. Assessment Levels: R1, E1, M1.

HART 2349. HEAT PUMPS (1-7-3) 15.0501
Study of heat pumps, heat pump control circuits, defrost controls, auxiliary heat, airflow, and other topics related to heat pump systems. Prerequisite: HART 1403. Assessment Levels: R1, E1, M1.

HART 2434. ADVANCED AIR CONDITIONING CONTROLS (CAPSTONE) (2-6-4) 15.0501
Theory and application of electrical control devices, electromechanical controls, direct digital controls and/or pneumatic controls. Assessment Levels: R1, E1, M1.

HEMR - Heavy Equipment Maintenance and Repair

HEMR 1304. NATURAL GAS COMPRESSION (1-7-3) 47.0302
An introductory course in the principles of the operation of gas compressors and natural gas engines. Assessment Levels: R1, E1, M1.

HEMR 1401. TRACKS AND UNDERCARRIAGES (2-6-4) 47.0302
Concepts in operation and maintenance of final drive track systems and undercarriages used on track and wheel type equipment. Assessment Levels: R1, E1, M1.
HIST - History

HIST 1301. UNITED STATES HISTORY I (3-0-3) 4508025125
Survey of the nation’s colonial background, the struggle for independence and the emergence of political parties; emphasis on individualism, westward expansion, social reform and sectionalism. Also offered as a telecourse and an online course. Assessment Levels: R3, E3, M1.

HIST 1302. UNITED STATES HISTORY II (3-0-3) 4508025125
Survey of Reconstruction; the impact of industrialization, urbanization and immigration; the rise of America as a world power; the quest for economic security and for social justice. Also offered as a telecourse and an online course. Assessment Levels: R3, E3, M1.

HIST 2301. TEXAS HISTORY (3-0-3) 4508025225
Survey of the history of Texas from 1500 to more recent times; emphasis on variety of influences from Indian, Spanish and American cultures; the political and economic evolution of the state; the social significance of the multi-ethnic character of the state’s population. Open to freshmen and sophomores. Assessment Levels: R3, E3, M1.

HIST 2311. WESTERN CIVILIZATION I (3-0-3) 4508015425
Rise of Near Eastern civilizations, Greeks and Romans, medieval Europe, Renaissance and Reformation and wars of religion. Open to freshmen and sophomores. Also offered as an online course. Assessment Levels: R3, E3, M1.

HIST 2312. WESTERN CIVILIZATION II (3-0-3) 4508015425
Modern Europe, intellectual and technological developments, revolutions, nationalism and its consequences, modern wars, ideologies and absolutism. HIST 2311 recommended but not required. Open to freshmen and sophomores. Also offered as an online course. Assessment Levels: R3, E3, M1.

HITT - Health Information Technology

HITT 1261. CLINICAL I (CAPSTONE) (0-8-2) 51.0707
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. Prerequisites: HITT 1342, 2335. Must be taken concurrently with: HITT 1355, 2339 and 2343. Assessment Levels: R3, E3, M2.

HITT 1301. HEALTH DATA CONTENT AND STRUCTURE (2-2-3) 51.0707
Introduction to systems and processes for collecting, maintaining and disseminating primary and secondary health-related information including consent of health record, documentation requirements, registries, indices, licensing, regulatory agencies, forms and screens. Must be taken concurrently with: HITT 1305, 1349 and POFI 1301. Assessment Levels: R3, E3, M2.

HITT 1305. MEDICAL TERMINOLOGY (3-0-3) 51.0707
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. Must be taken concurrently with: HITT 1301, 1349 and POFI 1301. Assessment Levels: R3, E3, M2.

HITT 1341. CODING AND CLASSIFICATION SYSTEM (3-1-3) 51.0713
Application of basic coding rules, principles, guidelines and conventions. Prerequisites: HITT 1301, 1305, 1349 and POFI 1301. Must be taken concurrently with: HITT 1345, 1353, HPRS 2301 and POFI 1341. Assessment Levels: R3, E3, M2.

HITT 1342. AMBULATORY CODING (3-1-3) 51.0713
Application of basic coding rules, principles, guidelines and conventions with emphasis on ambulatory coding. Prerequisites: HITT 1341, 1345, 1353, HPRS 2301 and POFI 1341. Must be taken concurrently with: HITT 2335. Assessment Levels: R3, E3, M2.
HITT 1345. HEALTHCARE DELIVERY SYSTEMS (3-0-3) 51.0707
Introduction to organization, financing and delivery of health care services, accreditation, licensure and regulatory agencies. Prerequisites: HITT 1301, 1305, 1349, and POFI 1301. Must be taken concurrently with: HITT 1341, 1353, HPRS 2301 and POFI 1341. Assessment Levels: R3, E3, M2.

HITT 1349. PHARMACOLOGY (3-0-3) 51.0707
Overview of the basic concepts of the pharmacological treatment of various diseases affecting major body systems. Must be taken concurrently with: HITT 1301, 1305 and POFI 1301. Assessment Levels: R3, E2, M2.

HITT 1353. LEGAL/ETHICAL ASPECTS OF HEALTH INFORMATION (3-0-3) 51.0707

HITT 1355. HEALTHCARE STATISTICS (3-0-3) 51.0707

HITT 2260. CLINICAL II (0-8-2) 51.0707
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. Prerequisite: HITT 1261, 1355, 2339 and 2343. Assessment Levels: R3, E3, M2.

HITT 2335. CODING AND REIMBURSEMENT METHODOLOGIES (CAPSTONE) (3-1-3) 51.0713
Development of advanced coding techniques with emphasis on case studies, health records, and federal regulations regarding prospective payment systems and methods of reimbursement. Prerequisites: HITT 1341, 1345, 1353, HPRS 2301, and POFI 1341. Must be taken concurrently with: HITT 1342. Assessment Levels: R3, E3, M2.

HITT 2339. HEALTH INFORMATION ORGANIZATION AND SUPERVISION (3-0-3) 51.0707
Principles of organization and supervision of human, fiscal and capital resources. Prerequisite: HITT 1342 and 2335. Must be taken concurrently with: HITT 1261, 1355, 2343, and 2339. Assessment Levels: R3, E3, M2.

HITT 2343. QUALITY ASSESSMENT AND PERFORMANCE IMPROVEMENT (3-0-3) 51.0707
Study of the many facets of quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality improvement functions, quality tools, utilization management, risk management, and medical staff data quality issues. Prerequisites: HITT 1342 and 2335. Must be taken concurrently with: HITT 1261, 1355, and 2339. Assessment Levels: R3, E3, M2.

HPRS - Health Professions and Related Sciences, Other

HPRS 1106. MEDICAL TERMINOLOGY (1-0-1) 51.1999
Prerequisite for selected health occupations courses. Study of common medical terminology, word origin, structure and application. For currency, must have been taken within two years of beginning a program. Must be taken concurrently with HPRS 1204. Assessment Levels: R2, E2, M2.
HPRS 1204. BASIC HEALTH PROFESSION SKILLS (1-4-2) 51.1999
Prerequisite for selected health occupations courses. Study of the concepts that serve as the foundation for health profession courses, including client care and safety issues, basic client monitoring and introduction to health documentation methods used by health care providers. For currency, must have been taken within two years of beginning a program. Must be taken concurrently with: HPRS 1106. Assessment Levels: R2, E2, M2.

HPRS 1206. MEDICAL TERMINOLOGY (2-0-1) 51.1999
Required for Emergency Medical Services Professions courses. Study of common medical terminology, word origin, structure and application. Assessment Levels: R2, E2, M1.

HPRS 2301. PATHOPHYSIOLOGY (3-0-3) 51.0000
Study of pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms and the physical and psychological reactions to diseases and injuries. Prerequisites: HITT 1301, 1305, 1349 and POFI 1301. Must be taken concurrently with: HITT 1341, 1345, 1353 and POFI 1341. Assessment Levels: R3, E3, M2.

Honors Program
For a current list of available Honors courses, consult the Honors Program Web site: www.delmar.edu/honors.html. Enrollment in courses is open to approved Honors Program students.

HRPO - Human Resources Management
HRPO 1311. HUMAN RELATIONS (3-0-3) 52.1003
Practical application of the principles and concepts of the behavioral sciences to interpersonal relationships in the business and industrial environment.

HRPO 2301. HUMAN RESOURCES MANAGEMENT (3-0-3) 52.1001
Behavioral and legal approaches to the management of human resources in organizations.

HUMA - Humanities
HUMA 1301. INTRODUCTION TO THE HUMANITIES (3-0-3) 2401035142
Interdisciplinary course: The study of music, literature, painting, sculpture, architecture and philosophy; relation of these subjects to each other in their social-political context. Assessment Levels: R3, E3, M1.

IFWA - Institutional Food Workers and Administrators
IFWA 1318. NUTRITION FOR THE FOOD SERVICE PROFESSIONAL (3-0-3) 12.0508
Introduction to nutrition including nutrients, digestion and metabolism, menu planning, recipe modification, dietary guidelines and restrictions, diet and disease and healthy cooking techniques. Prerequisite: CHEF 1301.

IFWA 1427. FOOD PREPARATION II (CAPSTONE) (2-6-4) 12.0508
Continuation of the fundamental principles of food preparation (CHEF 1301). Emphasis on preparation of food items such as meats, poultry, fish. Prerequisite: CHEF 1301.

IMED - Instructional Media Technology
IMED 1191. SPECIAL TOPICS IN EDUCATIONAL/INSTRUCTIONAL MEDIA DESIGN (1-0-1) 13.0501
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. Designed to be repeated multiple times to improve student proficiency. Suggested prerequisite: ITSC 1405.
IMED 1301. INTRODUCTION TO MULTIMEDIA (2-4-3) 11.0801
A survey of the theories, elements and hardware/software components of multimedia. Topics include digital image editing, digital sound and video editing, animation, Web site development and interactive presentations. Emphasis on conceptualizing and producing effective multimedia presentations. Prerequisite: ITSC 1301.

IMED 1305. MULTIMEDIA COURSEWARE DEVELOPMENT I (2-4-3) 13.0501
Instruction in courseware development. Topics include interactivity, branching, navigation, evaluation techniques and interface/information design using industry standard authoring software. Course offered in the Fall semester only. Prerequisites: ITSC 1301, IMED 1301.

IMED 1316. WEB DESIGN I (2-4-3) 11.0801
Instruction in Web page design and related graphic design issues including mark-up languages, Web sites and browsers. Prerequisite: ITSC 1405. Course offered in the spring semester only.

IMED 1345. INTERACTIVE MULTIMEDIA I (2-4-3) 11.0801
Exploration of the use of graphics and sound to create time-based interactive multimedia animations using industry standard authoring software. Suggested prerequisite, IMED 1305. Course offered in the fall semester only.

IMED 1491. SPECIAL TOPICS IN EDUCATIONAL/INSTRUCTIONAL MEDIA DESIGN (3-3-4) 13.0501
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. This course was designed to be repeated multiple times to improve student proficiency.

IMED 2301. INSTRUCTIONAL DESIGN (2-4-3) 13.0501
An in-depth study of the instructional design process based on learning theories including evaluation of models and design examples. Prerequisites: ITSC 1301, IMED 1305.

IMED 2305. MULTIMEDIA COURSEWARE DEVELOPMENT II (2-4-3) 13.0501
In-depth coverage of programming/scripting using an icon-based authoring system with emphasis on advanced development of courseware products. Concepts of object-oriented programming in a multimedia environment will include the use of animation, the editing of audio files and video graphic images in the development of a multimedia program. Advanced techniques using a script language are presented to handle computer hardware events from other media devices such as CD-ROM and audio devices. Advanced scripting used to handle navigation, text presentation and manipulation of graphic images. Media presentations are developed that are nonlinear and have access to information sources from peripheral devices. Includes a “hands-on” laboratory. Course offered in the Spring semester only. Suggested prerequisites: IMED 1345 and 2301.

IMED 2309. INTERNET COMMERCE (2-4-3) 11.0801
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 Web sites in order to collect information, performing online transactions and generating dynamic content. (Offered in the Spring Semester only) Prerequisite: IMED 1345. Suggested prerequisites: ITSE 1402, ITSC 1405 and IMED 2415.

IMED 2311. PORTFOLIO DEVELOPMENT (2-4-3) 11.0801
Emphasis on preparation and enhancement of portfolio to meet professional standards, professional organizations, presentation skills and job-seeking techniques. Prerequisite: IMED 2305.
IMED 2313. PROJECT ANALYSIS AND DESIGN (2-4-3) 11.0801
Introduction to the multimedia planning process for multimedia or Web including costing, preparation, production legal issues and guidelines for pre-production preparation and creation of a comprehensive design document including target audience analysis, purpose and goals, objectives, content outline, flow chart and storyboard. Emphasis on content design and production management. Emphasis on copyright and other legal issues, content design and production management. Prerequisite: IMED 2305.

IMED 2349. INTERNET COMMUNICATIONS (2-4-3) 11.1004
Web server software installation, configuration and maintenance. Includes scripting, website planning, testing, security, production and marketing. Course offered only in the Spring semester. Suggested prerequisites: ITSC 1405, ITNW 1454.

IMED 2351. MULTIMEDIA PROGRAMMING (2-4-3) 11.0801
Advanced topics in multimedia programming including custom scripts for data tracking. Emphasis on developing multimedia programs customized to the client’s needs. Prerequisite: IMED 1305 and ITSE 1402 or COSC 1436. Suggested prerequisite: IMED 2305.

IMED 2415. WEB DESIGN II (3-3-4) 11.0801
Study of hypertext mark-up language (HTML) and interesting layout techniques for creating engaging well-designed Web pages. Emphasis on identifying the target audience and producing a Web site according to physical and technical limitations, cultural appearance and legal issues. Interactive database-driven Web sites developed to accomplish this, using Access, BV.NET, ASP.NET, Javascripts and Personal Web Server technologies. Prerequisites: IMED 1301 and 1316. Suggested prerequisites: ITSE 1402 and ITSC 1405.

IMED 2459. INTERACTIVE WEB ELEMENTS (3-3-4) 13.0501
Production of projects using current Web development tools that may incorporate dynamic data, Web graphics, animation, video and audio streaming. Producing and editing video and sound for multimedia and Web projects using a desktop digital video workstation. Suggested prerequisite: IMED 1301.

INMT - Industrial Manufacturing Technology
INMT 2388. INTERNSHIP - INDUSTRIAL/MANUFACTURING TECHNOLOGY/TECHNICIAN (CAPSTONE) (1-8-3) 15.0603
A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. 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. Assessment Levels: R1, E1, M1.

INSR - Insurance and Risk Management
INSR 2311. TEXAS WORKERS COMPENSATION (3-0-3) 52.0805
Study of the history and rationale for the workers compensation systems and the rapidly changing regulatory environment. Topics include the importance of adequate medical knowledge in adjusting claims. Assessment Levels: R1, E1, M1.

ITCC - Information Technology-Cisco Certification
ITCC 1304. CISCO EXPLORATION 2 – ROUTING PROTOCOLS AND CONCEPTS (2-4-3) 11.1002
This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. Recognize and correct common routing issues and problems. Model and analyze routing processes. Prerequisite: ITCC (Cisco Exploration 1).
ITCC 1401. EXPLORATION – NETWORK FUNDAMENTALS (2-4-3) 11.1002
A course introducing the architecture, structure, functions, components, and models of the Internet. Describes the use of OSI and TCP layered models to examine the nature and roles of protocols and services at the applications, network, data link, and physical layers. Covers the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations. Build simple LAN topologies by applying basic principles of cabling; perform basic configurations of network devices, including routers and switches; and implementing IP addressing schemes. Prerequisites: ITSC 1401, or COSC 1401, or CPMT 1403; COSC 1309, or ITSE 1402.

ITCC 2308. CISCO EXPLORATION 3 – LAN SWITCHING AND WIRELESS (2-4-3) 11.1002
This course helps students develop an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks. Detailed explanations of LAN switch operations, VLAN implementation, Rapid Spanning Tree Protocol (RSTP), VLAN Trunking Protocol (VTP), Inter-VLAN routing, and wireless network operations. Analyze, configure, verify, and troubleshoot VLANs, RSTP, VTP, and wireless networks. Campus network design and Layer 3 switching concepts are introduced. Prerequisite: ITCC (Cisco Exploration 1).

ITCC 2310. CISCO EXPLORATION 4 – ACCESSING THE WAN (2-4-3) 11.1002
This course explains the principles of traffic control and access control lists (ACLs) and provides an overview of the services and protocols at the data link layer for wide-area access. Describes user access technologies and devices and discover how to implement and configure Point-to-Point Protocol (PPP), Point-to-Point Protocol over Ethernet (PPPoE), DSL, and Frame Relay. WAN security concepts, tunneling, and VPN basics are introduced. Discuss the special network services required by converged applications and an introduction to quality of service (QoS). Prerequisite: ITCC (Cisco Exploration 1), ITCC (Cisco Exploration 2).

ITDF - Information Technology/Digital Forensics

ITDF 1300. INTRODUCTION TO DIGITAL FORENSICS (2-4-3) 11.1003
Study of the application of forensic science and technology to collect, analyze, document and present after-the-fact digital information from digital sources while maintaining a documented chain of custody to determine exactly what happened on a digital device. Overview of ethics, white collar crime, HIPAA, SOX, GLBA and other legal guidelines/regulations/laws. Includes overview of tools used for forensic analysis of digital devices seized in investigations. Also covers securing a search warrant, collecting digital evidence, protecting digital evidence and obtaining information from offenders. Suggested prerequisites: ITSC or COSC 1301, ITSC 1405.

ITDF 1405. FUNDAMENTALS OF DIGITAL DATA STORAGE (3-3-4) 11.1003
Explanation, examination and assessment of the characteristics and details of digital storage media used in computers systems and small-scale digital devices, such as cell phones, cameras, TIVO, PDAs and other devices. Includes experimenting with various open source tools to reinforce identification of evidentiary data. Suggested prerequisites: ITSC or COSC 1301, ITSC 1405.

ITDF 2420. DIGITAL FORENSICS COLLECTION (3-3-4) 11.1003
Study of how to obtain digital evidence of a device and from network messages and logs while preserving the evidentiary chain. Includes the legal aspects of the search and seizure of computers and related equipment/information. Suggested prerequisite: ITSC 1405, ITDF 2425 (co-requisite)

ITDF 2425. DIGITAL FORENSICS TOOLS (3-3-4) 11.1003
Skills-based course in the applications of major forensic hardware and software tools such as EnCase, ILook, Forensic Tool Kit, write blockers, StegAlyzerSS, “X-Ways”
forensic software, ProDiscover Basic and others. Suggested prerequisite: ITSC 1405, ITDF 2420 (co-requisite)

**ITDF 2430. DIGITAL FORENSICS ANALYSIS (3-3-4) 11.1003**
Digital forensic analysis, report preparation and evidence presentation. Emphasizes balancing legal and technical aspects of cases where digital forensics is employed. Suggested prerequisites: ITSC 1405, ITDF 2420 and 2425.

**ITDF 2435. COMPREHENSIVE DIGITAL FORENSICS PROJECT (3-3-4) 11.1003**
Comprehensive application of skills learned in previous digital forensics courses in a simulated crime scene or workplace investigation. Includes collection, analysis and presentation of digital data and evidence in a problem-based case study format. This course is used as a capstone course for a certificate or degree. Suggested prerequisites: ITDF 2420, 2425 and 2430.

**ITNW - Information Technology/Networking**

**ITNW 1392. SPECIAL TOPICS IN COMPUTER SYSTEMS NETWORKING AND TELECOMMUNICATIONS (2-4-3) 11.0901**
Topics address recently identified current events, emerging technologies, skills, knowledge and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. Designed to be repeated multiple times to improve student proficiency.

**ITNW 1425. FUNDAMENTALS OF NETWORKING TECHNOLOGIES: (3-3-4) 11.1002**
Instruction in networking technologies and their implementation. Topics include the OSI reference model, network protocols, transmission media, topologies, access methods and networking hardware and software. Additional topics include cabling, cable closets, management devices, selection and installation of network devices, protocols and subnetting. This course will serve as part of the IT Core but will not substitute for the CCNA requirements in the Networking Degree or the Cisco Certification.

**ITNW 1451. FUNDAMENTALS OF WIRELESS LANS (3-4-4) 11.1002**
Designing, planning, implementing, operating and troubleshooting wireless LANs (WLANs). Includes WLAN design, installation and configuration; and WLAM security issues and vendor interoperability strategies. Prerequisite: CPMT 1449. Assessment Levels: R1, E1, M1.

**ITNW 1454. IMPLEMENTING AND SUPPORTING SERVERS (3-3-4) 11.0901**
Development of skills necessary to implement, administer and troubleshoot information systems that incorporate servers in a networked computer environment. Suggested prerequisite: ITSC 1405.

**ITNW 2313. NETWORKING HARDWARE (2-4-3) 11.0901**
Preparation to fabricate, install, configure and maintain network cabling and hardware devices. Topics include media, topologies, access methods, IEEE network standards, network cables, structured wiring, servers and workstations; network connectivity devices such as routers, hubs, bridges, gateways, repeaters and uninterruptible power supplies; and other networking hardware devices.

**ITNW 2332. UNIX NETWORK INTEGRATION (2-4-3) 11.0901**
Installation, configuration, management and support of a network infrastructure in a large computing environment that uses a version of the UNIX server operating system. Includes connectivity requirements, network services and applications including file, print, database, messaging, proxy server, firewall, Dynamic Host Configuration Protocol, Network Time Protocol, Domain Name Service and Internet Protocol Version 6 configuration and use. Course offered only in the Fall semester. Suggested prerequisite: ITSC 1358.
ITNW 2435. NETWORK TROUBLESHOOTING AND SUPPORT (3-3-4) 11.0901
Troubleshoot and support networks with emphasis on solving real world problems in a hands-on environment. Topics include troubleshooting and research techniques, available resources, and network management hard/software. Suggested prerequisites: ITNW 1425, 1454 or ITSC 1358.

ITSC - Information Technology/Software Computing

ITSC 1301. INTRODUCTION TO COMPUTERS (3-1-3) 11.0101
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. May be concurrently offered as an Internet course. Suggested prerequisite: Keyboarding proficiency.

ITSC 1309. INTEGRATED SOFTWARE APPLICATIONS I (2-4-3) 11.0101
Integration of software applications from popular business productivity software suites. Instruction in embedding data, linking and combining documents using word processing, spreadsheets, databases and/or presentation media software. May be concurrently offered as an Internet course. Suggested prerequisite: Keyboarding proficiency.

ITSC 1325. PERSONAL COMPUTER HARDWARE (2-4-3) 47.0104
Study of current personal computer hardware including personal computer assembly and upgrading, setup and configuration and troubleshooting. Covers CPUs, BUSs, peripheral equipment, optional and add-on equipment, interfacing and conflict resolution. Includes diagnosis of faulty components; optimization of system performance; and installation of peripherals. Includes a “hands-on” laboratory. Prerequisite: ITSC 1301.

ITSC 1358. UNIX SYSTEM ADMINISTRATION I (2-4-3) 11.0101
Provide new system administrators the basics of administering UNIX workstations. Students perform basic system administration tasks, such as installing a standalone system, adding users, backing up and restoring file systems and adding a new printer support. Emphasis on the procedures needed to perform these systems administration tasks. Introduces the concept of the system and disk management. Prerequisite: ITSC 1405.

ITSC 1391. SPECIAL TOPICS IN COMPUTER AND INFORMATION SCIENCES, GENERAL (2-4-3) 11.0101
Topics address recently identified current events, skills, knowledges and/or attitudes and behaviors pertinent to technology or occupation and relevant to the professional development of the student. Designed to be repeated multiple times to improve student proficiency.

ITSC 1405. INTRODUCTION TO PC OPERATING SYSTEMS (3-3-4) 11.0101
Study of personal computer operating systems. Topics include installation and configuration, file management, memory and storage management, control of peripheral devices and use of utilities. Suggested prerequisite: Concurrent enrollment in ITSC 1301 or ITSE 1402.

ITSC 2286. INTERNSHIP - COMPUTER AND INFORMATION SCIENCE, GENERAL (CAPSTONE) (0-10-2) 11.0101
A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts including a learning plan developed by the college and the employer. 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. This course may be repeated if topics and learning outcomes vary. Prerequisite: ITSE 1350 and consent of instructor.

**ITSE - Information Technology/Software Engineering**

**ITSE 1191. SPECIAL TOPICS IN COMPUTER PROGRAMMING (1-0-1) 11.0201**
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. Designed to be repeated multiple times to improve student proficiency. Examines in detail specific topics in computers used by business interests. Topics change as the need arises. May be repeated for credit.

**ITSE 1350. SYSTEMS ANALYSIS AND DESIGN (2-4-3) 11.0201**
Comprehensive introduction to the planning, design and construction of computer information systems using the systems development life cycle and other appropriate design tools. Topics include methods, tools and techniques to understand the existing system, determine true requirements for the new computerized information system, develop the system solution and implement the finalized system plan. Prerequisite: ITSE 1402 or COSC 1436.

**ITSE 1391. SPECIAL TOPICS IN COMPUTER PROGRAMMING (2-4-3) 11.0201**
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. Designed to be repeated multiple times to improve student proficiency. Examines in detail specific topics in computers used by business interests. Topics change as the need arises. May be repeated for credit.

**ITSE 1402. COMPUTER PROGRAMMING (3-3-4) 11.0201**
Introduction to computer programming with emphasis on the fundamentals of structured design, development, testing, implementation and documentation. Includes language syntax, data and file structures, input/output devices and files. Topics include methods, tools and techniques to design logical algorithms and write proper computer programs from those algorithms.

**ITSE 1432. INTRODUCTION TO VISUAL BASIC.NET PROGRAMMING (3-3-4) 11.0201**
Study of Visual Basic.NET (VB). Data types, control structures, functions, syntax and semantics of the language, classes, class relationships and exception handling. Suggested prerequisite: ITSE 1402.

**ITSE 1447. PROGRAMMING WITH VISUAL BASIC.NET (3-3-4) 11.0901**

**ITSE 1491. SPECIAL TOPICS IN COMPUTER PROGRAMMING (3-3-4) 11.0201**
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. Examines in detail specific topics in computers used by business interests. Designed to be repeated multiple times to improve student proficiency. Topics change as the need arises. May be repeated for credit.
COURSE DESCRIPTIONS

**ITSE 1492. SPECIAL TOPICS IN COMPUTER PROGRAMMING (3-3-4) 11.0201**
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. Topics change as the need arises. May be repeated for credit. Suggested prerequisite: ITSE 1402 or COSC 1436.

**ITSE 2313. WEB AUTHORING (2-4-3) 11.0801**
Instruction in designing and developing Web pages that incorporate text, graphics and other supporting elements using current technologies and authoring tools. Topics include methods, tools and techniques to do develop “interactive” Web pages, server-side and client-side processes to transfer information to web pages, HTML tags, MIME types, frames and framesets, FTP, Java and/or Perl scripting. Prerequisites: ITSC 1301 and 1405. Suggested prerequisites: ITSE 1402 or COSC 1436.

**ITSE 2402. INTERMEDIATE WEB PROGRAMMING (3-3-4) 11.0801**

**ITSE 2409. DATABASE PROGRAMMING (3-3-4) 11.0802**
Application development using database programming techniques emphasizing database structures, modeling and database access. Topics include methods, tools and techniques to access information from existing database tables using Structured Query Language (SQL), create queries, create reports, produce screen output, produce appropriate documentation and explore Access, Oracle, MySQL, or other relational database systems. Course offered only in the Fall semester. Prerequisites: ITSE 1402 and ITSW 1407.

**ITSE 2417. JAVA PROGRAMMING (3-3-4) 11.0201**
Introduction to Java programming with object-orientation. Emphasis on the fundamental syntax and semantics of Java for applications and Web applets. Topics include methods, tools and techniques for event-driven, non-linear design, graphical user interface (GUI) development and incorporation of Java packages and components into applications and applets. Prerequisites: ITSE 1402 or COSC 1436. Suggested prerequisite: ITSE 2431.

**ITSE 2431. ADVANCED C++ PROGRAMMING (3-3-4) 11.0201**
Further application of C++ programming techniques including subjects such as file access, abstract data structures, class inheritance and other advanced techniques. Topics include methods, tools and techniques for file access, declaring abstract data types, structures, classes and principles and concepts of object-oriented design and programming. Advanced topics include function and class templates, overloading operators and functions, inheritance and array and linked-list processing. Course may be offered as COSC 1437. Prerequisite: ITSE 1402 or COSC 1436.

**ITSE 2437. ASSEMBLY LANGUAGE PROGRAMMING (3-3-4) 11.0201**
Comprehensive coverage of low-level computer operations and architecture. Includes design, development, testing, implementation and documentation of programs; language syntax; data manipulation; input/output devices and operations; and file access. Topics include an introduction to processor (CPU) architecture, related hardware, processor instruction set, macros and procedures, registers, memory addressing, stack and using Assembly language procedures with high-level languages. Course may be offered as COSC 2425. Course offered only in the Spring semester. Course held only in the evenings during even-numbered years and only during the day in odd-numbered years. Prerequisite: ITSE 1402 or COSC 1436 and ITSE 2431, or COSC 1437 or permission of the instructor.

**ITSE 2445. DATA STRUCTURES (3-3-4) 11.0201**
Further applications of programming techniques. Includes an in-depth look at various data structures and the operations performed on them. Topics include methods, tools and techniques for implementing sorting and searching algorithms, lists, queues, stacks
and other advanced data structures. Course offered only in the Fall semester. Course held only in the evenings during even-numbered years and only during the day in odd-numbered years. Prerequisites: ITSE 1402 or COSC 1436. Suggested prerequisite ITSE 2431.

**ITSE 2447. ADVANCED DATABASE PROGRAMMING (3-3-4) 11.0802**
Application development using complex database programming techniques emphasizing multiple interrelated files, menu design, security implementation and multiple access. Topics include review of database models with major emphasis on the relational model, development of physical schema and data sets, report writing, querying techniques, SQL, screen layout/design and scripting and programming language access to databases. Course offered only in the Spring semester. Prerequisites: ITSW 1407 and either ITSE 2409 or 2449.

**ITSW - Information Technology/Software**

**ITSW 1407. INTRODUCTION TO DATABASE (3-3-4) 11.0802**
Introduction to database theory and the practical applications of a database. Topics include database terminology and concepts, methods and techniques to plan, design and generate a database and database tables, perform a query and produce a report. Prerequisite: ITSC 1309.

**ITSY - Computer and Information Systems Security**

**ITSY 1300. FUNDAMENTALS OF INFORMATION SECURITY (2-4-3) 11.1003**
Basic information security goals of availability, integrity, accuracy and confidentiality. Vocabulary and terminology specific to the field of information security are discussed. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. The importance of appropriate planning and administrative controls is also discussed. Suggested prerequisites: ITNW 1425.

**ITSY 1442. INFORMATION TECHNOLOGY SECURITY (3-3-4) 11.1003**
Instruction in security for network hardware, software and data, including physical security, backup procedures, relevant tools, encryption and protection from viruses. Suggested prerequisite: ITSY 1300, 2400, or ITSY 2401.

**ITSY 1491. SPECIAL TOPICS IN INFORMATION TECHNOLOGY/SECURITY (3-3-4) 11.1003**
Topics address recently identified current events, skills, knowledges and/or attitudes and behaviors pertinent to the information security technology or occupation and relevant to the professional development of the student.

**ITSY 2400. OPERATING SYSTEM SECURITY (3-3-4) 11.1003**
Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats, vulnerabilities and monitor network security implementations. Use best practices to configure operating systems to industry security standards. Suggested prerequisite: ITSC 1358.

**ITSY 2401. FIREWALLS AND NETWORK SECURITY (3-3-4) 11.1003**
Identify elements of firewall design, types of security threats and responses to security attacks. Use best practices to design, implement and monitor a network security plan. Learn security incident post mortem analysis and ongoing network security activities. Suggested prerequisites: ITNW 1425 and ITSY 2400.

**ITSY 2417. WIRELESS SECURITY DEVELOPMENT (3-3-4) 11.1003**
Development of information security policies, standards and guidelines for an organization. Includes Demilitarized Zone (DMZ), antivirus, Virtual Private Network (VPN), wireless communications, remote access, and other critical administrative and operational security policies. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. Emphasizes wireless security goals of
availability, integrity, accuracy, and confidentiality in the design, planning, implement-
ing, operating, and troubleshooting of wireless LAN along with appropriate planning
and administrative controls. Suggested prerequisite: ITSY 2400.

ITSY 2430. INTRUSION DETECTION (3-3-4) 11.1003
Computer information systems security monitoring, intrusion detection and crisis man-
agement. Includes alarm management, signature configuration, sensor configuration
and troubleshooting components. Emphasizes identifying, resolving and document-
ing network crises and activating the response team. Suggested prerequisites: ITSY
2400 and 2401.

ITSY 2441. SECURITY MANAGEMENT PRACTICES (3-3-4) 11.1003
Identify elements of firewall design, types of security threats and responses to security
attacks. Use best practices to design, implement and monitor a network security plan.
Examine security incident postmortem reporting and ongoing network security activi-
ties. In-depth coverage of security management practices, including asset evaluation
and risk management, cyber law and ethics issues, policies and procedures, business
recovery and business continuity planning, network security design and developing
and maintaining a security plan. Suggested prerequisites: ITSY 2400 and 2401.

ITSY 2442. INCIDENT RESPONSE AND HANDLING (3-3-4) 11.1003
In depth coverage of incident response and incident handling, including identifying
sources of attacks and security breaches; analyzing security logs; recovering the system
to normal; performing postmortem analysis; implementing and modifying security
measures. Prerequisites: ITSY 2400 and 2401.

ITSY 2443. COMPUTER SYSTEM FORENSICS (3-3-4) 11.1003
In-depth study of system forensics including methodologies used for analysis of com-
puter security breaches. Gather and evaluate evidence to perform postmortem analysis

ITSY 2459. SECURITY ASSESSMENT AND AUDITING (3-3-4) 11.1003
Capstone experience for the security curriculum. Synthesizes technical material covered
in prior courses to monitor, audit, analyze and revise computer and network security
systems to ensure appropriate levels of protection are in place. Suggested prerequisites:
ITSY 2400, 2401, 2441.

JAPN - Japanese

JAPN 1411. BEGINNING JAPANESE I (3-2-4) 1603025113
Fundamental skills in listening comprehension, speaking, reading and writing. In-
cludes basic vocabulary, grammatical structures and culture. Assessment Levels: R3,
E3, M1.

JAPN 1412. BEGINNING JAPANESE II (3-2-4) 1603025113
Review and application of skills in listening comprehension, speaking, reading and
writing. Emphasizes conversation, vocabulary acquisition, reading, composition and
culture. Assessment Levels: R3, E3, M1.

JAPN 2311. INTERMEDIATE JAPANESE I (3-0-3) 1603025213
Review and application of skills in listening comprehension, speaking, reading and
writing. Emphasizes conversation, vocabulary acquisition, reading, composition and
culture. Prerequisites: JAPN 1411 and 1412, satisfactory score on placement test, or
approval of instructor. Assessment Levels: R3, E3, M1.

JAPN 2312. INTERMEDIATE JAPANESE II (3-0-3) 1603025213
Review and application of skills in listening comprehension, speaking, reading and
writing. Emphasizes conversation, vocabulary acquisition, reading, composition and
culture. Prerequisites: JAPN 2311, satisfactory score on placement test, or permission
of instructor. Assessment Levels: R3, E3, M1.
Journalism (See COMM - Communications)

KINE - Kinesiology

PHYSICAL ACTIVITY COURSES (KINE 1100-1299 AND KINE 2100-2299)

The prerequisites for all intermediate activity courses are completion of the corresponding beginning activity course and/or satisfactory level of skill development. The prerequisites for all advanced activity courses are completion of the corresponding intermediate activity course and/or satisfactory level of skill development. Only one semester hour credit may be earned in the same level activity. NOTE: DANC 1141-1152 are also physical activity courses. NOTE: KINE 1238 will fulfill both hours of the core requirement.

KINE 1100. CARDIO AND STRENGTH TRENDS, BEGINNING (1-2-1)
3601085123
Emphasis on improvement in personal level of physical fitness through a variety of cardiovascular and strength workouts. Experience a variety of group fitness workouts to include the latest fitness trends such as Step Aerobics, Kickboxing, Lateral Movement Training, Body Pump, Body Sculpting, Traditional Aerobics, Yoga and/or Pilates-based workouts. Assessment Levels: R1, E1, M1.

KINE 1101. BADMINTON, BEGINNING (1-2-1) 3601085123
Instruction and skill development of the basic skills of badminton: serve, clear, smash, drop and net shots. Basic rules and strategy for singles, doubles and mixed doubles. Assessment Levels: R1, E1, M1.

KINE 1102. BADMINTON/TENNIS, BEGINNING (1-2-1) 3601085123
Instruction and skill development of the basic skills of badminton: serve, clear, smash, drop and net shots. Knowledge of the history, rules and basic strategy for singles and doubles will be acquired. Instruction and skill development of the basic skills of tennis: Groundstrokes, serve and volley. Knowledge of the history, rules and basic strategy for singles and doubles will be acquired. One-half of the semester will be devoted to each activity. Assessment Levels: R1, E1, M1.

KINE 1105. BOWLING, BEGINNING (1-2-1) 3601085123
Development of the mechanics of the approach, release and execution of different styles of bowling. Instruction in scorekeeping (automated and manual), pin and spot bowling, point of aim, rules and etiquette. An additional equipment/facility fee will be charged at the facility. Assessment Levels: R1, E1, M1.

KINE 1106. FITNESS CONDITIONING, BEGINNING (1-2-1) 3601085123
Instruction in and development of aerobic fitness through individual activities such as walking, jogging, step aerobics and rope skipping. Other components include strength, flexibility, nutrition and wellness concepts which contribute to a healthy lifestyle. Assessment Levels: R1, E1, M1.

KINE 1107. GOLF, BEGINNING (1-2-1) 3601085123
Development of the basic fundamentals of golf including grip, putting, chipping and full swing. Instruction of the basic rules, etiquette and types of competitive play available to the golfer. An additional equipment/facility fee will be charged at the facility. Assessment Levels: R1, E1, M1.

KINE 1108. GYMNASTICS, BEGINNING (1-2-1) 3601085123
Designed for any level student who would like to develop and perfect gymnastics skills. The class will include the four Olympic events for women and the six Olympic events for men. Assessment Levels: R1, E1, M1.

KINE 1110. HANDBALL/RACQUETBALL, BEGINNING (1-2-1) 3601085123
Instruction in and development of fundamental skills of handball and racquetball. One-half of the semester is devoted to each activity. Basic strokes, shots, serves, court positions, rules, variations of the game and scorekeeping. Assessment Levels: R1, E1, M1.
KINE 1113. RACQUETBALL, BEGINNING (1-2-1) 3601085123
Instruction in and development of fundamental skills such as basic strokes, basic shots, serves, court positioning, rules and variations of the game. Assessment Levels: R1, E1, M1.

KINE 1114. SAILING, BEGINNING (1-2-1) 3601085123
Instruction in sailing nomenclature, parts of the boat, points of sailing, up and down rigging and boating safety. Understanding of wind direction and its effect on the boat and rigging. Basic swimming skills required. An additional fee will be charged at the time of registration. Assessment Levels: R1, E1, M1.

KINE 1115. COUNTRY WESTERN AND SOCIAL DANCE, BEGINNING (1-2-1) 3601145123
Basic dance skills, positions, rhythms and steps. Focus will be on Texas two step/swing, polka, schottische, waltz, foxtrot, swing and tango. Dances will express a variety of cultures and historical periods. Assessment Levels: R1, E1, M1.

KINE 1118. SWIMMING, BEGINNING (1-2-1) 3601085123
Orientation to the water along with the development of survival skills. Instruction in the basic strokes, safety and rescue skills. The course is designed for nonswimmers and those who are not comfortable in deep water. Assessment Levels: R1, E1, M1.

KINE 1119. TENNIS, BEGINNING (1-2-1) 3601085123
Fundamental skills of tennis for the beginner including ground strokes, serve and volley. History, rules, player and tournament analysis also included. Assessment Levels: R1, E1, M1.

KINE 1120. VOLLEYBALL/BASKETBALL, BEGINNING (1-2-1) 3601085123
Instruction in the fundamental skills of volleyball and basketball. Rules, basic offensive and defensive team strategy. Game condition scrimmages are included. Assessment Levels: R1, E1, M1.

KINE 1121. WATER AEROBICS, BEGINNING (1-2-1) 3601085123
Emphasis on developing cardiorespiratory endurance, flexibility, strength and muscular endurance through workouts designed to maximize the waters’ resistance. Swimming skills not required. Assessment Levels: R1, E1, M1.

KINE 1122. WEIGHT TRAINING, BEGINNING (1-2-1) 3601085123
Instruction and practice in proper techniques of strength, muscular endurance and flexibility development. Application of anatomical and physiological principles of training. Body composition and nutrition and their relationship to fitness, will be stressed. Assessment Levels: R1, E1, M1.

KINE 1123. WINDSURFING, BEGINNING (1-2-1) 3601085123
Skills, techniques and knowledge for windsurfing in high-wind areas. Includes rigging, knot tying, wind orientation, theory of steering and all points of sail. Completion certificate from Boardsailors Instructors Group may be earned. An additional equipment/facility fee will be charged at the facility. Prerequisite: Beginning swimming skills. Assessment Levels: R1, E1, M1.

KINE 1124. FLAG FOOTBALL/SOFTBALL, BEGINNING (1-2-1) 3601085123
Instruction in the fundamental skills of flag football and softball. Rules, basic offensive and defensive team strategy. Game condition scrimmages are included. Assessment Levels: R1, E1, M1.

KINE 1125. RECREATIONAL ACTIVITIES (1-2-1) 3601085123
Introduction, rules and fundamental skills involved in recreational activities such as table tennis, pickleball, ultimate frisbee and other activities. Assessment Levels: R1, E1, M1.
KINE 1126. MARTIAL ARTS/SELF-DEFENSE, BEGINNING (1-2-1) 3601085128
The study of coordinating mind and body in the practice of self-defense. Course consists of techniques using all parts of the body to their maximum advantage. The study of the self-defense “mentality” also stressed. Assessment Levels: R1, E1, M1.

KINE 1127. YOGA, BEGINNING (1-2-1) 3601085123
Introduction to the practice of Hatha Yoga. General philosophy, history and benefits toward wellness included. Emphasis on the performance of asanas (postures) and pranayamas (breathing exercises) in order to improve total wellness. Assessment Levels: R1, E1, M1.

KINE 1151. SCUBA DIVING, BEGINNING (1-2-1) 3601085323
Skills for open-water diving developed in the pool. Includes underwater physics, physiology of diving, diving equipment and the diving environment. Diving certification by PADI (Professional Association of Diving Instructors) is not under Del Mar College auspices but may be earned by meeting additional requirements. An additional equipment/facility fee will be charged at the facility. Certain pre-existing medical conditions may preclude participation in this class. Prerequisites: 200-yard swim and 10 minutes of treading water. Assessment Levels: R1, E1, M1.

KINE 1238. LIFETIME FITNESS AND WELLNESS, (2-1-2) 3105015223
Introduction to the core concepts and practices of lifetime fitness and health necessary to achieve optimal well-being. Topics include components of fitness, assessment and exercise prescription, healthy lifestyle behaviors, nutrition, stress management, weight management and current health issues such as diabetes, obesity, coronary heart disease and cancer. Includes an exercise component. Students will be expected to design and implement an activity program throughout the semester. Assessment Levels: R1, E1, M1.

KINE 1253. LIFEGUARD TRAINING (1-2-2) 3601085323
Practice and knowledge in lifeguarding, first aid and CPR skills. Focuses on the job of the lifeguard in a swimming pool environment. Certification in First Aid, CPR and Lifeguarding may be earned. Prerequisite: Must be able to pass precourse swim and skill tests. Assessment Levels: R2, E2, M1.

KINE 1301. FOUNDATIONS OF KINESIOLOGY (3-0-3) 3105015223
Survey of the history, philosophy and scientific foundations (biological, sociological, psychological) of the professions of health, kinesiology and recreation. Assessment Levels: R2, E2, M1.

KINE 1304. PERSONAL/COMMUNITY HEALTH I: HEALTH AND LIFESTYLE (3-0-3) 5103015116
Fundamentals of personal health with emphasis on family health, including wellness behavior, sexuality, substance use and abuse, physical fitness, consumer health issues and current health concerns. Assessment Levels: R1, E1, M1.

KINE 1305. PERSONAL/COMMUNITY HEALTH II: STRESS MANAGEMENT (3-0-3) 5103015116

KINE 1306. FIRST AID (3-0-3) 5103015316
Instruction in first aid and emergency care skills including victim assessment, cardiopulmonary resuscitation, bandaging and splinting. Includes how to care for bleeding, burns, sudden illness, poisoning, drug abuse, temperature emergencies, emergency childbirth and drowning. Opportunity to earn certification in CPR and First Aid. Assessment Levels: R1, E1, M1.
KINE 1308. SPORTS OFFICIATING (3-0-3) 1202045109
In-depth study of the rules and strategy in basketball and volleyball, with practice in officiating these sports. Prerequisites: KINE 1301, sophomore standing and either competitive experience in volleyball/basketball or KINE 1120. Offered fall semester only. Assessment Levels: R2, E2, M1.

KINE 1321. COACHING/SPORTS/ATHLETICS: TRACK AND FIELD (3-0-3) 3105065123
In-depth study of the rules for all events in track and field, practice of the skills and development of the officiating skills for meets. Lecture, demonstration and study of present-day literature; a minimum of five hours field observation in the public schools required. Prerequisites: KINE 1301, sophomore standing. Offered spring semester only. Assessment Levels: R2, E2, M1.

KINE 1331. PHYSICAL EDUCATION FOR ELEMENTARY EDUCATION MAJORS (3-0-3) 3105015223
Overview of the program of activities in elementary school physical education. Includes the study and practice of activities and principles that promote physical fitness with an emphasis on historical development, philosophical implications, physical fitness, and kinesiology. Assessment Levels: R1, E1, M1.

KINE 1336. INTRODUCTION TO RECREATION I: OUTDOOR RECREATION (2-1-3) 3101015123
Overview of recreation and leisure concepts and their roles in American culture. Knowledge and practical experiences involving activities such as first aid and survival, gun safety, angling, orienteering, boating, and camping. Assessment Levels: R1, E1, M1.

KINE 1337. INTRODUCTION TO RECREATION II: RECREATION LEADERSHIP (3-0-3) 3101015123
Development of leadership skills and ability. Instruction in program development and administration of social/recreational activities and games. May include field work experience. Prerequisite: Sophomore standing. Assessment Levels: R2, E2, M1.

KINE 1346. DRUG USE AND ABUSE (3-0-3) 5103015216
Study of human behavior relating to legal and illegal drug use and abuse, with emphasis on physiological, sociological, psychological and legal factors. Assessment Levels: R3, E3, M2.

KINE 2100. CARDIO AND STRENGTH TRENDS, INTERMEDIATE (1-2-1) 3601085123
Continued improvement in personal level of physical fitness. Experience a variety of group fitness workouts to include the latest in fitness trends such as Step Aerobics, Kickboxing, Lateral Movement Training, Body Pump, Body Sculpting, Traditional Aerobics, Yoga and/or Pilates-based workouts. Assessment Levels: R1, E1, M1.

KINE 2101. BADMINTON, INTERMEDIATE (1-2-1) 3601085123
Review and practice of the basic skills and the addition of the around-the-head, half-smash, drive serve and advanced strategy for singles, doubles and mixed doubles. Assessment Levels: R1, E1, M1.

KINE 2105. BOWLING, INTERMEDIATE (1-2-1) 3601085123
Development of consistency in the approach and instruction in the adjustments needed for varying lanes and conditions. Emphasis will be on the curve and hook, ball mechanics with appropriate spot technique for strikes and spares. An additional equipment/facility fee will be charged at the facility. Assessment Levels: R1, E1, M1.

KINE 2106. FITNESS CONDITIONING, INTERMEDIATE (1-2-1) 3601085123
Instruction in and development of aerobic fitness through individual activities such as walking, jogging, step aerobics and rope skipping. Other components include strength, flexibility, nutrition and wellness concepts which contribute to a healthy lifestyle. Assessment Levels: R1, E1, M1.
KINE 2107. GOLF, INTERMEDIATE (1-2-1) 3601085123
Review of the basic fundamentals and instruction in special shots and trouble situations along with a more in-depth study of rules and competitive playing situations. An additional equipment/facility fee will be charged at the facility. Assessment Levels: R1, E1, M1.

KINE 2108. GYMNASTICS, INTERMEDIATE (1-2-1) 3601085123
Review of the basic skills. Combining of skills into routines. Three routines are required in three different events. Assessment Levels: R1, E1, M1.

KINE 2110. HANDBALL/RACQUETBALL, INTERMEDIATE (1-2-1) 3601085123
Review of the basic skills of handball and racquetball. Emphasis is placed on instruction of advanced techniques, offensive and defensive strategies in game situations, refereeing and tournament play. One-half of the semester is devoted to each activity. Assessment Levels: R1, E1, M1.

KINE 2113. RACQUETBALL, INTERMEDIATE (1-2-1) 3601085123
Review of the basic skills. Advanced techniques, strategies, refereeing and tournament play. Assessment Levels: R1, E1, M1.

KINE 2114. SAILING, INTERMEDIATE (1-2-1) 3601085123
Review of beginning sailing skills. Proper sail trim, “rules of the road,” and the five principal points of sailing are stressed. Emphasis on transferring small boat knowledge to crew on larger vessels. Basic swimming skills required. An additional fee will be charged at the time of registration. Assessment Levels: R1, E1, M1.

KINE 2115. COUNTRY WESTERN AND SOCIAL DANCE, INTERMEDIATE (1-2-1) 3601145123
Continuation of beginning course. Introducing both basic and complex dance skills. Assessment Levels: R1, E1, M1.

KINE 2118. SWIMMING, INTERMEDIATE (1-2-1) 3601085123
Review and refinement of the basic strokes, instruction and development of advanced strokes. Also included will be safety and rescue skills, endurance swimming and small craft safety. Assessment Levels: R1, E1, M1.

KINE 2119. TENNIS, INTERMEDIATE (1-2-1) 3601085123
Reinforcement of the fundamental skills with more advanced skills such as the return of serve, approach shots, strategy and more technical rules of the game. Drills, tournaments and films included. Assessment Levels: R1, E1, M1.

KINE 2120. VOLLEYBALL/BASKETBALL, INTERMEDIATE (1-2-1) 3601085123
Review and perfection of the basic skills of volleyball and basketball. Advanced offensive and defensive team strategy and rules. Game condition scrimmages are included. Assessment Levels: R1, E1, M1.

KINE 2121. WATER AEROBICS, INTERMEDIATE (1-2-1) 3601085123
Continued development of cardiorespiratory endurance, flexibility, strength and muscular endurance. Reinforcement of the fundamentals principles of exercise. Swimming skills not required. Assessment Levels: R1, E1, M1.

KINE 2122. WEIGHT TRAINING, INTERMEDIATE (1-2-1) 3601085123
Review of fundamentals and continued improvement in strength, muscular endurance and flexibility development. Opportunity to develop a personalized program for exercise, nutrition and wellness. Assessment Levels: R1, E1, M1.

KINE 2124. FLAG FOOTBALL/SOFTBALL, INTERMEDIATE (1-2-1) 3601085123
Review and perfection of the basic skills of flag football and softball. Advanced offensive and defensive team strategy and rules. Game condition scrimmages are included. Assessment Levels: R1, E1, M1.
KINE 2126. MARTIAL ARTS/SELF-DEFENSE, INTERMEDIATE (1-2-1) 3601085123
Review and reinforcement of basic techniques. Emphasis placed on advanced skills, strategies and higher levels of technical competency. Assessment Levels: R1, E1, M1.

KINE 2127. YOGA, INTERMEDIATE (1-2-1) 3601085123
Review and continuation of skill development in Hatha Yoga asanas and pranayamas. Refinement of body alignment and introduction to more advanced asanas. Introduction to dharanas (concentration exercises) and dhyanas (meditation and relaxation techniques). Continued study of yoga philosophy, history and application to a healthy lifestyle. Assessment Levels: R1, E1, M1.

KINE 2148. FITNESS SWIMMING (1-2-1) 3601085123
Aerobic fitness developed through lap swimming. Other fitness parameters include strength, flexibility, nutrition and proper body weight. Physiological principles of exercise. Prerequisite: KINE 1118 or the ability to execute the five basic strokes in deep water. Assessment Levels: R1, E1, M1.

KINE 2149. TENNIS, ADVANCED (1-2-1) 3601085123
Refining skill and game strategy to advance students to a more competitive level of play. Drills, tournaments and rule interpretation included. Assessment Levels: R1, E1, M1.

KINE 2255. WATER SAFETY (1-2-2) 3601085323
Theory and practice in the American Red Cross methods of teaching all levels of swimming. Emphasis is on organizing, conducting and evaluating swimming and water safety courses. American Red Cross Water Safety Instructor Certification may be earned. Prerequisite: Proficiency level equal to Level VI of the American Red Cross Learn To Swim program. Prerequisite: Have current or obtain ARC Instructor Candidate Training Certification. Assessment Levels: R2, E2, M1.

KINE 2371. STRENGTH AND CONDITIONING INSTRUCTOR TRAINING (2-1-3)
Knowledge and practice of resistance, cardiorespiratory, and performance training principles based on National Strength and Conditioning Association and American College of Sport Medicine guidelines. Topics include program planning, anatomy, kinesiology, exercise physiology, and nutrition. Lecture, lab and demonstration designs to be supplemented by student participation, practice teaching and development of leadership skills. Prepares the student for the National Strength and Conditioning Association’s Certified Personal Trainer exam. Assessment Levels: R2, E2, M2.

KINE 2375. NUTRITION AND HEALTH (3-0-3)
Principles of nutrition as related to health, essential nutrients needed by the body, food selection, digestion process, physical fitness, diet and weight control. Assessment Levels: R3, E3, M3.

LGLA - Legal Studies/Law
LGLA 1311. INTRODUCTION TO LAW (3-0-3) 22.0302
Introduction to legal terminology, fundamental legal concepts, and the judicial system.

LGLA 1313. INTRODUCTION TO PARALEGAL STUDIES (3-0-3) 22.0302
Overview of the paralegal profession including ethical obligations, professional regulation, professional trends and issues, and the paralegal’s role in assisting the delivery of legal services.

LGLA 1317. LAW OFFICE TECHNOLOGY (3-0-3) 22.0302
Computer technology and software applications within the law office. Prerequisite: Keyboarding proficiency of 35 wpm on a five-minute timing with at least 95% accuracy.
LGLA 1344. TEXAS CIVIL LITIGATION (3-0-3) 22.0302
Fundamental concepts and procedures of Texas civil litigation with emphasis on the paralegal’s role. Prerequisites: LGLA 1313.

LGLA 1345. CIVIL LITIGATION (3-0-3) 22.0302
Fundamental concepts and procedures of civil litigation with emphasis on the paralegal’s role. Topics include pretrial, trial and post trial phases of litigation. Prerequisites: LGLA 1313. Assessment Levels: R3, E3, M2.

LGLA 1401. LEGAL RESEARCH AND WRITING (3-3-4) 22.0302
Fundamentals of legal research and writing. Topics include standard and electronic legal research and legal writing techniques including case and fact analysis and citation format.

LGLA 2266. PRACTICUM - LEGAL ASSISTANT/PARALEGAL (CAPSTONE) (0-14-2) 22.0302
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: LGLA 1311, 1313, 1401 and POFL 2401. Assessment Levels: R3, E3, M2.

LGLA 2305. INTERVIEWING AND INVESTIGATING (3-0-3) 22.0302
Study of principles, methods and investigative techniques utilized to locate, gather, document and manage information, with emphasis on developing interviewing and investigative skills to prepare the paralegal to communicate effectively while recognizing ethical problems. Prerequisites: LGLA 1311, 1313. Assessment Levels: R3, E3, M2.

LGLA 2307. LAW OFFICE MANAGEMENT (3-0-3) 22.0302
Fundamentals of principles and structure of management, administration and substantive systems in the law office including law practice technology as applied to paralegals. Assessment Levels: R3, E3, M2.

LGLA 2331. ADVANCED LEGAL RESEARCH AND WRITING (3-0-3) 22.0302
Standard and electronic research techniques and preparation of complex legal documents such as briefs, legal office memoranda and citation forms with emphasis on the paralegal’s role. Prerequisites: LGLA 1311, 1313, 1401. Assessment Levels: R3, E3, M2.

LGLA 2335. ADVANCED CIVIL LITIGATION (3-0-3) 22.0302
Implementation of advanced civil litigation techniques with emphasis on the paralegal’s role. Builds upon skills acquired in prior civil litigation courses. Prerequisites: LGLA 1311, 1313, 1344. Assessment Levels: R3, E3, M2.

LGLA 2433. ADVANCED LEGAL DOCUMENT PREPARATION (3-3-4) 22.0302
Preparation of legal documents by paralegals based on hypothetical situations drawn from various areas including real estate, family law, contracts, litigation and business organizations. Prerequisites: LGLA 1311, 1313 and current enrollment in or completion of Internship. Assessment Levels: R3, E3, M2.

LMGT - Logistics and Materials Management
LMGT 1319. INTRODUCTION TO BUSINESS LOGISTICS (3-0-3) 52.0203
Systems approach to managing activities associated with traffic, transportation, inventory management and control, warehousing, packaging, order processing and materials handling.
LMGT 1321. INTRODUCTION TO MATERIALS HANDLING (3-0-3)  
52.0203  
Introduces the concepts and principles of materials management to include inventory control and forecasting activities.

LMGT 1325. WAREHOUSE AND DISTRIBUTION CENTER MANAGEMENT (3-0-3) 52.0203  
Emphasis on physical distribution and total supply chain management. Includes warehouse operations management, hardware and software operations, bar codes, organizational effectiveness, just-in-time manufacturing, continuous replenishment and third party.

LMGT 1349. MATERIALS REQUIREMENT PLANNING (3-0-3) 52.0203  
Study of materials requirement planning that includes net change versus regenerative systems, lot sizing and the time sharing of dependent demand. R2, E2, M2

LOTT - Laser Optical Technology

LOTT 1401. INTRODUCTION TO FIBER OPTICS (3-4-4) 15.0304  
An introductory course in fiber optics and its application including advantages of fiber, light transmission in fiber, types of fiber, sources, detectors and connectors. Assessment Levels: R1, E1, M1.

LTCA - Long Term Care Administrator

LTCA 1311. INTRODUCTION TO LONG TERM CARE ADMINISTRATION - (3-0-3) 51.0702  

LTCA 1312. RESIDENT CARE IN THE LONG TERM CARE FACILITY (3-0-3) 51.0702  
Study of the delivery of quality services to residents of long term care facilities. Includes a presentation of philosophical and ethical considerations. Assessment Levels: R3, E3, M3.

LTCA 1313. ORGANIZATION AND MANAGEMENT OF LONG TERM CARE FACILITIES (3-0-3) 51.0702  
An overview of the functional organization structures common to long term health care facilities. Includes an examination of the role of the long term care facility administrator in the organization and management of long term care facilities. Assessment Levels: R3, E3, M3.

LTCA 2314. LONG TERM CARE LAW (3-0-3) 51.0702  
An examination of the types and sources of law relating to the long term care industry. Study of federal, state, and local statutes and regulations affecting the long term care industry. Assessment Levels: R3, E3, M3.

LTCA 2315. FINANCIAL MANAGEMENT OF LONG TERM CARE FACILITIES (3-0-3) 51.0702  
Study of the techniques used in the financial management of the long term care facility. Includes special accounting requirements of Medicare, Medicaid, and other third-party pay or sources. Also covers strategies to promote financial viability such as risk management. Assessment Levels: R3, E3, M3.

LTCA 2588. INTERNSHIP - HOSPITAL AND HEALTH CARE FACILITIES ADMINISTRATION/MANAGEMENT (0-30-5) 51.0702  
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. Assessment Levels: R3, E3, M3.
LTCA 2689. INTERNSHIP - HOSPITAL AND HEALTH CARE FACILITIES ADMINISTRATION/MANAGEMENT (CAPSTONE) (0-33-6) 51.0702
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. Assessment Levels: R3, E3, M3.

MAIR - Maintenance, Appliance Installer and Repairer
MAIR 1341. DOMESTIC COOKING EQUIPMENT (1-7-3) 47.0106
Theory, sequence of operations, components and repair, electrical schematics and troubleshooting electric components in gas and electronic ranges and microwave ovens. Emphasis on safety for the gas systems in ranges and high voltage circuitry in microwave ovens. Prerequisite: HART 1401, HART 1407. Assessment Levels: R1, E1, M1.

MAIR 1345. DRYERS, WASHERS AND DISHWASHERS (1-7-3) 47.0106
Theory, sequence of operation, components and repair, electrical schematics and troubleshooting electronic components in dryers, washers and dishwashers. Emphasis on safety for the electrical and mechanical systems. Prerequisites: HART 1401, HART 1407. Assessment Levels: R1, E1, M1.

MAIR 1349. REFRIGERATORS, FREEZERS, WINDOW AIR CONDITIONERS (1-7-3) 47.0106
Theory, sequence of operations, components and repair, electrical schematics and troubleshooting electronic components in air conditioning and refrigeration. Emphasis on safety for the electrical, mechanical and sealed systems. Prerequisites: HART 1401, HART 1407. Assessment Levels: R1, E1, M1.

MAMT - Mammography Technology
MAMT 2164. PRACTICUM MAMMOGRAPHY (0-7-1) 51.0907
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student.

MAMT 2233. ANATOMY/POSITIONING AND PATIENT ASSESSMENT (2-0-2) 51.0907
Presentation of specialized instruction in breast imaging. Emphasis will be placed on breast anatomy, physiology, positioning, patient education and assessment. Includes surface anatomy as well as deep anatomy. Special emphasis on standard projections as well as additional projections/positions and positioning modifications.

MAMT 2330. QUALITY ASSURANCE (3-0-3) 510907
Instruction in quality control and quality assurance procedures. The student will participate in the performance evaluation and recording of the quality control tests as described in the Mammography Quality Control Manual.

MATH - Mathematics
MATH 0370. ARITHMETIC AND GEOMETRY (3-0-3) 32.0104.51
A review of elementary geometry, including area and volume and arithmetic, with practical applications. Assessment Levels: R1, E1, M0.

MATH 0371. ELEMENTARY ALGEBRA (3-0-3) 32.0104.51
Elementary algebra with applications. Assessment Levels: R1, E1, M1.

MATH 0372. INTERMEDIATE ALGEBRA (3-0-3) 32.0104.52
Intensive study of the operations of algebra designed to fill the needs of students preparing for college algebra. Credit not allowed for both MATH 0372 and 0373. Assessment Levels: R2, E1, M2.

MATH 0373. EXTENDED INTERMEDIATE ALGEBRA (3-1-3) 32.0104.52
Intensive study of the operations of algebra designed to fill the needs of students preparing for college algebra. Credit not allowed for both MATH 0372 and 0373. Assessment Levels: R2, E1, M2.
COURSE DESCRIPTIONS

MATH 1314. COLLEGE ALGEBRA (3-0-3) 27.0101.5419
Fundamentals of algebra, including inequalities, functions, quadratic equations, exponential and logarithmic functions, systems of equations, determinants and instructor option of binomial theorem or progressions (or both). Prerequisite: Satisfactory score on college admission test or MATH 0372 (or MATH 0373). Assessment Levels: R3, E1, M3.

MATH 1316. PLANE TRIGONOMETRY (3-0-3) 27.0101.5319
Trigonometric functions, identities, height and distance, equations involving trigonometric functions, solutions of triangles, area, vectors and their basic applications, and inverse functions. Prerequisite: Satisfactory score on college admission test or MATH 0373 (MATH 1314 and 1316 may be taken concurrently). Assessment Levels: R3, E1, M3.

MATH 1324. MATHEMATICS FOR BUSINESS AND SOCIAL SCIENCES I (3-0-3) 27.0301.5219
Study of linear equations, systems of linear equations, systems of linear inequalities, linear programming, probability, logarithmic, exponential functions and mathematics of finance. Prerequisite: MATH 1314 or consent of the department chairperson. Assessment Levels: R3, E1, M3.

MATH 1325. MATHEMATICS FOR BUSINESS AND SOCIAL SCIENCES II (3-0-3) 27.0301.5319
Study of functions, limits, differential calculus, integral calculus and applications. Prerequisite: MATH 1324 or consent of the department chairperson. Assessment Levels: R3, E1, M3.

MATH 1332. CONTEMPORARY MATHEMATICS I (3-0-3) 27.0101.5119
A course in modern algebra and geometry providing a broad background in principles of mathematics. Topics may include sets, logic, number systems, number theory, functions, geometric concepts and an introduction to probability and statistics. This course does not satisfy the prerequisite for higher level mathematics courses and is not intended for mathematics, science, or engineering majors. Assessment Levels: R3, E1, M3.

MATH 1342. ELEMENTARY STATISTICAL METHODS (3-0-3) 27.0501.5119
Statistical description - frequency distributions, measures of location, variation; probability - basic rules, concepts of random variables and their distributions (including binomial and normal); statistical inference - confidence intervals, tests of hypotheses p-values, introduction to linear regression. Credit not allowed for both MATH 1342 and 2342. (Fulfills statistics requirement for admission to upper division nursing courses.) Assessment Levels: R3, E1, M3.

MATH 1350. FUNDAMENTALS OF MATHEMATICS I (3-0-3) 27.0101.5619
Concepts of sets, functions, numeration systems, number theory and properties of the natural numbers, integers, rational and real number systems with an emphasis on problem solving and critical thinking. Designed specifically for students who seek middle grade (4-8) teacher certification. Prerequisite: College Algebra. Credit will not be given for both MATH 1332 and 1350. Assessment Levels: R3, E2, M3.

MATH 1351. FUNDAMENTALS OF MATHEMATICS II (3-0-3) 27.0101.6019
Concepts of geometry, probability and statistics, as well as applications of the algebraic properties of real numbers to concepts of measurements with an emphasis on problem solving and critical thinking. Designed specifically for students who seek middle grade (4-8) teacher certification. Prerequisite: MATH 1350. Credit will not be given for MATH 1332 and 1351. Assessment Levels: R3, E2, M3.

MATH 2312. PRECALCULUS MATH (3-0-3) 27.0101.5819
Elementary functions and their graphs, including polynomial, rational, exponential, logarithmic and trigonometric functions; analytic geometry. (Not sophomore level.) Prerequisites: Two years of high school algebra and one-half year trigonometry or the equivalent. Assessment Levels: R3, E1, M3.
MATH 2318. LINEAR ALGEBRA (3-0-3) 27.0101.6119
Geometrical vectors, vector spaces, linear transformations and matrices; determinants; inner product spaces. Prerequisite: MATH 2315 or permission of instructor. Assessment Levels: R3, E1, M3.

MATH 2320. DIFFERENTIAL EQUATIONS (3-0-3) 27.0301.5119
Solutions of differential equations with geometric and physical applications. Prerequisite: MATH 2414 (MATH 2415 recommended). Assessment Levels: R3, E1, M3.

MATH 2342. STATISTICAL METHODS AND PROBABILITY (3-0-3) 27.0501.5119
Descriptive statistics, probability, random variables and inferential statistics-hypothesis tests, confidence intervals, linear regression, correlation, contingency tables, analysis of variance. Some use of SPSS or comparable software will be included. Prerequisite: Six hours of mathematics or consent of department chairperson. Credit not allowed for both MATH 1342 and 2342. Assessment Levels: R3, E1, M3.

MATH 2413. CALCULUS I (4-0-4) 27.0101.5919
Limits, continuity, differentiation with applications, integration, definite integral with properties, applications of integration. (Not sophomore level.) Prerequisites: MATH 1314, 1316 or permission of mathematics department chair. Assessment Levels: R3, E1, M3.

MATH 2414. CALCULUS II (4-0-4) 27.0101.5919
Inverse functions, their derivatives and integrals, logarithmic and exponential functions, their derivatives and integrals, hyperbolic functions, inverse hyperbolic functions, techniques of integration, indeterminate forms, improper integrals, infinite series, power series, binomial series, conics. Prerequisite: MATH 2413 with a minimum grade of “C.” Assessment Levels: R3, E1, M3.

MATH 2415. CALCULUS III (4-0-4) 27.0101.5919
Vectors, dot and cross products, applications, motion, curvature, components of acceleration, functions of several variables, partial differentiation, applications, multiple integrals and vector analysis, Green’s Theorem, Divergence Theorem and Stokes’ Theorem. Prerequisite: MATH 2414. Assessment Levels: R3, E1, M3.

MCHN - Machining
MCHN 1301. BEGINNING MACHINE SHOP (3-0-3) 48.0501
Fundamental machine shop safety, math, measurement and theory of saws and drill presses. Assessment Levels: R1, E1, M1.

MCHN 1302. MACHINIST II (3-0-3) 48.0501
Study of different blueprints, with emphasis on machine blueprint and the application of each. Assessment Levels: R1, E1, M1.

MCHN 1308. BASIC LATHE (1-8-3) 48.0501
Introduction to the common types of lathes. Emphasis on basic parts, nomenclature, lathe operations, safety, machine mathematics, blueprint reading and theory. Assessment Levels: R1, E1, M1.

MCHN 1313. BASIC MILLING OPERATIONS (1-8-3) 48.0501
Introduction to the common types of milling machines, basic parts, nomenclature, basic operation and procedures, machine operations, safety, machine mathematics, blueprint reading and theory. Assessment Levels: R1, E1, M1.

MCHN 1335. GRINDERS, OUTSIDE, INTERNAL, SURFACE (1-7-3) 48.0507
Introduction to types and operation of outside diameter, internal diameter and surface grinders. Emphasis on identification, selection and replacement of grinding wheels. Related topics include math, blueprint and safety. Assessment Levels: R1, E1, M1.
MCHN 1338. BASIC MACHINE SHOP I (1-8-3) 48.0501
An introductory course that assists the student in understanding the machinist occupation in industry. Use of basic machine tools such as the lathe, milling machine, drill press, power saw and bench grinder. Machine terminology, theory, math, part layout and bench work using common measuring tools is included. Emphasis is placed on shop safety, housekeeping and preventative maintenance. Assessment Levels: R1, E1, M1.

MCHN 1341. BASIC MACHINE SHOP II (1-8-3) 48.0501
Continuation of Basic Machine Shop I. Assessment Levels: R1, E1, M1.

MCHN 1343. MACHINE SHOP MATHEMATICS (3-0-3) 48.0501
Designed to prepare the student with technical, applied mathematics that will be necessary in future machine shop-related courses. Assessment Levels: R1, E1, M1.

MCHN 1352. INTERMEDIATE MACHINING (1-8-3) 48.0501
Operation of drills, milling machines, lathes and power saws. Introduction to precision measuring techniques. Assessment Levels: R1, E1, M1.

MCHN 1358. INTERMEDIATE LATHE OPERATIONS (1-8-3) 48.0501
Continuation of Basic Lathe Operations, with emphasis on continued proficiency in lathe operations. Identification and operation of lathe machine tools, including basic tapered form turning and basic threading operations. Assessment Levels: R1, E1, M1.

MCHN 2302. INTERMEDIATE MILLING OPERATIONS (1-8-3) 48.0501
A continuation of Basic Milling Operations with emphasis on continued proficiency in mill operation. Identification of and operation of milling machines and support tooling including keyseat cutter, staggertooth cutters, rotary table and dividing heads. Assessment Levels: R1, E1, M1.

MCHN 2341. ADVANCED MACHINING I (3-0-3) 48.0501
Advanced study of lathe and milling operations. Emphasis on advanced cutting operations of the lathe and milling machines, including the use of carbide insert tooling, special tooling, bench assembly and materials metallurgy. Assessment Levels: R1, E1, M1.

MCHN 2344. COMPUTERIZED NUMERICAL CONTROL PROGRAMMING (2-2-3) 48.0501
Programming and operation of computer numerically controlled (CNC) machine shop equipment. Assessment Levels: R1, E1, M1.

MCHN 2345. ADVANCED MACHINING OPERATIONS II (1-8-3) 48.0501
Advanced milling, drilling, grinding and lathe operations to close tolerance dimensions. Emphasis on job planning and advanced uses of precision measuring instruments. Assessment Levels: R1, E1, M1.

MCHN 2371. INTRODUCTION TO MACHINE OPERATIONS VI (0-9-3) 48.0501
Complex milling operations programming for NC mill machine operations and machine operations using a CNC lathe. Prerequisites: MCHN 1308, 1313, 1335, 1338, 1341, 1352, 1358, 2302, 2345. Assessment Levels: R1, E1, M1.

MCHN 2372. INTERMEDIATE MACHINE OPERATIONS VI (0-9-3) 48.0501
Continuation of Machine Operations VI. Prerequisites: MCHN 1308, 1313, 1335, 1338, 1341, 1352, 1358, 2302, 2345. Assessment Levels: R1, E1, M1.

METL - Metallurgy

METL 1301. INTRODUCTION TO METALLURGY (3-0-3) 15.0611
Comprehensive study of refining properties, mechanical properties and physical properties of ferrous and nonferrous materials including the theory of alloys, heat treatment and testing. Assessment Levels: R1, E1, M1.

METL 1313. INTRODUCTION TO CORROSION (2-4-3) 15.0611
Introduction to internal, external and atmospheric corrosion including terminology, causes of common corrosion problems in industry and general remedies such as
cathodic protection, protective coatings, material selection and chemical treatments. Assessment Levels: R1, E1, M1.

**METL 2305. ATMOSPHERIC CORROSION CONTROL (2-4-3) 15.0611**
In-depth study of atmospheric corrosion control by coatings which includes surface preparation, coating selection, coating application, inspection and failure analysis. Assessment Levels: R1, E1, M1.

**MLAB - Medical Laboratory Technology**

**MLAB 1201. INTRODUCTION TO CLINICAL LABORATORY SCIENCE (1-4-2) 51.1004**
Introduction to clinical laboratory science, including quality control, laboratory math, safety, basic laboratory equipment, laboratory settings, accreditation and certification, professionalism and ethics. Assessment Levels: R3, E3, M3. (Open to all Del Mar College students.)

**MLAB 1211. URINALYSIS AND BODY FLUIDS (1-4-2) 51.1004**
Introduction to the study of urine and body fluid analysis. Includes the anatomy and physiology of the kidney, physical, chemical and microscopic examination of urine, cerebrospinal fluid, and other body fluids as well as quality control, quality assurance and safety. Assessment Levels: R3, E3, M3.

**MLAB 1227. COAGULATION (1-4-2) 51.1004**
A course in coagulation theory, procedures and practical applications. Includes quality control, quality assurance, safety and laboratory procedures which rely on commonly performed manual and/or semi-automated methods. Assessment Levels: R3, E3, M3.

**MLAB 1231. PARASITOLOGY/MYCOLOGY (1-4-2) 51.1004**
Study of taxonomy, morphology and pathogenesis of human parasites and fungi, including the practical application of laboratory procedures, quality control, quality assurance and safety. Assessment Levels: R3, E3, M3.

**MLAB 1335. IMMUNOLOGY/SEROLOGY (2-4-3) 51.1004**
Introduction to the theory and application of basic immunology, including the immune response, principles of antibody-antigen reactions and the principles of serological procedures as well as quality control, quality assurance, and safety. Assessment Levels: R3, E3, M3.

**MLAB 1415. HEMATOLOGY (3-4-4) 51.1004**
Study of blood cells in normal and abnormal conditions. Instruction in the theory and practical application of hematology procedures, including quality control, quality assurance, safety, manual and/or automated methods as well as blood cell maturation sequences, and normal and abnormal morphology with associated diseases. Assessment Levels: R3, E3, M3.

**MLAB 2260. CLINICAL-MEDICAL LABORATORY TECHNICIAN/ASSISTANT (0-9-2) 51.1004**
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. Assessment Levels: R3, E3, M3.

**MLAB 2261. CLINICAL-MEDICAL LABORATORY TECHNICIAN/ASSISTANT (0-9-2) 51.1004**
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. Assessment Levels: R3, E3, M3.
MLAB 2271. INSTRUMENTAL ANALYSIS (1-4-2) 51.1004
Study of the basic methodology, operation, calibration and maintenance of instruments in the clinical laboratory. Emphasis will be on semiautomated equipment including cell counting, spectrophotometry, electrophoresis, osmometry, electrolyte measurement and pH measurement. General small laboratory equipment will be studied including balances, centrifuges and timers. Assessment Levels: R3, E3, M3.

MLAB 2331. IMMUNOHEMATOLOGY (2-4-3) 51.1004
Study of blood antigens and antibodies. Presents quality control, basic laboratory technique and safety. Includes the principles, procedures and clinical significance of test results in genetics, blood group systems, pre-transfusion testing, adverse effects of transfusions, donor selection and components, and hemolytic disease of the newborn. Assessment Levels: R3, E3, M3.

MLAB 2338. ADVANCED TOPICS IN MEDICAL LABORATORY TECHNICIAN (CAPSTONE) (3-0-3) 51.1004
Examines the integration of all areas of the clinical laboratory and correlates laboratory test data with diagnostic applications and pathophysiology using critical thinking skills. Assessment Levels: R3, E3, M3.

MLAB 2362. CLINICAL-MEDICAL LABORATORY TECHNICIAN/ASSISTANT (0-18-3) 51.1004
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. Assessment Levels: R3, E3, M3.

MLAB 2363. CLINICAL-MEDICAL LABORATORY TECHNICIAN/ASSISTANT (0-18-3) 51.1004
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. Assessment Levels: R3, E3, M3.

MLAB 2401. CLINICAL CHEMISTRY (3-4-4) 51.1004
Introduction to the principles and procedures of various tests performed in Clinical Chemistry. Presents the physiological basis, principle and procedure and clinical significance of the test results, including quality control and reference values. Includes basic chemical laboratory technique and safety, electrolytes, acid-base balance, proteins, carbohydrates, lipids, enzymes, endocrine function and toxicology. Assessment Levels: R3, E3, M3.

MLAB 2434. CLINICAL MICROBIOLOGY (3-4-4) 51.1004
Instruction in the theory, practical application and pathogenesis of clinical microbiology, including collection, quality control, quality assurance, safety, setup, identification, susceptibility testing and reporting results. Assessment Levels: R3, E3, M3.

MRIT - Magnetic Resonance Imaging Technology
MRIT 2164. PRACTICUM: MAGNETIC RESONANCE IMAGING (0-7-1) 51.0907
Intermediate or advanced health professions work-based instruction that gains practical experience in the discipline, enhances skills and integrates knowledge. Emphasis on practical work experience for which the student has already acquired theoretical knowledge and basic skills. Direct supervision by the clinical professional, generally a clinical preceptor. Assessment Levels: R3, E3, M3.

MRKG - Marketing
MRKG 1266. PRACTICUM - MARKETING/MARKETING MANAGEMENT, GENERAL (CAPSTONE) (0-18-2) 52.1401
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Requires concurrent enrollment in BMGT 1174.
MRKG 1302. PRINCIPLES OF RETAILING (3-0-3) 52.1401
Introduction to the retailing environment and its relationship to consumer demographics, trends and traditional/nontraditional retailing markets. The employment of retailing techniques and factors that influence modern retailing.

MRKG 1311. PRINCIPLES OF MARKETING (CAPSTONE) (3-0-3) 52.1401
Introduction to the 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. Offered as a telecourse in some semesters.

MRKG 2333. PRINCIPLES OF SELLING (3-0-3) 52.1401
Overview of the selling process. Identification of the elements of the communication process between buyers and sellers. Examination of the legal and ethical issues of organizations which affect salespeople.

MRKG 2348. MARKETING RESEARCH AND STRATEGIES (3-0-3) 52.1401
A simulated marketing environment for experience in marketing decision-making. Provides practical experiences in analyzing marketing cases. Includes dynamic interrelationships among marketing price, channels of distribution, promotion and product responsibility.

MRKG 2349. ADVERTISING AND SALES PROMOTION (3-0-3) 52.1401
Integrated marketing communications. Includes advertising principles and practices. Emphasizes multimedia of persuasive communication including buyer behavior, budgeting and regulatory constraints.

MRMT - Medical Transcription/Transcriptionist
MRMT 1407. MEDICAL TRANSCRIPTION I (FALL ONLY) (3-3-4) 51.0708
Fundamentals of medical transcription with hands-on experience in transcribing physician dictation, including basic reports such as history and physicals, discharge summaries, consultations, operative reports and other medical reports. Utilizes transcribing and information processing equipment compatible with industry standards. Designed to develop speed and accuracy. Prerequisite: Keyboarding proficiency of 45 words a minute required and HITT 1305 or equivalent or concurrent enrollment.

MRMT 2433. MEDICAL TRANSCRIPTION II (SPRING ONLY) (3-3-4) 51.0708
Transcription of advanced medical reports with increasing speed and accuracy including history and physicals, consultations, discharge summaries, operative reports and other medical reports. Emphasis on speed and accuracy. Prerequisite: MRMT 1407 with a minimum grade of “C.”

MSCI - Military Science
MSCI 1371. BASIC MILITARY SCIENCE (DRILL AND CEREMONY) (3-2-3)
Introduction to basic military science; basic leadership principles at the lowest organizational level; examines the organization, history and roles of the United States Army. Lower level of command, with emphasis on fundamentals and application of the techniques of conducting individual and small unit drill up to platoon level. Studying the history and methods of ceremonial drill. Land navigation, map reading and physical fitness training designed to enhance self-confidence and physical fitness through active participation. Mandatory requirements: Physical Fitness Program (PT); 1 hour block, Monday/Tuesday/Thursday/Friday, 6:30-7:30 a.m.. Laboratory: practical training; 90 minute block, Wednesday, 2:30-4 p.m. and field training exercise (FTX) one weekend per semester TBA. Assessment Levels: R3, E2, M2.
MSCI 1372. BASIC MILITARY SCIENCE (SURVIVAL SKILLS) (3-2-3)
A continuation of basic military science; leadership training with emphasis on methods and techniques of survival; in various situations designed to enhance self-confidence and physical fitness through active participation. Rapelling and other adventure training included. Examines basic first aid procedures, supplemented by training in cardio-pulmonary resuscitation (CPR). Mandatory requirements: Physical Fitness Program (PT); 1 hour block, Monday/Tuesday/Thursday/Friday, 6:30-7:30 a.m.. Laboratory: practical training; 90 minute block, Wednesday, 2:30-4 p.m. and field training exercise (FTX) one weekend per semester TBA. Assessment Levels: R3, E2, M2.

MSCI 2371. INTERMEDIATE MILITARY SCIENCE (LEADERSHIP AND MANAGEMENT) (3-2-3)
Application of leadership principles and intermediate military skills; personnel management and motivational technique studies through placement of students in leadership positions in assigned mission. Studies and organization of the United States Army incorporating military history. Provides instruction from fire-team to company level tactics. Increased emphasis on advanced land navigation and first aid techniques; stresses physical fitness and provides adventure training at sophomore level. Mandatory requirements: Physical Fitness Program (PT); 1 hour block, Monday/Tuesday/Thursday/Friday, 6:30-7:30 a.m.. Laboratory: practical training; 90 minute block, Wednesday, 2:30-4 p.m. and field training exercise (FTX) one weekend per semester TBA. Prerequisites: MSCI 1371 and 1372 unless a prior military service member or Active Reserve or National Guard. Assessment Levels: R3, E2, M1.

MSCI 2372. INTERMEDIATE MILITARY SCIENCE (LEADERSHIP AND MANAGEMENT) (3-2-3)
Continuation of the application of leadership principles and intermediate military skills; provides instruction from company to battalion level. Examines the staff organization duties and roles in the United States Army; incorporating military history. Increased emphasis on advanced map reading, land navigation and planning techniques. Stresses physical fitness and provides adventure training at sophomore level. Mandatory requirements: Physical Fitness Program (PT); 1 hour block, Monday/Tuesday/Thursday/Friday, 6:30-7:30 a.m.. Laboratory: practical training; 90 minute block, Wednesday, 2:30-4 p.m. and field training exercise (FTX) one weekend per semester TBA. Prerequisites: MSCI 1371, 1372 and 2371 unless a member of the Active Reserve or National Guard. Assessment Levels: R3, E2, M1.

MUAP - Music, Applied

PRIVATE INSTRUCTION
Private instruction in applied music is offered in the following fields: piano, voice, violin, viola, violoncello, double bass, classical guitar, jazz guitar, electric bass, percussion, flute, oboe, clarinet, bassoon, saxophone, trumpet, French horn, trombone, euphonium, tuba and harp.

Any of the following courses may be repeated for credit.

MUAP 1101-1182, 2101-2182. APPLIED MUSIC-ELECTIVE (0 - 1/2 -1)
5009035426
Private instruction in applied music is offered in the following fields: piano, voice, violin, viola, violoncello, double bass, classical guitar, jazz guitar, electric bass, percussion, flute, oboe, clarinet, bassoon, saxophone, trumpet, French horn, trombone, baritone, tuba and harp. Any of the following courses may be repeated for credit. One half-hour lesson per week. This classification is for students in other departments of the College who wish to take applied music or for music majors that have finished their major lesson requirement and wish to continue with their studies. No prior experience is required. There are no audition requirements for the class and jury requirements are at the discretion of the instructor. Assessment Levels: R1, E1, M1.
MUAP 1201-1282, 2201-2282. APPLIED MUSIC-MAJOR (0-2-2) 5009035426
Private instruction in applied music is offered in the following fields: piano, voice, violin, viola, violincello, double bass, classical guitar, jazz guitar, electric bass, percussion, flute, oboe, clarinet, bassoon, saxophone, trumpet, French horn, trombone, baritone, tuba and harp. Any of the following courses may be repeated for credit. One one-hour private lesson each week, one-hour lab. This classification is for credit in the principal instrument or voice for students working toward as Associate’s degree in Music and for students in other departments of the College who demonstrate adequate proficiency. Instructor approval required. Jury required. Assessment Levels: R1, E1, M1

MUAP 1200S, 2200S APPLIED MUSIC, PRE-MAJOR (0-202) 5009035426
Private Instruction in applied music is offered in the following fields: baritone, bassoon, clarinet, double bass, electric bass, flute, classical guitar, harp, French horn, jazz guitar, oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, viola, violin, violincello, voice. One hour lesson per week, one hour lab. This classification series is for advanced students in other departments in the College that wish to take applied lessons and for music majors whose skill level is not up to the level needed for music major level lessons. Instructor approval required. Jury required. The fourth semester could be repeated for credit. Assessment Levels: R1, E1, M1.

MUEN - Music Ensembles
All ensemble courses may be repeated for credit.

MUEN 1121. CONCERT BAND (0-6-1) 5009035526
Study of the wind band repertory through performance on and off the Del Mar campus. The ensemble’s emphasis is on original works for winds including standard repertory, modern classics, and original compositions/premiere performances, embracing the breadth and depth of the band catalog. The ensemble performs two to three times each semester. The course is open to all Del Mar College students and community members through instructor permission. Assessment Levels: R1, E1, M1

MUEN 1122. CONCERT ORCHESTRA (0-5-1) 5009035526
Study of symphonic repertoire, from Baroque to Contemporary, through participation in instrumental performance. This course meets in conjunction with the Corpus Christi Chamber Orchestra at Del Mar College. This course, which is open to all Del Mar College students, requires instructor permission. Assessment Levels: R1, E1, M1

MUEN 1128. JAZZ BAND (0-5-1) 5009035526
Most advanced jazz ensemble at Del Mar College. Membership is open to all Del Mar students by audition. The instrumentation is determined by the traditional jazz big band instrumentation (saxophones, trombones, piano, guitar, bass, drums, and percussion). The group plays all styles of big-band jazz, with special emphasis on the swing medium. This course requires participation in all MWF Jazz Band performances. Instructor approval required. Assessment Levels: R1, E1, M1

MUEN 1130. MARIACHI ENSEMBLE (0-3-1) 5009035626
Study of mariachi music through instrumental and vocal performance. This ensemble performs the full spectrum of mariachi styles, performing classic and contemporary mariachi music. This course, which is open to Del Mar College students, requires instructor permission and participation in the Mariachi Del Mar. Assessment Levels: R1, E1, M1

MUEN 1131. WOODWIND ENSEMBLE (0-3-1) 5009035626
Study of woodwind chamber music through instrumental performance. This ensemble performs a wide variety of music ranging from early music, classical styles, as well as jazz and popular styles. Instrumentation varies and is dependent on enrollments. The course is open to all Del Mar students and requires instructor permission as well as participation in all Woodwind Ensemble performances. Assessment Levels: R1, E1, M1
COURSE DESCRIPTIONS

MUEN 1132. BRASS ENSEMBLE (0-3-1) 5009035626
Study of brass chamber music through instrumental performance. This ensemble performs a wide variety of music ranging from early music, classical styles, as well as jazz and popular styles. Instrumentation varies and is dependent on enrollments. This course is open to all Del Mar students and requires instructor permission as well as participation in all Del Mar Brass Ensemble performances. Assessment Levels: R1, E1, M1.

MUEN 1133. PERCUSSION ENSEMBLE (0-3-1) 5009035626
Percussion Ensemble performs contemporary art music written for this medium. Enrollment is open to all students by audition only. Assessment Levels: R1, E1, M1.

MUEN 1134. STRING ENSEMBLE (0-3-1) 5009035626
Course is designed for advanced musicians who are highly motivated and disciplined. String ensemble students are divided into chamber groups (duos, trios, quartets) which perform works by the great masters. These groups then meet for a weekly coaching session with a member of the string faculty. In addition, groups are expected to rehearse together outside coaching sessions. Instructor approval required. Assessment Levels: R1, E1, M1.

MUEN 1135. CLASSICAL GUITAR ENSEMBLE (0-3-1) 5009035626
Classical Guitar ensemble provides students with the opportunity to develop rehearsal and performance skills in small to large ensemble settings. Repertoire studied ranges from the Renaissance to the present. Students are expected to be proficient in note reading and to possess basic classical guitar skills. This course is open to all Del Mar College Students with Instructor Permission. Assessment Levels: R1, E1, M1.

MUEN 1136. PIANO ACCOMPANYING (0-3-1) 5009035626
A course designed for students to experience working in small ensemble formats such as piano four-hands, duo piano, and collaborations with singers and instrumentalists. The class is for piano majors and other students with advanced skills in piano. Instructor permission required. Assessment Levels: R1, E1, M1.

MUEN 1137. JAZZ GUITAR ENSEMBLE (0-3-1) 5009035626
The Jazz Guitar Ensemble is open to all Del Mar students with instructor permission. Instrumentation is limited to guitars, one bass, and one drummer. The ensemble studies jazz styles and jazz guitar techniques through rehearsal and performance. This course requires participation in all Jazz Guitar Ensemble. Assessment Levels: R1, E1, M1.

MUEN 1138. JAZZ COMBO (0-5-1) 5009035526
The Jazz Combo is open to all Del Mar students without audition. The group studies and performs all styles of combo (small band) jazz with a special emphasis on the swing medium. The combo serves as both a performing ensemble in its own right and a training group for the more advanced MWF Jazz Band. This course requires participation in all Jazz Combo performances. Assessment Levels: R1, E1, M1.

MUEN 1139. MIXED CHAMBER ENSEMBLE (0-3-1) 5009035626
Course is designed for advanced musicians who are highly motivated and disciplined. Students are divided into chamber groups (duos, trios, quartets) which perform works designed from Baroque period through the 21st Century. These groups then meet for a weekly coaching session with a member of the faculty. In addition, groups are expected to rehearse together outside coaching sessions. Instructor approval required. Assessment Levels: R1, E1, M1.

MUEN 1141. CONCERT CHOIR (0-6-1) 5009035726
Major choral ensemble for vocal music majors. Open to students from other fields of study. Consists of group instruction and rehearsal emphasizing development and application of basic choral music skills. Concentration on exposure to a variety of styles and languages of standard choral repertoire and the full spectrum of composers and historical periods. Two formal concerts per semester are usually scheduled. Assessment Levels: R1, E1, M1.
MUEN 1142. MASTER CHORUS (0-4-1) 5009035726
Community chorus including college students by enrollment, as well as adult and advanced high school singers by paying a fee. Consists of group instruction and rehearsal emphasizing advanced choral music skills. Concentration on a variety of choral music styles and on programming major choral works with orchestra and instrumental ensembles. Two formal concerts per semester are usually scheduled. Assessment Levels: R1, E1, M1.

MUEN 1151. CHAMBER SINGERS (0-4-1) 5009035826
Select vocal ensemble limited in enrollment due to the nature of style and literature chosen. Consists of group instruction and rehearsals on advanced specialized literature such as madrigals, small vocal works, vocal jazz and popular music charts. Two formal concerts per semester, as well as public relations performance opportunities. Enrollment open by audition only to vocal majors first and then to singers from other majors. Assessment Levels: R1, E1, M1.

MUEN 1152. SINGER’S THEATER (0-3-1) 5009085226
A presentation of basic techniques in voice projection, stage movement, characterization and acting. Singers prepare and present a program of scenes or complete work from the genres of opera, musical theater and choral music. Prerequisite: Instructor’s approval. Assessment Levels: R1, E1, M1.

MUSB - Music Business
MUSB 2355. LEGAL ASPECTS OF THE ENTERTAINMENT INDUSTRY (3-0-3) 50.09
Copyright law and the various agreements used in the entertainment industry. Emphasizes contracts used by music publishers, record companies, artist managers, record producers, film and television producers, and booking agencies. Assessment Levels: R2, E2, M2.

MUSC - Music, Sound Recording Technology
MUSC 1327. AUDIO ENGINEERING I (3-0-3) 50.09
Overview of the recording studio. Includes an in depth look at the acoustic principles governing sound, basic studio electronics, microphones, cables and connections, mixing board set up and signal flow, aural training, and an overview of mixing and editing. Assessment Levels: R1, E1, M1.

MUSC 1331. MIDI I (3-1-3) 50.09
Exploration of the history and evolution of Musical Instrument Digital Interface (MIDI) systems and applications. Topics include sequencing, subtractive synthesis, electronic arranging, and automation of track and effect parameters. Prerequisite: Ability to read basic music notation and basic keyboard skills. Assessment Levels: R1, E1, M1.

MUSC 1405. LIVE SOUND (3-2-4) 50.09
An overview of the field of live sound. Includes principles of live sound and the theory and interconnection of the components of a sound reinforcement system, power and voltage issues, speakers, horns and enclosures, system installations, mixing concepts and monitor mixes. Prerequisite: MUSC 1327 (MUSC 2327 recommended). Assessment Levels: R3, E3, M3.

MUSC 2327. AUDIO ENGINEERING II (2-3-3) 50.09
Implementation of the recording process, balance and mixing, stereo microphone techniques, busing and auxes, digital audio theory and issues, advanced aural training, and signal processing devices and techniques. Prerequisite: MUSC 1327 (MUSC 1331 recommended). Assessment Levels: R2, E2, M2.
MUSC 2351. AUDIO FOR VIDEO (3-1-3) 50.09
Audio and composition techniques for video production. Includes synchronization, automation, foley, sound effects, and editing techniques. Prerequisite: MUSC 1331. Assessment Levels: R2, E2, M2.

MUSC 2447. AUDIO ENGINEERING III (CAPSTONE) (2-4-3) 50.09
Advanced practice of procedures and techniques in recording and manipulating audio. Includes digital audio editing, advanced recording techniques, and advanced engineering projects. Prerequisites: MUSC 1331, 2327. Assessment Levels: R2, E2, M2.

MUSI - Music

INSTRUMENTAL TECHNIQUE COURSES (1-1-1)
Basic techniques of playing the band and orchestral instruments with emphasis on pedagogical aspects. Assessment Levels: R1, E1, M1.

MUSI 1166. WOODWIND INSTRUMENTS: OBOE, BASSOON 5009035126
MUSI 1167. WOODWIND INSTRUMENTS: FLUTE, CLARINET, SAXOPHONE 5009035126
MUSI 1168. BRASS INSTRUMENTS (1-1-1) 5009035126
MUSI 1188. PERCUSSION INSTRUMENTS (1-1-1) 5009035126
Percussion Instruments is a survey course designed for music education and music composition majors. The course covers the performance practice of the usual percussion instruments found in public education and emphasizes rhythmic theory.

MUSI 1190. STRING INSTRUMENTS: CELLO, BASS (1-1-1) 5009035126
MUSI 2190. STRING INSTRUMENTS: VIOLIN, VIOLA (1-1-1) 5009035126

CLASS INSTRUCTION
MUSI 1101. NONMAJOR CLASS PIANO (1-1-1) 5009045526
Group instruction in the elements of piano playing, designed for students who are not music majors. No previous experience necessary. Assessment Levels: R1, E1, M1.

MUSI 1162. DICTION (2-0-1) 5009085326
French and English pronunciation for singers. Assessment Levels: R1, E1, M1.

MUSI 1163. JAZZ IMPROVISATION (1-1-1) 5009036526
Designed to provide laboratory experience and knowledge of basic materials and practices as a foundation for improvising or extemporaneous performance. Prerequisites: MUSI 1211, 1216. Assessment Levels: R1, E1, M1.

MUSI 1165. DICTION (2-0-1) 5009085326
Italian and German pronunciation for singers. Assessment Levels: R1, E1, M1.

MUSI 1181. PIANO I (1-1-1) 5009075126
Class instruction in piano. Three practice hours per week including one hour at the piano lab. Seven solo pieces, sight-reading and transposition on grand staves, harmonization using I and V chords, scales and arpeggios on white key major. Enrollment in MUSI 1211 and 1216 is encouraged. Prerequisite: Ability to read both the treble and bass clefs. Assessment Levels: R1, E1, M1.

MUSI 1182. PIANO II (1-1-1) 5009075126
Continuation of MUSI 1181. Six solo pieces, sight-reading, transposition, harmonization with primary chords, all major and white key harmonic minor scales and arpeggios. Three practice hours per week including one hour at the piano lab. Enrollment in MUSI 1212 and 1217 is encouraged. Prerequisite: MUSI 1181 with a grade of at least “C” or consent of instructor. Assessment Levels: R1, E1, M1.

MUSI 1183. CLASS VOICE (1-1-1) 5009085126
Class instruction in the fundamentals of singing, including breathing, tone production and diction. Designed for students with little or no previous voice training. Assessment Levels: R1, E1, M1.
MUSI 1186, 1187. COMPOSITION I, II (0-1/2-1) 5009045326
Opportunity for and guidance in creative writing in contemporary style; study of the smaller musical forms for piano, voice, solo instruments, or ensembles. Applied music fee schedule applicable for this course. Prerequisites for MUSI 1186: Completion of MUSI 1212 with a grade of “C” or above, or permission of instructor. Prerequisite for MUSI 1187: Completion of MUSI 1186 with a grade of “C” or above. Assessment Levels: R1, E1, M1.

MUSI 1192. GUITAR (1-1-1) 5009035126
Class instruction in guitar with student supplying own instrument. Prerequisite: MUSI 1303 with grade of “A” or approval of the instructor. Assessment Levels: R1, E1, M1. Three practice hours per week.

MUSI 1211. MUSIC THEORY I (3-0-2) 5009045126
Companion course to MUSI 1216. After beginning with a study of music fundamentals, this course explores principles governing certain harmonic and melodic structures. The course includes written exercises, musical analysis, and correlated exercises at the keyboard. Prerequisite: satisfactory performance on a placement test measuring the student’s ability to read music in treble and bass clefs, given at the start of the term. Assessment Levels: R1, E1, M1.

MUSI 1212. MUSIC THEORY II (3-0-2) 5009045126
Continuation of MUSI 1211 and companion course to MUSI 1217. This course involves the study of chord progressions and phrase harmonization, voice-leading, and more advanced chord structures and their placement within the phrase. The course includes written exercises, musical analysis, and correlated exercises at the keyboard. Prerequisite: completion of MUSI 1211 with a grade of “C” or above. Assessment Levels: R1, E1, M1.

MUSI 1216. SIGHT SINGING/EAR TRAINING I (3-0-2) 5009045626
Companion course to MUSI 1211, designed to strengthen the understanding of theoretical principles through the development of aural perception and skills; exercises in melodic, harmonic and rhythmic dictation as well as drill in sight singing. Prerequisite: Satisfactory performance on a placement test measuring the student’s ability to read music in bass and treble clefs, and enrollment in or successful completion of MUSI 1211. Assessment Levels: R1, E1, M1.

MUSI 1217. SIGHT SINGING/EAR TRAINING TRAINING II (3-0-2) 5009045626
Continuation of MUSI 1216 and companion course to MUSI 1212, designed to strengthen the understanding of theoretical principles through the development of aural perception and skills; exercises in melodic, harmonic and rhythmic dictation as well as drill in sight singing. Prerequisite: Completion of MUSI 1211 and 1216 with a grade of “C” or above and enrollment in or successful completion of MUSI 1212. Assessment Levels: R1, E1, M1.

MUSI 1301. FUNDAMENTALS OF MUSIC - INTRO TO MUSICAL SKILLS (3-0-3) 5009045526
A core elective for nonmajors and preparation for music majors with limited music training toward MUSI 1211 and 1216. Includes notation (music reading), ear training, solfege singing and keyboard skills. Assessment Levels: R1, E1, M1.

MUSI 1303. FUNDAMENTALS OF MUSIC, GUITAR (3-0-3) 5009045526
A beginning guitar course for nonmajors, including the fundamentals of rhythm, notation and music theory requisite to guitar playing. Each student must provide a suitable guitar. Assessment Levels: R1, E1, M1.

MUSI 1304. FOUNDATIONS IN MUSIC: EARLY CHILDHOOD (3-0-3) 5009045426
A course designed to teach students to confidently lead children up to ten years of age in music and movement activities. Areas of study include development of the singing voice, acquisition of music vocabulary and the application of principles of social/
emotional, language/cognitive and physical development and learning in choosing appropriate activities. Students will develop a rich and varied repertoire of multicultural music and movement activities. Assessment Levels: R3, E3, M1.

MUSI 1306. MUSIC APPRECIATION (3-0-3) 5009025126
Develops an understanding of musical arts through the study of the elements of music including melody, harmony, rhythm, color, texture and form. Includes style traits, genres and composers of various historical periods. Emphasizes the development of listening skills. Assessment Levels: R3, E3, M1.

MUSI 1307. MUSIC LITERATURE: JAZZ (3-0-3) 5009025326
Study of the development of jazz and its various styles, from the early twentieth century to the present. Assessment Levels: R3, E3, M1.

MUSI 1308. INTRODUCTION TO MUSIC LITERATURE (3-0-3) 5009025226
For music majors. An overview of history and literature of music from ca. 600 A.D. through the Classic Era. Emphasis on the development of musical style, important composers and individual works. Nonmajors may enroll with the consent of the instructor or the music advisor. Assessment Levels: R3, E3, M1.

MUSI 1309. ADVANCED MUSIC LITERATURE (3-0-3) 5009025226
Continuation of MUSI 1308. The history and literature of music from Beethoven to the present. Emphasis on selected major composers and their contributions to the development of style and form. Prerequisite: MUSI 1308 or with consent of instructor or music advisor. Assessment Levels: R3, E3, M1.

MUSI 1310. AMERICAN MUSIC-HISTORY OF ROCK AND ROLL (3-0-3) 5009025326
General survey of composers, performers and styles of American music. Topics may include folk, jazz, ragtime, rock and contemporary art music. Assessment Levels: R1, E1, M1.

MUSI 2181. PIANO III (1-1-1) 5009075126
Continuation of MUSI 1181. Solo and accompaniment pieces, all major and harmonic minor scales and arpeggios, progression of primary chords along with ii and vi chords, sight-reading, transposition, and harmonization. There will be a piano jury in addition to the final exam at the end of semester. Three practice hours per week including one hour at the piano lab. Enrollment in MUSI 2211 and 2216 is encouraged. Prerequisite: MUSI 1182 with a grade of at least “C” or consent of instructor. Applied music fee schedule applicable for this course. Assessment Levels: R1, E1, M1.

MUSI 2182. PIANO IV (1-1-1) 5009075126
Continuation of MUSI 2181. Solo and accompaniment pieces, diminished seventh arpeggios, secondary dominant chords, sight-reading, and score-reading. There will be a piano jury at the end of the semester. Three practice hours per week including one hour at the piano lab. Enrollment in MUSI 2212 and 2217 is encouraged. Assessment Levels: R1, E1, M1.

MUSI 2186, 2187. ADVANCED COMPOSITION I, II (0-1 1/2-1) 5009045326
Guidance in creative writing and study of the larger forms using various instrumental or vocal media, solo and ensemble. Prerequisite for MUSI 2186: Completion of MUSI 1187 with grade average of “C.” Prerequisite for MUSI 2187: Completion of MUSI 2186 with a grade average of “C” or above. Applied music fee schedule applicable for this course. Assessment Levels: R1, E1, M1.

MUSI 2211. MUSIC THEORY III (3-0-2) 5009045226
Continuation of MUSI 1212 and companion course to MUSI 2216. A broad summary of classical and chromatic harmony and exploration of techniques of the Romantic and Post-Romantic styles through written exercises, analysis and correlated exercises at the keyboard. Prerequisite: Completion of MUSI 1212 with a grade of “C” or above. Assessment Levels: R1, E1, M1.
MUSI 2212. MUSIC THEORY IV (3-0-2) 5009045226
Continuation of MUSI 2211 and companion course to MUSI 2217. Exploration of techniques of the Twentieth Century and study of standard musical forms through written exercises, analysis and correlated exercises at the keyboard. Prerequisite: Completion of MUSI 2211 with a grade of “C” or above. Assessment Levels: R1, E1, M1.

MUSI 2216. SIGHT SINGING/EAR TRAINING III (3-0-2) 5009045726
Continuation of MUSI 1217 and a companion course to MUSI 2211, designed to further the understanding of advanced theoretical principles and techniques through related aural exercises, dictation and sight singing. Prerequisite: Completion of MUSI 1212 and MUSI 1217 with a grade of “C” or above and enrollment in or successful completion of MUSI 2211. Assessment Levels: R1, E1, M1.

MUSI 2217. SIGHT SINGING/EAR TRAINING IV (3-0-2) 5009045726
Continuation of MUSI 2216 and a companion course to MUSI 2212, designed to further the understanding of advanced theoretical principles and techniques through related aural exercises, dictation and sight singing. Prerequisite: Completion of MUSI 2211 and 2216 with a grade of “C” or above and enrollment in or successful completion of MUSI 2212. Assessment Levels: R1, E1, M1.

NDTE - Nondestructive Testing
NDTE 1340. EDDY CURRENT TESTING (2-4-3) 48.0508
General principles of Eddy Current Testing including theory, knowledge and skills for basic examination; effects of material properties, probe types, calibration standards and equipment selection. Assessment Levels: R1, E1, M1.

NDTE 1371. INTRODUCTION TO RADIATION SAFETY (3-0-3) 48.0508
A course designed to teach the safety rules and regulations using X-Ray equipment. Students will review the documents regarding personal safety, standards and practices. Student’s knowledge and understanding of X-Ray equipment according to government and state regulations will be evaluated by written reports and research assignments. Topics for discussion include image processing and image data analysis, radiographic interpretation, radiography of castings and welds, aerospace electric power and petroleum and chemical applications. Assessment Levels: R1, E1, M1.

NDTE 1405. INTRODUCTION TO ULTRASONIC TESTING (2-6-4) 48.0508
Basic theory and applications of the ultrasonic techniques of materials testing covering the theoretical material from the certification test for Ultrasonic Level I American Society of Nondestructive Testing. Assessment Levels: R1, E1, M1.

NDTE 1410. LIQUID PENETRANT/MAGNETIC PARTICLE TESTING (2-6-4) 48.0508
A theoretical study and practical application of the nondestructive testing technique of penetrant and magnetic particle testing required by quality assurance and test personnel including proper test technique, or combination of techniques and interpretation, evaluation of test results. Assessment Levels: R1, E1, M1.

NDTE 1471. INTRODUCTION TO NDT/CODES AND STANDARDS (4-0-4) 48.0508
An overview on the theory and principles of NDT testing methods to include Liquid Penetrent, Magnetic Particle, Radiographic, Eddy Current, and Ultrasonic. An extensive review of the Codes & Standards that apply to Petrochemical and Aviation industries. Assessment Levels: R1, E1, M1.

NDTE 2311. PREPARATION FOR WELDING INSPECTION (3-0-3) 48.0508
General principles of welding inspection including welding processes, terms and definitions, welding discontinuities, duties, and responsibilities of inspectors, destructive and nondestructive testing, quality assurance / quality control, welding codes and blueprints, procedures, and case studies. An overview of welding tools and equipment, metallurgy, chemistry, and joint design. Assessment Levels: R1, E1, M1.
NDTE 2401. ADVANCED ULTRASONICS TESTING (2-4-3) 48.0508
Designed to strengthen the students' knowledge and skills in ultrasonic testing. Emphasis is on examination of plate and pipe welds, characterization of flaws, immersion testing, written practices and procedures. Assessment Levels: R1, E1, M1.

NDTE 2473. ADVANCED RADIOGRAPHY (2-8-4) 48.0508
Advanced study of Radiography testing that provides the student classroom training and hands on applications. The student will progress through a series of lessons and gain demonstrated abilities comparable to a Level II technician. The classroom and lab training will meet the requirements for SNT-TC-1A and NAS-410, which are the governing criteria for certification. Assessment Levels: R1, E1, M1.

NDTE 2474. INDUSTRIAL RADIOGRAPHY TESTING LEVEL II (2-8-4) 48.0508
An advanced study of Radiography testing that provides the student classroom training and hands on applications. The student will progress through a series of lessons and gain demonstrated abilities comparable to a level II technician. The classroom and lab training will meet the requirements of SNT-TC-1A and NAS-410, which are the governing criteria for certification. Prerequisite: NDTE 2473. Assessment Levels: R1, E1, M1.

NDTE 2571. ADVANCED LIQUID PENETRANT/MAGNETIC PARTICLE (2-9-5) 48.0508
An advanced study of Liquid Penentrent testing that provides the student classroom training and hands on applications. The student will progress through a series of lessons and gain demonstrated abilities comparable to a Level II technician. The classroom and lab training will meet the requirements of SNT-TC-1A and NAS-410, which are the governing criteria for certification. Assessment Levels: R1, E1, M1.

NDTE 2572. ADVANCED EDDY CURRENT TESTING (2-9-5) 48.0508
An advanced study of Eddy Current testing that provides the student classroom training and hands on applications. The student will progress through a series of lessons and gain demonstrated abilities comparable to a Level II technician. The classroom and lab training will meet the requirements of SNT-TC-1A and NAS-410, which are the governing criteria for certification. Assessment Levels: R1, E1, M1.

NMTT - Nuclear Medicine Technology
NMTT 1266. NUCLEAR MEDICINE TECHNOLOGY PRACTICUM I (0-16-2) 51.0905
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: Admission to the NMT program and approval of the program director for assignment of specific clinical location. Assessment Levels: R3, E3, M3.

NMTT 1267. NUCLEAR MEDICINE TECHNOLOGY PRACTICUM II (0-16-2) 51.0905
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: NMTT 1266 and approval of the NMT program director for assignment of specific clinical location. Assessment Levels: R3, E3, M3.

NMTT 1301. INTRODUCTION TO NUCLEAR MEDICINE (2-3-3) 51.0905
Introduction to the field of nuclear medicine with emphasis on the principles of radiation safety, health physics, ethics, and the various studies performed in a nuclear medicine area. Prerequisite: Admission to the Nuclear Medicine Technology Program. Assessment Levels: R3, E3, M3.

NMTT 1309. NUCLEAR MEDICINE INSTRUMENTATION (2-3-3) 51.0905
Application of instrumentation used in the measurement and analysis of ionizing radiation with emphasis on gamma spectrometry and quality assurance. Prerequisite:
NMTT 1313 or approval of Nuclear Medicine Technology program director. Assessment Levels: R3, E3, M3.

**NMTT 1313. NUCLEAR MEDICINE PHYSICS (2-3-3) 51.0905**
A comprehensive study of the physical principles associated with nuclear medicine. Prerequisite: Admission to the Nuclear Medicine Technology Program. Assessment Levels: R3, E3, M3.

**NMTT 2235. NUCLEAR MEDICINE TECHNOLOGY SEMINAR (1-4-2) 51.0905**
A capstone course focusing on the synthesis of professional knowledge, skills and attitude in preparation for professional employment and lifelong learning. Prerequisites: All NMTT courses or approval of the NMT program director.

**NMTT 2266. NUCLEAR MEDICINE TECHNOLOGY PRACTICUM III (0-16-2) 51.0905**
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: NMTT 1267 and approval of the NMT program director for assignment of specific clinical location. Assessment Levels: R3, E3, M3.

**NMTT 2301. RADIOCHEMISTRY AND RADIOPHARMACY (2-3-3) 51.0905**
Includes radioactive decay and production of radionuclides. Emphasis on radiopharmaceuticals and their ideal characteristics, biodistribution, and clinical applications. Incorporates quality control tests and mathematical equations. Prerequisites: CHEM 1406 or its equivalent, or instructor’s permission. Assessment Levels: R3, E3, M3.

**NMTT 2309. NUCLEAR MEDICINE METHODOLOGY II (2-3-3) 51.0905**
Principles and practices involved in nuclear medicine regarding cardiovascular, genitourinary, respiratory systems, and miscellaneous procedures. Emphasizes patient care, anatomy, physiology, radiopharmaceuticals, instrumentation, data processing and analysis, and diagnostic value. Prerequisites: NMTT 2305, BIOL 2401, 2402. Assessment Levels: R3, E3, M3.

**NMTT 2313. NUCLEAR MEDICINE METHODOLOGY III (2-3-3) 51.0905**
Principles and practices involved in nuclear medicine regarding gastrointestinal, central nervous system, skeletal system, tumor and inflammation processes and miscellaneous procedures. Emphasizes patient care, anatomy, physiology, pathology, radiopharmaceuticals, instrumentation, date processing and analysis, and diagnostic values. Prerequisites: NMTT 2309, BIOL 2401, 2402. Assessment Levels: R3, E3, M3.

**NMTT 2333. ADVANCED PET AND FUSION TECHNOLOGY (2-3-3) 51.0905**
Advanced study in the field of positron emission tomography and fusion technology. Assessment Levels: R3, E3, M3.

**NMTT 2366. NUCLEAR MEDICINE TECHNOLOGY PRACTICUM IV (0-24-3) 51.0905**
Practical general workplace training supported by an individual learning plan developed by the employer, college and student. Prerequisites: NMTT 2266 and approval of the NMT program director for assignment of specific clinical location. Assessment Levels: R3, E3, M3.

**NMTT 2367. NUCLEAR MEDICINE TECHNOLOGY PRACTICUM V (0-24-3) 51.0905**
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: NMTT 2366 and approval of the NMT program director for assignment of specific clinical location. Assessment Levels: R3, E3, M3.
OSHT - Occupational Safety and Health Technology

OSHT 1309. PHYSICAL HAZARDS CONTROL (3-0-3) 15.0701
Study of the common physical hazards in industry and methods of workplace design and redesign to control hazards. Emphasis on the regulation codes and standards associated with the control of physical hazards. Assessment Levels: R1, E1, M1.

OSHT 1313. ACCIDENT PREVENTION, INSPECTION AND INVESTIGATION (3-0-3) 15.0701
Principles and practices providing a basis for understanding the nature of occupational hazard recognition, accident prevention, loss reduction, inspection techniques and accident investigation analysis. Assessment Levels: R1, E1, M1.

OSHT 1405. OSHA REGULATIONS - CONSTRUCTION INDUSTRY (3-3-4) 15.0701
Study of Occupational Safety and Health Administration (OSHA) regulations pertinent to the construction industry. Assessment Levels: R1, E1, M1.

OSHT 2309. SAFETY PROGRAM MANAGEMENT (3-0-3) 15.0701
Study of the Occupational Safety and Health Act, cost analysis of accidents, records and recordkeeping, reporting, job safety analysis and fundamentals of safety training. Introduction to OSHA’s General Industry Standards and an overview of the more frequently cited violations in recent years. Assessment Levels: R1, E1, M1.

OSHT 2388. INTERNSHIP - OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY/TECHNICIAN (CAPSTONE) (0-9-3) 15.0701
An experience external to the College for an advanced student in a specialized field involving a written agreement between the educational institution and a business or industry. Mentored and supervised by a workplace employee, objectives are developed and documented by the College and directly related to specific occupational outcomes. This may be a paid or unpaid experience. May be repeated if topics and learning outcomes vary. Prerequisite: Permission of instructor. Assessment Levels: R1, E1, M1.

OSHT 2401. OSHA REGULATIONS - GENERAL INDUSTRY (3-3-4) 15.0701
Study of OSHA’s regulations pertinent to general industry. Assessment Levels: R1, E1, M1.

OTHA - Occupational Therapy Assistant

OTHA 1211. OCCUPATIONAL PERFORMANCE THROUGHOUT THE LIFESPAN (2-1-2) 51.0803
General principles of occupational performance throughout the life span. Assessment Levels: R2, E2, M2.

OTHA 1262. CLINICAL - OCCUPATIONAL THERAPY ASSISTANT (0-8-2) 51.0803
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. Prerequisites: OTHA 1211, 1305, 1309, 1319, 2301, 2309. Assessment Levels: R2, E2, M2.

OTHA 1309. HUMAN STRUCTURE AND FUNCTION IN OCCUPATIONAL THERAPY (2-4-3) 51.0803
Study of the biomechanics of human motion. Emphasis on the musculoskeletal system including skeletal structure, muscles and nerves and biomechanical assessment procedures. Prerequisite: BIOL 2401. Assessment Levels: R2, E2, M2.

OTHA 1315. THERAPEUTIC USE OF OCCUPATIONS OR ACTIVITIES I (2-4-3) 51.0803
Various occupations or activities used as therapeutic interventions in occupational therapy. Emphasis on awareness of activity demands, contexts, adapting, grading and safe implementation of occupations or activities. Prerequisite: OTHA 1309. Assessment Level: R2, E2, M2.
OTHA 1319. THERAPEUTIC INTERVENTIONS I (2-4-3) 51.0803
Concepts, techniques and assessments leading to proficiency in skills and activities used as treatment interventions in occupational therapy (OT). Emphasizes the Occupational Therapy Assistant’s role in the OT process. Prerequisite: OTHA 1309. Assessment Level: R2, E2, M2.

OTHA 1341. OCCUPATIONAL PERFORMANCE FROM BIRTH THROUGH ADOLESCENCE (3-0-3) 51.0803
Occupational performance of newborns through adolescents. Includes frames of reference, assessment/evaluation tools and techniques and intervention strategies specific to this population. Prerequisite: OTHA 2466. Assessment Level: R2, E2, M2.

OTHA 1353. OCCUPATIONAL PERFORMANCE FOR ELDERS (3-0-3) 51.0803
Occupational performance of elders. Includes frames of reference, assessment/ evaluation tools and techniques and intervention strategies specific to this population. Prerequisite: OTHA 2466. Assessment Level: R2, E2, M2.

OTHA 1405. PRINCIPLES OF OCCUPATIONAL THERAPY (3-3-4) 51.0803
Introduction to occupational therapy including the historical development and philosophy. Emphasis on the roles of the occupational therapy assistant. Topics include occupation in daily life; education and functions; occupational therapy personnel; current health care environment; and moral, legal and ethical issues. Assessment Levels: R2, E2, M2.

OTHA 2204. NEUROLOGY IN OCCUPATIONAL THERAPY (2-0-2) 51.0803
Study of neuroanatomy and neurophysiology as it relates to neurological conditions commonly treated in occupational therapy. Emphasis on neuro-based occupational therapy intervention techniques. Assessment Level: R2, E2, M2.

OTHA 2235. HEALTH CARE MANAGEMENT IN OCCUPATIONAL THERAPY (2-1-2) 51.0803
Explores the roles of the occupational therapy assistant in health care delivery. Topics include documentation, reimbursement, credentialing, ethical standards, health care team role delineation, and management. Prerequisite: OTHA 1309. Assessment Levels: R2, E2, M2.

OTHA 2301. PATHOPHYSIOLOGY IN OCCUPATIONAL THERAPY (3-0-3) 51.0803
Pathology and general health management of diseases and injuries across the lifespan encountered in occupational therapy treatment settings. Includes etiology, symptoms and the client’s physical and psychological reactions to disease and injury. Prerequisite: Completion or concurrent enrollment in OTHA 1405. Assessment Levels: R2, E2, M2.

OTHA 2302. THERAPEUTIC USE OF OCCUPATIONS OR ACTIVITIES II (2-4-3) 51.0803
Continuation of OTHA 1315/1415: Therapeutic Use of Occupations or Activities I. Emphasis on advanced techniques and applications used in traditional and non-traditional practice settings. Prerequisite: OTHA 1309. Assessment Level: R2, E2, M2.

OTHA 2309. MENTAL HEALTH IN OCCUPATIONAL THERAPY (2-4-3) 51.0803
Promotion of mental health through occupational therapy. Topics include theory and intervention strategies to enhance occupational performance. Prerequisites: OTHA 1405, 1315, 1319. Assessment Levels: R2, E2, M2.

OTHA 2330. WORKPLACE SKILLS FOR THE OCCUPATIONAL THERAPY ASSISTANT (3-0-3) 51.0803
Seminar-based course designed to complement Level II fieldwork by creating a discussion forum addressing events, skills, knowledge and/or behaviors related to the practice environment. Application of didactic coursework practice. Prerequisites: Registered in OTHA 2466. Assessment Levels: R2, E2, M2.
OTHA 2331. PHYSICAL FUNCTION IN OCCUPATIONAL THERAPY (2-8-4) 51.0803
Physical function to promote occupational performance. Includes frames of reference, evaluative tools, intervention strategies, and consumer education. Prerequisites: OTHA 1405, 1315, 1319. Assessment Levels: R2, E2, M2.

OTHA 2360. CLINICAL - OCCUPATIONAL THERAPY ASSISTANT (0-16-3) 51.0803
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. Prerequisites: OTHA 1211, 1262, 1305, 1309, 1315, 1319, 2301, 2309. Assessment Levels: R2, E2, M2.

OTHA 2466. PRACTICUM - OCCUPATIONAL THERAPY ASSISTANT (CAPSTONE) (0-32-4) 51.0803
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: OTHA 1211, 1262, 1305, 1309, 1315, 1319, 2235, 2301, 2309, 2331, 2360. Assessment Levels: R2, E2, M2.

PHIL - Philosophy

PHIL 1301. INTRODUCTION TO PHILOSOPHY (3-0-3) 3801015112
Introduction to the study of ideas from antiquity to the present, covering such topics as knowledge, religion, ethics, reality, the meaning of life and current events. Includes introduction to the history, theories and methods of reasoning. Assessment Levels: R3, E3, M1.

PHIL 1316. HISTORY OF RELIGIONS (3-0-3) 3802015212

PHIL 2303. INTRODUCTION TO LOGIC (3-0-3) 3801015212
Nature and methods of clear and critical thinking and methods of reasoning such as deduction, induction, scientific reasoning and fallacies. Assessment Levels: R3, E3, M1.

PHIL 2306. INTRODUCTION TO ETHICS (3-0-3) 3801015312
Introduction to classical and contemporary ethical theories and principles. Includes critical analysis of contemporary and historical moral problems facing individuals and society. Courses may emphasize particular applications. Assessment Levels: R3, E3, M1.

PHIL 2307. INTRODUCTION TO SOCIAL AND POLITICAL PHILOSOPHY (3-0-3) 3801015412
Critical examination of the major theories concerning the organization of societies and government. Assessment Levels: R3, E3, M1.

PHIL 2316. HISTORY OF CLASSICAL AND MODERN PHILOSOPHY I (3-0-3) 3801015512
Introduction to the development of Western Philosophy from its origins in Greece to its synthesis in Christian thought. Prerequisite: PHIL 1301 or permission of the instructor. Assessment Levels: R3, E3, M1.

PHIL 2317. HISTORY OF CLASSICAL AND MODERN PHILOSOPHY II (3-0-3) 3801015512
Introduction to the development of Western philosophy from Descartes to Marx, an epoch that profoundly affects our modern world. Prerequisite: PHIL 1301 or permission of the instructor. Assessment Levels: R3, E3, M1.

PHIL 2318. CONTEMPORARY PHILOSOPHY (3-0-3) 3801015512
Study in the philosophy of Twentieth Century thought. Includes such thinkers as Wittgenstein, Heidegger, Sartre, Russell and Dewey. Prerequisite: PHIL 1301 or permission of the instructor. Assessment Levels: R3, E3, M1.
PHIL 2321. PHILOSOPHY OF RELIGION (3-0-3) 3802015312
Philosophical investigation of major religious ideas and experiences. Assessment Levels: R3, E3, M1.

PHRA - Pharmacy Technology

PHRA 1202. PHARMACY LAW (2-0-2) 51.0805
Survey of federal and state laws governing the practice of pharmacy. Describes the legal and ethical constraints governing technician responsibilities and pharmacist responsibilities in various settings. Prerequisite: PHRA 1306. Must be taken concurrently with PHRA 1243, 2266. Assessment Levels: R3, E3, M3.

PHRA 1243. PHARMACY TECHNOLOGY CERTIFICATION REVIEW (CAPSTONE) (2-1-2) 51.0805
A review of major topics covered on the National Pharmacy Technician Certification Examination. Prerequisite: PHRA 1306. Must be taken concurrently with PHRA 1202, 2266. Assessment Levels: R3, E3, M3.

PHRA 1266. PRACTICUM-PHARMACY TECHNICIAN I (0-16-2) 51.0805
Practical, general workplace training supported by an individualize learning plan developed by employee, college and student. Must be taken concurrently with PHRA 1301, 1305, 1313, and 1349. Assessment Levels: R3, E3, M3.

PHRA 1267. PRACTICUM-PHARMACY TECHNICIAN II (0-16-2) 51.0805
Practical, general workplace training supported by an individualized learning plan developed by employee, college and student. Prerequisites: PHRA 1266, 1301, 1305, 1313, 1349. Must be taken concurrently with PHRA 1309, 1441, 1445, 2330. Assessment Levels: R3, E3, M3.

PHRA 1301. INTRODUCTION TO PHARMACY (3-1-3) 51.0805
An overview of the qualifications, operational guidelines and job duties of a pharmacy technician. Topics include definitions of a pharmacy environment, the profile of a pharmacy technician, legal and ethical guidelines, job skills and duties, verbal and written communication skills, professional resources, safety techniques. Must be taken concurrently with: PHRA 1266, 1305, 1313 and 1349. Assessment Levels: R3, E3, M3.

PHRA 1305. DRUG CLASSIFICATION (2-3-3) 51.0805
Introduction to the study of the disease processes, pharmaceutical drugs, abbreviations, classifications, dosages, actions in the body and routes of administration. Must be taken concurrently with: PHRA 1266, 1301, 1313 and 1349. Assessment Levels: R3, E3, M3.

PHRA 1306. COMPUTERIZED DRUG DELIVERY SYSTEMS (1-5-3) 51.0805
Fundamentals of computer information systems and technology within the health care system. Includes specialized skills in the production of pharmaceutical documentation using selected pharmacy software packages and an overview of equipment and devices for drug distribution, preparation and manufacturing. Also covers mechanical, automatic, and robotic drug delivery systems. Prerequisites: PHRA 1267, 1309, 1441, 1445 and 2330. Must be taken concurrently with PHRA 2266. Assessment Levels: R3, E3, M3.

PHRA 1309. PHARMACY MATHEMATICS I (2-3-3) 51.0805
Pharmaceutical mathematics including reading, interpreting and solving calculation problems encountered in the preparation and distribution of drugs. Conversion of measurements within the apothecary,avoirdupois and metric systems with emphasis on the metric system of weight and volume. Topics include ratio and proportion, percentage, dilution and concentration, milliequivalent units, intravenous flow rates and solving dosage problems. Prerequisites: PHRA 1266, 1301, 1305, 1313 and 1349. Must be taken concurrently with PHRA 1267, 1441, 1445 and 2330. Assessment Levels: R3, E3, M3.
PHRA 1313. COMMUNITY PHARMACY PRACTICE (2-4-3) 51.0805
Introduction to the skills necessary to interpret, prepare, label and maintain records of physicians’ medication orders and prescriptions in a community pharmacy. Designed to train individuals in supply, inventory and data entry. Topics include customer service, count and pour techniques, prescription calculations, drug selection and preparation, over-the-counter drugs, recordkeeping, stock level adjustment, data input and editing and legal parameters. Must be taken concurrently with PHRA 1266, 1301, 1305 and 1349. Assessment Levels: R3, E3, M3.

PHRA 1349. INSTITUTIONAL PHARMACY PRACTICE (2-4-3) 51.0805
Exploration of the unique role and practice of pharmacy technicians in an institutional pharmacy with emphasis on daily pharmacy operation. Topics include hospital pharmacy organization, work flow and personnel, medical and pharmaceutical terminology, safety techniques, data entry, packaging and labeling operations, extemporaneous compounding, inpatient drug distribution systems, unit dose chart fills, quality assurance, drug storage and inventory control. Must be taken concurrently with PHRA 1266, 1301, 1305 and 1313. Assessment Levels: R3, E3, M3.

PHRA 1441. PHARMACY DRUG THERAPY AND TREATMENT (3-4-4) 51.0805
Study of therapeutic agents, their classifications, properties, actions and effects on the human body and their role in the management of disease. Provides detailed information regarding drug dosages, side effects, interactions, toxicities and incompatibilities. Prerequisites: PHRA 1266, 1301, 1305, 1313 and 1349. Must be taken concurrently with PHRA 1267, 1309, 1445 and 2330. Assessment Levels: R3, E3, M3.

PHRA 1445. INTRA VENOUS ADMIXTURE AND STERILE COMPOUNDING (2-6-4) 51.0805
A study of sterile products, legal and regulatory guidelines, hand washing techniques, pharmaceutical calculations, references, safety techniques, aseptic techniques in parenteral compounding, proper use of equipment, preparations of sterile products and safe handling of antineoplastic drugs. Prerequisite: PHRA 1266, 1301, 1305, 1313 and 1349. Must be taken concurrently with PHRA 1267, 1309, 1441 and 2330. Assessment Levels: R3, E3, M3.

PHRA 2266. PRACTICUM-PHARMACY TECHNICIAN III (0-16-2) 51.0805
Practical, general workplace training supported by an individualized learning plan developed by employer, college and student. Prerequisites: PHRA 1267, 1309, 1441, 1445 and 2330. Must be taken concurrently with PHRA 1306. Assessment Levels: R3, E3, M3.

PHRA 2330. INNOVATIVE PHARMACY PRACTICES (3-0-3) 51.0805
Specialized duties and practice settings available to pharmacy technicians. Examines the areas of the contemporary pharmacy; nuclear pharmacy and long-term care pharmacy. Prerequisites: PHRA 1266, 1301, 1305, 1313 and 1349. Must be taken concurrently with PHRA 1267, 1309, 1441 and 1445. Assessment Levels: R3, E3, M3.

PHYS - Physics

PHYS 1105. LABORATORY FOR PHYSICS I (0-3-1) 40.0801.5103
(Formerly listed as PHYS 1405.) Optional laboratory for PHYS 1305. Prerequisite or corequisite: PHYS 1305. Assessment Levels: R3, E1, M3.

PHYS 1303. STARS AND GALAXIES (3-0-3) 40.0201.5103
Study of stars, galaxies and the universe outside our solar system. For nonscience majors. Assessment Levels: R3, E3, M2.

PHYS 1305. PHYSICS I (3-0-3) 40.0801.5103
(Formerly listed as PHYS 1405.) Elementary introduction to mechanics, heat and thermodynamics, sound and music and relativity for liberal arts students, business students, elementary education majors and health science students; not for science
requirements for majors in physics, math, chemistry, biology, or other sciences. Recommended companion course: PHYS 1105. Credit allowed for only one of the following: Physics 1305, 1401, or 2425. Prerequisite: MATH 0373 or equivalent. Assessment Levels: R3, M1, R3.

PHYS 1310. ELEMENTARY PHYSICS METHODS (3-0-3) 4008015103
Introduction to the methods in physics for students who have had no previous college course in physics. Examines basic concepts, problem solving techniques, graphical representations and pertinent mathematics. Credit not allowed for both PHYS 1310 and 1305. Prerequisites: MATH 1314 and 1316 or permission of instructor. Assessment Levels: R3, E1, M3.

PHYS 1401. COLLEGE PHYSICS I (3-3-4) 40.0801.5303
Principles of mechanics and heat for pre-dental, pre-medical, architecture, biology and geology majors; suggested for teachers preparing to teach general science or other science courses. Prerequisites: MATH 1314, 1316 with a minimum grade of “C.” Credit allowed for only one of the following: PHYS 1305, 1401, or 2425. Assessment Levels: R3, E1, M3.

PHYS 1402. COLLEGE PHYSICS II (3-3-4) 40.0801.5303
Elementary magnetism, electricity, light, sound and modern physics with some reference to the practical aspects of the principle studied. Prerequisites: MATH 1314, 1316 with a minimum grade of “C,” and PHYS 1401. Credit allowed for only one of the following: Physics 1407, 1402, or 2426. Assessment Levels: R3, E1, M3.

PHYS 1407. INTRODUCTORY PHYSICS II (3-3-4) 40.0801.5103
Fundamentals of electricity and magnetism, waves and optics and topics in modern physics; for liberal arts, business, elementary education and health science students; not for math or science majors. Credit allowed for only one of the following: Physics 1407, 1402, or 2426. Prerequisite: MATH 0372 or equivalent. Assessment Levels: R3, E1, M3.

PHYS 2425. UNIVERSITY PHYSICS I (3-3-4) 40.0801.5403
Principles of mechanics for students of physics, math, chemistry and engineering majors. (Not sophomore level.) Prerequisites: MATH 2314 or 2414 or concurrent enrollment; PHYS 1310 or permission of instructor. A year of high school physics is recommended. Credit allowed for only one of the following: PHYS 1305, 1401, or 2425. Assessment Levels: R3, E1, M3.

PHYS 2426. UNIVERSITY PHYSICS II (3-3-4) 40.0801.5403
Advanced study of electricity and magnetism and introduction to optics for physics, math, chemistry and engineering majors. Credit allowed for only one of the following: PHYS 1407, 1402, or 2426. Prerequisites: MATH 2315 or concurrent enrollment and PHYS 2425. Assessment Levels: R3, E1, M3.

PLAB - Phlebotomy

PLAB 1223. PHLEBOTOMY (1-4-2) 51.1004
Skill development in the performance of a variety of blood collecting 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 specimens and quality assurance, specimen handling, processing and receiving. Assessment Levels: R3, E3, M3.
PMHS - Psychiatric/Mental Health and Retardation

PMHS 1166. PRACTICUM (OR FIELD EXPERIENCE) PSYCHIATRIC/MENTAL HEALTH SERVICES (0-7-1) 51.1502
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. The guided external experiences may be paid or unpaid. This course may be repeated if topics and learning outcomes vary. Prerequisites: DAAC 1311, DAAC 1314, 2354 and approval of Human Services program director for assignment to specific practicum. Assessment Levels: R1, E1, M1.

PMHS 2166. PRACTICUM (OR FIELD EXPERIENCE) PSYCHIATRIC/MENTAL HEALTH SERVICES (0-7-1) 51.1502
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. The guided external experiences may be paid or unpaid. This course may be repeated if topics and learning outcomes vary. Prerequisites: DAAC 1311, 2354, PMHS 1166, approval of Human Services program director for assignment to specific practicum. Assessment Levels: R1, E1, M1.

PMHS 2363. INTERNSHIP - PSYCHIATRIC/MENTAL HEALTH SERVICES TECHNICIAN (CAPSTONE) (0-9-3) 51.1502
An experience external to the College for an advanced student 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. This course may be repeated if topics and learning outcomes vary. Prerequisite: DAAC 2354. Assessment Levels: R1, E1, M1.

POFI - Business/Office Automation/Technology/Data Entry

POFI 1301. COMPUTER APPLICATIONS I (2-2-3) 52.0407
Overview of computer office applications including current terminology and technology. Introduction to computer hardware, software applications and procedures. Keyboarding proficiency advisable.

POFI 1341. COMPUTER APPLICATIONS II (2-2-3) 52.0407
Continued study of current computer terminology and technology. Advanced skill development in computer hardware, software applications and procedures. Prerequisite: POFI 1301 or equivalent. Keyboarding proficiency advisable.

POFI 2301. WORD PROCESSING (2-2-3) 52.0407
Word processing software focusing on business applications. Prerequisites: Keyboarding proficiency of 35 words per minute and knowledge of keyboarding procedures and formatting.

POFI 2331. DESKTOP PUBLISHING (2-2-3) 52.0407
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.

POFL - Professional Office Legal

POFL 1371. WORD PROCESSING FOR THE LEGAL PROFESSIONS II (3-0-3) 52.0403
Designed for students in legal professions to practice copy formatting, proofreading, editing and revising techniques while preparing and editing selected documents used in the law office, in addition to creating headers and footers, table of contents, table of
authorities, tables and redlining and using word processing software on a microcomputer. Prerequisites: Keyboarding proficiency of 45 words per minute on a five-minute timing with at least 95% accuracy.

**POFL 2164. PRACTICUM - LEGAL ADMINISTRATIVE/SECRETARY (CAPSTONE) (1-7-1) 22.0301**
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: POFL 1371, POFT 1301 and sophomore standing.

**POFL 2401. LEGAL DOCUMENT PROCESSING (3-3-4) 22.0301**
develops the skills for the production of legal documents. Prerequisite: LGLA 1317, POFL 1371 and keyboarding proficiency of 55 words per minute on a five-minute timing with at least 95% accuracy.

**POFL 2433. ADVANCED LEGAL DOCUMENT PROCESSING (3-3-4) 22.0301**
Advanced training in the preparation of legal documents using word processing software. Application of formats used in the law office with increased emphasis on accuracy, grammar, punctuation and vocabulary in addition to production speed. Prerequisites: LGLA 1317, POFL 1371 and 2401 and a keyboarding proficiency of 70 words per minute on a five-minute timing with a least 95% accuracy.

**POFM - Medical Administrative/Executive Assistant and Medical Secretary**

**POFM 1191. SPECIAL TOPICS - MEDICAL ADMINISTRATIVE/EXECUTIVE ASSISTANT AND MEDICAL SECRETARY (CAPSTONE) (SUMMER ONLY) (1-0-1) 51.0716**
The special topics class taken concurrently with POFM 2264 - Office Practicum addresses the major forces influencing human behavior in the office through examination of information (time management, assertiveness training, values/needs assessments, confidentiality, procedures used in the medical/business office, etc.) and related exercises are completed in weekly class meetings. Each week symptoms of problems in the work environment and development of possible solutions through improved human relations skills discussed. In addition, key objectives determined and analyzed and prospective job duties are established.

**POFM 1300. MEDICAL CODING BASICS (2-4-3) 51.0716**
Presentation and application of basic coding rules, principles, guidelines and conventions utilizing various coding systems. Emphasis on CPT and ICD-9-CM.

**POFM 1309. MEDICAL OFFICE PROCEDURES (FALL ONLY) (3-0-3) 51.0716**
Introduction to basic medical office skills including telephone techniques, filing and indexing, mail handling, appointment scheduling, correspondence and business transactions. Emphasis on human relations and customer service skills. Other topics to be covered include medical ethics, federal regulations and guidelines, basic medical insurance concepts and basic medical coding.

**POFM 2264. PRACTICUM-MEDICAL ADMINISTRATIVE/EXECUTIVE ASSISTANT AND MEDICAL SECRETARY (CAPSTONE) (SUMMER ONLY) (0-20-2) 51.0716**
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. The guided external experiences may be for pay or no pay. This course may be repeated if topics and learning outcomes vary.
POFT - Administrative Assistant/Secretarial Science, General

POFT 1192. SPECIAL TOPICS - ADMINISTRATIVE ASSISTANT/SECRETARIAL SCIENCE, GENERAL (CAPSTONE) (SUMMER ONLY) (1-0-1) 52.0401

The special topics class taken concurrently with POFT 2264 Office Practicum addresses the major forces influencing human behavior in the office through examination of information (time management, assertiveness training, values/needs assessment, confidentiality, procedures used in the medical/business office, etc.) and related exercises are completed in weekly class meetings. Each week symptoms of problems in the work environment and development of possible solutions through improved human relations skills are discussed. In addition, key objectives are determined and analyzed and prospective job duties are established.

POFT 1292. SPECIAL TOPICS IN ADMINISTRATIVE ASSISTANT/SECRETARIAL SCIENCE, GENERAL (CAPSTONE) (1-2-2) 52.0401

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.

POFT 1301. BUSINESS ENGLISH (3-0-3) 52.0501

Introduction to a practical application of basic language usage skills with emphasis on fundamentals of writing and editing for business.

POFT 1309. ADMINISTRATIVE OFFICE PROCEDURES I (3-0-3) 52.0401

Study of current office procedures, duties and responsibilities applicable to an office environment. Prerequisites: Both POFT 2401 or equivalent (with keyboarding speed of 40 words per minute) and ENGL 1301 or POFT 1301 with a minimum grade of “C.”

POFT 1313. PROFESSIONAL WORKFORCE (3-0-3) 52.0401

Preparation for career success including ethics, interpersonal relations, professional attire and advancement.

POFT 1319. RECORDS AND INFORMATION MANAGEMENT I (FALL ONLY) (3-0-3) 52.0401

Introduction to basic records and information management filing systems including manual and electronic filing.

POFT 1321. BUSINESS MATH (3-0-3) 52.0408

Fundamentals of business mathematics including analytical and critical thinking skills.

POFT 1325. BUSINESS MATH AND MACHINE APPLICATIONS (3-0-3) 52.0408

Business math problem-solving skills using office technology. Emphasis on business problem-solving skills using spreadsheet software and/or electronic calculator/keyboard. Prerequisite: POFT 1321.

POFT 1329. BEGINNING KEYBOARDING (2-2-3) 52.0408

Skill development keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents.

POFT 1349. ADMINISTRATIVE OFFICE PROCEDURES II (CAPSTONE) (FALL ONLY) (3-0-3) 52.0401

In depth coverage of office procedures with special emphasis on decision making, goal setting, management theories and critical thinking. Prerequisites: POFT 1309 with a minimum grade of “C,” POFT 2401 or equivalent (with minimum keyboarding speed of 40 words per minute) and ENGL 1301.

POFT 1371. TELEPHONE COMMUNICATIONS (3-1-3) 52.0408

Includes units on listening techniques, voice dictation training, effective telephone techniques, telecommunications, quality customer service, intercultural communica-
tions and Western Hemisphere geography. Three hours of lecture weekly with one hour of laboratory training. Keyboarding proficiency advisable.

**POFT 2264. PRACTICUM-ADMINISTRATIVE ASSISTANT/SECRETARIAL SCIENCE, GENERAL (CAPSTONE) (SUMMER ONLY) (0-20-2) 52.0401**
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. The guided external experiences may be for pay or no pay. This course may be repeated if topics and learning outcomes vary.

**POFT 2303. SPEED AND ACCURACY BUILDING (2-2-3) 52.0408**
Review, correct, and improve keyboarding techniques for the purpose of increasing speed and improving accuracy. Students may repeat to meet keyboarding proficiency of 40 words per minute on a five-minute timing with at least 95% accuracy.

**POFT 2312. BUSINESS CORRESPONDENCE AND COMMUNICATION (SPRING ONLY) (3-0-3) 52.0501**
Development of writing and presentation skills to produce effective business communications. Prerequisites: Keyboarding skills.

**POFT 2401. INTERMEDIATE KEYBOARDING (3-3-4) 52.0408**
Continuation of keyboarding skills, emphasizing acceptable speed, accuracy levels and formatting documents. Emphasis on proofreading, editing and following instructions and keying documents from various copy. Prerequisites: 40 words per minute on a five-minute timing with at least 95% accuracy, POFT 1301 with a minimum grade of “C” or concurrent enrollment and POFI 1301 or 2301.

**POFT 2433. ADVANCED KEYBOARDING (3-3-4) 52.0408**
Continuation of keyboarding skills in advanced document formatting emphasizing speed, accuracy, and decision making. Prerequisites: POFT 1301 with a minimum of “C,” POFT 2401 or equivalent and POFI 2301 or equivalent. A keyboarding speed of 50 words a minute on a five-minute timing with 97% accuracy.

**PSTR - Pastry (Chef)**

**PSTR 1301. FUNDAMENTALS OF BAKING (2-3-3) 12.0501**
Fundamentals of baking including dough, quick breads, pies, cakes, cookies, tarts and doughnuts. Instruction in flours, fillings and ingredients. Topics include baking terminology, tool and equipment use, formula conversions, functions of ingredients and the evaluation of baked products. Prerequisite: CHEF 1301.

**PSTR 1305. BREADS AND ROLLS (2-3-3) 12.0501**
Concentration on fundamentals of chemically- and yeast-raised breads and rolls. Instruction on commercial preparation of a wide variety of products. Prerequisites: CHEF 1301, PSTR 1301. Assessment Levels: R1, E1, M1.

**PSTR 1306. CAKE DECORATING I (2-3-3) 12.0501**
Introduction to skills, concepts and techniques of cake decorating. Prerequisites: CHEF 1301, PSTR 1301. Assessment Levels: R1, E1, M1.

**PSTR 1310. PIES, TARTS, TEACAKES AND COOKIES (2-3-3) 12.0501**
Focus on preparation of American and European style pie and tart fillings and dough, cookies, teacakes, custard and batters. Instruction in finishing and presentations techniques. Prerequisites: CHEF 1301, PSTR 1301. Assessment Levels: R1, E1, M1.

**PSTR 1391. SPECIAL TOPICS IN BAKER/PAstry CHEF (2-3-3) 12.0501**
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. Only one special topic may be taken if in a certificate program. Prerequisites: CHEF 1301, PSTR 1301, 2331. Assessment Levels: R1, E1, M1.
COURSE DESCRIPTIONS

PSTR 1440. PLATED DESSERTS (CAPSTONE) (3-3-4) 12.0501
Preparation and service of hot and cold desserts with a focus on individual desserts, a la minute preparations and numerous components within one preparation. Emphasis on station organization, timing and service coordination for restaurant dessert production. Prerequisites: CHEF 1301, PSTR 1301, 2331.

PSTR 1442. QUANTITY BAKESHOP PRODUCTION (3-3-4) 12.0501
Advanced baking techniques to include volume production of a variety of breads and desserts. Prerequisites: CHEF 1301, PSTR 1301, 1305, 1310, 2331. Assessment Levels: R1, E1, M1.

PSTR 2307. CAKE DECORATING II (2-3-3) 12.0501
A course in decoration of specialized and seasonal products. Prerequisites: CHEF 1301, PSTR 1301, 1306, 2331. Assessment Levels: R1, E1, M1.

PSTR 2331. ADVANCED PASTRY SHOP (CAPSTONE) (2-3-3) 12.0501
Study of classical desserts, French and international pastries, hot and cold desserts, ice creams and ices, chocolate work and decorations. Emphasis on advanced techniques. Prerequisites: CHEF 1301, PSTR 1301. Assessment Levels: R1, E1, M1.

PSYC - Psychology

PSYC 2301. GENERAL PSYCHOLOGY (3-0-3) 42.0101
Survey of major topics in psychology. Introduces the study of behavior and the factors that determine and affect behavior. Assessment Levels: R3, E3, M1.

PSYC 2314. LIFESPAN GROWTH AND DEVELOPMENT (3-0-3) 4207015125
Surveys research on developmental changes from prenatal development to adulthood. May include genetic/environmental interactions, prenatal development, development of thinking in childhood, genetic and environmental influences on personality, moral development, physical changes during puberty, romantic relationships in adulthood, childrearing, adjustments of middle adulthood, changes in cognitive skills in adulthood, adjustments of late adulthood and dealing with dying. Also offered as an online course. Prerequisite: PSYC 2301. Assessment Levels: R3, E3, M1.

PSYC 2317. STATISTICAL METHODS IN PSYCHOLOGY (3-0-3) 4201015225
Introduction to the use of statistics in social sciences; includes central tendency and variability, probability and inference, correlation and regression and analysis of variance. Credit not allowed for this course and either MATH 1342 or 2342. Prerequisite: PSYC 2301 or SOCI 1301. Assessment Levels: R3, E3, M3.

PSYC 2319. SOCIAL PSYCHOLOGY (3-0-3) 4216015125
Scientific study of individual behavior within the social environment. Science methodologies are the basis for understanding and applying concepts in topic areas such as social cognition, attitudes, stereotypes/prejudice/discrimination, helping and aggression, conformity/compliance/obedience and persuasion. Prerequisite: PSYC 2301. Assessment Levels: R3, E3, M1.

PTAC - Process Technology

PTAC 1302. INTRODUCTION TO PROCESS TECHNOLOGY (3-0-3) 41.0301
Introduction to chemical and refinery plant operations. Topics include process technician duties, responsibilities and expectations; plant organizations; plant process and utility systems; and the physical and mental requirements of the process technician. Assessment Levels: R1, E1, M1.

PTAC 1308. SAFETY, HEALTH AND ENVIRONMENT I (3-0-3) 41.0301
Development of knowledge and skills to reinforce the attitudes and behaviors required for safe and environmentally sound work habits. Emphasis will be on safety health and
environmental issues in the performance of all job tasks and regulatory compliance issues. Assessment Levels: R1, E1, M1.

**PTAC 1354. INDUSTRIAL PROCESSES (2-3-3) 41.0301**
Study of the processes employed in process plant operations. Prerequisite: PTAC 1302. Assessment Levels: R2, E2, M2.

**PTAC 1410. PROCESS TECHNOLOGY I: EQUIPMENT (3-3-4) 41.0301**
Instruction in the use of common process equipment. Prerequisite: PTAC 1302. Assessment Levels: R1, E1, M1.

**PTAC 1432. PROCESS INSTRUMENTATION I (3-3-4) 41.0301**
Study of the instruments and instrument systems used in the process industry including terminology, primary variables, symbology, control loops, and basic troubleshooting. Prerequisite: PTAC 1302. Assessment Levels: R1, E1, M1.

**PTAC 2314. PRINCIPLES OF QUALITY (3-0-3) 41.0301**
Study of the background and application of quality concepts. Topics include team skills, quality tools and economics and continuous improvement. Prerequisite: PTAC 1302. Assessment Levels: R2, E2, M2.

**PTAC 2346. PROCESS TROUBLESHOOTING (CAPSTONE) (2-3-3) 41.0301**
Instruction in the different types of troubleshooting techniques, procedures and methods used to solve process problems. Topics include application of data collection and analysis, cause-effect relationships and reasoning. Prerequisite: PTAC 2420. Assessment Levels: R2, E2, M2.

**PTAC 2348. SAFETY, HEALTH AND ENVIRONMENT II (3-0-3) 41.0301**

**PTAC 2420. PROCESS TECHNOLOGY II: SYSTEMS (3-3-4) 41.0301**
Study of the interrelation of process equipment and process systems including related scientific principles. Prerequisites: PTAC 1410 and 1432. Assessment Levels: R1, E1, M1.

**PTAC 2436. PROCESS INSTRUMENTATION II (3-3-4) 41.0301**
Continued study of coverage of the varied instruments with emphasis on instrument systems used in the processing industry. Includes terminology, primary variables, symbology, control loops and basic troubleshooting. Prerequisite: PTAC 1432. Assessment Levels: R1, E1, M1.

**PTAC 2438. PROCESS TECHNOLOGY III: OPERATIONS (3-2-4) 41.0301**
This course combines systems into operational processes with emphasis on operations under various conditions. Topics include typical duties of an operator. Prerequisite: PTAC 2420. Assessment Levels: R2, E2, M2.

**PTHA - Physical Therapist Assistant**

**PTHA 1166. PRACTICUM PHYSICAL THERAPIST ASSISTANT (0-7.5-1) 51.0806**
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: PTHA 1201, 1321, 1513, 2509. Assessment Levels: R3, E3, M3.

**PTHA 1191. SPECIAL TOPICS IN PHYSICAL THERAPY ASSISTANT (SPECIAL INTERNSHIP) (0-7-1) 51.0806**
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. This course was designed to be repeated multiple times to improve student proficiency. Assessment Levels: R3, E3, M3.
PTHA 1201. THE PROFESSION OF PHYSICAL THERAPY (1-2-2) 51.0806
Introduction to the profession of physical therapy and the role of the physical therapist assistant. Assessment Levels: R2, E2, M3.

PTHA 1229. APPLIED PHYSICAL PRINCIPLES (1-4-2) 51.0806
Application of physical principles to selected interventions in physical therapy. Assessment Levels: R3, E3, M3.

PTHA 1321. PATHOPHYSIOLOGY (3-0-3) 51.0806
Study of the pathophysiology of diseases/conditions commonly encountered in physical therapy. Prerequisites: PTHA 1201. Assessment Levels: R3, E3, M3.

PTHA 1391. SPECIAL TOPICS IN PHYSICAL THERAPY ASSISTANT - DOCUMENTATION/REPORTING (2-3-3) 51.0806
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. This course was designed to be repeated multiple times to improve student proficiency. Assessment Levels: R3, E3, M3.

PTHA 1391. SPECIAL TOPICS IN PHYSICAL THERAPY ASSISTANT - CARDIOPULMONARY (2-3-3) 51.0806
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. This course was designed to be repeated multiple times to improve student proficiency. Assessment Levels: R3, E3, M3.

PTHA 1391. SPECIAL TOPICS IN PHYSICAL THERAPY ASSISTANT - MUSCULOSKELETAL (2-3-3) 51.0806
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. This course was designed to be repeated multiple times to improve student proficiency. Assessment Levels: R3, E3, M3.

PTHA 1391. SPECIAL TOPICS IN PHYSICAL THERAPY ASSISTANT - NEUROMUSCULAR (2-3-3) 51.0806
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. This course was designed to be repeated multiple times to improve student proficiency. Assessment Levels: R3, E3, M3.

PTHA 1513. FUNCTIONAL ANATOMY (3-5-5) 51.0806

PTHA 1531. PHYSICAL AGENTS (3-5-5) 51.0806
Biophysical principles, physiological effects, intervention efficacy and application of physical agents. Prerequisite: PTHA 1321. Assessment Levels: R3, E3, M3.

PTHA 2217. ISSUES IN HEALTH CARE (2-0-2) 51.0806
Organizational patterns, administrative principles, legal and ethical issues in physical therapy, and preparation for licensure and employment. Assessment Levels: R3, E3, M3.

PTHA 2239. PROFESSIONAL ISSUES (CAPSTONE) (2-0-2) 51.0806
A capstone course which engages the student in the discussion of professional issues and behaviors related to clinical practice and which prepares the student for transition into the workforce. Prerequisites: PTHA 2366, 2431. Assessment Levels: R3, E3, M3.

PTHA 2266. PRACTICUM PHYSICAL THERAPIST ASSISTANT (0-15-2) 51.0806
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisite: PTHA 1166. Assessment Levels: R3, E3, M3.
PTHA 2305. NEUROLOGY (3-0-3) 51.0806
Study of neuroanatomy and neurophysiology as it relates to commonly encountered neurological conditions. Prerequisites: PTHA 1201, 1321, 1513, 1531, 2509. Assessment Levels: R3, E3, M3.

PTHA 2366. PRACTICUM PHYSICAL THERAPIST ASSISTANT (0-22.5-3) 51.0806
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. Prerequisites: PTHA 1166, 2266. Assessment Levels: R3, E3, M3.

PTHA 2431. MANAGEMENT OF NEUROLOGICAL DISORDERS (3-4-4) 51.0806
Advanced course integrating previously learned and new skills/techniques into the comprehensive rehabilitation of selected neurological disorders. Prerequisite: PTHA 2305. Assessment Levels: R3, E3, M3.

PTHA 2435. REHABILITATION TECHNIQUES (3-4-4) 51.0806
Advanced course integrating previously learned and new skills/techniques into the comprehensive rehabilitation of selected musculoskeletal, neuromuscular, cardiopulmonary, and integumentary disorders. Prerequisites: PTHA 1201, 1321, 1513, 1531, 2509. Assessment Levels: R3, E3, M3.

PTHA 2509. THERAPEUTIC EXERCISE (3-5-5) 51.0806

PTRT - Petroleum Technology/Technician

PTRT 1313. INDUSTRIAL SAFETY (3-0-3) 15.0903
An overview for petroleum and manufacturing workers of state/federal regulations and guidelines which require industrial safety training. Topics include the 29 C.F.R. 1910, 1926 standards such as confined space entry, emergency action, lock out/tag out and other work related subjects. Assessment Levels: R1, E1, M1.

QCTC - Quality Control Technology/Technician

QCTC 1301. TOTAL QUALITY MANAGEMENT (3-1-3) 15.0702
Study of integrating work processes using team participation through employee empowerment and teamwork. Emphasizing the philosophy of customer service and satisfaction.

QCTC 1303. QUALITY CONTROL (3-1-3) 15.0702
Quality control principles and applications.

QCTC 1341. STATISTICAL PROCESS CONTROL (3-1-3) 15.0702
Components of statistics including techniques of collection, presentation, analysis and interpretation of numerical data as applied to statistical control. Stresses application of correlation methods, analysis of variance, dispersion, sampling quality control, reliability, mathematical models and programming.

QCTC 1343. QUALITY ASSURANCE (3-1-3) 15.0702
Principles and applications designed to introduce quality assurance.

Radio-Television (See COMM - Communications)
COURSE DESCRIPTIONS

**RADR - Radiologic Technology**

**RADR 1260. CLINICAL RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-12-2) 51.0911**
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. Prerequisites: RADR 1309 and HPRS 1106, 1204. Assessment Levels: R3, E3, M3.

**RADR 1261. CLINICAL RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-12-2) 51.0911**
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. Prerequisites: RADR 1309. Assessment Levels: R3, E3, M3.

**RADR 1262. CLINICAL RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-12-2) 51.0911**
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. Prerequisites: RADR 2301 with at least a “C” grade. Assessment Levels: R3, E3, M3.

**RADR 1309. INTRODUCTION TO RADIOGRAPHY AND PATIENT CARE (SECOND SUMMER SESSION ONLY) (2-4-3) 51.0911**
Overview of the historical development of radiography, basic radiation protection, an introduction to medical terminology, ethical and legal issues for health care professionals, and an orientation to the program and to the health care system. Patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills and basic pharmacology are also included. Written acceptance into the Radiologic Technology Program from the department chairperson. Assessment Levels: R3, E3, M3.

**RADR 1311. BASIC RADIOGRAPHIC PROCEDURES (2-4-3) 51.0911**
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. Prerequisites: Written acceptance into the Radiologic Technology Program from the Department Chairperson. Assessment Levels: R3, E3, M3.

**RADR 1313. PRINCIPLES OF RADIOGRAPHIC IMAGING I (3-1-3) 51.0911**
Radiographic image quality and the effects of exposure variables. Prerequisites: RADR 1311, 2309. Assessment Levels: R3, E3, M3.

**RADR 2217. RADIOLOGIC PATHOLOGY (2-1-2) 51.0911**
Disease processes and their appearances on radiographic images. Prerequisites: RADR 1261. 12-week summer session. Assessment Levels: R3, E3, M3.

**RADR 2260. CLINICAL RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-12-2) 51.0911**
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. Prerequisite: RADR 1311. Assessment Levels: R3, E3, M3.

**RADR 2301. INTERMEDIATE RADIOGRAPHIC PROCEDURES (2-4-3) 51.0911**
Continuation of the study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of anatomy. Prerequisite: RADR 1309. Assessment Levels: R3, E3, M3.
RADR 2305. PRINCIPLES OF RADIOLOGIC IMAGING II (3-0-3) 51.0911
Radiographic imaging technique formulation. Includes equipment quality control, image quality assurance, and the synthesis of all variables in image production. Prerequisite: RADR 1313. Assessment Levels: R3, E3, M3.

RADR 2309. RADIOGRAPHIC IMAGING EQUIPMENT (3-1-3) 51.0911
Equipment and physics of x-ray production. Includes basic X-ray circuits. Also examines the relationship of conventional and digital equipment components to the imaging process. Prerequisite: RADR 1309. Assessment Levels: R3, E3, M3.

RADR 2313. RADIATION BIOLOGY AND PROTECTION (3-1-3) 51.0911
Effects of radiation exposure on biological systems. Includes typical medical exposure levels, methods for measuring and monitoring radiation, and methods for protecting personnel and patients from excessive exposure. Prerequisites: RADR 2362. Assessment Levels: R3, E3, M3.

RADR 2333. ADVANCED MEDICAL IMAGING (2-2-3) 51.0911
Specialized imaging modalities. Includes concepts and theories of equipment operations and their integration for medical diagnosis. Prerequisite: RADR 2431. Assessment Levels: R3, E3, M3.

RADR 2335. RADIOLOGIC TECHNOLOGY SEMINAR (CAPSTONE) (3-0-3) 51.0911
Capstone course focusing on the synthesis of professional knowledge, skills and attitudes in preparation for professional employment and lifelong learning. Prerequisite: RADR 2361. Assessment Levels: R3, E3, M3.

RADR 2361. CLINICAL RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-16-3) 51.0911
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. Prerequisites: RADR 1260 and 1261. Assessment Levels: R3, E3, M3.

RADR 2362. CLINICAL-RADIOLOGIC TECHNOLOGY/SCIENCE-RADIOGRAPHER (0-16-3) 51.0911
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. Prerequisites: RADR 1260, 1261 and 2361. Assessment Levels R3, E3, M3.

RADR 2431. ADVANCED RADIOGRAPHIC PROCEDURES (3-3-4) 51.0911
Continuation of positioning; alignment of the anatomical structure and equipment, evaluation of images for proper demonstration of anatomy and related pathology. Prerequisite: RADR 2301. Assessment Levels: R3, E3, M3.

READ - Reading

READ 0305. BASIC READING AND COMPREHENSION (3-1-3) 3201085212
Basic developmental reading course for students who do not meet the prerequisites for READ 0306 or READ 1377 or who need help in improving reading skills. Development of vocabulary, basic comprehension, study skills, critical reasoning and recognition of the organization of ideas in written material. One-hour lab required. Not counted toward graduation. Assessment Levels: R1, E1, M1.

READ 0306. INTERMEDIATE READING AND COMPREHENSION (3-1-3) 3201085212
Intermediate developmental reading course for students who do not meet the prerequisites for READ 1377 or other college-level courses or who need help in improving reading skills. Improvement of vocabulary, reading comprehension, critical reasoning and study skills. One-hour lab required. Not counted toward graduation. Assessment Levels: R2, E1, M1.
READ 1377. RAPID AND ANALYTICAL READING (3-0-3) 3801015712
Emphasis on reading speed flexibility, application of effective reading skills in college subjects, improvement of size and accuracy of vocabulary and development of analytical comprehension skills. Assessment Levels: R3, E3, M1.

RELE - Real Estate
RELE 1303. REAL ESTATE APPRAISAL (3-0-3) 52.1501
Study of the central purposes and functions of an appraisal, social and economic determinants of value, appraisal case studies, cost, market data and income approaches to value estimates, final correlations and reporting.

RELE 1311. LAW OF CONTRACTS (3-0-3) 52.1501
Elements of a contract, offer and acceptance, statute of frauds, specific performance and remedies for breach, unauthorized practice of law, commission rules relating to use of adopted forms and owner disclosure requirements.

RELE 1315. PROPERTY MANAGEMENT (3-0-3) 52.1501
Study of the role of the property manager, landlord policies, operational guidelines, leases, lease negotiations, tenant relations, maintenance, reports, habitability laws and the Fair Housing Act.

RELE 1321. REAL ESTATE MARKETING (3-0-3) 52.1501
Study of real estate professionalism and ethics; characteristics of successful salespersons; time management; psychology of marketing; listing procedures; advertising; negotiation and closure of financing; and the Deceptive Trade Practice Act-Consumer Protection Act.

RELE 1323. REAL ESTATE COMPUTER APPLICATION (3-0-3) 52.1501
Study of the availability of technology, especially software and its ability to help a real estate agent become more productive. Includes database mapping interest and software application.

RELE 1406. REAL ESTATE PRINCIPLES (4-0-4) 52.1501
Complete overview of licensing as a broker or salesperson. Includes ethics of practice as a license holder, titles to and conveyance of real estate; legal descriptions, deeds, encumbrances and liens; distinctions between personal and real property; appraisal, finance and regulations; closing procedures and real estate mathematics. Covers at least three hours of classroom instruction on federal, state and local laws relating to housing, discrimination, housing credit discrimination and community reinvestment. Fulfills the 60-hour requirement for salesperson license.

RELE 2301. LAW OF AGENCY (CAPSTONE) (3-0-3) 52.1501
Law of agency including principal-agent and master-servant relationships, the authority of an agent, the termination of an agent’s authority, the fiduciary and other duties of an agent, employment law, deceptive trade practices, listing or buying representation procedures and the disclosure of an agency.

RNSG - Registered Nurse Education
RNSG 1153. HIGH RISK CHILDBEARING FAMILY (1-0-1) 511601
Study of concepts related to the provision of nursing care for high risk childbearing families with emphasis on judgment, skills and professional values within a legal/ethical framework. One of five level IV courses which focus on advanced medical surgical concepts across the lifespan. Pharmacology with math computation, nutrition and legal issues are integrated as students plan and implement nursing care for patients with chronic or life-threatening conditions. Prerequisite: ENGL 1301, PHIL 2306, RNSG 1162, 1343, 2160. Assessment Levels: R3, E3, M3.
RNSG 1160. CLINICAL (FOUNDATIONS FOR NURSING PRACTICE) (0-6-1) 5116016914
Development of a realization of nursing as an interpersonal process with emphasis on the socialization into the role of the registered nurse, clinical decision making using the nursing process and fundamental nursing skills. Studies include basic concepts and related skills in nursing process, communication, asepsis, pharmacology, medication administration, physical assessment and basic math proficiency. These concepts contribute to comprehensive assessment of patients, nursing care planning and implementation of care for adults (including older adults) in simple nursing situations. Must be repeated if RNSG 1413 is not successful. Prerequisites: BIOL 2401, 2402, HPRS 1106 and 1204. Concurrent: RNSG 1413. Assessment Levels: R3, E3, M3.

RNSG 1161. CLINICAL (COMMON CONCEPTS OF ADULT HEALTH) (0-6-1) 5116016914
Emphasis on the role of the registered nurse, clinical decision making using the nursing process and beginning medical-surgical nursing skills. Builds on Level I skills and concepts. Must be repeated if RNSG 1341 is not successful. Concurrent: RNSG 1341. Assessment Levels: R3, E3, M3.

RNSG 1162. CLINICAL (COMPLEX CONCEPTS OF ADULT HEALTH) (0-6-1) 5116016914
Emphasis is on the role of the registered nurse, clinical decision making using the nursing process and beginning medical-surgical nursing skills. Builds on Level I skills and concepts. Must be repeated if RNSG 1343 is not successful. Concurrent: RNSG 1343. Assessment Levels: R3, E3, M3.

RNSG 1163. CLINICAL (LVN-RN TRANSITION) (0-6-1) 5116016914
Emphasis is on the role of the registered nurse for LVN’s, clinical decision making using the nursing process and medical-surgical nursing skills. Must be repeated if RNSG 1327 is not successful. Concurrent: RNSG 1327. Assessment Levels: R3, E3, M3.

RNSG 1166. PRACTICUM (0-8-1) 511601
Practical, general workplace training supported by an individualized learning plan developed by the employer, college and student. This Level IV course focuses on clinical decision making using the nursing process and all medical surgical nursing skills and concepts. Prerequisites: RNSG 1162, 1343, 2160, 2213, ENGL 1301, PHIL 2306. Concurrent or prerequisite: RNSG 1153, 2161, 2331, ENGL 1302. Assessment Levels: R3, E3, M3.

RNSG 1201. PHARMACOLOGY (1-4-2) 51.1601
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. Lays the foundation for pharmacological application throughout the program. Specific drug information is discussed in relation to assessment, nursing diagnosis, client monitoring, interventions, client education and evaluation of safe and effective drug therapy. Must be repeated if clinical evaluation in clinical courses is unsatisfactory in application of concepts from this course. Prerequisites: BIOL 2401, 2402, HPRS 1106 and 1204. Assessment Levels: R3, E3, M3.

RNSG 1209. INTRODUCTION TO NURSING (1-3-2) 51.1601
Overview of nursing and the role of the professional nurse as a provider of care, coordinator of care and member of a profession. Topics include knowledge, judgement, skills and professional values with a legal/ethical framework. Prerequisites: BIOL 2401, 2402, 2420, CHEM 1406, PSYC 2301, 2314. Assessment Levels: R3, E3, M3.

RNSG 1300. HEALTH ASSESSMENT ACROSS THE LIFESPAN (2-4-3) 51.1601
Development of skills and techniques required for a comprehensive health assessment of clients across the lifespan: pediatric, adult, and geriatric. Includes assessment of clients’ health promotion and maintenance, illness and injury prevention and restoration,
and application of the nursing process within a legal/ethical framework. Assessment Levels: R3, E3, M3.

RNSG 1327. TRANSITION FROM VOCATIONAL TO PROFESSIONAL NURSING (2-3-3) 51.1601
Topics include health promotion, expanded assessment, analysis of data, nursing process, pharmacology, multidisciplinary teamwork, communication and applicable competencies in knowledge, judgment, skills and professional values within a legal/ethical framework. An accelerated course of study for qualified LVNs that will incorporate content and practice taught in the programs Level I and Level II courses. This transition course is designed to assess, validate and enhance the LVN’s basic knowledge of nursing gained in LVN education and working experience. Study of medical-surgical areas of patient care relating to basic medical-surgical nursing. Emphasis on the role of the registered nurse and the application of clinical decision making to nursing practice. Must be repeated if clinical RNSG 1163 is not successful. Prerequisites: BIOL 2401, 2402, 2420, CHEM 1406, PSYC 2301, 2314. Concurrent: RNSG 1163. Assessment Levels: R3, E3, M3.

RNSG 1341. COMMON CONCEPTS OF ADULT HEALTH (2-4-3) 51.16016314
Study of the general principles of caring for selected adult clients and families with common health needs in a structured setting. Emphasis on knowledge judgment, skills and professional values within a legal/ethical framework. This Level II course focuses on medical-surgical areas of nursing care relating to physiological and higher needs as altered by physiological stress. Further development of clinical decision making continues along with study of pharmacology, nutrition, math proficiency, communication skills and asepsis as altered by specific stressors. Must be repeated if clinical RNSG 1161 is not successful. Prerequisites: RNSG 1160, 1201, 1413, CHEM 1406, PSYC 2301. Concurrent: RNSG 1161. Assessment Levels: R3, E3, M3.

RNSG 1343. COMPLEX CONCEPTS OF ADULT HEALTH (2-4-3) 5116016414
Integration of previous knowledge and skills into the continued development of the associate degree nurse as a provider of care, coordinator of care and member of a profession in the care of adult clients/families in structured health care settings. Incorporates judgments, skills and professional values within a legal/ethical framework. This Level III course focuses on medical-surgical areas of nursing care relating to physiological and higher needs as altered by physiological stress. Further development of clinical decision making continues along with study of pharmacology, nutrition, math proficiency, communication skills and asepsis as altered by specific stressors. Must be repeated if clinical RNSG 1162 is not successful. Prerequisites: RNSG 1161, 1412, 1341, 2162, BIOL 2420, PSYC 2314. Concurrent: RNSG 1162. Concurrent or prerequisite: ENGL 1302, PHIL 2306. Assessment Levels: R3, E3, M3.

RNSG 1412. NURSING CARE OF THE CHILDBEARING AND CHILDRearing FAMILY (2-4-4) 5116015614
Study of concepts related to the provision of nursing care for childbearing and childrearing families in a multidisciplinary approach; competency in knowledge, judgment, skill and professional values within a legal/ethical framework, focus on normal needs for the childbearing/childrearing family during the conception, prenatal, intrapartum, neonatal, postpartum and childrearing experience from conception through 18 years of age. Emphasis on applying the nursing process to client/patient and family assessment, caring for the family in crisis, developing communication skills with families and teaching appropriate health practices. Must be repeated if clinical RNSG 2162 is not successful. Prerequisites: RNSG 1160, 1201, 1413, PSYC 2301, CHEM 1406. Concurrent: RNSG 2162. Concurrent or prerequisite: BIOL 2420, PSYC 2314. Assessment Levels: R3, E3, M3.
RNSG 1413. FOUNDATIONS FOR NURSING PRACTICE (2-4-4) 5116015114
Introduction to the role of the associate degree nurse as a provider of care, coordinator of care and member of a profession. Topics include knowledge, judgment, skills and professional values within a legal/ethical framework. Development of a realization of nursing as an interpersonal process with emphasis on fundamental concepts and theories upon which nursing is based. One of four Level I courses which includes nursing practice socialization and history, legal aspects and other factors influencing health care. Must be repeated if clinical RNSG 1160 is not successful. Prerequisites: BIOL 2401, 2402, HPRS 1106 and 1204. Concurrent: RNSG 1160. Concurrent or prerequisite: CHEM 1406, PSYC 2301. Assessment Levels: R3, E3, M3.

RNSG 1417. CONCEPTS OF NURSING PRACTICE 1 FOR ARTICULATING STUDENTS (3-4-4) 51.1601
Provides the articulating student the opportunity to examine the role of the professional nurse; application of a systematic problem solving process and critical thinking skills which includes a focus on the adult population in selected settings, and competency in knowledge, judgment, skill and professional values within a legal/ethical framework. Must be repeated if RNSG 2163 is not successful. Prerequisites: BIOL 2401, 2402, 2420, CHEM 1406, PSYC 2301, 2314. Concurrent enrollment in RNSG 2163. Assessment Levels: R3, E3, M3.

RNSG 2101. CARE OF CHILDREN/FAMILY (1-0-1) 511601
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 Level IV course focuses on critical care and high risk needs for children and their families. Prerequisites: RNSG 1162, 1343, 2160, 2213, ENGL 1301, PHIL 2306. Assessment Levels: R3, E3, M3.

RNSG 2160. CLINICAL (MENTAL HEALTH NURSING) (0-3-1) 5116016914
Emphasis is on the role of the registered nurse, clinical decision making using the nursing process and psychiatric nursing skills. Builds on Level I and II skills and concepts. Must be repeated if RNSG 2213 is not successful. Prerequisites: BIOL 2420, PSYC 2314. Concurrent RNSG 2213. Assessment Levels: R3, E3, M3.

RNSG 2161. CLINICAL (ADVANCED CONCEPTS OF HEALTH ACROSS THE LIFESPAN) (0-6-1) (CAPSTONE) 5116016914
Emphasis is on the role of the registered nurse, clinical decision making using the nursing process and advanced medical surgical nursing as specified for all ages. This course builds on Level I, II and III skills and concepts. Must be repeated if RNSG 2331 is not successfully completed. Assessment Levels: R3, E3, M3.

RNSG 2162. CLINICAL (CHILDBEARING AND CHILDCARING FAMILY) (0-5-1) 51.16016914
Emphasis is on the role of the registered nurse, clinical decision making using the nursing process and childbearing/childrearing nursing skills. Builds on Level I skills and concepts. Must be repeated if RNSG 1412 is not successful. Concurrent or prerequisite: RNSG 1161, 1341, 1412, BIOL 2420, PSYC 2314. Assessment Levels: R3, E3, M3.

RNSG 2163. CLINICAL (PARAMEDIC-RN TRANSITION) (0-6-1) 51.1616914
Health-related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision provided by clinical professional. Must be repeated if RNSG 1417 is not successful. Prerequisites: BIOL 2401, 2402, 2420, CHEM 1406, PSYC 2301, 2314. Concurrent: RNSG 1417. Assessment Levels: R3, E3, M3.

RNSG 2213. MENTAL HEALTH NURSING (1-2-2) 51.16015514
Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of clients and their families. Offers the opportunity for
students to study the intrapersonal and interpersonal needs of individuals and their families who are experiencing stress, conflict and anxiety. Must be repeated if clinical RNSG 2160 is not successful. Concurrent or prerequisite: ENGL 1301, PHIL 2306. Assessment Levels: R3, E3, M3.

RNSG 2230. PROFESSIONAL NURSING REVIEW AND LICENSURE PREPARATION (1-3-2) 51.1601

RNSG 2331. ADVANCED CONCEPTS OF ADULT HEALTH ACROSS LIFESPAN (2-4-3) 51.1601
Application of advanced concepts and skills for the development of the associate degree nurse’s roles in complex nursing situations with adult clients/families in structured settings. Emphasis is given to judgment and professional values within a legal/ethical framework. This Level IV course emphasizes establishing priorities while using clinical decision making in caring for multiple patients/clients with complex medical-surgical health problems in intermediate and critical care settings. Communication skills practiced in small group simulated situations, patient interviewing, patient teaching and professional leadership role with peer group. Pharmacology with math computation, nutrition, lifestyle and accountability are integrated as the student plans and implements nursing care for patients with rehabilitative chronic or life-threatening conditions. Must be repeated if clinical RNSG 2161 is not successful. Assessment Levels: R3, E3, M3.

RSPT - Respiratory Therapy

RSPT 1213. RESPIRATORY CARE PHARMACOLOGY (2-0-2) 51.0908

RSPT 1260. CLINICAL (0-12-2) 51.0908
Health related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision by clinical professional. Corequisites: RSPT 1329. Assessment Levels: R3, E3, M3.

RSPT 1261. CLINICAL (0-12-2) 51.0908
Health related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision by clinical professional. Corequisites: RSPT 1331, 2210. Prerequisites: RSPT 1213, 1260, 1329. Assessment Levels: R3, E3, M3.

RSPT 1329. RESPIRATORY CARE FUNDAMENTALS I (2-4-3) 51.0908
Provides an introduction to the knowledge and skills for respiratory care including history, medical terms/symbols, medical/legal, infection control, vital signs, physical assessment, chest x-ray interpretation, medical gas therapy, oxygen analyzers and humidity/aerosol therapy. Corequisites: RSPT 1213, 1260. Assessment Levels: R3, E3, M3.

RSPT 1331. RESPIRATORY CARE FUNDAMENTALS II (2-4-3) 51.0908
Provides a continuation of knowledge and skills for respiratory care including lung expansion therapy, bronchial hygiene therapy, artificial airways, manual resuscitation devices, suctioning, pulse oximetry, bedside spirometry, arterial sampling techniques and blood gas analysis and interpretation. Corequisites: RSPT 1261 and 2210. Prerequisites: RSPT 1213, 1260, 1329. Assessment Levels: R3, E3, M3.
RSPT 2161. CLINICAL (0-6-1) 51.0908
Health related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision by clinical professional. Corequisite: RSPT 2314. Prerequisites: RSPT 1260, 1261. Assessment Levels: R3, E3, M3.

RSPT 2210. CARDIOPULMONARY DISEASES (2-0-2) 51.0908

RSPT 2230. RESPIRATORY CARE EXAMINATION PREP (CAPSTONE) (2-0-2) 51.0908

RSPT 2260. CLINICAL (0-12-2) 51.0908
Health related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision by clinical professional. Corequisite: RSPT 2353. Prerequisites: RSPT 1260, 1261, 2161. Assessment Levels: R3, E3, M3.

RSPT 2261. CLINICAL (0-12-2) 51.0908
Health related work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. Direct supervision by clinical professional. Corequisite: RSPT 2230. Prerequisites: RSPT 1260, 1261, 2161, 2260. Assessment Levels: R3, E3, M3.

RSPT 2314. MECHANICAL VENTILATION (2-4-3) 51.0908
Study of mechanical ventilation with emphasis on ventilator classification, methods, principles, and operational characteristics. Includes indications, complications, and physiologic effects/principles of mechanical ventilation. Emphasizes initiation, management, and weaning of ventilatory support. Corequisite: RSPT 2161. Prerequisites: RSPT 1260, 1261. Assessment Levels: R3, E3, M3.

RSPT 2353. NEONATAL/PEDIATRIC CARDIOPULMONARY CARE (3-0-3) 51.0908

RSTO - Restaurant Operations

RSTO 1301. BEVERAGE MANAGEMENT (3-0-3) 12.0504
Study of the beverage service of the hospitality industry including spirits, wines, beers and nonalcoholic beverages. Topics include purchasing, resource control, legislation, marketing physical plant requirements, staffing service and the selection of wines to enhance foods. Assessment Levels: R1, E1, M1.

RSTO 1304. DINING ROOM SERVICE (2-3-3) 12.0504
Introduces the principles, concepts and systems of professional table service. Topics include dining room organization, scheduling and management of food service personnel. Assessment Levels: R1, E1, M1.

RSTO 1306. FACILITIES LAYOUT AND DESIGN (3-0-3) 12.0504
Overview of the planning, development and feasibility aspects of building or renovating a food service facility. Application of principles of work and flow analysis, spatial relationships and equipment selection as they relate to the overall layout and design. Assessment Levels: R1, E1, M1.

RSTO 1313. HOSPITALITY SUPERVISION (3-0-3) 12.0504
Fundamentals of recruiting, selection and training of foods service and hospitality personnel. Topics include job description, schedules, work improvement, motivation
and applicable personnel laws and regulations. Emphasis on leadership development. Assessment Levels: R1, E1, M1.

**RSTO 1325. PURCHASING FOR HOSPITALITY OPERATIONS (3-0-3)**

12.0504

Study of purchasing and inventory management of foods and other supplies to include development of purchase specifications, determination of order quantities, formal and informal price comparisons, proper receiving procedures, storage management and issue procedures. Emphasis on product cost analysis, yields, pricing formulas, controls and record keeping at each stage of the purchasing cycle. Prerequisites: CHEF 1301. Assessment Levels: R1, E1, M1.

**RSTO 1391. SPECIAL TOPICS IN FOOD AND BEVERAGE/RESTAURANT OPERATIONS MANAGER (2-3-3) 12.0504**

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. Only one special topic may be taken if in a certificate program. Assessment Levels: R1, E1, M1.

**RSTO 2301. PRINCIPLES OF FOOD AND BEVERAGE CONTROLS (CAPSTONE) (2-3-3) 12.0504**

Study of financial principles and controls of food service operation including review of operation policies and procedures. Topics include financial budgeting and cost analysis emphasizing foods and beverage labor costs, operational analysis and international and regulatory reporting procedures. Prerequisites: CHEF 1301, IFWA 1427. Assessment Levels: R2, E2, M2.

**RSTO 2307. CATERING (3-0-3) 12.0504**

Principles, techniques and applications for both on-premises, off-premises and group marketing of catering operations including food preparation, holding and transporting techniques. Assessment Levels: R1, E1, M1.

**RSTO 2380. COOPERATIVE EDUCATION - FOOD AND BEVERAGE/RESTAURANT OPERATIONS MANAGER (CAPSTONE) (1-20-3) 12.0504**

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. Prerequisites: CHEF 1301, 1305 and IFWA 1427. Assessment Levels: R1, E1, M1.

**RSTO 2431. FOOD SERVICE MANAGEMENT (3-3-4) 12.0508**

Mastery of actual management experiences in supervision, training, planning and control of a variety of foods service operation formats to include cafeteria, table service, meetings banquets and catered events. Prerequisites: CHEF 1301, IFWA 1427. Assessment Levels: R2, E2, M2.

**SCIT - Science Technology**

**SCIT 1414. INDUSTRIAL CHEMISTRY I (3-4-4) 40.0501**

Study of chemistry emphasizing industrial applications. Includes models for atomic and molecular structure and bonding, empirical approaches to thermo chemistry and equilibrium, acids and bases, descriptive chemistry of the main group elements, and solutions.

**SCIT 1415. INDUSTRIAL CHEMISTRY II (3-4-4) 40.0501**

Quantitative models of chemical behavior related to industrial applications. Includes covalent bonding, thermodynamics, equilibrium, reaction rates, electrochemistry, nuclear chemistry, and descriptive chemistry of the transition metals and their complexes.

**SCIT 1418. INDUSTRIAL PHYSICS I (3-3-4) 40.0801**

Motion, optics, electricity, magnetism, solid mechanics, and fluid mechanics relating to industrial applications. Includes properties of matter, heat and thermodynamics. Assessment Levels: R2, E2, M2.
SCIT 1543. INDUSTRIAL ANALYTICAL CHEMISTRY (3-6-5) 40.0502
Principles of quantitative analysis as related to industrial applications. Includes gravimetric and titrimetric analysis of practical samples by classical and standard methods. Prerequisites: CHEM 1407 and CTEC 1206 or CHEM 1412. Assessment Levels: R3, E3, M3.

SCIT 2401. INDUSTRIAL ORGANIC CHEMISTRY I (3-4-4) 40.0504
Study of carbon compounds found in common industrial applications. Credit not given for both this course and CHEM 2323/2123. Prerequisites: CHEM 1407 and CTEC 1206 or CHEM 1412. Assessment Levels: R3, E3, M2.

SCIT 2402. INDUSTRIAL ORGANIC CHEMISTRY II (3-4-4) 40.0504
Continuation of the study of carbon compounds related to industrial applications. Emphasizes reaction mechanisms and synthetic methods. Credit not given for both this course and CHEM 2325. Prerequisites: SCIT 2401 or CHEM 2323. Assessment Levels: R3, E3, M2.

SCWK - Social Work
SCWK 1321. ORIENTATION TO SOCIAL SERVICES (3-0-3) 44.0701
Introduction to the basic concepts, information, and practices within the field of social services. Topics include a survey of the historical development of social services; social, legal, and clinical definitions; and review of current information regarding indications for and methods of treatment and/or services. Assessment Levels: R1, E1, M1.

SGNL - Sign Language Interpreter (Transfer)
SGNL 1301. AMERICAN SIGN LANGUAGE (ASL) I (2-2-3) 1616035113
Introduction to the basic skills in production and comprehension of American Sign Language (ASL). Includes the manual alphabet and numbers. Develops conversational ability, culturally appropriate behaviors and exposes students to ASL grammar. Assessment Levels: R1, E1, M1.

SGNL 1302. AMERICAN SIGN LANGUAGE (ASL) II (2-2-3) 1616035113
Develops receptive and expressive ability and allows recognition and demonstration of more sophisticated grammatical features of American Sign Language (ASL). Increases fluency and accuracy in fingerspelling and numbers. Provides opportunities for interaction within the Deaf community. Prerequisite: SGNL 1301 or instructor approval. Assessment Levels: R1, E1, M1.

SLNG - Sign Language Interpreter
SLNG 1211. FINGERSPELLING AND NUMBERS (1-2-2) 16.1603
Development of expressive and receptive skills in fingerspelling and numbers. Receptive skills focus on whole word phrase recognition and fingerspelling/number comprehension in context. Expressive skills focus on the development of speed, clarity and fluency. Prerequisite: SGNL 1302 or instructor approval. Assessment Levels: R2, E2, M1.

SLNG 1215. VISUAL/GESTURAL COMMUNICATION (1-2-2) 16.1603
Development of skills in non-verbal communications. Emphasizes the use and understanding of facial expression, gestures, pantomime and body language. Assessment Levels: R1, E1, M1.

SLNG 1304. AMERICAN SIGN LANGUAGE (ASL) I (2-2-3) 1616035113
Introduction to the basic skills in production and comprehension of American Sign Language (ASL). Includes the manual alphabet and numbers. Develops conversational ability, culturally appropriate behaviors and exposes students to ASL grammar. Assessment Levels: R1, E1, M1.
SLNG 1305. AMERICAN SIGN LANGUAGE (ASL) II (2-2-3) 1616035113
Develops receptive and expressive ability and allows recognition and demonstration of more sophisticated grammatical features of American Sign Language (ASL). Increases fluency and accuracy in fingerspelling and numbers. Provides opportunities for interaction within the Deaf community. Prerequisite: SGNL 1301 or instructor approval. Assessment Levels: R1, E1, M1.

SLNG 1307. INTRA-LINGUAL SKILLS DEVELOPMENT FOR INTERPRETERS (3-1-3) 16.1603
Concentration on the development of intra-lingual (English to English) skills necessary for future development of inter-lingual (English to American Sign Language [ASL]/ASL to English) skills. Focus on linguistic and cognitive skills development in areas of paraphrasing, summarizing, main idea identification, comprehension, memory, delayed repetition, multi-tasking, vocabulary and cultural literacy. Prerequisites: SGNL 1301, 1302, ENGL 1301, 1302. Assessment Levels: R2, E2, M1.

SLNG 1317. INTRODUCTION TO THE DEAF COMMUNITY (3-0-3) 16.1603
An overview of the physical, educational, social and cultural implications within the context of a deaf or hard-of-hearing individual's personal life, family and community in today's multicultural world. Emphasis on current educational and vocational programs, legislation, technology, oppression and other issues. Assessment Levels: R3, E2, M1.

SLNG 1321. INTRODUCTION TO THE INTERPRETING PROFESSION (3-0-3) 16.1603
An overview of the field of American Sign Language (ASL)/English interpretation. Provides a historical framework for the current principles, ethics, roles, responsibilities and standard practices of the interpreting profession. Prerequisite: SGNL 1301 or instructor approval. Assessment Levels: R3, E3, M1.

SLNG 1347. DEAF CULTURE (3-1-3) 16.1603
Historical and contemporary perspective of American Deaf culture using a sociocultural model. Includes cultural identity and awareness, values, group norms, communication, language and significant contributions made by D/deaf people to the world. Prerequisite: SGNL 1302 or instructor approval. Assessment Levels: R3, E3, M1.

SLNG 1444. AMERICAN SIGN LANGUAGE (ASL) III (CAPSTONE) (2-4-4) 16.1603
Integrates and refines expressive and receptive skills in American Sign Language (ASL), including recognition of sociolinguistic variation. A practice oriented approach to language acquisition. Prerequisites: SGNL 1302 or instructor approval. Assessment Levels: R2, E2, M1

SLNG 1445. AMERICAN SIGN LANGUAGE (ASL) IV (2-4-4) 16.1603
An integration of expressive and receptive skills in American Sign Language (ASL) with emphasis on grammar, linguistics, literature and discourse styles at an intermediate level. Provides students with information on linguistic and cultural variations. Prerequisites: SLNG 1444 or instructor approval. Assessment Levels: R2, E2, M1

SLNG 2301. INTERPRETING I (3-1-3) 16.1603
An overview of the interpreting process and models of interpretation. Introduces the skills necessary to achieve dynamic message equivalence in interpreting American Sign Language (ASL) to English and English to ASL. Prerequisites: SGNL 1301, 1302, ENGL 1301, 1302. Assessment Levels: R3, E3, M2.

SLNG 2315. INTERPRETING IN EDUCATIONAL SETTINGS (3-1-3) 16.1603
Overview of education programs (K-12 and post secondary), focusing on the roles and skills of the interpreter as a member of the educational team. Includes current practices, communication methods, legislation, trends and ethical issues. Introduces resources
for content-specific vocabulary. Prerequisites: SLNG 1321 and 1444, or instructor approval. Assessment Levels: R3, E3, M3.

SLNG 2402. INTERPRETING II (2-4-4) 16.1603

SLNG 2431. INTERPRETING III (2-4-4) 16.1603

SLNG 2434. AMERICAN SIGN LANGUAGE (ASL) V (2-4-4) 16.1603
Development of proficiency in ASL. Includes instruction in semantic and grammatical accuracy and appropriate discourse strategies in a variety of communication contexts. Prerequisite: SLNG 1445 or instructor approval. Assessment Levels: R3, E3, M1.

SLNG 2488. INTERNSHIP - SIGN LANGUAGE INTERPRETATION AND TRANSLATION (CAPSTONE) (1-12-4) 16.16.03
A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan developed by the college and the employer. Prerequisite: SLNG 2431, 2434. Assessment Levels: R3, E3, M3.

SLPS - Security and Loss Prevention Services
SLPS 1313. SECURITY AND SPECIAL OFFICER (3-0-3) 43.0109
Legal limitations on the use of handguns, powers and authority of private security officers, familiarity with legislation, note taking, report writing, range firing and procedures, handgun safety and maintenance, required range qualification, and first aid.

SLPS 2331. METHODS OF SECURITY (3-0-3) 43.0109
Identify issues currently facing security professionals; identify the importance of security patrols and related security methods; identify the different types of security patrols and characteristics of each; define crime prevention; and identify the role of the security professional in the overall scheme of crime prevention.

SOCI - Sociology
SOCI 1301. INTRODUCTION TO SOCIOLOGY (3-0-3) 45.1101
Introduction to the concepts and principles used in the study of group life, social institutions, and social processes. Assessment Levels: R3, E3, M1.

SOCI 1306. SOCIAL PROBLEMS (3-0-3) 4511015225
Analysis of the major problems of contemporary society, including the social causes of these problems and the public policy consequences of solutions. Topics include inequality, crime and violence, substance abuse, deviance and family problems. Also offered as an online course. Assessment Levels: R3, E3, M1.

SOCI 2301. MARRIAGE AND THE FAMILY (3-0-3) 4511015425
A sociological examination of marriage and family life. Topics include a historical and cross-cultural examination of family, mate selection and marriage adjustment; ethnic, social class and gender differences in family life; family violence; divorce and remarriage. Assessment Levels: R3, E3, M1.

SOCI 2319. MINORITY STUDIES I (3-0-3) 4511015325
An examination of the historical, economic, social and cultural development of minority groups in the United States, including African-American, Mexican-American, Native American and religious and gender groups. Topics focus on the social inequality associated with majority/minority relationships. Assessment Levels: R3, E3, M1.
SOCW - Social Work

SOCW 2361. INTRODUCTION TO SOCIAL WORK (3-0-3) 4407015124
Introduction to social work as a profession; emphasizes a generic approach to social work; examines the historical origins of the profession, its knowledge base and methodology. Prerequisites: SOCI 1301 or 1306, PSYC 2301. Assessment Levels: R3, E3, M1.

SPAN - Spanish

SPAN 1300. BEGINNING SPANISH CONVERSATION I (3-0-3) 1609055413
Designed to build students' speaking and listening skills for practical, everyday use and for using Spanish for basic communication on the job. Hispanic culture emphasized. Specializations in Allied Health, law enforcement and everyday use. Assessment Levels: R1, E1, M1.

SPAN 1310. BEGINNING SPANISH CONVERSATION II (3-0-3) 1609055413
Basic practice in comprehension and production of the spoken language. Designed to build students' speaking and listening skills for practical, everyday use and for using Spanish for basic communication on the job. Hispanic culture emphasized. Specializations in Allied Health, law enforcement and everyday use. Assessment Levels: R1, E1, M1.

SPAN 1411. BEGINNING SPANISH I (3-2-4) 1609055113
Fundamental skills in listening comprehension, speaking, reading and writing, including basic vocabulary, grammatical structures and culture within a Hispanic cultural framework. Emphasis on developing speaking skills. Assessment Levels: R3, E3, M1.

SPAN 1412. BEGINNING SPANISH II (3-2-4) 1609055113
Review and application of skills in listening comprehension, speaking, reading and writing. Emphasizes conversation, vocabulary acquisition, reading, composition and culture. Prerequisites: SPAN 1411 or satisfactory score on departmental oral proficiency test. Assessment Levels: R3, E3, M1.

SPAN 2311. INTERMEDIATE SPANISH I (3-0-3) 1609055213
Review and application of skills in listening comprehension, speaking, reading and writing, emphasizing conversation, vocabulary acquisition, reading, composition and culture within a Hispanic cultural framework. Prerequisites: SPAN 1411 and 1412, satisfactory score on Del Mar College Spanish placement test, or permission of instructor. Assessment Levels: R3, E3, M1.

SPAN 2312. INTERMEDIATE SPANISH II (3-0-3) 1609055213
Review and application of skills in listening comprehension, speaking, reading and writing. Emphasizes conversation, vocabulary acquisition, reading, composition and cultural framework. Prerequisite: SPAN 2311 or satisfactory score on departmental oral proficiency test. Assessment Levels: R3, E3, M1.

SPAN 2313. SPANISH FOR NATIVE SPEAKERS I (3-0-3) 1609055113
Basic practice in comprehension and production of the spoken language. For students who have had exposure to Spanish but limited formal training in the language. Prerequisite: Satisfactory score on departmental oral proficiency test: Assessment Levels: R3, E3, M1.

SPAN 2315. SPANISH FOR NATIVE SPEAKERS II (3-0-3) 1609055113
Basic practice in comprehension and production of the spoken language. For students who have had exposure to Spanish but limited formal training in the language. Continued practice in the essentials of grammar and oral and written composition. Prerequisite: SPAN 2313 or satisfactory score on departmental oral proficiency test. Assessment Levels: R3, E3, M1.
SPCH - Speech

SPCH 1144. FORENSIC ACTIVITIES I (0-2-1) 2310016012
Laboratory experience for students who participate in forensic activities on Del Mar Speech Squad. Forensic competition focused on competitions in researched communication activities such as: extemporaneous speaking, communication analysis, impromptu speaking, persuasive and informative speaking. May also compete in literary presentation including: prose, poetry and dramatic interpretation. Assessment Levels: R3, E3, M1.

SPCH 1145. FORENSIC ACTIVITIES II (0-2-1) 2310016012
Laboratory experience for students who participate in forensic activities on Del Mar Speech Squad. Forensic competition focused on competitions in researched communication activities such as: extemporaneous speaking, communication analysis, impromptu speaking, persuasive and informative speaking. May also compete in literary presentation including: prose, poetry and dramatic interpretation. Assessment Levels: R3, E3, M1.

SPCH 1311. INTRODUCTION TO SPEECH COMMUNICATION (3-0-3) 2310015112
Introductory course in theory and practice of speech communication behavior in personal relationships, small groups and public/professional communication situations. Introduces skills to communicate with others, participate effectively in groups and deliver researched public speeches. Assessment Levels: R3, E3, M1.

SPCH 1315. FUNDAMENTALS OF PUBLIC SPEAKING (3-0-3) 2310015312
Introductory course in theories and practices of speech communication behavior in public communication situations. Includes listener and audience analysis with an emphasis on research, organization and delivery of informative and persuasive presentations. Prerequisite: Successful completion of developmental English and Reading courses. Assessment Levels: R3, E3, M1.

SPCH 1318. INTERPERSONAL COMMUNICATION (3-0-3) 2310015412
Experiential classroom approach emphasizing knowledge and practical understanding of the verbal and nonverbal dimensions of the communication process as it relates to personal experiences. Areas addressed include: improving self-esteem, understanding relationship development, expressing emotions effectively, improving listening skills and coping with conflict. Assessment Levels: R2, E2, M1.

SPCH 1321. BUSINESS AND PROFESSIONAL COMMUNICATION (3-0-3) 2310015212
Basic course designed for students to improve verbal and nonverbal communication skills as they relate to the business/professional arena. Practical/applied orientation areas of emphasis, include interviewing, problem-solving, oral presentation, defense of ideas and listening. Assessment Levels: R3, E3, M1.

SPCH 2144. FORENSIC ACTIVITIES III (0-2-1) 2310016012
Laboratory experience for students who participate in forensic activities on Del Mar Speech Squad. Forensic competition focused on competitions in researched communication activities such as: extemporaneous speaking, communication analysis, impromptu speaking, persuasive and informative speaking. May also compete in literary presentation including: prose, poetry and dramatic interpretation. Assessment Levels: R3, E3, M1.

SPCH 2145. FORENSIC ACTIVITIES IV (0-2-1) 2310016012
Laboratory experience for students who participate in forensic activities on Del Mar Speech Squad. Forensic competition focused on competitions in researched communication activities such as: extemporaneous speaking, communication analysis, impromptu speaking, persuasive and informative speaking. May also compete in literary presentation including: prose, poetry and dramatic interpretation. Assessment Levels: R3, E3, M1.
SPCH 2333. DISCUSSION AND SMALL GROUP COMMUNICATION (3-0-3) 2310015612
Study and practice in group dynamics, emphasizing conflicts that affect ongoing communication relationships, conflict resolution strategies and an analysis of the influence of group structure, norms, roles, leadership and climate on group process. Assessment Levels: R3, E3, M1.

SPCH 2335. ARGUMENTATION AND DEBATE (3-0-3) 2310015912
Introductory course in the theories and practices of argumentation and debate designed to improve the understanding of argumentation, both as a speaker and a listener. Emphasis is on learning to construct well-founded arguments to be used in everyday situations, as well as formal speeches and debates; and becoming a critical listener and a skilled respondent. Prerequisite: Credit for or concurrent enrollment in SPCH 1315 or 1321, or instructor approval. Assessment Levels: R3, E3, M1.

SPCH 2341. ORAL INTERPRETATION (3-0-3) 2310015712
Theories and techniques in the oral interpretation of literature. Preparation and presentation of various literary forms. Prerequisite: SPCH 1315. Assessment Levels: R3, E3, M1.

SRGT - Surgical Technology
SRGT 1405. INTRODUCTION TO SURGICAL TECHNOLOGY (2-8-4) 51.0909
Orientation to surgical technology theory, surgical pharmacology and anesthesia, technological sciences and patient care concepts. Assessment Levels: R2, E2, M1.

SRGT 1409. FUNDAMENTALS OF PERIOPERATIVE CONCEPTS AND TECHNIQUES (2-8-4) 51.0909
In-depth coverage of perioperative concepts such as aseptic/sterile principles and practices, infectious processes, wound healing and creation and maintenance of the sterile field. Assessment Levels: R2, E2, M1.

SRGT 1441. SURGICAL PROCEDURES I (4-1-4) 51.0909

SRGT 1442. SURGICAL PROCEDURES II (CAPSTONE) (4-1-4) 51.0909
Introduction to surgical procedures and related pathologies. Emphasis on surgical procedures related to the thoracic, peripheral vascular, plastic/reconstructive, ophthalmology, cardiac and neurological surgical specialties incorporating instruments, equipment and supplies required for perioperative patient care. Assessment Levels: R3, E3, M1.

SRGT 1460. CLINICAL I (0-24-4) 51.0909
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. Assessment Levels: R3, E3, M1.

SRGT 2460. CLINICAL II (0-24-4) 51.0909
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. Assessment Levels: R3, E3, M1.

SRVY - Survey Technology/Surveying
SRVY 2448. PLANE SURVEYING (3-3-4) 15.1102
Plane surveying includes use of surveying instruments, basic measuring procedures, vertical and horizontal control and traverse closure. Prerequisite: MATH 1316, ARCH 1315, or concurrent enrollment. Assessment Levels: R2, E1, M3.
TECA - Texas Early Childhood Articulation

Texas Early Childhood Articulation (TECA) courses are the approved courses designed for transfer as field of study courses in Child Development/Early Childhood.

**TECA 1303. FAMILY, SCHOOL AND THE COMMUNITY (3-1-3)** 13.0101.5209

- Study of the child, family, community and schools, including parent education and involvement, family and community lifestyles, child abuse and current family life issues. Assessment Levels: R1, E1, M1.

**TECA 1311. EDUCATING YOUNG CHILDREN (3-1-3)** 13.1202.5109

- Introduction to education of the young child, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities and current issues. Assessment Levels: R1, E1, M1.

**TECA 1318. WELLNESS OF THE YOUNG CHILD (3-1-3)** 13.0101.5309

- Study of the factors that impact the well-being of the young child including healthy behavior, food, nutrition, fitness and safety practices. Focus on local and national standards and legal implications of relevant policies and regulations. Assessment Levels: R1, E1, M1.

**TECA 1354. CHILD GROWTH AND DEVELOPMENT (3-0-3)** 13.1202.5209

- Study of the physical, emotional, social and cognitive factors impacting growth and development of children through adolescence. Prerequisite: Sophomore level standing. Assessment Levels: R2, E2, M1.

TECM - Technical Mathematics

**TECM 1301. INDUSTRIAL MATHEMATICS (3-0-3)** 27.0301

- Math skills applicable to industrial occupations. Includes fraction and decimal manipulation, measurement, percentage, and problem solving techniques for equations and ratio/proportion applications. Assessment Levels: R1, E1, M1.

**TECM 1317. TECHNICAL TRIGONOMETRY (3-0-3)** 27.0301

- Triangular measurements and calculations used in industrial applications. Includes trigonometry ratios, solution of right triangles, oblique triangles, convert between polar and rectangular vectors, add and subtract vectors, and perform graphical analysis of sine and cosine waveforms. Prerequisite: TECM 1341. Assessment Levels: R2, E1, M2.

**TECM 1341. TECHNICAL ALGEBRA (3-0-3)** 27.0301

- Application of linear equations, simultaneous equations and quadratic equations relevant to technical occupations. Assessment Levels: R2, E1, M2.

**TECM 1391. SPECIAL TOPICS IN APPLIED MATHEMATICS, GENERAL (3-0-3)** 27.0301

- Topics address recently identified current events, skills, knowledge and/or attitudes and behavior pertinent to the technology or occupation and relevant to the professional development of the student. Assessment Levels: R3, E1, M3.

VNSG- Vocational Nurse Education

**VNSG 1122. VOCATIONAL NURSING CONCEPTS (1-0-1)** 51.1613

- Introduction to the nursing profession and its responsibilities and the legal and ethical issues in nursing practice. Concepts related to the physical, emotional and psychosocial self-care of the learner/professional. Assessment Levels: R2, E2, M2.

**VNSG 1219. PROFESSIONAL DEVELOPMENT (2-0-2)** 51.1613

- Study of the importance of professional growth. Topics include the role of the licensed vocational nurse in the multi-disciplinary health care team, professional organizations and continuing education. Assessment Levels: R2, E2, M2.
COURSE DESCRIPTIONS

WLDG - Welding Applied Technology

WLDG 1317. INTRODUCTION TO LAYOUT AND FABRICATION (2-4-3) 48.0508
Fundamentals of layout and fabrication related to the welding industry. Major emphasis on structural shapes and use in construction. Assessment Levels: R1, E1, M1.

WLDG 1340. AWS LEVEL I CERTIFICATION REVIEW (1-4-3) 48.0508
A review of various welding processes, welding terminology and welding technology curriculum in preparation for taking the American Welding Society Level One Certification written test. Assessment Levels: R1, E1, M1.

WLDG 1428. INTRODUCTION TO SHIELDED METAL ARC WELDING (SMAW) (2-8-4) 48.0508
Introduction to shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting and various joint designs. Instruction provided in SMAW fillet welds in various positions. Assessment Levels: R1, E1, M1.

WLDG 1430. INTRODUCTION TO GAS METAL ARC WELDING (GMAW) (1-9-4) 45.0508
Study of principles of gas metal arc welding, setup and use of Gas Metal Arc Welding (GMAW) equipment, and safe use of tools/equipment. Instruction in various joint designs. Assessment Levels: R1, E1, M1.

WLDG 1534. INTRODUCTION TO GAS TUNGSTEN ARC (GTAW) WELDING (2-9-5) 48.0508
Introduction to the principles of gas tungsten arc welding (GTAW), setup / use of GTAW equipment, and safe use of tools and equipment. Welding instruction in various positions on joint welding. Assessment Levels: R1, E1, M1.

WLDG 1535. INTRODUCTION TO PIPE WELDING (2-9-5) 48.0508
Introduction to welding of pipe using the shielded metal arc welding process (SMAW), including electrode selection, equipment setup, and safe shop practices. Emphasis on Weld positions 1G and 2G using various electrodes. Assessment Levels: R1, E1, M1.

WLDG 1557. INTERMEDIATE SHIELDED METAL ARC WELDING (SMAW) (2-9-5) 48.0508
Study of the production of various fillets and groove welds. Preparation specimens for testing in all positions. Assessment Levels: R1, E1, M1.

WLDG 2413. INTERMEDIATE WELDING USING MULTIPLE PROCESSES (1-9-4) 48.0508
Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: oxy-fuel gas cutting and welding, shield metal arc welding (SMAW), gas metal arc welding (GMAW), flus-cored arc welding (FCAW) gas tungsten arc welding (GTAW), or any other approved welding process. Assessment Levels: R1, E1, M1.

WLDG 2443. ADVANCED SHIELDED METAL ARC WELDING (SMAW) (2-8-4) 48.0508
Advanced topics based on accepted welding codes. Training provided with various electrodes in shielded metal arc welding processes with open V-groove joints in all positions. Assessment Levels: R1, E1, M1.

WLDG 2447. ADVANCED GAS METAL ARC (MIG) WELDING (2-8-4) 48.0508
Advanced topics in GMAW welding, including welding in various positions and directions. Prerequisites: WLDG 2443. Assessment Levels: R1, E1, M1.

WLDG 2551. ADVANCED GAS TUNGSTEN ARC WELDING (GTAW) (2-9-5) 48.0508
Advanced topics in GTAW welding, including welding in various positions and directions. Assessment Levels: R1, E1, M1.
WLDG 2553. ADVANCED PIPE WELDING (2-9-5) 48.0508
Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes. Assessment Levels: R1, E1, M1.