Course Descriptions
Course Numbering System

The following is a list of courses to be offered at Lake Land College. Courses are listed in alphabetic order by course prefix and catalog number. Departments or areas are listed in alphabetical order with the department or area number indicated in parenthesis. Numbers represent the following courses:

- 001 to 009 Developmental Courses
- 010 to 039 General Studies Courses
- 040 to 075 Freshman Vocational and Technical Courses
- 076 to 099 Sophomore Vocational and Technical Courses
- 100 to 199 Freshman College Transfer Courses
- 200 to 299 Sophomore College Transfer Courses

Any exceptions to the numbering system will be noted in the specific curriculum description and at the beginning of the course descriptions for that particular program.

Most courses below 040 do not qualify for Federal Title IV or Illinois Monetary Award (MAP). Contact the Financial Aid office for specific details.

Courses which could come under more than one program are placed in the highest-numbered category possible. Many technical courses are as rigorous as college transfer courses and cover material which parallels a college transfer course offered at four-year colleges and/or universities. It is anticipated that when students who have technical courses listed on their transcripts matriculate to a four-year college or university, personnel in that institution will check the course title and course description and allow the student college transfer credit for such courses if they are parallel. Lake Land College will furnish information regarding specific technical courses when and if needed to verify that the courses are parallel.

The number of semester hours credit is indicated for each course. Courses which require laboratory meetings have the number of class periods and number of laboratory periods indicated under the course title. The time schedule should be checked for the days and times when classes meet.
Departments or Areas of Study

Courses are offered in the following departments or areas of study. Each department or area of study has been assigned a prefix.

<table>
<thead>
<tr>
<th>Department/Area of Study</th>
<th>Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Education – ABE/GED</td>
<td>AED</td>
</tr>
<tr>
<td>Agriculture</td>
<td>AGR</td>
</tr>
<tr>
<td>Allied Health</td>
<td>AHE</td>
</tr>
<tr>
<td>Anthropology</td>
<td>ANT</td>
</tr>
<tr>
<td>John Deere Ag Tech</td>
<td>JDA</td>
</tr>
<tr>
<td>Art</td>
<td>ART</td>
</tr>
<tr>
<td>Associate Degree Nursing</td>
<td>ADN</td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>AUT</td>
</tr>
<tr>
<td>Bio-science</td>
<td>BIO</td>
</tr>
<tr>
<td>Building Construction Technology</td>
<td>BCT</td>
</tr>
<tr>
<td>Business</td>
<td>BUS</td>
</tr>
<tr>
<td>CAD</td>
<td>CAD</td>
</tr>
<tr>
<td>Chemistry</td>
<td>CHM</td>
</tr>
<tr>
<td>Civil Engineering Technology</td>
<td>CET</td>
</tr>
<tr>
<td>Commercial Drivers License</td>
<td>CDL</td>
</tr>
<tr>
<td>Computer Information Systems</td>
<td>CIS</td>
</tr>
<tr>
<td>Computer Integrated Manufacturing</td>
<td>CIM</td>
</tr>
<tr>
<td>Cosmetology</td>
<td>COS</td>
</tr>
<tr>
<td>Criminal Justice</td>
<td>CJS</td>
</tr>
<tr>
<td>Dental Hygiene</td>
<td>DHY</td>
</tr>
<tr>
<td>Early Childhood Education</td>
<td>ECE</td>
</tr>
<tr>
<td>Earth Science</td>
<td>ESC</td>
</tr>
<tr>
<td>Economics</td>
<td>ECO</td>
</tr>
<tr>
<td>Education</td>
<td>EDU</td>
</tr>
<tr>
<td>Educational Interpreting Program</td>
<td>EIL</td>
</tr>
<tr>
<td>Electronics Engineering Technology</td>
<td>EET</td>
</tr>
<tr>
<td>Emergency</td>
<td>EMT</td>
</tr>
<tr>
<td>Medical Services</td>
<td>EMS/EMT</td>
</tr>
<tr>
<td>English</td>
<td>ENG</td>
</tr>
<tr>
<td>English As a Second Language</td>
<td>ESL</td>
</tr>
<tr>
<td>Esthetics</td>
<td>EST</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>FLG</td>
</tr>
<tr>
<td>General Technology</td>
<td>TEC</td>
</tr>
<tr>
<td>Geology</td>
<td>GEO</td>
</tr>
<tr>
<td>Geospatial Information Systems</td>
<td>GIS</td>
</tr>
<tr>
<td>Health Education</td>
<td>HED</td>
</tr>
<tr>
<td>Heating, Ventilation, A/C and Refrig. Technology</td>
<td>HVC</td>
</tr>
<tr>
<td>History</td>
<td>HIS</td>
</tr>
<tr>
<td>Horticulture</td>
<td>HRT</td>
</tr>
<tr>
<td>Human Services</td>
<td>HSP</td>
</tr>
<tr>
<td>Humanities</td>
<td>HUM</td>
</tr>
<tr>
<td>Independent Study</td>
<td>INS</td>
</tr>
<tr>
<td>Industrial Equipment Maintenance</td>
<td>IND</td>
</tr>
<tr>
<td>Information Technology Training</td>
<td>ITT</td>
</tr>
<tr>
<td>Intensive English Language</td>
<td>IEL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Department/Area of Study</th>
<th>Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journalsm</td>
<td>JOR</td>
</tr>
<tr>
<td>Law Enforcement</td>
<td>CJS</td>
</tr>
<tr>
<td>Learning Assistance Centers – E.S.L</td>
<td>ESL/TUT</td>
</tr>
<tr>
<td>Library</td>
<td>LIB</td>
</tr>
<tr>
<td>Literature</td>
<td>LIT</td>
</tr>
<tr>
<td>Machine Tool Technology</td>
<td>MTT</td>
</tr>
<tr>
<td>Manufacturing Maintenance Program</td>
<td>MMP</td>
</tr>
<tr>
<td>Massage Therapy</td>
<td>MAS</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MAT</td>
</tr>
<tr>
<td>Mechanical Electrical Technology</td>
<td>MET</td>
</tr>
<tr>
<td>Medical Coding Specialist</td>
<td>MCS</td>
</tr>
<tr>
<td>Music</td>
<td>MUS</td>
</tr>
<tr>
<td>Philosophy</td>
<td>PHI</td>
</tr>
<tr>
<td>Physical Education</td>
<td>PED</td>
</tr>
<tr>
<td>Physics</td>
<td>PHY</td>
</tr>
<tr>
<td>Physical Therapist Assistant</td>
<td>PTA</td>
</tr>
<tr>
<td>Political Science</td>
<td>POS</td>
</tr>
<tr>
<td>Power Plant Technology</td>
<td>PPT</td>
</tr>
<tr>
<td>Programmable Logic Controller</td>
<td>PLC</td>
</tr>
<tr>
<td>Psychology</td>
<td>PSY</td>
</tr>
<tr>
<td>Practical Nursing</td>
<td>PNC</td>
</tr>
<tr>
<td>Public Health</td>
<td>WTO</td>
</tr>
<tr>
<td>Radio-TV Broadcasting</td>
<td>RTV</td>
</tr>
<tr>
<td>Reading</td>
<td>RDG</td>
</tr>
<tr>
<td>Recreation</td>
<td>REC</td>
</tr>
<tr>
<td>Service Learning</td>
<td>SLN</td>
</tr>
<tr>
<td>Social Science</td>
<td>SOS</td>
</tr>
<tr>
<td>Sociology</td>
<td>SOC</td>
</tr>
<tr>
<td>Student Success</td>
<td>SFS</td>
</tr>
<tr>
<td>Study Abroad</td>
<td>STA</td>
</tr>
<tr>
<td>Speech-Theatre Arts</td>
<td>SPE</td>
</tr>
<tr>
<td>Technology</td>
<td>TEC</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>TEL</td>
</tr>
<tr>
<td>Waste Water</td>
<td>WTO</td>
</tr>
<tr>
<td>Welding</td>
<td>WEL</td>
</tr>
<tr>
<td>Wind Technology</td>
<td>WND</td>
</tr>
</tbody>
</table>

Course Fees

Some courses require payment of a course fee. Course fee levels are listed below while specific course fee levels are listed with the course description.

Level 1 • Fee $12
Applied to courses using limited equipment and/or supplies with equipment not rapidly becoming obsolete.

Level 2 • Fee $24
Applied to most courses using computers or other highly specialized equipment in a rapidly changing technology and courses using large amounts of supplies.

Level 3 • Fee $36
Applied to courses requiring very expensive equipment or very high usage of supplies.

Level 4 • Fee $50 – $150
Applied to courses requiring very expensive equipment and very high usage of supplies, rental of facilities and equipment, great distances traveled to visit S.O.E. students, etc.

Courses with this symbol are repeatable. See page 210 for more information.
Adult Basic Education (ABD---)
A complete list of Adult Education classes is available by calling 217-235-0361.

Aeronautics (AER---)
AER 020
Basic Ground School
Basic ground instruction for the private pilot. Includes aerodynamics, theory of flight, principles of Aircraft and engine operation, meteorology, flight computer, basic and radio navigation, flight planning and federal aviation regulations. (Preparation for private pilot written examination. Not applicable to AAS degree.) (3 credits, 3 Lecture)

Agriculture (AGR---)
AGR 014
Agriculture Update
Study of current agricultural trends and techniques in the areas of agronomy, agribusiness, animal science, and agricultural mechanization. (1 credits, 1 Lecture)

AGR 019
Cert Crop Advisor Test Prep
This course is designed to prepare individuals to take the State and National Written Exam so they may be Certified Crop Advisor (CCA) Certified. (1.5 credits, 1.5 Lecture)

AGR 039
Outdoor Power Equipment
Provides an understanding of both 2 and 4 cycle engines and drive trains used on outdoor power equipment. The theory of carburetion, ignition, safety, and lubrication systems will be discussed. Emphasis will be placed on overhaul and service procedures. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

AGR 040
Agricultural Mathematics
Applications of mathematics as it applies to the operation of grain and livestock farms, agriculture business and agriculture mechanization. (2.5 credits, 2.5 Lecture)

AGR 041
Supervised Occupational Exp I
On the job experience as a full-time employee in selected agriculture occupation. Must be in curriculum that degree is awarded. (Repeatable 3 Times) Course Level Fee 4 (3.5 credits, 17.5 Lab/Lab-Discussion)

AGR 042
Supervised Occupational Exp II
On the job experience as a full-time employee in selected agriculture occupation. Must be in curriculum that degree is awarded. (Repeatable 3 Times) Course Level Fee 4 (2.5 credits, 12.5 Lab/Lab-Discussion)

AGR 043
Supervised Occupational Experience III
On the job experience as a full-time employee in selected agriculture occupation. Must be in curriculum that degree is awarded. (Repeatable 3 Times) Course Level Fee 4 (3 credits, 15 Lab/Lab-Discussion)

AGR 044
Supervised Occupational Experience IV
On the job experience as a full-time employee in selected agriculture occupation. Must be in curriculum that degree is awarded. (Repeatable 3 Times) Course Level Fee 4 (3.5 credits, 17.5 Lab/Lab-Discussion)

AGR 046
Introduction to Agricultural Occupations
An introduction to the vast, complex business of agriculture, ways of doing business, guides for success of a person in the agricultural business of farm machinery technology, and familiarizes the student with the preparation for agricultural production, business, and mechanics jobs. (1 credits, 1 Lecture)

AGR 049
OSHA/Ag Mach Safety
Provides an intensified study into agricultural machinery safety. Focuses on why agriculture machinery accidents happen, how they can be prevented, and how to create a safe working environment. Visual aids are utilized to display effect. (1 credits, 1 Lecture)

AGR 050
Soils
Planned learning activities and experiences designed to cover soil development, functions of soil minerals, soil types, and their class. A major study of soil types in Illinois and Indiana and their conservation practices are included. Course Level Fee 2 (3.5 credits, 3 Lecture, 1 Lab/Lab-Discussion)

AGR 051
Soil Fertility
Prerequisites: Recommend AGR 050 or AGR 205

AGR 052
Principles of Crop Production
Designed to develop needed skills involved in production of the major field crops in central Illinois and Indiana. Plant growth, crop choice, tillage, planting and sowing for maximum yields are emphasized. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 053
Integrated Pest Management
Designed to develop a working knowledge of agricultural chemicals as they are related to herbicides and insecticides. Students should have a working knowledge of calibration and maintenance of agricultural chemical equipment. Identification of major weed species in this area and their control is emphasized. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 054
Crop Harvesting/Drying/Storage
Fundamentals of harvesting, drying, and storage. Opportunities of various systems are explored through visitations at different sites and systems. Course Level Fee 1 (2.5 credits, 2 Lecture, 1 Lab/Lab-Discussion)

AGR 060
Animal Husbandry
Prepares students with a basic understanding of livestock care, production and management from selection through breeding and marketing of beef and dairy cattle, swine, and sheep. Emphasis is placed on confinement plans and new trends. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 061
Livestock Evaluation
Detailed study of beef cattle, dairy cattle, swine, sheep, and horse selection. This laboratory oriented course allows students to appraise livestock, viewing positive and negative selection points, and pays particular attention to judging. Course Level Fee 2 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

AGR 062
Advanced Livestock Evaluation
Prerequisites: AGR 061
Provides an advanced study of beef, swine, and sheep selection. Both live animal and performance record analysis will be incorporated utilizing a combination of visual and genetic potential appraisal. Special emphasis will be placed on oral reasons. Course Level Fee 2 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)
AGR 063
Animal Nutrition
Covers fundamental principles of livestock nutrition with an understanding of the mono-gastric and ruminant digestive system, essential nutrients, feed ingredients and additives, and balancing of rations. Private and commercial feed sales implications are included. (2.5 credits, 2.5 Lecture)

AGR 064
Beef/Dairy Production Skills
Prepares students with the necessary skills required in modern cattle production, the different methods and tools used to perform these skills and a close inspection of handling facilities. Course Level Fee 1 (1.5 credits, 1 Lecture, 1 Lab/Lab-Discussion)

AGR 065
A.I. Management – Cattle
Provides a basic understanding of reproductive physiology and trains individuals to artificially inseminate beef or dairy cattle. Explains and gives hands-on experience in actual insemination producers. Course Level Fee 4 (1.5 credits, 1 Lecture, 1 Lab/Lab-Discussion)

AGR 066
Meat Science
Provides a basic understanding of meat classification and grading. Emphasis is placed on the live evaluation of beef, pork, and lamb. Following harvest the carcasses will be evaluated for consumer acceptability. Course Level Fee 4 (1.5 credits, 1 Lecture, 2 Lab/Lab-Discussion)

AGR 070
Swine Production Skills
Prepares students with the necessary skills required in modern swine production, the different methods and tools used to perform these skills, understanding herd health, and looking at and making swine environmental decisions. Course Level Fee 1 (1.5 credits, 1 Lecture, 1 Lab/Lab-Discussion)

AGR 071
Swine Reproduction and A.I.
Trains individuals to understand reproductive physiology, semen collection and artificial insemination. Course Level Fee 1 (1 credits, 1 Lecture)

AGR 078
Equine Care and Management
A survey of issues for the horse owner addressing basic equine care and management including health, farrier science, nutrition, stable management, equine equipment, and buying, selling, riding and training horses. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 079
Equine Training Techniques
Focuses on the psychology and physiology involved in training and riding. Study includes progressive training schedules, motivation and response to rider cues. The course examines various equine training techniques and exercises. Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

AGR 080
Ignition & Electrical Systems
Designed to develop a working knowledge of the concepts and components of farm power and machinery electrical systems. Discusses basic electrical principles of electromagnetism and use of electrical test meters including the repair of ignition and charging systems. Course Level Fee 1 (3.5 credits, 2 Lecture, 3 Lab/Lab-Discussion)

AGR 082
Advanced Electrical Systems
Prerequisites: AGR 080
Designed to increase knowledge in electrical systems. After completion of this course, students will be able to properly use service equipment to diagnose electronically controlled monitor systems and components on tractors and harvesting equipment. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 083
Small Engines
Designed to develop a working knowledge of types of gas engines, systems in a gas engine, components of systems, principles of operations, care, maintenance, repair, and adjustment of gas engines. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 086
Adjusting New and Used Mach
Designed to teach the basic fundamentals of the operating principles and adjustments of combines and bailers. Course Level Fee 3 (2.5 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

AGR 087
Diesel Fuel Systems
Prerequisites: AGR 083
Provide basic understanding of diesel engine fuel systems and operation. Students will learn diagnosis, removal of diesel pumps, and injector repair. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 088
Ag Trans & Power Trains
Prerequisites: AGR 083; AGR 091
Covers standard and automatic transmissions, their gears and gear ratios, application and use, service requirements, and adjustments in farm power equipment and machinery units. Course Level Fee 3 (3.5 credits, 2 Lecture, 3 Lab/Lab-Discussion)

AGR 089
Tractor Overhaul
Prerequisites: AGR 083
Designed to develop students’ skills necessary to successfully overhaul a gas, liquid propane, or diesel farm equipment engine. Students will be able to accomplish disassembly and assembly procedures, measure parts for wear, engine overhaul, and tune-up and break-in procedures. Course Level Fee 3 (6 credits, 3 Lecture, 6 Lab/Lab-Discussion)

AGR 090
Principles of Agri Mechanics
Covers the fundamentals of basic preventive maintenance for tractors and familiarizes the student with setting and adjusting sprayers, tillage equipment, planters, and combines. Course Level Fee 2 (2.5 credits, 2 Lecture, 1 Lab/Lab-Discussion)

AGR 091
Hydraulics
Covers theory and principles involved in hydraulics and their application to the mechanization and maintenance of farm power machinery. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 092
Advanced Hydraulics
Prerequisites: AGR 091
Provides an in-depth study of hydraulics and its functions in mechanization. This course looks specifically at John Deere, Case-IH, Deutz-Allis, and Ford systems. Emphasis will be placed on theory of operation, diagnosis, and repair of machinery manufacturers’ equipment. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 094
Ag Machinery Air Conditioning
Focuses on the theory of air conditioning, diagnosis of problems, and the safe handling of air conditioning material. Extensive hands-on is provided for diagnosis, service procedures, and agricultural air conditioning component repair. Equipment that will be covered will be two and four-wheel drive tractors, combines, and fertilizer applicator trucks. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 095
Agriculture Institute I
Designed for elementary and secondary teachers to provide for an essential background in the agriculture industries and look at newly developing technologies in that field. (2 credits, 2 Lecture)
AGR 096
Agriculture Institute II
Prerequisites: AGR 095 or consent of the instructor
An extension of Ag Institute I, it is once again designed for elementary and secondary teachers. This course focuses intensively on the impact of agriculture industries and new technologies on society. Lesson plans and methods for delivering information will be discussed. Course Level Fee 1 (2 credits, 2 Lecture)

AGR 097
Planting and Tillage Equipment
Prerequisites: AGR 081; AGR 091
Covers the theory and principles of operation, set-up and adjustment, troubleshooting, and repair of major brands of planters, drills, field cultivators, and primary tillage equipment. Course Level Fee 1 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

AGR 098
Agriculture Institute III
An extension of Ag Institutes I & II this course focuses intensively on the impact of urban agriculture and its industries, agriculture communications, and alternative energy. Lesson plans and implementation within curricula will be discussed. (Repeatable 2 Times) (2 credits, 2 Lecture)

AGR 111
Intro to Agriculture Software
Use of computers in farm and agri-business management with emphasis on commercially available software for accounting, budgeting, record keeping and market analysis. Course Level Fee 2 (2 credits, 2 Lecture)

AGR 112
Computer Applic/Agriculture IAI AG 913
Covers the effective use of keyboard, manipulating agriculture files, using word processors, spreadsheets, database and presentation software, and discovering available agriculture software for accounting, budgeting, record keeping, and market analysis. Course Level Fee 2 (3 credits, 3 Lecture)

AGR 120
Agriculture Economics
An introduction to basic economic concepts of the agricultural sector with emphasis on costs, revenue, price determination, supply and demand, and farm policy. (3 credits, 3 Lecture)

AGR 121
Farm Business Records
An introduction into basic farm record keeping. Prepares students to compile records associated with specific farm enterprises. Record analysis is emphasized for farm efficiency measures. (2.5 credits, 2.5 Lecture)

AGR 122
Farm Management
Prerequisites: AGR 121
Economics principles applied directly to the organization and operation of midwest farms are discussed. Management effectiveness in cropping and livestock systems and resource utilization for maximum profit are stressed. (2.5 credits, 2.5 Lecture)

AGR 123
Marketing of Ag Products
An introductory course covering farm marketing strategies, futures markets, cash markets for livestock and grain, and general problems in pricing major agricultural commodities. (2.5 credits, 2.5 Lecture)

AGR 124
Farm Credit and Finance
An introduction to financing statements, capital and credit needs of farmers, sources of credit, and problems of borrowers and lenders. (2 credits, 2 Lecture)

AGR 131
Agriculture Business Financing
Covers the use, sources, and methods of obtaining credit as it applies to farming and the farm supply business. (2 credits, 2 Lecture)

AGR 132
Retailing/Agri Supplies
Covers the practical application of retailing as it affects farm business supplies by divisions merchandising, sales, promotion, personnel control and operation. (2 credits, 2 Lecture)

AGR 133
Agriculture Salesmanship
Covers the basic principles underlying the sales process in agricultural farm supply and practical application and development of sales techniques. Basic to the course is an understanding of the salesperson's obligation to self, his or her company, and his or her customer. (2.5 credits, 2.5 Lecture)

AGR 134
Business Analysis/Records
An analytical approach to financial statements and records of agricultural business, implications and decisions made on the basis of these records. (2 credits, 2 Lecture)

AGR 141
Introduction to Agroecology
This course introduces ecological principles as they relate to agriculture, and includes sustainable food production systems and concepts of agroecology. Also emphasized is discussion of population ecology and plant demographics, as well as the conversion from conventional to alternative production. (3 credits, 3 Lecture)

AGR 143
Organic Crop Production
Organic crop production will explore the history, production, harvesting, storage, and marketing of products. State and federal laws as they relate to organic crop production will also be discussed. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 145
Biological Pest Management
Biology of pest management will discuss the pest concerns of an organic production system. The discussion will include identification, prevention, and approved control measures within an organic system. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 151
GPS/Applications in Ag
This class is designed to provide students the opportunity to become familiar with global positioning systems as they relate to agriculture and develop a working knowledge of variable rate systems. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 152
Intensive Crop Scouting
Scouting skills are taught with emphasis on insects and plant diseases. Life cycles, prevention and control measures are discussed. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 153
Ag Custom Applications
Designed to familiarize students with custom application equipment. Emphasis is placed on regulations, procedures, safety, environment, and professional conduct. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

AGR 154
CDL Training
This class will prepare students to take the CDL drivers license exam. Rules and regulations including the performing of safety checks will be covered. (2 credits, 2 Lecture)
AGR 163
Forages and Pasture Management
Various forage crops will be discussed including their role in today’s agriculture and grassland ecology, plant physiology, nitrogen fixation, establishing and maintaining forages, and harvesting. Pasture management including identification, establishing pastures, and intensive and rotational grazing systems will be discussed. (2.5 credits, 2.5 Lecture)

AGR 174▼
Agriculture Institute IV
An extension of Ag Institutes I, II, & III this course focuses intensively on renewable energy and the impact on agriculture and the growing energy needs of our society. Lesson plans and implementation within curricula will be discussed. (Repeatable 3 Times) (2 credits, 2 Lecture)

AGR 201
Intro/Agriculture Education
IAI AG 911
A general introduction into the various aspects and natures of the teaching profession. Opportunities and responsibilities are explored through individual work and site visitations. Evaluations are made to evaluate an individual’s potential to teach. (3 credits, 3 Lecture)

AGR 204
Prin/Field Crop Science
IAI AG 903
Designed to develop a working and scientific knowledge of modern crop production as a germination, growth, reproduction, tillage, and weed control of agricultural field crops. Emphasis is also placed on fertility, diseases and insects. Course Level Fee 2 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

AGR 205
Intro/Soil Science
IAI AG 904
Application of the basics in the physical, chemical, and biological aspects in soils. Soils of Illinois and Indiana are emphasized along with concepts of fertility, conservation, and field descriptions. Course Level Fee 2 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

AGR 206
Intro/Animal Science
IAI AG 902
Focuses on a study of beef, swine, sheep, poultry, and horses; and the scientific factors affecting nutrition, selection and genetics, products, environment, and physiology. Course Level Fee 2 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

AGR 207
Intro/Ag Economics
IAI AG 901
Principles of economics applied to problems in agriculture, marketing of agricultural products, agricultural policy, and the role of agriculture in the U.S. and world economies. (4 credits, 4 Lecture)

AGR 208
Intro/Ag Mechanization
IAI AG 906
Study of problems and laboratory exercises pointing to present and potential engineering applications in agriculture are presented. Emphasis is placed on farm power and machinery, soil and water control, electricity, and structures. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

Allied Health (AHE---)

AHE 040
Basic Nurse Assisting
Prepares students for nurse assistant roles. Meets requirements for Illinois Department of Public Health Certified Aide Course. Course Level Fee 2 (8 credits, 6 Lecture, 4 Lab/Lab-Discussion)

AHE 041
Medical Terminology
Focuses on vocabulary used in medicine, nursing and allied health occupations. (3 credits, 3 Lecture)

AHE 042
Advanced Medical Terminology
Builds and enlarges on basic medical vocabulary used in medicine, nursing and allied health occupations. (3 credits, 3 Lecture)

AHE 043
Alzheimers Disease – Upgrade
Prepares students for nurse assistant roles. Meets requirements for Illinois Department of Public Health for Alzheimer’s Disease Time Requirements. (1 credits, 1 Lecture)

AHE 044
Pathophysiology
This course provides basic concepts of both structural and functional changes caused by disease in tissues and organs as a basis for understanding clinical manifestations and principles of treatment. (3 credits, 3 Lecture)

AHE 047
Phlebotomy Techniques
The Phlebotomist is an integral member of the laboratory team who draws blood specimens. This course will include all aspects of specimen collection and processing while maintaining high standards of professionalism. (4 credits, 4 Lecture)

AHE 048
Phlebotomy Practicum
Prerequisites: AHE 047
This course provides intense clinical training in a patient care environment to achieve the skills required to become a competent and professional phlebotomist. Upon completion, student is eligible to take the PET (ASCP) certification exam. Course Level Fee 4 (2 credits, 2 Lab/ Lab-Discussion)

AHE 051▼
Health Science Careers
This course will explore in-depth, health career pathways, educational and aptitude requirements and occupational opportunities needed by health care workers. (Repeatable 1 time) (3 credits, 3 Lecture)

AHE 055
Math for Meds
This course will prepare the student to perform drug calculations safely and accurately. Students will be introduced to identification and administration of oral and parenteral medications. (2 credits, 2 Lecture)

AHE 086
Exploring Allied Health Careers
Designed for elementary and secondary teachers to provide information about the careers available in Allied Health. Will include information about new technologies in health careers. (3 credits, 3 Lecture)

Anthropology (ANT---)

ANT 200
General Anthropology
IAI S1 900N
The course provides an introduction to cultural and physical anthropology. Human and animal behavior is studied by using the comparative method. Some of the topics covered are: religion, magic, kinship, sex roles, human evolution, race, archeology and primates. (3 credits, 3 Lecture)

Art (ART---)

ART 100
Drawing I
IAI ART 904
Fundamental concepts and application of techniques of drawing, using a variety of media. Studies from nature and life-leading to an interpretive approach to understanding the visual environment. Course Level Fee 3 (3 credits, 6 Lab/ Lab-Discussion)
ART 105 Photography I
An introductory course that covers the basic principles and techniques of black and white photography including: equipment use, exposure control, film processing and printing, and the aesthetic concerns as a fine art medium. Course Level Fee 3 (3 credits, 0 Lecture, 6 Lab/ Lab-Discussion)

ART 110 2-D Design
IAI ART 907
A comprehensive study of the elements and principles of a two-dimensional design. Experience with a variety of materials and techniques. Course Level Fee 3 (3 credits, 6 Lab/Lab-Discussion)

ART 111 3-D Design
IAI ART 908
A foundation studio course concerned with understanding how to manipulate basic elements and principles of design to develop visual images that exist in real space. A variety of experiences using different tools and media will be used to understand both the processes and products of 3-D design. Course Level Fee 4 (3 credits, 6 Lab/Lab-Discussion)

ART 161 Printmaking I
Introductory Printmaking course covering various printmaking techniques, such as: Woodcut, Linocut, Etching, Monotype/ Monoprint, Collagraph and Silkscreen. Lectures and demonstrations will cover printmaking history and current trends. Competency in drawing and design required, in order to achieve concepts, compositions and craftsmanship. Course Level Fee 4 (3 credits, 6 Lab/ Lab-Discussion)

ART 165 Fundamentals of Art
A comprehensive overview of vocabulary and theories involving the elements and principles of design used in creating visual art with a studio experience geared to students pursuing a child care or elementary education degree. Course Level Fee 3 (3 credits, 1 Lecture, 4 Lab/ Lab-Discussion)

ART 181 Intro to Film Appreciation
IAI F2 908
Prerequisites: Complete ENG 120 with a minimum grade of “C”.
Students will enrich their knowledge of film art and their abilities to critically analyze and evaluate films. By viewing and discussing a variety of films, students will understand film techniques, directorial styles, genres, structure, critical approaches, and cultural influences. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

ART 200 Drawing II
IAI ART 905
Prerequisites: ART 100
Continued study of concept and technique of drawing; emphasis on developing individual expression through a conceptual approach and drawing from life. Course Level Fee 3 (3 credits, 6 Lab/Lab-Discussion)

ART 205 Painting
IAI ART 911
Prerequisites: ART 100
Introduction and application to opaque painting media; color mixing, canvas stretching and framing, composition, techniques, and styles of expression. Course Level Fee 3 (3 credits, 6 Lab/ Lab-Discussion)

ART 206 Painting II
Prerequisites: ART 205
This course is a continued study of conceptual and technical aspects of opaque painting media, canvas stretching and framing, composition and styles of expression. Emphasis will be on individual expression through abstracting from observation and utilizing painting as expressive communication. (3 credits, 3 Lecture, 6 Lab/Lab-Discussion)

ART 225 Ceramics I
IAI ART 912
A studio art course which explores different methods of working with the media clay. The basic hand building methods of pinch, coil, slab and mold and an introduction to throwing pottery on the wheel will be covered as well as instruction on different methods of surface decoration. Developing good craftsmanship as well as creative inventiveness will also be explored. Course Level Fee 4 (3 credits, 6 Lab/Lab-Discussion)

ART 240 Art and Gender
IAI F2 907 D
Prerequisites: ENG 120
This course will examine the expression of the visual arts through gender, history and culture. The study of art and gender is covered to better understand and define the intent and creation of art forms from ancient to contemporary culture. (3 credits, 3 Lecture)

ART 250 Understanding Art
IAI F2 900
A survey of the visual arts from Ancient to contemporary times, an understanding the major cultural and historical relationships to the art forms. (3 credits, 3 Lecture)

ART 260 Art History I
IAI F2901
The primary focus of this course will involve an understanding of the historical developments of the visual arts (painting, sculpture, architecture) from Prehistoric through the Gothic period. Works of art will be examined as expressions of ideas, beliefs and practices of artists, cultures and societies. The relationship between the style, symbolism and function of art; the political, religious and philosophical ideas supporting them; and the ideals of the culture that produced them will also be explored. (3 credits, 3 Lecture)

ART 261 Art History II
IAI F2902
The study of the historical development of art from Pre-Renaissance through the 21st Century. Beliefs and practices of cultures and societies will be examined. Style and symbolism combined with political, religious and philosophical traits will be explored through art. (3 credits, 3 Lecture)

Associate Degree Nursing
(ADN---)

ADN 040 Nursing I
Prerequisites: Admission to the ADN Program
Introduces the role of the ADN as a provider and manager of care, and member of the profession and interdisciplinary healthcare team. Using a concept-based approach, the nursing process, critical thinking, and technology will be used to introduce evidence-based care to diverse populations for wellness and basic oxygenation, circulation/perfusion, and sensory/tissue integrity needs. Prerequisites: Admission to the ADN Program Course Level Fee 4 (8 credits, 5 Lecture, 9 Lab/ Lab-Discussion)

ADN 042 Nursing II
Prerequisites: ADN 040
Further develops role of the ADN nurse. Previous learned skills and concepts are used to delegate and provide evidence-based care in meeting simple basic needs in the clinical setting. Clinical assignments progress from simple to complex. Course Level Fee 3 (9 credits, 6 Lecture, 9 Lab/ Lab-Discussion)
Adn 051 Transition to Adn
Comprehensive approach to the clinical application of drug therapy through the use of the nursing process. Course Level Fee 1 (2 credits, 1.5 Lecture, 1 Lab/Lab-Discussion)

Adn 052 Nursing Process & Pharmacology
Prerequisites: Adn 040, Adn 042, or approval of program director
A concept-based approach to the clinical application of drug therapy through the use of the nursing process. (3 credits, 3 Lecture)

Adn 060 Nursing Seminar
Prerequisites: Adn 076 or consent of instructor
Prepares the student for the transition to the role of the graduate associate degree nurse. Employment issues, legal implications, nursing organizations, continuing education, nursing management and current issues in nursing are identified and discussed. (1 credits, 1 Lecture)

Adn 061 Health Assessment
Enhances basic physical assessment skills needed in the healthcare setting. Body systems are examined individually. (2 credits, 2 Lecture)

Adn 076 Nursing Ill
Prerequisites: Adn 042
Broadens and amplifies role of the AD nurse in meeting complex basic needs in clinical setting. Complex higher order needs associated with mental health are studied. Course Level Fee 3 (10 credits, 6 Lecture, 12 Lab/Lab-Discussion)

Adn 078 Nursing Iv
Prerequisites: Adn 076, Adn 052 or consent of instructor
Broadens and amplifies role of the AD nurse in meeting the complex basic needs in the clinical setting. Complex higher order needs associated with the child rearing family are studied. Course Level Fee 3 (10 credits, 6 Lecture, 12 Lab/Lab-Discussion)

Automotive Technology (AUT---)

AUT 048 Intro to Automotive Technology
This course is a study of chemicals, shop safety and operations, tools and equipment, and careers in automotive technology.

Techniques associated with electrical/electronics, heating and air conditioning, engine repair, brakes, steering and suspension, and engine performance will be discussed. Course Level Fee 3 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

AUT 049 Intro Med/Heavy Truck Repair
This course is an introduction to medium and heavy duty truck repair. It will focus on safety, hand tools, and general knowledge on how to inspect and do basic maintenance services on trucks and trailers. (2 credits, 2 Lecture, 1 Lab/Lab-Discussion)

AUT 050 Engine Repair
This course is a study of engine design, diagnosis, removal, cylinder head and valve train repair. Short block repair, lubricating systems, cooling systems will be discussed and hands on reassembly of the engine is included. Course Level Fee 2 (5 credits, 2 Lecture, 6 Lab/Lab-Discussion)

AUT 051 Electrical Systems I
This course is a study of the principles of electricity and electrical circuit design and diagnosing. Covers battery diagnosis and service. Starting Systems diagnosis and repair will be discussed. Course Level Fee 1 (4 credits, 2 Lecture, 4 Lab/Lab-Discussion)

AUT 052 Engine Performance I
This course is a study of ignition systems beginning with and building on basic ignition systems and culminating with computerized ignition systems. Course Level Fee 2 (5 credits, 3 Lecture, 4 Lab/ Lab-Discussion)

AUT 053 Brake Systems
This course is a study of the hydraulic principles of drum, disc, and ABS brake systems. Diagnosis and repair of power assisted, drum, disc, and antilock brake systems will be discussed. Course Level Fee 1 (4 credits, 2 Lecture, 4 Lab/ Lab-Discussion)

AUT 054 Heating and Air Conditioning I
Prerequisites: AUT 048 AUT 051 or consent of instructor
A study of heating and air conditioning fundamentals as used on current automobiles, trucks and farm equipment. Practical experience will be provided in diagnosis, repair and service of various types of components. Course Level Fee 2 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

AUT 059 Electrical Systems II
Prerequisites: AUT 048 AUT 051 or consent of instructor
This course is a study of diagnosis and repair of the charging and lighting systems. A discussion of accessories, including air bags, gauges, will also be covered. Course Level Fee 1 (4 credits, 2 Lecture, 4 Lab/ Lab-Discussion)

AUT 075 Supervised Occupational Experience
Prerequisites: AUT 048 AUT 050 AUT 051 AUT 052 AUT 053
Designed to promote on the job experience in automotive technology and applying skills & knowledge learned in the program. The employers & supervising instructors work closely with the student in an off campus job site during the summer session. Course Level Fee NF (Variable Credit 0.5/5 credits, 15 Lab/Lab-Discussion)

AUT 076 Auto Transmissions/Transaxes
Prerequisites: AUT 048 and AUT 051 or consent of instructor
This course is a study of automatic transmissions/transaxeses maintenance, diagnosis and adjustment. On board and off board hydraulic control operations and repair are discussed. Course Level Fee 2 (5 credits, 2 Lecture, 6 Lab/Lab-Discussion)

AUT 080 Steering and Suspension
Prerequisites: AUT 048 and AUT 053 or consent of instructor
This course is a study of steering systems, front and rear suspension systems. It also covers basic wheel alignment, diagnosis and repair culminating in complete four wheel computerized alignment. Course Level Fee 2 (4 credits, 2 Lecture, 4 Lab/ Lab-Discussion)

AUT 081 Engine Performance II
This course is a study of fuel and exhaust systems, including carburetion, fuel injection, and computer-controlled fuel systems. Diesel fuel injection and turbochargers will also be discussed. Course Level Fee 1 (5 credits, 3 Lecture, 4 Lab/ Lab-Discussion)

AUT 082 Manual Dr Train and Axles
Prerequisites: AUT 048 or consent of instructor
This course is the study of the diagnosis and repair of clutches, manual transmissions, transaxeses and differentials. CV joints, drive shafts, front-wheel drive and four-wheel drive operations will be discussed. Course Level Fee 1 (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

237
AUG 083
Engine Performance III
Prerequisites: AUG 081
or consent of instructor
This course is a study of positive crankcase ventilation and emission control systems. Individual emission control devices including EGR, catalytic converters, and spark timing controllers are discussed. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

AUG 089
ASE Test Review
Review of subject material covered by National Institute Automotive Service Excellence Certificate Tests. Assists the technician in psychology of how to take the tests. (2 credits, 2 Lecture)

Bio-Science (BIO---)
BIO 050
Basic Anatomy & Physiology
This course provides the fundamentals of anatomical structures and functions of the human body. Course Level Fee 1 (4 credits, 4 Lecture)

BIO 100
Bio Science I
IAI L1 900L
An introduction to the fundamental processes and structures common to all living things. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

BIO 111
General Botany
IAI BIO 910
Prerequisites: BIO 100
A survey of the plant kingdom with emphasis on evolutionary advancements and the structure and function of plants and their economic importance. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

BIO 116
General Zoology
IAI BIO 910
Prerequisites: Bio 100
An introduction to the basic concepts of animal life and its diversity. Including: taxonomy, cellular and organismic structure and function, development and economic importance. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

BIO 120
Natural Science
Designed to give practical science experience to students of child care, elementary and special education. Much of the time is spent learning to do things rather than learning about things. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

BIO 130
Environmental Science
IAI L1 905L
An introductory course dealing with the principles that govern natural environments including man's relationship to them. Part of the course will be conducted in the field observing and measuring various aspects of ecology. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

BIO 150
Biotchnology in Society
IAI L1 906
This course explores the field of biotechnology in a comprehensive overview. Material covered includes the following: history of biotechnology; basic techniques used in biotechnology; current and future impacts of biotechnology; and ethical issues within biotechnology. (3 credits, 3 Lecture)

BIO 160
Introduction to Genetics
IAI L1 906
An introduction to the principles of genetics with emphasis on human heredity. Included are Mendelian genetics, hereditary disorders, gene expression, genetic engineering and agricultural genetics. (3 credits, 3 Lecture)

BIO 212
Vertebrate Zoology
Prerequisites: BIO 100, BIO 116
Laboratory and field course. An in-depth study of North American vertebrates with emphasis on Illinois species. Includes taxonomy, distribution, habitats, adaptation, and economic importance. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

BIO 214
Comparative Anatomy of Vertebrates
Prerequisites: BIO 100, BIO 116
Classification and comparative anatomy and vertebrates including the functions and evolution of their organ systems. Laboratory work includes a variety of vertebrate forms. Course Level Fee 2 (5 credits, 4 Lecture, 2 Lab/Lab-Discussion)

BIO 220
Human Anatomy and Physiology I
IAI L1 905L
Prerequisites: BIO 100
or consent of instructor
This course employs the regional approach to human structure and function using human cadavers. First of a two course sequence for allied health majors. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

BIO 221
Human Anatomy and Physiology II
IAI L1 906L
Prerequisites: BIO 220
or consent of instructor
This course covers a survey of microorganisms with detailed study of the biology, metabolism, growth, death, genetics, and methods of differentiation of bacteria. Also classification, control of organisms by physical and chemical methods, immunology and diseases are covered. Course Level Fee 2 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

Building Construction Tech (BCT---)
BCT 041
Post Frame Construction
This course is designed to teach the students proper building construction techniques using a combination of lecture and hands-on experience. Emphasis is placed on job-site safety, framing techniques, window & door installation, roof installation, and siding. Course Level Fee 1 (1.5 credits, 1 Lecture, 1 Lab/Lab-Discussion)

BCT 045
Plans and Specifications
Prerequisites: TEC 045
Enables the student to interpret architectural and engineering working drawings and specifications for residential and commercial construction. Incorporates site visits when possible. (3 credits, 3 Lecture)

BCT 050
Construction Materials
Designed to give the student a basic understanding of the properties, uses and limitations of construction materials.
Emphasis is placed on concrete, steel and wood. Enables the student to interpret architectural and engineering working drawings and specifications for residential and commercial construction. Incorporates site visits when possible. (3 credits, 1 Lecture)

**BCT 062 Architectural Drafting II**  
**Prerequisites:** BCT 050, TEC 045  
Emphasis is placed on residential and small commercial design. Problems presented have varied materials and structural systems. Some emphasis is placed on building code requirements. CAD Incorporated. Enables the student to interpret architectural and engineering working drawings and specifications for residential and commercial construction. Incorporates site visits when possible. Course Level Fee 1 (4 credits, 1 Lecture, 7 Lab/Lab-Discussion)

**BCT 064 Construction Surveying Layout**  
**Prerequisites:** CET 060, TEC 052  
This course will focus on the fundamentals of building layout, grade staking, topographic surveying, the use of a laser level, cut and fill calculations, checking square, and will further develop the leveling and angular measurement skills learned in Surveying I. (Repeatable 3 times). (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

**BCT 070 Construction Management**  
**Prerequisites:** BCT 050, BCT 045  
Designed to give the student an understanding of the duties and responsibilities of the construction manager. Emphasis placed on cost control, scheduling, construction documents and reports. Site visits when possible, computer incorporated. Enables the student to interpret architectural and engineering working drawings and specifications for residential and commercial construction. Incorporates site visits when possible. (3 credits, 3 Lecture)

**BCT 076 Architectural Drafting III**  
**Prerequisites:** BCT 062  
Prepares the student to do structural steel erection drawings including shop drawings. Also included is a study of mechanical systems of a building such as plumbing, heating, ventilation, and air conditioning and electrical wiring requirements and code restrictions. Enables the student to interpret architectural and engineering working drawings and specifications for residential and commercial construction. Incorporates site visits when possible. Course Level Fee 1 (4 credits, 1 Lecture, 7 Lab/Lab-Discussion)

**BCT 078 Architectural S.O.E.**  
Enables the student to gain on the job experience in the construction industry. Enables the student to interpret architectural and engineering working drawings and specifications for residential and commercial construction. Incorporates site visits when possible. Course Level Fee NF (Variable Credit 0.5/5, 25 Lab/Lab-Discussion)

**BCT 089 Construction Estimating**  
**Prerequisites:** BCT 045  
Prepares students to do quantity take off’s on material, equipment and labor estimates for building construction. Incorporates computer estimating. Enables the student to interpret architectural and engineering working drawings and specifications for residential and commercial construction. Incorporates site visits when possible. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

**Business (BUS---)**

**BUS 056 Marketing Seminar**  
Enables the student to participate in group discussions relating to successful employment. The student must complete a project relating to his/her job. This course must be taken concurrently with the Marketing Internship and is repeatable for credit. Corequisite courses: BUS 057 (1 credits, 1 Lecture)

**BUS 057 Marketing Internship**  
Provides employment experience in a position consistent with the career objective of the student. The position must be approved by the program director. This fall, spring, or summer semester variable credit course may be taken as the first or second student internship and is repeatable for credit. To be taken concurrently with BUS 056. Corequisite courses: BUS 056, Course Level Fee NF (4 credits, 2 Lab/Lab-Discussion)

**BUS 059 Medical Insurance and Coding**  
Introduction to types of medical insurance and procedural and diagnostic coding. Includes preparation of insurance forms, ICD-10-CM coding, procedural coding using HCPCS system, common insurance carriers and claims processing guidelines, Medicare, Medicaid, and workers’ compensation. (3 credits, 3 Lecture)

**BUS 060 Automated Office Procedures**  
**Prerequisites:** BUS 113 or consent of instructor  
Students handle office activities using computers in a simulated office environment. Students access software including wordprocessing, electronic mail and calendaring, and other specialized software. Course Level Fee 2 (3 credits, 3 Lecture)

**BUS 061 Office Transcription**  
**Prerequisites:** BUS 113  
Designed to develop skill in transcribing recorded dictation for a variety of business sectors in an efficient manner using proper formats, spelling, and grammar. (1 credits, 1 Lecture)

**BUS 062 Legal Transcription**  
**Prerequisites:** BUS 113  
Designed to develop skill in transcribing recorded legal dictation in an efficient manner using proper formulas, spelling, grammar, and legal terminology. (1 credits, 1 Lecture)

**BUS 063 Medical Transcription**  
**Prerequisites:** BUS 113, AHE 041  
Designed to develop skill in transcribing recorded medical dictation in an efficient manner using proper formats, grammar, spelling, and medical terminology. (1 credits, 1 Lecture)

**BUS 065 Legal Terminology**  
Gives knowledge and understanding of terms commonly used in the legal profession. Students learn to define terms and use them in legal context. (1 credits, 1 Lecture)

**BUS 074 Management Seminar**  
Enables the student to participate in discussions relating to successful employment. The student must complete a project relating to his/her job. This course must be taken concurrently with the Management Internship and is repeatable for credit. Corequisite courses: BUS 076 (1 credits, 1 Lecture)

**BUS 076**
BUS 076 Management Internship
Provides employment experience in a position consistent with the career objective of the student. The position must be approved by the program director. This fall, spring, or summer semester variable credit course may be taken as the first or second student internship and is repeatable for credit. To be taken concurrently with BUS 056. Corequisite courses: BUS 074, Course Level Fee NF (4 credits, 20 Lab/Lab-Discussion)

BUS 078 Management/Marketing Capstone
Designed as a capstone class for both Management and Marketing majors. Areas of concentration will include current topics in business, job seeking and keeping skills, organizational politics and diplomacy, and an in depth examination of management/marketing concepts. (1 credits, 1 Lecture)

BUS 079 Professional Development
Designed as a pre-employment course. Areas of study include job-searching skills, refinement of social skills, office management decisions and review of office skills and responsibilities. (3 credits, 3 Lecture)

BUS 080 Office Technology Seminar
Enables the student to participate in discussions relating to successful employment. BUS 081, BUS 082, or BUS 083. Corequisite courses: BUS 081 BUS 082 (1 credits, 1 Lecture)

BUS 081 Office Technology Internship
Prerequisites: BUS 079
Designed to provide employment experience in a position using specialized skills. Field experience: minimum of 312.5 hours required of Administrative Assistant (Executive and Legal) and Office Management majors. Corequisite courses: BUS 080, Course Level Fee NF (5 credits, 25 Lab/Lab-Discussion)

BUS 082 Medical Transcriptionist Internship
Prerequisites: BUS 079, BUS 114, BIO 050 and minimum typing speed of 55 words per minute
Designed to provide employment experience in a position that will utilize the specialized skills of the student. Placements will include positions in doctors’ offices, hospitals, medical clinics, etc. To be taken concurrently with BUS 080. Course Level Fee NF (3 credits, 15 Lab/Lab-Discussion)

BUS 083 Office Technology Internship – Medical
Prerequisites: BUS 079; to be taken concurrently with BUS 080
Designed to provide employment experience in a position that will utilize the specialized skills of the student. Placements will include positions in medical offices, hospitals, and clinics. Field experience: minimum of 312.5 hours. Course Level Fee NF (5 credits, 5 Lab/Lab-Discussion)

BUS 084 Adv Medical Transcription
Prerequisites: BUS 063
Realistic dictation with comprehensive terminology in 13 specialties by medical professionals from various ethnic groups. (1 credits, 1 Lecture)

BUS 085 Accounting Process
Develops a foundation and a working knowledge of the basic accounting procedures. Students will work through the accounting cycle. (1 credits, 1 Lecture)

BUS 086 Statistics for Bus
Develops a working knowledge of some of the statistical tools used in business analysis and decision making. (3 credits, 3 Lecture)

BUS 087 Accounting Internship
Designed to provide employment experience in a position that will utilize the specialized skills of the student. The position must be approved by the accounting program coordinator. Course Level Fee NF (3 credits, 15 Lab/Lab-Discussion)

BUS 089 Small Business Management
Covers entrepreneurship opportunities and challenges facing small business managers including how to conceptualize a feasible business concept, develop a comprehensive business plan, obtain start-up capital, execute the firm’s strategy, and maintain financial and inventory control. (3 credits, 3 Lecture)

BUS 090 Prin of Retailing
Designed for those owning or planning to become owners of a retail business, those involved or planning to become involved in the management function of a retail business, and/or those desiring a general knowledge of retailing as an institution. (3 credits, 3 Lecture)

BUS 091 Prin of Advertising
Provides an overview of integrated marketing communications, promotional strategy, research, creativity, the role of an advertising agency and other support organizations, media selection and assessment, ethical and regulatory considerations, and budgetary allocations. (3 credits, 3 Lecture)

BUS 092 Principles of Selling
Covers the various aspects of the personal selling process including organizational buying motives, consumer behavior, approaching the customer, making the presentation, handling objections, techniques for closing the sale, and managing the salesforce. (3 credits, 3 Lecture)

BUS 094 Business Math
Covers basic applications of mathematics in the business world percentages, elementary algebra, interest, installment buying, statistics, insurance, etc. It is designed to reinforce and expand business concepts held by the student through the use of mathematics. (3 credits, 3 Lecture)

BUS 095 Fundamentals of Accounting
An introduction to basic accounting principles and techniques designed to give the student a general knowledge of accounting practices and terminology. (3 credits, 3 Lecture)

BUS 096 Fed Tax Accounting
Focuses on a practical study of the current federal revenue act as it relates to business and individuals. (3 credits, 3 Lecture)

BUS 097 Prin/Cost Account
Prerequisites: BUS 151 with grade of ‘C’ or higher
A study of job order, process and standard cost systems and management’s uses of cost information for planning and control. (3 credits, 3 Lecture)

BUS 098 Intermediate Accounting
Prerequisites: BUS 151 with grade of ‘C’ or higher
Provides an in-depth study of accounting theory and current practice. Includes the development of accounting theory, the format and content of the financial statements, and emphasizes assets. (3 credits, 3 Lecture)
BUS 099
Computerized Accounting
Prerequisites: BUS 095 or BUS 151 and CIS 040 or equivalent experience
A capstone course which reinforces financial accounting concepts and procedures through the use of personal computers and popular commercial software. A comprehensive study of computerized accounting systems in both service and merchandising environments. Course Level Fee 3 (3 credits, 3 Lecture)

BUS 113
Keyboarding
Development of keyboarding skill on letters, numbers, and symbols keys. Students learn to format and print business letters, memos, reports, and tables using word processing features. Course Level Fee 1 (3 credits, 3 Lecture)

BUS 114
Advanced Formatting
Prerequisites: BUS 113 or ability to type 40 words per minute
Development of skill in formatting business correspondence, reports, forms, and tables to meet mailability and production standards. Instruction on word processing software is integrated throughout the course. Course Level Fee 1 (3 credits, 3 Lecture)

BUS 115
Processing Info
Prerequisites: BUS 114
Development of skill in processing information using word processing software and applying critical thinking from a variety of office simulations. Advanced formatting skills are further developed through application to specialized office situations. Course Level Fee 1 (3 credits, 3 Lecture)

BUS 120
Business Career Development
This course covers career development from targeting and researching a business career to preparing employment communications and interviewing. The course also covers business writing techniques, e-mail and memorandum communication, teamwork, professional development, and business etiquette. (3 credits, 3 Lecture)

BUS 123
Notetaking
Develops skill using abbreviated writing in order to take notes quickly and accurately. Provides instruction for beginners who transcribe business letters, memos, and reports quickly in acceptable formatted copy meeting strict mailability standards. (4 credits, 4 Lecture)

BUS 134
Principles of E-Commerce
A study of the planning and startup phases of an e-business, including topics on the global e-business economy, financing options, marketing, legal issues, web site issues, risk management, and security. (3 credits, 3 Lecture)

BUS 141
Business Communications
Prerequisites: BUS 113 or the equivalent
Provides students a practical strategy for creating successful communication products used in business. (3 credits, 3 Lecture)

BUS 142
Introduction to Business
IAI BUS 911
Covers the objectives, organization, and role of business in the free-enterprise system. The course is designed to provide an overview of the field of business and to provide a framework into which specialized fields may be studied. (3 credits, 3 Lecture)

BUS 151
Financial Accounting
IAI BUS 903
Prerequisites: HS acct, BUS 085, BUS 095 or consent of instructor
A study of the financial statements, the accounting process and the principles and procedures underlying items on the financial statements. (3 credits, 3 Lecture)

BUS 152
Managerial Accounting
IAI BUS 904
Prerequisites: BUS 151
Designed to use accounting information to help management make decisions concerning product costing, planning and controlling operations in an ever-changing business environment. (3 credits, 3 Lecture)

BUS 200
Legal Environ/Business
IAI BUS 913
An introduction to legal systems and law, especially the U.S. legal system. Business-legal relationships in the areas of criminal law, torts, product liability, and contracts are examined. Antitrust, consumer, labor, and environmental law are studied; also the international marketplace. (3 credits, 3 Lecture)

BUS 247
Principles of Marketing
Covers the selection of target markets; the controllable variables of the marketing mix including product, place, price and

BUS 251
Principles of Management
Provides an overview of how managers utilize planning, organization, leadership, and control in order to ensure that a firm achieves its goals in the most efficient way possible. (3 credits, 3 Lecture)

BUS 281
Business Statistics
IAI BUS 901
Prerequisites: MAT 130
An introduction to statistics as used in business decision making that includes averages, dispersion, probabilities, probability distributions, sampling error, sample size, confidence intervals, hypothesis tests, regression and correlation analysis. (3 credits, 3 Lecture)

BUS 285
Labor Relations
Prerequisites: BUS 142 or consent of instructor
A study of the labor and employment laws that have the greatest impact on the relationship between employers and employees, and the strategies managers utilize to maintain an effective level of employee satisfaction. Transfers as elective credit only. (3 credits, 3 Lecture)

BUS 287
Intro to International Business
IAI BUS 911
Prerequisites: BUS 142 or consent of instructor
An introduction to foreign trade theory and practice, with special emphasis on cultural diversity in the areas of marketing, management, finance economics, and the environment in which businesses function. Transfers as elective credit only. (3 credits, 3 Lecture)

BUS 290
Human Resource Management
Prerequisites: BUS 142 or consent of instructor
The managerial process of planning, developing, and controlling human resources within the organization is examined. Special emphasis will be placed on the areas of recruiting, selection, training, labor relations, salary, and fringe benefit administration. Transfers as elective credit only. (3 credits, 3 Lecture)
Chemistry (CHM---)

CHM 085
Special Topics in Chemical Science
Designed for elementary and secondary teachers to provide an essential background in the application of science to a topic of societal interest. The course may be repeated for credit if a different topic is taught. (Repeatable 3 Times) (3 credits, 3 Lecture)

CHM 101
Physical Science II
IAI P1 903L
An introductory discussion of chemical principles. Presents a balance between basic knowledge needed to understand the uses of chemicals and applications of chemicals in everyday life. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CHM 111
Concepts of Chemistry
IAI P1 903L
An introduction to the concepts of chemistry where information is presented to students with little background or no prior interest in chemistry and those students who are not interested in abstract or mathematical theories. Course Level Fee 3 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

CHM 120
General, Organic and Biochemistry I
IAI P1 902L
Fundamentals of inorganic chemistry including history, atomic theory, bonding, stoichiometry, gases, solids, solutions, chemical equilibria, acids, bases, salts, pH, and electrochemistry. Course Level Fee 3 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

CHM 121
General, Organic and Biochemistry II
Prerequisites: CHM 120
Study of organic and biological chemistry for students in allied health programs, agriculture, forestry, and other majors with comparable requirements. Course Level Fee 3 (5 credits, 4 Lecture, 2 Lab/Lab-Discussion)

CHM 150
General Chemistry I
IAI P1 902L
Prerequisites: 1 yr HS chemistry, CHM 111 or consent of Division Chair
General principles of chemistry for students majoring in chemistry, engineering or science professions. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

CHM 151
General Chemistry II
IAI CHM 912
Prerequisites: CHM 150
Continues the study of general chemical principles. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

CHM 243
Organic Chemistry I
IAI CHM 913
Prerequisites: CHM 151
Fundamental introduction to organic chemistry including a study of hydrocarbons and alcohols with spectroscopy, stereochemistry, and reaction mechanisms. To be taken concurrently with CHM 253. Course Level Fee 1 (4 credits, 4 Lecture)

CHM 244
Organic Chemistry II
IAI CHM 914
Prerequisites: CHM 243
This course is a continuation of Organic Chemistry I CHM 243) with focus on carbonyls chemistry, oxidation and reduction, and biomolecules. To be taken concurrently with CHM 254. Course Level Fee 3 (4 credits, 4 Lecture)

CHM 253
Organic Chemistry Lab I
IAI CHM 915
Corequisite courses: CHM 243 (1 credits, 3 Lab/Lab-Discussion)
Laboratory course introduces synthesis and the basic techniques for the separation, isolation, purification and identification of organic compounds. Course is designed for concurrent registration in CHM 254. Corequisite courses: CHM 243 (1 credits, 3 Lab/Lab-Discussion)

CHM 254
Organic Chemistry Lab II
IAI CHM 916
Corequisite courses: CHM 253 (0.5 credits, 0.5 Lecture)
Laboratory experiments in organic chemistry with a focus on multi-step synthesis. Course is designed for concurrent registration in CHM 244. Corequisite courses: CHM 244 (1 credits, 3 Lab/Lab-Discussion)

Civil Engineering Technology (CET---)

CET 020
3-Day Aggregate for I.D.O.T.
This course prepares a student for the I.D.O.T. Level I Hot Mix Asphalt course (CET 029) or the Portland Cement Concrete Level II course (CET 024). (Repeatable 3 Times) (1 credits, 1 Lecture)

CET 021
5-Day Aggregate for I.D.O.T.
This course prepares a person to work in an aggregate producer's lab on I.D.O.T. QC/QA projects. It can also serve as the prerequisite for IDOT Hot Mix Asphalt Level I (CET 029) course or Portland Cement Concrete Level II course (CET 024). (2 credits, 2 Lecture)

CET 023
5-Day Asphalt/IDOT Level II
An advanced course covering proportioning, troubleshooting and lay down of hot mix asphalt. (2 credits, 2 Lecture)

CET 024
Level II Portland Cement Conc
An advanced course covering proportioning of P.C.C. for I.D.O.T. QC/QA projects. (1 credits, 1 Lecture)

CET 026
Nuclear Density (IDOT)
Upon completion of the course a person is qualified to run a nuclear density gauge on QC/QA asphalt projects. This course covers the use of the gauge and I.D.O.T. paperwork involved. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

CET 027
Mixture Aggregate Tech Upgrade
This course serves as an upgrade course for individuals who currently are Mixture Aggregates certified. Upon successful completion, it enables a person to administer the I.D.O.T. QC/QA program for an aggregate producer participating in the Aggregate Gradation Control System. (Repeatable 3 Times) (1 credits, 1 Lecture)

CET 029
Level I Hot Mix Asphalt
Laboratory testing of HMA using Superpave technology and information on the production of HMA is covered in this course. Successful completion permits a person to do testing associated with contracts let under the QC/QA program. Course Level Fee NF (2 credits, 1.5 Lecture, 1 Lab/Lab-Discussion)

CET 030
Level I Port Cement Concrete
This course covers the testing of PCC Mix and the basics of the I.D.O.T. QC/QA program as it applies to PCC. Persons completing this course will be able to do the mix testing for PCC on QC/QA projects and will also receive the ACI Level I certification. This course is a combination of CET 035 and CET 036. (1.5 credits, 1.5 Lecture)
CET 031
HMA Level III
This course covers the basics of Superpave Mix Design. Persons completing this course will be able to do a mix design for Hot Mix Asphalt. Course Level Fee NF (2 credits, 1.5 Lecture, 1 Lab/Lab-Discussion)

CET 039\nLevel 3 Prtlnd Cement Concrete
An advanced course covering concrete mix design for I.D.O.T. QC/QA projects. (Repeatable 3 Times) (1 credits, 1 Lecture)

CET 051
Civil Construction I
Study of civil construction including types of projects, personnel, equipment, materials, and methods. Blue print reading and specification interpretation for heavy construction is also emphasized. (3 credits, 3 Lecture)

CET 052
Civil Construction II
Prerequisites: CET 051
Familiarizes the student with basic concepts of construction management with special emphasis on contracts, cost estimating, progress scheduling, engineering economics, and quality control. (3 credits, 3 Lecture)

CET 054
Soils + Aggregates
Prerequisites: TEC 050
Familiarizes the student with basic concepts of construction management with special emphasis on contracts, cost estimating, progress scheduling, engineering economics, and quality control. Course Level Fee 1 (4 credits, 2 Lecture, 4 Lab/Lab-Discussion)

CET 056
PCC Theory and Design
Prerequisites: CET 054 or BCT 050
Discussion of concrete through all stages of design, mix, delivery, placement, and curing with special emphasis on design, proportioning, and field testing. Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

CET 057
Asphalt Theory and Design
Prerequisites: CET 054
Discussion of asphalt paving from plant to paver with special emphasis on testing and proportioning. Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

CET 060
Surveying I
Fundamentals of basic surveying operations such as chaining, leveling and use of the transit and the basic calculations associated with these operations. Course Level Fee 1 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

CET 062
Surveying II
Prerequisites: CET 060 TEC 052
Designed to apply the skills learned in Surveying I to practical problems such as closed traverse, area calculations, land surveying, topographic mapping, stadia surveys, and difficult level circuits. Course Level Fee 1 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

CET 064
Surveying III
Prerequisites: CET 062
Analysis of horizontal and vertical curves, precise control traverses and leveling. Emphasizes the use of total stations, electronic data collectors, GPS equipment and engineering software. Course Level Fee 2 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

CET 065
Data Collection for GIS Mapping
Prerequisites: ESC 106 CET 060
This class is designed to familiarize students with the theory of the global positioning system and data collection methods associated with geographic information systems. Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

CET 075
Supervised Occupational Exp
Enables the student to gain on the job experience in Civil Engineering Technology during the summer session. Course Level Fee 2 (Variable Credit 0.5/5 credits, 25 Lab/Lab-Discussion)

CET 076
Supervised Occupational Exp
Enables the student to gain on the job experience in Civil Engineering Technology. Course Level Fee NF (5 credits, 30 Lab/Lab-Discussion)

CET 077
Supervised Occupational Experience
Prerequisites: CET 076
Enables the student to gain on the job experience in Civil Engineering Technology. Course Level Fee NF (6 credits, 30 Lab/Lab-Discussion)

CET 078
Supervised Occupational Experience
Prerequisites: CET 077
Enables the student to gain on the job experience in Civil Engineering Technology. Course Level Fee NF (6 credits, 30 Lab/Lab-Discussion)

CET 079
Supervised Occupational Exp
Prerequisites: CET 078
Designed to provide the student with work experience in the field while maintaining contact with an instructor for review and assistance. Course Level Fee NF (3 credits, 15 Lab/Lab-Discussion)

CET 081
CAD for Civil Engineering
Prerequisites: CET 082
A study of Computer-Aided Drafting (CAD) related to civil engineering applications. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CET 082
Civil Drafting
Prerequisites: CAD 056
Focuses on developing competence in drafting structural and detail drawings with special emphasis on interpreting field data to produce highway construction drawings and specifications. Course Level Fee 1 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

CET 087
Hydraulics/Drainage
Prerequisites: TEC 052
Fundamentals of statics kinematics and dynamic flow; drainage area and volume of flow calculations. (3 credits, 3 Lecture)

Commercial Drivers License (CDL---)

CDL 011
Class B Commercial Driver Training
This course prepares the student with core knowledge and skills needed to pass Illinois Secretary of State Class B written and behind-the-wheel licensing tests. (2 credits)

CDL 010
CDL Refresher Course
Designed for the student who has previously passed CDL 040 and who has not driven during the 60-days immediately following graduation. Student will be reissued a current completion certificate as required by most employers to be eligible for entry level employment. (0.5 credit)
Computer Aided Drafting (CAD---)

CAD 052
Microstation CAD I
Student will learn to use the Integraph Microstation Computer-Aided Drafting system to create simple to moderately complex technical drawings. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

CAD 056
CAD I
Basic Theory of CAD. Students will learn to use a Computer Aided Drafting system to create simple to moderately complex technical drawings. (Repeatable 1 Time) Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

CAD 057
CAD II
Prerequisites: CAD 056
This course is a continuation of CAD I (CAD 056). Such subjects as Symbol Libraries, Block Attributes, 3 D Design, Solid Modeling and Slide Shows are studied. Course Level Fee 3 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

CAD 058
CAD Drafting Systems
Prerequisites: CAD 056
This course familiarizes the student with the setup, use and features of various CAD systems. Such subjects as operating systems, file management and customizing AutoCAD are also studied. Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

CAD 059
Special Applications of CAD
Prerequisites: CAD 058 and CAD 057 or concurrent enrollment
This course is a more in depth study of computer aided design. The student will explore specific applications of CAD and industry requirements. Course Level Fee 3 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

CAD 060
3D Solid Modeling
Prerequisites: CAD 057
This course is an in depth study of three-dimensional solid modeling using different computer aided design programs. The student will learn to create, view, render and plot 3D models. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CAD 061
3D Parametric Design
Prerequisites: CAD 060
This course is study of three dimensional parametric design and prototype creation. The student will learn to create a family of part designs using parametric modeling CAD software. Creating design prototypes will also be covered. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CAD 062
Introduction to Solidworks
This course is a study of three-dimensional solid modeling using the Solidworks system. The student will learn to create, view, render and plot 3D models and assemblies. (Repeatable 3 Times) Course Level Fee 1 (2 credits, 2 Lecture)

CAD 063
Wind Energy Design
This course is an in depth study of the mechanical design of wind turbine components. The student will learn to design, prototype, test and improve turbine blades and towers. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 3 Lecture, 2 Lab/Lab-Discussion)

CAD 075
Supervised Occupational Exp
Designed to promote on the job experience in CAD technology while applying skills and knowledge learned in the program. The employers and supervising instructors work closely with the student in an off campus job site. (Repeatable 2 Times) Course Level Fee NF (3 credits, 15 Lab/Lab-Discussion)

CAD 092
Computer-Aided Manufacturing
An introduction to the use of a CAD/CAM system. Students will learn to use a computer for design and to automatically create programs to control manufacturing equipment. Course Level Fee 4 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CAD 094
Computer Integrated Manf
An introduction to Computer Integrated Manufacturing. Students will learn to setup, program and troubleshoot a CIM system. This is the final course in the CIM Technology degree program. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

Computer Information Systems (CIS---)

CIS 040
Introduction to Computers
An operational oriented course which involves student experience using hardware, software, peripherals, operating procedures, and internet. Designed for novice computer users. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 1 Lecture)

CIS 047
Graphic Design Capstone
Prerequisites: CIS 160, CIS 098, CIS 092, CIS 088, CIS 090, CIS 051, CIS 056
This capstone course will integrate Illustrator, Photoshop, and Web Page Design concepts. The course features a simulated work environment. Students will complete graphic design applications in print and on the web for a simulated business. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 049
Content Management Systems
Prerequisites: CIS 099 or concurrent enrollment
This course covers the creation and maintenance of a website using a content management system. The course will include, but is not limited to, business content, adding widgets and plugins, blogging, commenting, theme development, and user account setup. Repeatable 3 Times) Course Level Fee 3 (2 credits, 2 Lecture)

CIS 050
Advanced Web Technologies
Prerequisites: CIS 100, CIS 095, CIS 162 or CIS 164
This course focuses on server side technologies to create database driven websites. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 051
Designing for the Web
Prerequisites: CIS 099, CIS 088 or equivalent experience
Tools, techniques, and design theory for creating well-designed web sites. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 052
Visual Basic
Prerequisites: CIS 156
Continuation of fundamentals of programming selection, iteration, and condition structures. Introduction to graphical interface(s) and object-oriented, event-driven applications requiring the use of controls, events, arrays, error handling and more. Also includes Mobile, Office and ASP.NET applications, ADO.NET and classes. (Repeatable 3 Times) Course Level Fee 2 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)
CIS 053▼
Wireless Networking
Prerequisites: CIS 079, CIS 081
An overview course of wireless LAN technologies and implementations. Course study includes both theory and configuration of current wireless devices, details of 802.11 standards and discussions of security implementations and concerns. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 054▼
PowerPoint
Introduction to the graphic presentation software PowerPoint. The basics of PowerPoint will be covered including creating, editing, and formatting slides; adding clip art and pictures; and creating various charts and graphs. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 055▼
Word
An introduction to the word processing software package Word that includes document preparation, storage, editing, and printing. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 056▼
Advanced Software Applications
Prerequisites: CIS 160
Advanced instruction in an office suite program with emphasis on advanced topics in word processing, spreadsheet, and presentation software. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 3 Lecture)

CIS 058▼
Specialized Software Applications
Students handle office activities and use career-related software such as an accounting system, desktop publishing, form management, calculator, medical scheduling and invoicing, and legal document preparation. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 060▼
Project Management
An overview of project management as it applies to information technology projects. Project management software will be introduced. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 062▼
Computer Game Development
Prerequisites: CIS 156
A practical exploration of video game development using both original programming and modification of existing game code. A variety of game types will be explored and created with the focus being on understanding, exploration and creativity in the development process. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 063▼
3-D Computer Animation
An overview and exploration of the different applications and techniques used in the development of 3D models for game, video and web animation. The course will explore a variety of commonly used tools and will identify their strengths and capacities. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 065▼
Advanced Game Development
Prerequisites: CIS 062
An in-depth examination of the different game genres available and how to create appropriate content for each. Integration of basic programming and animation skills with more advanced topics will be discussed and developed through several individual and group projects. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 066▼
Digital Video Production
An overview course discussing the development of digital video including planning and shooting, editing, titling, effects and animation, soundtrack creation and audio editing and output in DVD, video and the Web. Streaming output will also be discussed. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 067▼
Advanced Digital Video Production
Prerequisites: CIS 066
Advanced training in the many aspects of video production will be covered from concept development through final editing and delivery. Emphasis is placed on preproduction skills and techniques and live action direction of talent and crew. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 068▼
Computer Appl-Special Topics
Familiarizes the student with a word processing package and a spreadsheet package with emphasis on special topics pertinent to the student population. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 069▼
Advanced Animation and Modeling
Prerequisites: CIS 063
Advanced features of modeling and animation software will be covered including building and character creation, texturing and animation. Emphasis will be placed on the importing of models from the environment and exporting of completed models to other applications. (Repeatable 3 Times) Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 070▼
Network Security
Prerequisites: CIS 081, CIS 079
An overview course of security topics as it applies to a typical Server-based network. Course of study includes Security+ Exam content: authentication, remote access, external attacks, intrusion detection, web and email security, and disaster recovery. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 071▼
Introduction to Networking
An overview of computer hardware, software, networks, Internet, web applications, systems, security and troubleshooting. To be used as an introduction to the Network Administration program or to supplement another computer-related degree. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 073▼
Survey of Operating Systems
An overview study of Operating Systems from text-based DOS systems through the 32-bit GUI interface Operating Systems. The broad exposure is appropriate for the beginner, but the depth of study also makes it appropriate for the advanced student. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 074▼
IT Seminar
Prerequisites: CIS 072, CIS 076
Places emphasis on the student's on-the-job experiences. Job related aptitude tests as well as job hunting techniques are discussed. (Repeatable 3 Times) (1 credits, 1 Lecture)

CIS 079▼
Client Operating System
A comprehensive examination of Client Operating Systems. Course of study includes, but is not limited to, Microsoft client operating systems. Topics include installation, configuration, optimization, administration, network integration and other support issues. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)
CIS 081▼
Networking Essentials
Prerequisites: EET 060
An introduction to networking technology for Local Area Networks (LANs), Wide Area Networks (WANs) and the Internet. Designed for those seeking a career in network administration and support or those seeking professional certification. Leads toward Network+ Certification. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 083▼
Systems Design
Prerequisites: CIS 052, CIS 162, CIS 095, CIS 154, CIS 164
Study of the Systems Development Life Cycle including documentation standards, software packages, data communications and systems conversions will be covered. Emphasis is placed on analyzing designing, implementing and documenting a complete system. (Repeatable 3 Times) Course Level Fee 2 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

CIS 084▼
Server Operating Systems
Prerequisites: CIS 079
A comprehensive examination of server operating systems. Course of study includes, but is not limited to, Microsoft server operating systems. Topics include installation, configuration, optimization, administration, network integration and other support issues. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 085▼
Adv Server Operating System
Prerequisites: CIS 084
An advanced course in the design, installation, configuration, and support of a Local Area Network using the server operating systems and their tools. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 087▼
TCP/IP and Routing
Prerequisites: CIS 081
An in-depth study of the TCP/IP protocol and router technology. Topics include installation, configuration, optimization, and administration of routers in an Internet, intranet or LAN environment. Troubleshooting, network integration and other support issues will also be discussed. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 088▼
Adobe Photoshop
Prerequisites: CIS 040 or equivalent experience
Adobe Photoshop is the industry leading image editing software. Topics covered include image surgery, working with layers, selections, color adjustment, paint tools, filters, working with type, and creating images for the web. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 089▼
Advanced Routing
Prerequisites: CIS 087
An in-depth look at the components of the Routing and Switching and the tools that are used in the implementation, configuration, optimization, and troubleshooting of the LAN/WAN environment. Study will lead toward Cisco CCNA certification. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIS 090▼
Adobe InDesign
Prerequisites: CIS 040 or equivalent experience
Adobe InDesign is the industry leading page layout software. Topics covered include setting up a document, working with text, placing images, working with color, exporting and packaging documents for print. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 092▼
Adobe Illustrator
Prerequisites: CIS 040 or equivalent experience
Adobe Illustrator is the industry leading drawing software used to create artwork which can be imported into other programs. Topics covered include creating text, drawing, transforming objects, working with layers, recoloring, graphic styles, preparing graphics for the web and print. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 093▼
Access
Prerequisites: CIS 040 or equivalent experience
An introduction to Microsoft Access, a database management application designed to operate in the Windows environment. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 094▼
Excel
The basics of the Excel software package will be covered. This includes spreadsheet basics, formulas, functions, charting, data management, and collaborative tools. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 095▼
Database Management
Prerequisites: CIS 160 or instructor consent
Structured Query Language will be used to design and manage a database. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 098▼
Advanced Desktop Skills
Prerequisites: CIS 090, CIS 088, CIS 092
InDesign, Illustrator, and Photoshop are used to create advanced desktop publishing designs. Emphasis is placed on creating your own styles, graphics, and layouts. Pre-press and printing techniques are also covered. (Repeatable 3 Times) Corequisite courses: CIS 088, Course Level Fee 3 (3 credits, 3 Lecture)

CIS 099▼
Web Page Design
Prerequisites: Type 30 words per minute
This introductory course focuses on creating and maintaining web pages using XHTML and CSS code. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 3 Lecture)

CIS 100▼
Advanced Web Page Design
Prerequisites: CIS 099, CIS 156
This course focuses on using client-side technologies to create interactive web pages. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 3 Lecture)

CIS 101▼
Internet Systems and Applications
An introduction to networking basics through the Internet. Students will learn about Internet services, etiquette, searches, E-mail, and other internet skills. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 2 Lecture)

CIS 156▼
Computer Logic
Prerequisites: CIS 160 or concurrent enrollment or HS computer class
Familiarizes the student with techniques and problem-solving aids necessary for the solution of computer programming. The exercises will use a programming language to develop the skills needed for solving problems. (Repeatable 3 Times) Course Level Fee 1 (3 credits, 3 Lecture)

CIS 160▼
Practical Software Applications
IAI BUS 902
Prerequisites: Students must take CIS 040 or have previous HS experience
Provides an opportunity for the student to work with various types of software on the PC. These learning activities include MS
Windows, Word Processing, Spreadsheet Design, Database Management, Internet access, and presentation program. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 3 Lecture)

CIS 162▼
Object-Oriented Programming I
Prerequisites: CIS 156 or consent of instructor
This course teaches the fundamentals of object-oriented programming. It develops an understanding of data types, methods, classes and objects, selection and repetition structures, functions & one and two-dimensional arrays. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 3 Lecture)

CIS 164
Object-Oriented Programming II
Prerequisites: CIS 162
This course teaches advanced concepts in object-oriented programming. It develops an understanding of Windows programming, events, inheritance, data files, databases, debugging, exceptions, and Web-based applications. (Repeatable 3 times) Course Level Fee 2 (3 credits, 3 Lecture)

CIS 170
Java Programming
Prerequisites: CIS 156, CIS 162
A study of object oriented programming using the Java language. Includes scalar, aggregate, statements, expressions, methods, libraries, classes and objects. Development of objects including the concepts of polymorphism, encapsulation and inheritance are covered. (Repeatable 3 times) Course Level Fee 2 (3 credits, 3 Lecture)

Computer Integrated Manuf (CIM---)

CIM 044▼
Industrial Robotics
A comprehensive study of industrial robotics used in computer integrated manufacturing systems. Some areas of study include history, classification, tooling, sensors, safety and justification of robotic systems. The student will learn robotics related to manufacturing, and fundamental robotic programming. (Repeatable 3 Times) (2 credits, 2 Lecture)

CIM 050▼
CNC Machine Operator
Prerequisites: MTT 050
A study designed to highlight the theory and application of CNC machining centers, machine configuration, fixture and tool offsets/compensations, production runs, setup and cycle time reductions. (3 credits, 3 Lecture, 2 Lab/Lab-Discussion)

CIM 060
CNC Machining
Prerequisites: CAD 056
Introduction to computer numerical controlled (CNC) machine tool operation, programming and processes. Manual and computer assisted part programming with machine tool verification. Course Level Fee 4 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIM 075▼
Supervised Occupational Experience
Prerequisites: Must have completed 12 semester hours of CNC Certificate Program.
Designed to promote on the job experience in CNC technology while applying skills and knowledge learned in the program. The employers and supervising instructors work closely with the student in an off campus job site. (3 credits, 15 Lab/Lab-Discussion)

CIM 092
Computer-Aided Manufacturing
Prerequisites: MTT 060, CAD 056
An introduction to the use of a CAD/CAM system. Student will learn to use a computer for design and to automatically create programs to control manufacturing equipment. Course Level Fee 4 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

CIM 094
Computer Integrated Manf
Prerequisites: CAD 092, MET 044
An introduction to Computer Integrated Manufacturing. Student will learn to setup, program and troubleshoot a CIM system. This is the final course in the CIM Technology degree program. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

Cosmetology (COS---)

COS 050
Cosmetology I
This course focuses on professional rules and regulations, shampooing, basic chemistry, hair shaping, bacteriology, facials, scalp treatments, sanitation and safety for students and clients. Course Level Fee 2 (6 credits, 3 Lecture, 15 Lab/Lab-Discussion)

COS 052
Cosmetology II
Prerequisites: COS 050
This course focuses on thermal designing, permanent waving, manicuring, pedicuring, make-up techniques, and hair coloring. Course Level Fee 2 (6 credits, 3 Lecture, 15 Lab/Lab-Discussion)

COS 054
Cosmetology III
Prerequisites: COS 050, COS 052
This course consists of advanced hair coloring, decolorizing, hair styling, competition, superfluous hair, artificial nails, pH chemistry, and chemical relaxing. Course Level Fee 2 (6 credits, 3 Lecture, 15 Lab/Lab-Discussion)

COS 056
Cosmetology IV
Prerequisites: COS 050, COS 052, COS 054
This course focuses on nail structure, including disorders and diseases, dermatology, disorders of the skin and scalp, electricity, artificial hair and advanced chemistry. Course Level Fee 2 (7 credits, 4 Lecture, 15 Lab/Lab-Discussion)

COS 058
Cosmetology V
Prerequisites: COS 050, COS 052, COS 054, COS 056
This course is a study of basic anatomy and the related areas; also retailing, job marketing skills and student-salon internship. Course Level Fee 2 (7 credits, 4 Lecture, 15 Lab/Lab-Discussion)

COS 059
Cosmetology Clinic
Prerequisites: COS 050, COS 052, COS 054, COS 056, COS 058
Designed for Lake Land College Cosmetology students who have not completed the state required 1500 hours during the regular modules. Course Level Fee NF (Variable Credit 1-3 credits, 9 Lab/Lab-Discussion)

COS 060
Salon Management
Covers areas of opportunity and the outlook for small business managers, success and failure patterns, capital needs and sources, organizing, directing, controlling, finance, locations, facilities, marketing, and inventory control. (3 credits, 3 Lecture)

COS 061
Computer Appl for Cosmetology
Provides an opportunity for the student to work with various types of software on the microcomputer. These learning activities include MS Windows, word processing, spreadsheet design, database management, Internet access, and cosmetology specific software. Course Level Fee 2 (3 credits, 3 Lecture)

COS 076
Cosmetology Teacher I
This course is designed to develop basic cosmetology teaching skills; a study of basic theory and fundamental principles
COS 077
Cosmetology Teacher II
Prerequisites: COS 076
This course provides supervised student teaching; preparation and presentations of lesson plans, evaluation of subject matter, business procedures related to the operation of a cosmetology school. Course Level Fee 2 (6 credits, 3 Lecture, 9 Lab/Lab-Discussion)

COS 078
Cosmetology Teacher III
Prerequisites: COS 077
This course is a continuation of presenting various educational methods: testing student and completing a teaching portfolio. Course Level Fee 2 (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

COS 080
Nail Technology I
Prerequisites: COS 080
Course is designed to instruct students in basic manicures, pedicures, disinfecting implements, and bacteriology. The course will also include nail structure, anatomy of the hands and feet, and recognition of nail disorders. Course Level Fee 3 (2 credits, 1 Lecture, 5 Lab/Lab-Discussion)

COS 081
Nail Technology II
Prerequisites: COS 080
Course is designed to instruct students in the use and care of electric files, salon business, and retailing. Advanced techniques such as nail tip application, nail wraps, acrylic nails, sculptured nails, gel nails, and nail art are also included. Course Level Fee 3 (2 credits, 1 Lecture, 5 Lab/Lab-Discussion)

COS 082
Nail Technology III
Prerequisites: COS 080, COS 081
Course is designed to instruct students in the use and care of electric files, salon business and retailing. Advanced techniques such as nail tip application, nail wraps and nail art are included. (Repeatable 3 Times) Course Level Fee 3 (2 credits, 1 Lecture, 5 Lab/Lab-Discussion)

COS 083
Nail Technology IV
Prerequisites: COS 080, COS 081, COS 082
Course is designed for intense instruction of advanced techniques including acrylic nails, sculptured nails and gel nails. (Repeatable 3 Times) Course Level Fee 3 (2 credits, 1 Lecture, 5 Lab/Lab-Discussion)

Criminal Justice (CJS---)

CJS 056
Illinois Concealed Carry Handgun
Prerequisite: Be at least 21 years of age; have a valid FOID card (if Illinois resident) or be eligible for a FOID card if a non-resident; not have any disqualifiers as described under the Illinois Firearm Concealed Carry Act.
This course provides required training to individuals who want to pursue a concealed carry permit under Illinois Public Act 98-0063. This is the complete 16 hour course which includes classroom and practical experience on a firing range. (1 credit, 1 lecture)

CJS 057
Illinois Concealed Carry Supplement
Prerequisites: Successful completion of an approved training course as illustrated in Public Act 98-0063; be at least 21 years of age; have a valid FOID card (if Illinois resident) or be eligible for a FOID card if a non-resident; not have any disqualifiers as described under the Illinois Firearm Concealed Carry Act.
This course provides the supplemental eight hour training to individuals who want to pursue a concealed carry permit under Illinois law and have successfully completed an approved concealed carry course prior to Public Act 98-0063. (0.5 credit, 0.5 lecture)

Dental Hygiene (DHY---)

DHY 035
Pit and Fissure Sealants
This course is designed to meet the educational requirements and lab experience necessary for the Dental Assistant to be certified to place pit and fissure sealants in the office. (0.5 credits, 0.5 Lecture)

DHY 036
Coronal Polishing/Dental Asst
This course will meet the legal requirements regarding coronal polishing by Dental Assistants. This course will include a minimum of four hours of didactic study in anatomy, physiology, pharmacology, dental emergencies, and two hours of clinical instruction. (0.5 credits, 0.5 Lecture)

DHY 039
Nitrous Oxide-Dental Assistant
The Illinois Dental Practice Act identifies nitrous oxide sedation monitoring as a dental assisting duty. The Dental Assistant will receive didactic and clinical training that will qualify him/her to monitor this form of pain control. (1 credits, 1 Lecture)

DHY 041
Dental Terminology
Prepares student to enter the dental hygiene program by the introduction of terms commonly used in the practice of dentistry and dental hygiene. The student will also be exposed to basic numbering systems and charting methods. Course Level Fee 1 (0.5 credits, 0.5 Lecture)

DHY 043
Dental Hygiene Board Review
Generalized review of dental hygiene curriculum that helps to prepare the student to take the National Dental Hygiene Board Examination. Course Level Fee 1 (0.5 credits, 0.5 Lecture)

DHY 044
Admin of Local Anesthetics
This course is designed to educate and give clinical experience to the Dental Hygienist in the administration of local anesthesia, in compliance with the Dental Practice Act. (2.5 credits, 2.5 Lecture)

DHY 045
Radiology
This course is designed to include the principles and biological effects of radiation and safety measures used in dental radiology. Correct methods of exposing, processing, and mounting intraoral radiographs for diagnostic purposes will be stressed. Course Level Fee 4 (5 credits, 2 Lecture, 6 Lab/Lab-Discussion)

DHY 060
Dental Assisting
An 8-week module in Dental Assisting to prepare the student in those areas pertinent for employment in the dental office. Does not qualify for Federal Title VI financial aid or Illinois Monetary Award (MAP). Course Level Fee 4 (8 credits, 5 Lecture, 6 Lab/ Lab-Discussion)

DHY 067
Dental Anatomy/Hist
Designed to provide a thorough knowledge of the head, neck, teeth, and related structures by following their growth, development and function. Course Level Fee 3 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

DHY 068
Dental Hygiene I
Designed to acquaint the beginning dental hygiene student with duties and responsibilities in the clinical aspect of the profession and the role the hygienist plays in today's health. (3 credits, 3 Lecture)
DHY 069  
Pre-Clinic Hyg I  
An introduction to the duties and basic skills the dental hygienist uses in daily clinical practice. Course Level Fee 4  
(4.5 credits, 9 Lab/Lab-Discussion)

DHY 071  
Dental Hygiene II  
Prerequisites: DHY 069  
A continuation of Dental Hygiene I, advanced instrumentation and evaluation of the patient's oral health are given greater attention. An introduction to emergencies in the dental office and a continuation of preventive dentistry and patient education are included. (3 credits, 3 Lecture)

DHY 072  
Pre Clinic Hyg II  
Prerequisites: DHY 069  
A continuation of Preclinical I; Preclinical II continues with the development of clinical skills. Emphasis will be placed on prevention through patient education. The student will provide treatment for live patients. Course Level Fee 4  
(4.5 credits, 9 Lab/Lab-Discussion)

DHY 080  
Pathology  
Gives a brief insight into general principles of pathology with heavy emphasis on specifics of oral pathology. Terminology will be taught in addition to description of oral diseases, lesions and their treatment. (3 credits, 3 Lecture)

DHY 081  
Periodontology  
Focuses on the clinical aspects of the different forms of periodontal disease, and philosophy of treatment, the role of the dental hygienist in patient education for the prevention of periodontal problems, and the chairside management of these pathological conditions. (3 credits, 3 Lecture)

DHY 082  
Dental Hygiene Seminar  
This one hour credit course further introduces the dental hygiene student to clinical responsibilities required in providing patient treatment. (1 credits, 1 Lecture)

DHY 083  
Clinic I  
Prerequisites: DHY 072  
Requires the student to perform under supervision, a specific number of oral prophylaxis on child and adult patients. Some advanced skills will be introduced and experience is gained in sterilization and reception responsibilities. Course Level Fee 4  
(3 credits, 9 Lab/Lab-Discussion)

DHY 086  
Pharmacology  
The study of drugs affecting the practice of dentistry. (2 credits, 2 Lecture)

DHY 087  
Dental Hygiene III  
This course provides for continuing advancement in clinical and community settings. Content includes treatment of special needs patients, development of a pre-school educational model and designing a community dental health project. (3 credits, 3 Lecture)

DHY 088  
Clinic II  
Prerequisites: DHY 083  
Designed to improve the clinical skills of the dental hygiene student. Focus is on total assessment of individual patient needs, advanced instrumentation procedures and the special needs patient. Course Level Fee 4  
(5 credits, 1 Lecture, 12 Lab/Lab-Discussion)

DHY 089  
Lab Proced/Dent Hyg  
A comprehensive study of the science of dental materials and their application in dental hygiene. Course Level Fee 4  
(3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

DHY 090  
Exp Duties/Dent Hyg  
Prepares students to perform expanded duties permitted by the current Dental Practice Act of Illinois. Course Level Fee 4  
(2.5 credits, 1 Lecture, 3 Lab/ Lab-Discussion)

DHY 092  
Dent Public Health  
Applications of the dental public health survey, analysis, program plan, program operation, finance and appraisal procedures will be conducted in the nursing care homes and schools of the community. Course Level Fee 4  
(1 credits, 3 Lab/Lab-Discussion)

DHY 093  
Dental Hygiene IV  
This course is designed to give insight into the applications of dental hygiene practice and stress the development of professionalism. Introduction to the Illinois Dental Practice Act, ethics and jurisprudence and the history and organization of the American Dental Hygienists' Association. (3 credits, 3 Lecture)

DHY 094  
Clinic III  
Prerequisites: DHY 088  
Continued advancement of clinical competency is stressed. The student is required to perform expanded functions in clinical situations to broaden clinical experience; treatment will be provided for patients from selected outside agencies. Course Level Fee 4  
(5 credits, 1 Lecture, 12 Lab/Lab-Discussion)

Early Childhood Education (ECE---)

ECE 041  
The Creative Play Classroom  
The emphasis in this course is on developing hands-on materials that enhance play in a creative learning environment. (Repeatable 3 Times) Course Level Fee 1  
(1 credits, 1 Lecture)

ECE 051  
Infant/Toddler Environment  
This courses emphasizes the characteristics of high quality infant/toddler caregivers, curriculum, indoor/outdoor space and play equipment/toys vital for developmental learning. Course requirements include 20 hours of hands-on practicum in a community setting. (3 credits, 3 Lecture)

ECE 052  
Heads Up! Reading  
This course focuses on developmentally appropriate methods for enhancing literacy development in young children from birth through age five, analyzing and selecting literature for diverse groups, the teacher's role in promoting language and literacy, and applying these methods in early childhood settings. (3 credits, 3 Lecture)

ECE 081  
Early Childhood Clinical  
Prerequisites: ECE 100 or approval by program coordinator  
This course provides students experience in preparing and implementing developmentally appropriate activities. Students gain understanding of classroom management techniques and areas of focus when planning. The course includes 30 hours of practical experience in the on-site Child Care Lab. Course Level Fee 3  
(1 credits, 2 Lab/Lab-Discussion)

ECE 083  
Instructional Methods  
This course enables students to do total program planning consistent with the developmental needs of children. Course Level Fee 1  
(3 credits, 3 Lecture)
ECE 086  
Nanny/Family Relations  
Focuses on specific responsibilities of the nanny as a profession, as well as interpersonal relationships and personal adjustment within the live-in family setting. (2 credits, 1 Lecture)

ECE 087  
Organization/Mgt of Preschools  
This course focuses on state rules and regulations for operating a licensed child care facility. Room layout of an efficient facility, arrangement of outside playground areas, and the selection of furniture and equipment will also be discussed. (3 credits, 3 Lecture)

ECE 095  
Creative Activities for Children  
This course provides students an understanding of the value of and practical experience in preparing creative activities and experiences for children. The student is given many opportunities to explore, develop, and appreciate various types of creative media for preschool children. Course Level Fee 3 (4 credits, 4 Lecture)

ECE 100  
Intro to Early Childhood Educ  
This course focuses on an overview of early childhood care and education that includes basic values, professional disposition, program operation, historical influences, assessment, and structure. Includes 20 hours of practicum. (3 credits, 3 Lecture)

ECE 102  
Health/Safety/Nutri/Yng Child  
This course focuses on the health, safety, and nutritional needs of children in group settings as well as the personal health of the individual. Emphasis is placed on preventive health through education and the development of healthy habits. (3 credits, 3 Lecture)

ECE 110  
Child Behavior Management  
This course focuses on the use of positive redirective techniques in shaping behavior so children can learn self discipline and self control. Observation of discipline problems and analysis of procedures are required of the student. (3 credits, 3 Lecture)

ECE 120  
Field Experience Seminar  
IAI ECE 914  
Prerequisites: Mod prior to ECE 125 or approval of program coordinator  
This course prepares the student for the Field Experience practicum (ECE 125) and includes preparation of credentials for seeking employment. (1 credits, 1 Lecture)

ECE 125  
Field Experience  
IAI ECE 914  
Prerequisites: Enrolled in ECE 120 and approval by program coordinator. A "C" average in ECE and EDU prefix courses is required.  
Supervised practicum designed for Early Childhood and Child & Family Services and Paraprofessional Education majors to provide on-the-job experience. Practicum will include application of: program and classroom management skills, managing daily routines, curriculum development, agency policies and regulations, and enhancement of family involvement. Course Level Fee 3 (Variable Credit 0.5/4 credits, 20 Lab/Lab-Discussion)

ECE 130  
The American Economy  
Combinest Microeconomics and Microeconomics and focuses on basic supply and demand analysis, national income accounting, business cycles, inflation, unemployment, fiscal and monetary policy, and international economic problems. (3 credits, 3 Lecture)

ECE 104  
Physical Geography  
IAI P1 909L  
Stresses the physical environment of earth. Emphasis is placed upon basic concepts in geography with a focus on the biosphere, lithosphere, atmosphere, and hydrosphere. Extensive use of Internet resources and software will be required. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

ECE 106  
Introduction to Geographic Info Systems  
Introduction to basic Geographic Information Systems (GIS) concepts, using the ArcView GIS software program. Course will focus on developing both a theoretical background in the technology and real world applications using GIS techniques. Course Level Fee 4 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

ESC 100  
Physical Geology  
IAI P1 907L  
Physical geology focuses on the geologic concepts and processes that are responsible for creating and shaping the Earth. Materials covered include the topics of: rocks, minerals, volcanoes, earthquakes, stream erosion, wind erosion, glaciers, ground water, Earth interior, plate tectonics, and gravity. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

ESC 102  
Weather and Climate  
IAI P1 905L  
This course emphasizes the dynamics of the atmosphere with focuses on atmospheric evolution, seasonal controls of climate, human impacts, atmospheric humidity, air pressure, severe weather, and climate classification. Extensive use of Internet resources and software will be required. Course Level Fee 2 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

ESC 104  
Physical Geography  
IAI P1 909L  
Stresses the physical environment of earth. Emphasis is placed upon basic concepts in geography with a focus on the biosphere, lithosphere, atmosphere, and hydrosphere. Extensive use of Internet resources and software will be required for this course. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

ESC 106  
Introduction to Geographic Info Systems  
Introduction to basic Geographic Information Systems (GIS) concepts, using the ArcView GIS software program. Course will focus on developing both a theoretical background in the technology and real world applications using GIS techniques. Course Level Fee 4 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

ESC 114  
Advanced Vector GIS  
This six-module course introduces ArcGIS and provides the foundation for becoming a successful ArcView, ArcEditor, or ArcInfo user. Students learn how to use ArcMap, ArcCatalog, and ArcToolbox and see how they work together to provide a complete GIS software solution. Course Level Fee 2 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

Economics (ECO---)  
ECO 130  
The American Economy  
Combines Macroeconomics and Microeconomics and focuses on basic supply and demand analysis, national income accounting, business cycles, inflation, unemployment, fiscal and monetary policy, and international economic problems. (3 credits, 3 Lecture)

ECO 231  
Principles of Economics I (Macro)  
IAI S3 901  
Focuses on the nature and method of economics, basic supply and demand analysis, national income accounting, business cycles, inflation and unemployment, fiscal policy, money and banking, and monetary policy. (3 credits, 3 Lecture)

ECO 232  
Principles of Economics II (Micro)  
IAI S3 902  
Prerequisites: ECO 231  
Focuses on free enterprise and the economic functions of government, advanced supply and demand analysis, pricing in competitive/non-competitive markets, and pricing in resource markets. (3 credits, 3 Lecture)

Education (EDU---)  
EDU 025  
Paraprofessional Test Prep  
This course is as a refresher/review course for paraprofessionals that have learned the subject matter earlier in their educational experience in order to prepare for the Paraprofessional Certification test mandated by the No Child Left Behind (NCLB) Act. (0.5 credits, 0.5 Lecture)

EDU 100  
Introduction to Education  
An overview of the American education system. Social, historical and philosophical foundations give perspective to an
examination of current issues, policies and trends in the field of education, including cultural diversity. A 30 hour practical lab is required for this course. Course Level Fee 4 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EDU 103
Teaching/Learning W/Technology
Prerequisites: CIS 040 or HS computer application class
This course features practical ways to use various types of technology for the K-12 classroom teacher. Is a basic course in microcomputers, their operation, and utilization in K-12 classrooms. (3 credits, 3 Lecture)

EDU 190
Introduction/Special Education
IAI ECE 913
This course is designed to introduce the student to the study of exceptional children, including a survey of the child’s developmental traits and examination of appropriate intervention techniques. A 30 hour practical lab is required in this course. (3 credits, 3 Lecture)

EDU 200
Educational Psychology
IAI SED 902
The application of psychology principles to education. Special emphasis on understanding growth and development, the learning process, motivation, intelligence, evaluation, measurement, creativity and the impact of culture on learning styles. (3 credits, 3 Lecture)

EDU 210
Diversity in Schools and Societies
IAI EDU 911
This course is a study of how schooling is shaped by and ought to respond to the social contexts in which it occurs, particularly in multicultural and global contexts. (3 credits, 3 Lecture)

Electronic Engineering Tech (EET---)

EET 040
Basic Electronics
Develops an understanding of the basic DC electricity concepts such as voltage, current, resistance, power and energy. The course covers resistive circuits through series-parallel circuits. Laboratory work includes use of analog and digital meters and circuit construction. Course Level Fee 1 (2.5 credits, 1.5 Lecture, 2 Lab/Lab-Discussion)

EET 045
Active Devices
Fundamentals of basic solid state components through the most common and popular devices and their applications are presented. Course Level Fee 1 (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

EET 047
Video Systems
Prerequisites: EET 044, EET 046
Comprehensive coverage of all types of video systems from the standpoint of theory, operation, troubleshooting, alignment, and applications. Course Level Fee 1 (5 credits, 3 Lecture, 4 Lab/ Lab-Discussion)

EET 048
Digital Circuits
Prerequisites: EET 076
Applications of digital circuits and devices to consumer products. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 049
Robotics Fundamentals
Introduces the concepts of robotics, automation, and guided vehicles by looking at various applications, types, classifications and operation. Operator and safety precautions are stressed. (1 credits, 1 Lecture)

EET 050
Electric Circuits I
Prerequisites: EET 040
Introduces the student to the sin wave and the relative parameters such as frequency, period, rms and ave values. Capacitance and inductance are introduced and their effect in sin wave circuits are studied. Lab work includes familiarization with the oscilloscope. Course Level Fee 1 (2.5 credits, 1.5 Lecture, 2 Lab/Lab-Discussion)

EET 052
Solid State Devices
Prerequisites: EET 050, TEC 052
Study of basic solid state devices and associated circuits. Devices included will be general purpose diodes, zener diodes, bipolar junction transistors, field effect transistors. Integrated circuits will be introduced. Circuit applications will include rectifiers, transistors, switching circuits, and linear amplifiers. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/ Lab-Discussion)

EET 053
A+ Technician Preparation
Preparation for the Computing Technology Industry Association A+ Operating Systems. This course is designed to cover the Operating System Component of the A+ Exam. Some of the topics discussed are Operating Systems, System Administration Tools, Network Management, and System Maintenance. (Repeatable 2 Times) Course Level Fee 2 (2 credits, 2 Lecture)
boards are also demonstrated. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 064
A+ Computer Essentials
Preparation for the Computing Technology Industry Association A+ test. This course is designed to cover both the Core and DOS/Windows modules. Some of the topics discussed are installation, upgrading, troubleshooting, hardware, networks, and DOS, Windows 3.X, and Windows 95. (2 credits, 2 Lecture)

EET 065▼
Home Technology Integration
This course is designed for students interested in the field of home technology integration. Focuses on background knowledge and hands-on skills to prepare for the CompTIA DHTI+ Exam. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 066
Network Pro
This course covers material needed to pass the Computing Technology Industry Association Net+ and Electronics Technicians Association CNST exam. Topics include an in-depth look at data transmission and covers basic telephony, LAN, Satellites, modems, error control and data security. (4 credits, 4 Lecture)

EET 067
Computer Servicing Techniques
Prerequisites: EET 060
This lab is dedicated to advanced configuration and trouble shooting and is designed to simulate problems in home or business computers. Student will be given a description of the problem from an operators viewpoint and will correct the problems encountered. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 068▼
Photovoltaic Systems
Prerequisites: EET 040 EET 050
This course is designed to provide a technical foundation for design, installation, and evaluation of residential and commercial photovoltaic systems. Concepts of system advantages and disadvantages, site evaluation, system design and sizing are assessed. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 069▼
Residential Wiring I
This course provides students with an understanding of residential wiring. Topics include safety, planning, and installation of residential wiring systems according to the National Electrical Code®. (Repeatable 3 Times) Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 070▼
Photovoltaic Technician
This course is designed to provide a technical foundation for system design, systems implementation, electrical codes, and hardware installation. Maintaining and troubleshooting systems are performed. (Repeatable 3 Times) Course Level Fee 3 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

EET 071
Routing & Switching Fundamentals
Provides the student with practical skills needed to configure and connect routers and switches. It also discussed trunking, access list, and WANS. Connectivity to other electronic controls systems. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 072
Industrial Control I
Prerequisites: EET 050, EET 052 or instructor consent
This course provides the student with an understanding of industrial electrical and electronic power systems. Topics covered include three phase circuits, motors wiring, ladder logic, transformers, and electronical motor controllers. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

EET 074▼
Supervised Occupational Experience
Designed to provide the student with work experience in field while maintaining contact with the occupational instructor for review and assistance. (Repeatable 1 Time) Course Level Fee NF (Variable Credit 0.5/5 credits, 25 Lab/Lab-Discussion)

EET 075
HMI-Human Machine Interface
Prerequisites: EET 073 or consent of instructor
This course covers basic HMI operation and programming using Wonderware - InTouch software. Topics include: Designing HMI windows, interfacing to the PLC, basic animation, using and creating logic scripts, using DDE, setting alarms, charts and trending, and security. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

EET 076
Digital Logic
Prerequisites: EET 040, EET 050
The study of digital systems principles and techniques. Binary, Hexadecimal, BCD, logic theory, AND, OR, NOT, NAND, and NOR gates as well as combination gate, Flip Flops and hardware are covered. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 078
Linear Electronics
Prerequisites: EET 052
A study of linear electronic circuits. Combines theory of passive and active circuits into operational units. Topics include amplifiers frequency response, feedback, oscillators, high frequency, operational and instrumentation amplifiers, linear and switching regulators. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 079
R.F. Communication Licensing
Prerequisites: EET 046 or concurrent enrollment in EET 080
Preparation for NABER, NARTE, SBE and F.C. - General Radiofrequency License tests. Radio low, R.C.C. rules and regulations related to licensing and review of basic electronics and radio theory pertinent to tests. Corequisite courses: EET 080 EET 047 (1 credits, 1 Lecture)

EET 080
R.F. Communications
Prerequisites: EET 078
The study of electronic communication components and systems. AM, FM Single Side Band, commercial broadcasting and digital transmitters and receivers as found in two-way radio are studied. Transmission lines, electromagnetic fields and antennas are included. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 081
Microcontroller Applications
Principles of micro controllers. Topics include: Flow charting, Input-output devices and interfacing, Signal conditioning, Programming, and basic process control using a micro controller. Class stresses using the micro controllers to control I/O devices. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

EET 085▼
Electronic Projects
Prerequisites: EET 076, EET 078, EET 081
Instructor approved and student selected electronic project providing experience in design, fabrication and testing of an electronic unit. The project should coincide with student's occupational goal and area of electronic work interest. (Communications, computers, industrial, etc.) (Repeatable 3 Times) Corequisite courses: EET 080, EET 081, Course Level Fee 1 (2 credits, 1 Lecture, 3 Lab/Lab-Discussion)

EET 086
Prog Logic Controllers I
Prerequisites: EET 072 or consent of instructor
This course covers basic PLC operation and programming using Rslogix500 software and Allen Bradley PLCs. Topics include: Basic ladder design, Input Output, Timers, Counters, Batch Processes, Shift registers, Word compare, and Math. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

EET 087
Prog Logic Controllers II
Prerequisites: EET 086 or consent of instructor
This course covers advanced topics of the Micrologix 1000 PLC operation and programming using Rslogix500 software and Allen Bradley PLCs. Topics include Analog I/O, Math and Data handling instruction, program flow, message instructions, and communication protocols. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

Emergency Medical Services (EMS---)

EMS 010▼
Heartsaver First Aid/CPR/AED
Provide participants with a basic understanding for adult, child and infant cardiopulmonary resuscitation; foreign body airway obstruction removal maneuvers according to current American Heart Association guidelines. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

EMS 011▼
CPR for Healthcare Providers
Provide participants with a basic understanding for adult, child and infant cardiopulmonary resuscitation; automated external defibrillation; use of the BVM; and adult, child and infant foreign body airway obstruction removal maneuvers according to current American Heart Association guidelines. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

EMS 013▼
CPR for Healthcare Providers
Provide participants with a basic understanding for adult, child and infant cardiopulmonary resuscitation; automated external defibrillation; use of the BVM; and adult, child and infant foreign body airway obstruction removal maneuvers according to current American Heart Association guidelines. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

EMS 015▼
Heartsaver CPR and AED
Provide participants with a basic understanding for adult, child and infant cardiopulmonary resuscitation and foreign body airway obstruction removal maneuvers. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

EMS 017
Hazardous Materials Awareness
This program provides emergency medical services, law enforcement and industrial personnel a basic awareness of hazardous materials. Meets OSHA CFR 1910.120 requirements for Awareness level. (0.5 credits, 0.5 Lecture)

EMS 023▼
Responding to Terrorist Acts
Provide emergency medical services personnel with a better understanding of the various types of weapons of mass destruction and how this affects patient assessment and management. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

EMS 038
Prehospital Registered Nurse
Prerequisites: RIO license
The course will provide knowledge and skills required to prepare RNs to function as an entry level Prehospital Registered Nurse (PHRN). Emphasis is on the role of the PHRN, the recognition, assessment, and management of medical and traumatic emergencies. Course Level Fee NF (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

EMS 050▼
Emergency Medical Tech-Basic
Prerequisites: At least 18 years of age, high school diploma or GED and a current Healthcare Provider, or equivalent, CPR card. Immunizations: Hep B, TB, DT/ Tetanus, MMR (if you have immunizations, a copy of what you have is acceptable, physical exam, copy of current Driver's License or State I.D., Background check ($30 to EMS Office cash or money order), May be subject to random drug check.
Provides the student with an understanding of his/her roles and responsibilities within the EMS system, including operations, patient assessment, and emergency medical care. Students successfully completing this course will be eligible to take the EMT-Basic licensing examination. (Repeatable 3 Times) Course Level Fee 2 (6 credits, 6.5 Lecture, 2 Lab/Lab-Discussion)

EMS 053▼
Introduction to First Response
Introduction to First Response provides an introduction to the basic knowledge and skills necessary for emergency medical training. This course is designed for persons who are first on the scene of an injury or medical illness. (Repeatable 3 Times) (3 credits, 3 Lecture)

EMS 056▼
Paramedical Services I
Prerequisites: Admission into program; EMT B or I license
Provides the paramedic student with an understanding of his/her roles and responsibilities within the EMS system including safety, medical-legal issues, EMS operations, and specialized scene responses. (Repeatable 3 Times) Course Level Fee NF (6 credits, 4 Lecture, 4 Lab/Lab-Discussion)

EMS 057▼
Paramedical Services II
Prerequisites: EMS 056
Provides the paramedic student with the knowledge and skills to integrate the principles of kinetics, pathophysiology, and assessment findings to formulate a field impression and implement a treatment plan for the trauma patient. (Repeatable 3 Times) Course Level Fee NF (9 credits, 6 Lecture, 6 Lab/Lab-Discussion)

EMS 058▼
Paramedical Services III
Prerequisites: EMS 056, EMS 057
Provides the paramedic student with the knowledge and skills to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the medical patient. (Repeatable 3 Times) Course Level Fee NF (10 credits, 6 Lecture, 8 Lab/Lab-Discussion)

EMS 059▼
Paramedical Services IV
Prerequisites: EMS 056, EMS 057, EMS 058, EMS 062, EMS 065
Provides the paramedic student with the knowledge and skills to integrate pathophysiological principles and
assessments to formulate a field impression and implement a treatment plan for the medical, obstetric, pediatric, geriatric, or other special patients. (Repeatable 3 Times) Course Level Fee 4 (10 credits, 6 Lecture, 8 Lab/Lab-Discussion)

**EMS 062**

**EMS Pharmacology**

**Prerequisites:** EMS 056, EMS 057, EMS 065

Provides the paramedic student with the knowledge and skills to integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan. (Repeatable 3 Times) (2 credits, 2 Lecture)

**EMS 065**

**Paramedic Skills I**

**Prerequisites:** Admission into program; EMT B or I license

Provides the paramedic student with the skills needed for patient assessment and medical history; airway management and ventilation; clinical decision making; communications; and documentation. (Repeatable 3 Times) Course Level Fee NF (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

**EMS 066**

**Paramedic Skills II**

**Prerequisites:** EMS 056, EMS 057, EMS 058, EMS 062

Provides the paramedic student with the skills needed to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan. (Repeatable 3 Times) Course Level Fee NF (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

**EMS 070**

**First Responder**

Provides basic emergency medical training to those persons who might be first on the scene of an injury or medical illness. (Repeatable 3 Times) Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

**Emergency Medical Tech**

**EMT 010**

**EMT-Basic Refresher Course**

**Prerequisites:** EMT B license

Provides the current EMT-Basic with a review of knowledge and skills needed to function within the EMS system, including operations, patient assessment, and emergency medical care. Students successfully completing this course will receive EMT-Basic refresher credit towards license renewal. (Repeatable 3 Times) (2 credits, 2 Lecture)

**EMT 011**

**TNCC Provider Course**

**Prerequisites:** RN licensure

Provides core-level trauma knowledge and psychomotor skills associated with the delivery of professional nursing care to the trauma patient. Students successfully completing the course will receive provider recognition from the Emergency Nurses Association. (Repeatable 3 Times) Course Level Fee NF (1 credits, 0.5 Lecture, 0.75 Lab/Lab-Discussion)

**EMT 012**

**Special Topics in EMS**

Provides the students with information and/or practical skills pertaining to the functions required in the manner in which they perform their jobs in the Emergency Medical Services profession. (Repeatable 3 Times) (Variable Credit 0.5/2.5 credits, 2.5 Lecture)

**EMT 015**

**ENPC Provider Course**

**Prerequisites:** RN licensure

Provides core-level knowledge and psychomotor skills associated with the delivery of professional nursing care to the emergent pediatric patient. Students successfully completing the course will receive provider recognition from the Emergency Nurses Association. (Repeatable 3 Times) Course Level Fee NF (1 credits, 0.5 Lecture, 0.75 Lab/Lab-Discussion)

**EMT 020**

**BLS Instructor Course**

**Prerequisites:** Current CPR certification

Provides the student with the knowledge and skills needed to serve as faculty for AHA BLS and PBLBS Provider courses. Those successfully completing the course will receive instructor recognition from the American Heart Association. (Repeatable 3 Times) Course Level Fee NF (1 credits, 1 Lecture, 0.75 Lab/Lab-Discussion)

**EMT 021**

**Medical and Legal Aspects of EMS**

**Prerequisites:** EMS licensure

This program is designed to provide EMS personnel with a better understanding of how the legal system interacts with EMS. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

**EMT 024**

**Ethics in Prehospital Care**

**Prerequisites:** EMS licensure

This program is designed to provide EMS personnel with a better understanding of how ethics play a vital role in clinical decision making. (Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

**EMT 025**

**ACLS Provider Course**

Provides the physician, nurse, paramedic, or allied health professional with the knowledge and skills needed for the management of the emergent adult cardiovascular patient. Those successfully completing the course will receive provider recognition from the American Heart Association. (Repeatable 3 Times) Course Level Fee NF (1 credits, 0.5 Lecture, 0.75 Lab/Lab-Discussion)

**EMT 026**

**ACLS Instructor Course**

Provides the student with the knowledge and skills needed to serve as faculty for AHA ACLS Provider courses. Those successfully completing the course will receive instructor recognition from the American Heart Association. (Repeatable 3 Times) Course Level Fee NF (1 credits, 0.5 Lecture, 0.75 Lab/Lab-Discussion)

**EMT 030**

**PALS Provider Course**

Provides the physician, nurse, paramedic, or allied health professional with the knowledge and skills needed for the management of the emergent pediatric patient. Those successfully completing the course will receive provider recognition from the American Heart Association. (Repeatable 3 Times) Course Level Fee NF (1 credits, 0.5 Lecture, 0.75 Lab/Lab-Discussion)

**EMT 031**

**PALS Instructor Course**

Provides the student with the knowledge and skills needed to serve as faculty for AHA PALS Provider courses. Those successfully completing the course will receive instructor recognition from the American Heart Association. (Repeatable 3 Times) Course Level Fee NF (1 credits, 0.5 Lecture, 0.75 Lab/Lab-Discussion)

**EMT 050**

**Emergency Medical Tech-Basic**

Provides the student with an understanding of his/her roles and responsibilities within the EMS system, including operations, patient assessment, and emergency medical care. Students successfully completing this course will be eligible to take the EMT-Basic licensing examination. (Repeatable 3 Times) Course Level Fee NF (6 credits, 5 Lecture, 1.5 Lab/Lab-Discussion)

**EMT 070**

**First Responder**

Provides first response agencies and personnel with the knowledge and skills needed to function as an integral part of the EMS system. (Repeatable 3 Times) Course Level Fee NF (3 credits, 2 Lecture, 1.5 Lab/Lab-Discussion)
English (ENG---)

ENG 005
Foundations in Composition
This course enables students to upgrade writing skills through a concentration on grammar and sentence structure. Areas included are parts of speech, parts of sentence and punctuation. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 3 Lecture)

ENG 007
Composition Skills
Prerequisites: Must assess into ENG 007 or take ENG 005 with a minimum grade of “C”.
Students will review the basics of spelling, grammar, and the components of the short essay. Students will, by the end of the term, produce thoroughly revised essays that are free of all major grammar and readability errors. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 3 Lecture)

ENG 050
Writing for Industry
Students will learn strategies for writing essays, instructions manuals, proposals, reports, career documents as well as deliver oral presentations to prepare them for a profession in industry. Students will practice research strategies by using library resources and the Internet. Course Level Fee 2 (3 credits, 3 Lecture)

ENG 095
Business English
Using critical thinking skills, students will study and reinforce the basics of the English language as they apply to business communications. Emphasis is placed on grammar, punctuation, spelling, word usage, and sentence structure. Course Level Fee 2 (3 credits, 3 Lecture)

ENG 098
Communications I
Students will learn the principles of communications by listening, speaking, and writing. Emphasis is placed on communication skills related to the demands of the student's career area. Course Level Fee 2 (3 credits, 3 Lecture)

ENG 099
Communications II
Students will continue to enrich the listening, speaking, and writing skills introduced in Communications I. Emphasis is placed on research, report writing, and communication skills for the upwardly mobile career student. Course Level Fee 2 (2 credits, 2 Lecture)

ENG 110
Manual Comm-Deaf
Instruction in methods of communication with the deaf through signing. (3 credits, 3 Lecture)

ENG 111
Advanced Signing
Prerequisites: ENG 110
A continuation of Manual Communication for the Deaf. Advanced vocabulary and signing. (3 credits, 3 Lecture)

ENG 112
Conversational Sign Language
This course prepares students for signing conversations and stories with a focus on building narrative skills, moving from an informal setting to a more formal presentation by incorporating American Sign Language structure and grammar and exposure to deaf culture. (3 credits, 3 Lecture)

ENG 120
Composition I
IAI C1 900
Prerequisites: Must assess into ENG 120 or take ENG 007 with minimum grade of “C”.
Students will study the writing process by reading essays that illustrate a variety of rhetorical strategies, analyzing writing tasks and texts, and writing, revising, and editing short essays. Course Level Fee 2 (3 credits, 3 Lecture)

ENG 121
Composition II
IAI C1 901R
Prerequisites: Complete ENG 120 with a minimum grade of “C”.
Students will learn how to find, use, assess and document research sources, producing an extended writing project based primarily on library research. Course Level Fee 2 (3 credits, 3 Lecture)

ENG 122
Creative Writing - Fiction
Prerequisites: ENG 120 and ENG 121 advised
Students will understand the structure and elements of fiction and the writing process, produce fully-developed works of fiction, and demonstrate an understanding of the critical terminology of the creative writer. Course Level Fee 1 (3 credits, 3 Lecture)

ENG 123
Creative Writing - Poetry
IAI EGL 922
Prerequisites: ENG 120
Students will understand the structure and elements of poetry and the writing process, produce fully developed works of poetry and demonstrate an understanding of the critical terminology of the creative writer. (3 credits, 3 Lecture)

English as a Second Language (ESL---)

ESL 014
ESL-Entry Level I
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

ESL 015
ESL-Entry Level II
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

ESL 016
ESL-Entry Level III
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

ESL 017
ESL-Intermediate Level I
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

ESL 018
ESL-Intermediate Level II
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

ESL 019
ESL-Intermediate Level III
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

ESL 020
ESL-Advanced Level I
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)
ESL 021\(^\uparrow\)
ESL-Advanced Level II
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff.
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

ESL 022\(^\uparrow\)
ESL-Advanced Level III
Prerequisites: Placement is based on formal and informal assessment by Learning Assistance Center staff.
(Repeatable 3 Times) (Variable Credit 0.5/4 credits, 4 Lecture)

Esthetics (EST---)
EST 041
Esthetics I
Introduction to the principles and applications of basic skin care. The student is introduced to the history of skin care, professional ethics, sanitation, anatomy and physiology, and cosmetic chemistry. Course Level Fee 3 (6.5 credits, 5 Lecture, 4.5 Lab/Lab-Discussion)

EST 042
Esthetics II
Prerequisites: EST 041
Focuses on histology of the skin, disorders and diseases, skin analysis, correct product selection and treatment room preparation. Course Level Fee 3 (6.5 credits, 5 Lecture, 4.5 Lab/Lab-Discussion)

EST 043
Esthetics III
Prerequisites: EST 041, EST 042
This course is designed to introduce the esthetician to facial massage techniques, hair removal, make-up application, basic facials and other skin treatments. Course Level Fee 3 (6 credits, 5 Lecture, 5 Lab/Lab-Discussion)

EST 044
Esthetics IV
Prerequisites: EST 041, EST 042, EST 043
Focuses on the basics of electricity, light therapy, implements and electrical current used with facial machines and microdermabrasion. Course Level Fee 3 (6 credits, 5 Lecture, 5 Lab/Lab-Discussion)

EST 045
Esthetics V
Prerequisites: EST 041, EST 042, EST 043, EST 044
Continuation of Esthetics IV. Concentrated toward advanced esthetics, salon/spa business, retailing products and career planning. Course Level Fee 3 (6 credits, 5 Lecture, 5 Lab/Lab-Discussion)

Fire Science Technology (FST---)
FST 012\(^\uparrow\)
Special Topics - Fire Service Trends
Provide the students with information and/or practical skills pertaining to the functions required in the manner in which they perform their jobs in the Fire/ Emergency Services profession. (Repeatable 3 Times) (3 credits, 3 Lecture)

FST 040
Fire Behavior and Combustion
Explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. (3 credits, 3 Lecture)

FST 041
Principles of Emergency Services
Provides an overview to fire protection; including career opportunities; philosophy and history of fire protection/service; fire loss analysis; organization and function of private fire protection services; laws and regulations affecting the fire service; and fire service nomenclature. (3 credits, 3 Lecture)

FST 042
Occupational Safety and Health
Introduces basic concepts of risk evaluation, control procedures, EMS, hazardous materials, and technical rescue for fire stations, training sites, emergency vehicles and emergency situations involving fire. (3 credits, 3 Lecture)

FST 043
Building Construction
Provides the components of building construction that relate to fire and life safety with focus on firefighter safety. Elements of construction and design of structures are key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. (3 credits, 3 Lecture)

FST 044
Fire Prevention
Provides use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. (3 credits, 3 Lecture)

FST 045
Fire Investigation I
Provide the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire setter, and types of fire causes. (3 credits, 3 Lecture)

FST 046\(^\uparrow\)
Fire Service Safety & Survival
This course will provide basic principles and history related to the National Fire Life Safety Initiatives, focusing on cultural and behavioral change. Course Level Fee 4 (3 credits, 3 Lecture)

FST 070
Fire Protection Systems
Provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers. (3 credits, 3 Lecture)

FST 071
FST Hydraulics and Water Supply
Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. (3 credits, 3 Lecture)

FST 072
Legal Aspects of the Fire Service
Introduces the federal, state and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of relevant court cases. (3 credits, 3 Lecture)

FST 073
Fire Administration I
Provides student with education in fire science organization and management, administrative procedures and methods, budgeting, control of resources, and the maintenance of records. Discusses managerial attitudes and decisions, general organizational planning and career development. (3 credits, 3 Lecture)

FST 074
Fire Investigation II
Provides advanced technical knowledge on rule of law, fire scene analysis, fire behavior, evidence collection and preservation, scene documentation, case preparation and testifying. (3 credits, 3 Lecture)

FST 075
Fire Administration II
Provides student with education in fire service organization and management, administrative procedures and methods, budgeting, control of resources, and the maintenance of records. Discusses managerial attitudes and decisions, general organizational planning and career development. (3 credits, 3 Lecture)
Fire Strategy and Tactics
Provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. (3 credits, 3 Lecture)

Fire Service Instructor I
Provides up-to-date information required to meet the modern job performance requirements for the Fire Service Instructor I as outlined by the National Fire Protection Association, relating to the Safety during the Learning Process and Instructor Management. (3 credits, 3 Lecture)

Beginning German II
Prerequisites: FLG 150
Grammar and syntax are reviewed and continued on a more complex level than in the Beginning German course. The course will lead students to understand simplified Normal German texts and to engage in actual conversation on general issues. (Salzburg Program Only) (3 credits, 3 Lecture)

German Conversation I
Designed for beginners, accompany the grammar oriented “Beginning German” course. Based on language functions, presentation, practice and application. (Salzburg Program Only) (2 credits, 2 Lecture)

German Conversation II
Prerequisites: FLG 151
Grammar and exercises in composition, conversation and reading. Reading of advanced literacy works. (3 credits, 3 Lecture)

Intermediate German I
Prerequisites: FLG 151
This course is designed for students with at least three semesters of college-level German. Dialogues and tests are more complex nature and conversation is developed towards guided discussions. (Salzburg Program Only) (2 credits, 2 Lecture)

German Conversation II
Prerequisites: FLG 251
Course is designed for students to expand and deepen their knowledge of German grammar, pronunciation, phonetics, rhythm and intonation, reading, writing and German culture. Instruction will emphasize the four modes of expression as well as culture. (3 credits, 3 Lecture)

German Conversation III
Prerequisites: FLG 252
This refresher course is intended to meet the needs of certified food service managers seeking renewal of

Food Certificate Renewal-FSSM
This course covers the principles of food microbiology, sources, and types of foodborne illness, personal hygiene, and all other rules and regulations for the safe handling of food. (2 credits, 2 Lecture)

Food Service Sanitation
This course is about the world's great realms, surveyed and discussed in geographic perspective. It links human society and culture to the world's natural environment and climates. (3 credits, 3 Lecture)

World Geography
IAI S4 900N
This course provides an introduction to advanced applications of Geographic Information Systems (GIS) using ArcView and ArcInfo. Focus will be placed on technician level issues associated with data capture and associated quality control issues associated with developing accurate information. Course Level Fee 1 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

Advanced GIS
This course provides an introduction to Geographic Information Systems (GIS) projects in the community. Students should complete GIS-090 and GIS-091 and arrange for an advisor prior to enrolling in an internship. Course Level Fee 1 (3 credits, 1.5 Lab/Lab-Discussion)
their five year Illinois FSSMC certificate after October 1, 1999. The core elements of the 30 clock hour course will be emphasized. (0.5 credits, 0.5 Lecture)

HED 102 Nutrition
A basic course in nutritional education including: food groups, diet goals, energy nutrients, digestion, absorption and metabolism. Water, vitamins, and minerals will be studied. Diet analysis and disease of digestion will be covered. (3 credits, 3 Lecture)

HED 177 First Aid Review
A review of the latest methods used in cardiopulmonary resuscitation. A renewed CPR card will be given at the successful completion of the course. (0.5 credits, 0.5 Lecture)

HED 178 Responding to Emergencies
The purpose of the American Red Cross Responding to Emergency course is to provide the citizen responder with the knowledge and skills necessary in an emergency to help sustain life. Course Level Fee 1 (2 credits, 2 Lecture)

HED 179 Advanced 1st Aid and CPR
Studies all phases of advanced first aid and safety. Also includes Cardiopulmonary resuscitation (CPR). Students receive an Advanced First Aid card and a CPR card with the successful completion of the course. Course Level Fee 3 (3 credits, 3 Lecture)

HED 200 Principles of Health
This course is designed to explore the most important health issues current and past. Helping students to make responsible decisions that will affect them throughout their life. Focus will be on interrelating behavior with one's own health decisions. (3 credits, 3 Lecture)

HED 270 Community Health
A study of public health, school health, occupational health, social and recreational services and self-care. (3 credits, 3 Lecture)

HED 290 Disease Processes
Prerequisites: BIO 100
The course details with the epidemiology of the major communicable diseases and the causative factors of the degenerative diseases. Historical aspects of diseases are studied. The system of human immunity is the second unit covered. (2 credits, 2 Lecture)

Heat Vent Air Cond Refg (HVC---)

HVC 060 HVACR Blueprint Reading
This course prepares students to read and interpret blueprints for heating, ventilation, air conditioning and refrigeration systems. Students learn how to employ proper drafting techniques to develop a set of plans and prepare an estimate of cost for a project. Course Level Fee 1 (4 credits, 2 Lecture, 4 Lab/Lab-Discussion)

HVC 062 Intro to HVACR Electricity
This course covers principles of electricity as used in the HVACR industry including circuits, electrical theory and schematic interpretation. Students learn to use hand tools and test equipment. Safety and application of math skills are stressed. Employability skills are introduced. Course Level Fee 1 (4 credits, 1 Lecture, 6 Lab/Lab-Discussion)

HVC 064 Refrigeration I
This course covers the basic refrigeration cycle, as well as refrigeration components and types of refrigerants. Students work with tools and gauges, measure temperatures and pressures and practice refrigeration safety procedures. Course Level Fee 1 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

HVC 066 Refrigeration II
This course covers the troubleshooting of refrigeration systems, including light commercial. Reclaiming procedures are covered and employability and career planning skills are stressed. Students also prepare for certification exams. Course Level Fee 1 (5 credits, 1 Lecture, 8 Lab/Lab-Discussion)

HVC 068 Air Conditioning I
This course covers various types of air conditioning systems and their components. Humidification, dehumidification, and air filtration and heat pump operation are covered, as well as installation procedures for each type of system. Course Level Fee 1 (4 credits, 2 Lecture, 4 Lab/Lab-Discussion)

HVC 070 Air Conditioning II
In this course students learn to design and troubleshoot various types of air conditioning systems. Heat Load and heat loss calculations are made and HVACR job search skills are stressed. Course Level Fee 1 (4 credits, 1 Lecture, 6 Lab/Lab-Discussion)

HVC 072 Heat Generating Systems
This course covers principles of working with LP and natural gas. Procedures for installing and troubleshooting gas, oil and electric furnaces are covered. Safety and leak testing are stressed. Course Level Fee 1 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

HVC 074 Pipe & Ductwork Installation
This course covers ductwork fabrication and installation. An introduction to fabrication practices and procedures, layout, and heating and refrigeration piping is provided. Safety practices are stressed. Course Level Fee 1 (4 credits, 1 Lecture, 6 Lab/Lab-Discussion)

History (HIS---)

HIS 150 History of Illinois
Describe Indian cultures, French rule, and problems of early statehood; assess patterns of settlement; describe impact of Civil War and trace the economic transition to an industrial power; assess 20th Century changes and current states problems. (3 credits, 3 Lecture)

HIS 153 History/Culture of Third World
IAI H2 903N
The course will introduce the student to history and culture in the third world from ancient civilizations to the modern era. This course will focus upon broad themes in history and culture and will examine those themes in each major historical era. (3 credits, 3 Lecture)

HIS 155 History of the U.S. I
S2 900, HST 911
A survey of early American history viewed with an emphasis on the political, social, economic, and ideological foundations of the Republic. Major topics include colonialism, revolution, federalism, nationalism, sectionalism, expansion, slavery, religion, Civil War. (3 credits, 3 Lecture)

HIS 156 History of the U.S. II
S2 901, HST 912
Views U.S. History since the end of Reconstruction with emphasis on how the domestic and international conflicts helped shape our modern society. (3 credits, 3 Lecture)
HIS 250
Western Civil to 1660
IAI H2 901
A survey of the political, economic, cultural and social development of Western Civilization to 1660. Topics include prehistory, ancient near east, Greco-Roman world, Germanic migrations, middle ages, Renaissance and Reformation, and the beginnings of the Modern World. (3 credits, 3 Lecture)

HIS 252
West Civil/1660-Present
IAI H2 902
Survey of Western Civilization with topics including absolutism, the rise of modern science, the French Revolution, the Industrial Revolution, the Age of Ideology, Imperialism, the Russian Revolutions, World War I, the Rise of Totalitarianism, World War II and the Contemporary Age. (3 credits, 3 Lecture)

Horticulture (HRT---)

HRT 061
Woody Plants Identification
A study in the identification of deciduous trees and shrubs used primarily in landscaping. Emphasis is placed on cultural requirements of the plants, their natural habitat, and plant usage. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 063
Evergreen/Vines & Ground Cover
A study in the identification, selection, use, propagation, and cultural requirements of woody and herbaceous ground covers, vines, needled evergreens, and broad-leaved evergreen plants. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 066
Turf Management
Methods of establishment and maintenance of turfgrass for lawns, public grounds, and recreational areas. Also includes the identification and management of plant and soil materials in different environments. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 071
Herbaceous Landscape Plants
A study in the identification, selection, and use of herbaceous plants primarily used in the landscape, including perennials, biennials, ornamental grasses, wildflowers and specialty annuals. Emphasis is placed on cultural requirements of the plants, propagation, and plant usage. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 072
Herbaceous Landscape Plants II
Covers the identification and use of flowering (bedding) annuals, specialty annuals, and tropical plants used for outdoor displays. Improvement in selection, changes in marketing and branding, and new trends are discussed. Emphasis is placed on use in the Illinois landscape. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 076
Greenhouse Mgt and Production
A study of the commercial production of floricultural crops, including greenhouse construction, management and operation. Attention will be given to the production of better plants through the study of temperature, light, soil, nutrition, scheduling, propagation methods, and plant breeding. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 081
Landscape Design
This class will cover the basic principles of landscape design, methods and techniques of the landscape design process for residential and commercial settings, including an appreciation of various landscape theories and objectives, art in landscape design, and special landscape problems. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 082
Landscape Construction & Maint
Students will learn construction methods for residential and small commercial landscapes; selection and installation of plants; techniques and uses of materials related to various landscape features; prepare cost estimates; control of landscape diseases and pests; and maintenance of landscape areas. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 083
Landscape Design II – Layout/Graphics
This course reviews the design processes and techniques as they apply to residential landscape designs and integrates them into landscape projects. Course will include pen and ink graphic design techniques, freehand sketching, preparing quick designs, perspective sketching, and color drawing. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

HRT 091
Supervised Occupational Experience I
This course provides introductory on the job experience as a full-time employee in selected horticulture production or landscaping. Course Level Fee 3 (3.5 credits, 0 Lecture, 17.5 Lab/Lab-Discussion)

HRT 092
Supervised Occupational Experience II
This course provides intermediate level on the job experience as a full-time employee in selected horticulture production or landscaping occupation. Course Level Fee 3 (2.5 credits, 0 Lecture, 12.5 Lab/Lab-Discussion)

HRT 093
Supervised Occupational Experience III
This course provides advanced on the job experience as a full-time employee in selected horticulture production or landscaping occupation. Course Level Fee 3 (3 credits, 0 Lecture, 15 Lab/Lab-Discussion)

HRT 201
Introduction to Horticulture
A study and introduction to the principles and practices involved in the development, production, and use of horticultural crops (fruits, vegetables, greenhouse, turf, nursery, floral, and landscape). Course will include a broad overview of the green industry including propagation, production and design. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

Human Services (HSP---)

HSP 053
Work Experience Seminar I
Prerequisites: HSP 103, HSP 122, 30 sem hrs required and 2.0 GPA
This course accompanies the field experience class. These seminars give opportunity to provide individual assessment and assist with job competence. (1 credits, 1 Lecture)

HSP 054
Field Experience I
Prerequisites: HSP 103, HSP 122, 30 sem hrs required and 2.0 GPA
This course provides 150 hours of supervised employment in various human service agencies. Course Level Fee 3 (2 credits, 10 Lab/Lab-Discussion)

HSP 055
Work Experience Seminar II
Prerequisites: HSP 053, HSP 054
This course accompanies the field experience class. Seminars give opportunity to provide individual assessment and assist with job competence. (1 credits, 1 Lecture)
HSP 056
Field Experience II
Prerequisites: HSP 053, HSP 054
This course provides 150 hours of supervised employment in various human service agencies. Course Level Fee 3 (2 credits, 10 Lab/Lab-Discussion)

HSP 057
Work Experience Seminar III
Prerequisites: HSP 055, HSP 056
This course accompanies the field experience class. These seminars give opportunity to provide individual assessment and assist with job competence. (1 credits, 1 Lecture)

HSP 058
Field Experience III
Prerequisites: HSP 055, HSP 056
This course provides 150 hours of supervised employment in various human service agencies. Course Level Fee 3 (2 credits, 10 Lab/Lab-Discussion)

HSP 065
Intro to Substance Abuse
This course encompasses social, psychological, and medical views of drug use. The historical evolution of drug use and regulation, the differences between drug use, misuse, and abuse and their consequences. (3 credits, 3 Lecture)

HSP 101
Dynamics of Domestic Violence
Study of dynamics of Domestic Violence, focusing on program philosophy, cultural diversity, direct relation of substance abuse, crisis intervention, understand II. Domestic Violence Act, criminal aspects, battering treatment & how Domestic Violence affects children & our society. (3 credits, 3 Lecture)

HSP 102
Behavior Management
This course introduces the learning principles of behavior modification, measurement and strategies to change human behaviors in educational and clinical settings. (3 credits, 3 Lecture)

HSP 103
Foundations of Human Services
Foundations in the discipline of human services, including: Historical origins, ethics and values, skill development, roles of the profession, career opportunities, challenges, examination of diverse and at-risk populations, and policy issues in human services. (3 credits, 3 Lecture)

HSP 120
Introduction to Social Work
An introduction to generalist practice: Historical origins, values and ethics, practice methods, research considerations, and policy issues in social work. Examination of diverse and at-risk populations; the wide variety of problems workers confront, knowledge and skills of the worker. (3 credits, 3 Lecture)

HSP 122
Social Welfare
A study of the history, purpose, philosophy, methods and values governing social welfare, with an overview of the American social welfare system, programs and structure of service delivery. Examination of the relationships among social welfare systems and institutional structures. (3 credits, 3 Lecture)

HSP 123
Policies of Social Work Practice
An introduction to generalist practice: Historical origins, values and ethics, practice methods, research considerations, and policy issues in social work. Examination of diverse and at-risk populations; the wide variety of problems workers confront, knowledge and skills of the worker. (3 credits, 3 Lecture)

Humanities (HUM---)

HUM 120
Myths and Legends
IAI H9 901
Prerequisites: ENG 120; minimum grade of “C”
An introduction to major myths and legends spanning from Ancient Greece to Modern America with an emphasis on how the motifs, archetypes, and themes are consistently revived in popular culture. (3 credits, 3 Lecture)

HUM 150
Humanities Through the Arts
IAI HF 900
Students will survey the human condition as revealed through the arts, including an examination of painting, sculpture, architecture, literature, drama, film, photography, and music. (3 credits, 3 Lecture)

HUM 151
Nature in the Humanities
IAI HF 900
An interdisciplinary study of literary, philosophical and historical relationships between the natural environment and the human condition. Focus will be placed on the appreciation of nature and its effect on human endeavor. (3 credits, 3 Lecture)

Independent Study (INS---)

INS 100
Internship/Cooperative Education
This course is supervised internships experience at a business or organization and customized to meet the needs of students served through the Cooperative Work Study Program. This course is managed in the Career Services Office. (Repeatable 3 Times) Course Level Fee NF (Variable Credit 0.5/4 credits, 20 Lab/Lab-Discussion)

INS 101
Independent Study
(Repeatable 3 Times) For more information about this course or to secure a contract to take an independent study please contact the Associate Vice President for Educational Services 217-234-5427. (Variable Credit 0.5/4 credits, 4 Lecture)

Industrial Maintenance (IND---)

IND 042
Pipefitting Procedures
Focuses on the basic principles of installation and maintenance of industrial piping systems. Mechanical joining methods are stressed. Course Level Fee 1 (1 credits, 0.5 Lecture, 1 Lab/Lab-Discussion)

IND 043
Heat Vent A/C I
Develops basic understanding of the refrigeration cycle, basic terms, system components, controls and test equipment. Student learns proper use of tools and test equipment to do basic troubleshooting. Course Level Fee 2 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

IND 044
Fluid Power
Provides the mechanic with the basic concepts of pneumatics and hydraulics. It will concentrate on prime movers and their controls. Course Level Fee 3 (3 credits, 2.5 Lecture, 1 Lab/Lab-Discussion)

IND 045
Heat Vent A/C II
Prerequisites: IND 043
Continues study of Heating, Ventilating, and Air Conditioning I. Course studies various types of heating, ventilating, and air conditioning systems, applications, load calculations, psychrometric principles, plus maintenance, repair and servicing of refrigeration units. Course Level Fee 1 (4 credits, 2 Lecture, 4 Lab/Lab-Discussion)
IND 046
Basic Electrical Maintenance
Provides the student with the basic electrical theory and hands-on experience using a variety of basic test equipment. Course Level Fee 1 (3 credits, 2.5 Lecture, 1 Lab/Lab-Discussion)

IND 052
Electrical Installation Procedures
Prerequisites: EET 040, EET 050
Focuses on the methods and materials used in electrical installation, and the problems encountered in construction work. The National Electrical Code is used as a guide. Course Level Fee 1 (2.5 credits, 1 Lecture, 3 Lab/Lab-Discussion)

IND 054
Trouble Shooting and Preventative Maint
Prerequisites: EET 040, EET 050
Provides those skills and insights necessary to detect and solve problems which occur in industrial machinery. Includes procedures aimed at prevention rather than emergency action. Course Level Fee 1 (Variable Credit 0.5/3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

IND 056
Pneumatic Controls
This course is designed to provide a basic understanding of pneumatic control systems related to power plant technology. Students learn industry-relevant skills including how to operate, install, and analyze performance of basic pneumatic systems. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

IND 058
Industrial Pumps
This course is designed to provide a basic understanding of repair and maintenance of industrial centrifugal and positive displacement pumps. Students learn industry-relevant skills including how to: install, maintain, troubleshoot, analyze performance, and select centrifugal and positive displacement pumps. (Repeatable 3 Times) Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

IND 060
Industrial Valves
This course is designed to provide a basic understanding of industrial control valves and actuators. Students learn industry-relevant skills including how to: operate, install, maintain, and analyze performance of control valves and actuators. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

IND 062
Rigging and Hoisting
This course is designed to provide a basic understanding of hoisting and rigging equipment. Safety regulations will be discussed along with determination of safe working loads and proper care of equipment. (Repeatable 3 Times) Course Level Fee 3 (1 credits, 1 Lecture)

Information Literacy
LIB 100
Intro to Information Literacy
Students will study available resources and research methods that help them understand how to use library and Internet resources. Students will formulate a research strategy, develop search skills, and evaluate sources. Course Level Fee 2 (1 credits, 1 Lecture)

Information Technology Train (ITT---)
ITT 040
IT Computer Applications Crt Internship
Prerequisites: Completion of 15 semester hours in IT Computer Applications certificate with 2.0 minimum GPA
Designed to give Computer Applications students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) Course Level Fee NF (1 credits, 5 Lab)

ITT 041
IT Computer Apps Degree Internship
Prerequisites: Completion of 50 semester hours in IT Computer Applications program with 2.0 minimum GPA
Designed to give Computer Applications students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) (2 credits, 10 Lab)

ITT 042
IT Net Admin Cert Internship
Prerequisites: Completion of 15 semester hours in IT Network Administration certificate with 2.0 minimum GPA
Designed to give Network Administration students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) (2 credits, 5 Lab)

ITT 043
IT Network Admin Degree Internship
Prerequisites: Completion of 50 semester hours in IT Network Administration program with 2.0 minimum GPA
Designed to give Network Administration students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) (2 credits, 1 Lecture, 10 Lab)

ITT 044
IT Programming Certificate Internship
Prerequisites: Completion of 15 semester hours in IT Programming Certificate with 2.0 minimum GPA
Designed to give Programming students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) (2 credits, 5 Lab)

ITT 045
IT Programming Degree Internship
Prerequisites: Completion of 50 semester hours in IT Programming Degree with 2.0 minimum GPA
Designed to give Programming students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) (2 credits, 10 Lab)

ITT 046
IT Web Technology Cert Internship
Prerequisites: Completion of 15 semester hours in IT Web Technology certificate with 2.0 minimum GPA
Designed to give Web Technology students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) (1 credits, 5 Lab)

ITT 047
IT Web Technology Degree Internship
Prerequisites: Completion of 50 semester hours in IT Web Technology degree with 2.0 minimum GPA
Designed to give Web Technology students on-the-job experience. The students must work in the community in a computer related area. (Repeatable 3 Times) (2 credits, 10 Lab)

ITT 048
IT Digital Media Certificate Internship
Prerequisites: Completion of 15 semester hours in IT Digital Media with 2.0 minimum GPA
Designed to give Digital Media Specialist students on-the-job experience. The
students must work in the community doing video, web, or animation production. (Repeatable 3 Times) Course Level Fee 2 (1 credits, 5 Lab)

**ITT 049**

**Introduction to Digital Video**

An introductory course covering the basic terminology, techniques, and equipment used in professional and prosumer video productions. The concentration will be on understanding fundamentals as the techniques and editing of the video will be covered in a later class. (Repeatable 3 Times) (2 credits, 2 Lecture)

**ITT 050**

**IT Game Development Cert Internship**

**Prerequisites:** Completion of 15 semester hours in IT Game Development certificate with 2.0 minimum GPA

Designed to give Game Development students on-the-job experience. The students must work in the community in an animation, modeling or programming related area. (Repeatable 3 Times) Course Level Fee NF (1 credits, 5 Lab)

**ITT 053**

**Digital Media Arts**

**Prerequisites:** CIS 088 recommended

An introduction to using digital technology to produce artistic creations on the computer. Students will learn basic art theories of design, color, typography, and visual elements and how to apply them in a digital environment. (3 credits, 3 Lecture)

**ITT 054**

**Mobile Application Development**

**Prerequisites:** CIS 156

This course is a study of mobile device programming using the Java language. Development of mobile applications including user interfaces, user input, variables, icons, decision making, lists, arrays, web browsers, audio, pictures, tablets, animation, Google maps, and publishing are covered. (Repeatable 3 times) (3 credits, 3 Lecture)

**ITT 064**

**Human Computer Interaction Lab**

**Prerequisites:** CIS 062, CIS 063

A practical, lab-based class that concentrates on the design, development, and implementation of physical and electronic computer interfaces. The goal is to extend the reality of computer use and/or game play using both currently available and custom hardware and software. (Repeatable 3 Times) (3 credits, 6 Lab/Lab-Discussion)

**ITT 066**

**Indie Game Development Lab**

**Prerequisites:** Complete CIS 065

This course is a production class that mimics the game development environment in an indie development house. Methods of production will be covered, options will be discussed and assignments will be made based on skill and ability. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 6 Lab/Lab-Discussion)

**ITT 068**

**Digital Video Effects**

**Prerequisites:** Complete ITT 066

This course is a continuation of post-production techniques that includes but is not limited to compositing, chromakeying, rotoscoping, motion tracking, matte effects, 3D production techniques and motion graphics. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

**Intensive English Language (IEL---)**

**IEL 001**

**Beg Reading/Vocabulary 1**

The course is designed for students with limited knowledge of English reading and vocabulary fundamentals. Students will be taught basic phonics and alphabet skills. Emphasis will be placed on reading simple passages containing basic vocabulary and expressions necessary to function in everyday life. (Repeatable 3 Times) Course Level Fee NF (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

**IEL 003**

**Beg Grammar/Writing 1**

The course is intended for students with limited knowledge of English grammar and writing. Students will be taught sentence structure and rules of grammar and will begin to use English in writing simple sentences and basic paragraphs. (Repeatable 3 Times) Course Level Fee NF (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

**IEL 005**

**Beg Speaking/Listening 1**

The course is designed for students with limited knowledge of spoken English. Student will concentrate on improving oral English skills in order to function in everyday life and in academic settings. Practice will include working with phonics, conversation, and listening. (Repeatable 3 Times) Course Level Fee NF (4 credits, 2 Lecture, 4 Lab/Lab-Discussion)

**IEL 007**

**Int Reading/Vocabulary 1**

The course is intended to develop vocabulary and reading at the intermediate level. Students will review phonics, expand vocabulary, practice outlining and summarizing, and increase their comprehension through work on reading for the main idea, and recognizing supporting details. (Repeatable 3 Times) Course Level Fee NF (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

**IEL 009**

**Int Grammar/Writing 1**

The course is designed to increase knowledge of grammar and writing techniques at the intermediate level. Students will review and expand on English grammar rules and sentence structures and will use English to write compound and complex sentences, paragraphs, and short papers. (Repeatable 3 Times) Course Level Fee NF (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

**IEL 011**

**Int Speaking/Listening 1**

The course is designed to improve speaking and listening skills at the intermediate level. Students will expand their ability to converse in English and work on improving their oral skills for everyday interaction and for academic settings. (Repeatable 3 Times) Course Level Fee NF (4 credits, 2 Lecture, 4 Lab/Lab-Discussion)

**IEL 013**

**Adv Reading/Vocabulary 1**

The course is designed to improve reading and vocabulary skills for students at the advanced level. Emphasis will be placed on expanding vocabulary and developing the ability to read college level texts, newspapers, magazines, and journals. (Repeatable 3 Times) Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

**IEL 015**

**Adv Grammar/Writing 1**

The course is designed to assist the non-native speaker in attaining an advanced knowledge of English grammar and writing. Students will study skills needed in college level composition classes. (Repeatable 3 Times) Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

**IEL 017**

**Adv Speaking/Listening 1**

The course is designed to improve speaking and listening skills for students at the advanced level. English of a more complex nature will be stressed. Emphasis will be on oral communication skills for academic application. (Repeatable 3 Times) Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)
IEL 019
Beg English Non-Native Speaker
The course is designed for students with limited knowledge of English. Students will be introduced to basic English phonics and alphabet skills and will begin to learn reading, grammar, speaking, and listening in English. Course Level Fee NF (5 credits, 4 Lecture, 2 Lab/Lab-Discussion)

IEL 021
Int English Non-Native Speaker
The course is intended to develop vocabulary, reading, grammar, and oral English skills at the intermediate level. Students will review and expand reading and writing skills and improve oral English skills. Course Level Fee NF (5 credits, 4 Lecture, 2 Lab/Lab-Discussion)

JDA 043
John Deere SOE III
Prerequisites: JDA 042 or instructor consent
Students will receive on-the-job experience in a John Deere dealership. This will allow them to practice and utilize the skills and knowledge learned previously. This work will be supervised by the sponsoring dealership and a Lake Land College John Deere Ag Tech instructor. Course Level Fee 4 (4 credits, 20 Lab/Lab-Discussion)

JDA 073
JD Shop Skills & Fundamentals
Prerequisites: JDA 080, JDA 091, TEC 048 or higher
This course is a study of the theory and principles of operation of John Deere conventional and STS combines, corn heads, and grain platforms. Pre-delivery, set-up, and adjustment of combines and headers will be performed. Course Level Fee 3 (2.5 credits, 1.5 Lecture, 2 Lab/Lab-Discussion)

JDA 080
John Deere Fuel Systems
Prerequisites: JDA 042 or instructor approval
Basic understanding of the operating principles of John Deere fuel systems. Students will also learn diagnosis, removal, installation, and repair of John Deere mechanical and electrical-electronic fuel system components. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)
Intro to Journalistic Photography

Teaches the student basic photographic techniques, including uses of different types of cameras, principles of the taking of photographs, darkroom procedures for film development and printing, photographic editing, cutline writing, and examination of current trends in journalistic photography. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

Law Enforce/Criminal Justice (CJS--)

CJS 054  Correction Officer/Cycle Trng
Cycle training consists of 40 clock hours of mandatory refresher topics provided by the Department of Corrections. Topics may include: review of administration directives, first aid & safety, security, report writing and legal issues, substance abuse and related topics. (2.5 credits, 2 Lecture)

CJS 064  Spec Prob in Law Enforcement
This course focuses on controversial issues facing the criminal justice and correctional systems such as corruption, brutality, politics, crime prevention, high risk situations, hostage negotiations, protective custody and many others. (4 credits, 4 Lecture)

CJS 071  Orientation to Corrections
A study of the history of corrections, criminal law, rights of the convicted offender, types of detentions, correctional management, release from prison and juvenile corrections. (3 credits, 3 Lecture)

CJS 101  Special Topics Correction Mgt
Allows students to identify a current issue in correctional management and develop techniques for improvement. (1 credits, 1 Lecture)

CJS 104  Criminal Justice Seminar & Internship
Prerequisites: Sophomore standing; 12 credit hours of CJS classes. Off-campus work experience in the criminal justice field. Students will be assigned to a criminal justice agency(s) and observe the criminal justice field. Open to criminal justice majors only. Subject to internship coordinator and agency approval, including background check. Prerequisites: Sophomore standing; 12 credit hours of CJS classes. Course Level Fee 3 (4 credits, 1 Lecture, 15 Lab/Lab-Discussion)

CJS 150  Intro/Criminal Just
IAI CRJ 901
Focuses on an overview of the justice system with emphasis on the total system of police, courts, and corrections. (3 credits, 3 Lecture)

CJS 152  Criminal Investigation I
Focuses on the fundamentals of investigation, crime scene applications, and investigative techniques and procedures. Upon completion of this course, the student will understand the theory and practicality of investigation from crime scene to courtroom. (3 credits, 3 Lecture)

CJS 153  Police Operations
This course focuses on the duties and responsibilities of the patrol officer. Topics covered will include routine patrol, traffic enforcement, and officer survival. (3 credits, 3 Lecture)

CJS 156  Criminal Law
IAI CRJ 913
A study of the concept of social order, examining criminal law. Crime is defined and examined as is criminal responsibility, mental state, physical act and other fundamental legal doctrines. (3 credits, 3 Lecture)

CJS 158  Juvenile Justice
IAI CRJ 914
Designed to familiarize the student with development and trends in the juvenile justice system. It includes delinquency prevention, causation of juvenile crime, and treatment and control of the juvenile delinquent. (3 credits, 3 Lecture)

CJS 160  Criminal Evidence and Procedure
Prerequisites: CJS 156
Focuses on the application of Constitutional law. Procedural responsibilities of the police as they apply to the constitutional rights of the individual will be emphasized. (3 credits, 3 Lecture)

CJS 166  Corrections
IAI CRJ 911
Enables the student to develop an understanding of the current problems in correctional institutions. Sentencing trends, alternatives to incarceration, inmate life of population, and their effect on the system will be examined. (3 credits, 3 Lecture)

Learning Assistance Center (TUT--)

TUT 013  Basic Memory Dynamics
(Repeatable 3 Times) (0.5 credits, 0.5 Lecture)
TUT 023  
Test Taking Strategies  
(Repeatable 3 Times) (1 credits, 1 Lecture)

TUT 026  
Relieving Computer Anxiety  
(Repeatable 3 Times) (0.5 credits, 0.5 Lecture)

Literature (LIT---)

LIT 130  
Intro to Literature  
IAI H3 900  
Prerequisites: Complete ENG 120 with a minimum grade of “C”  
Students will read, examine, and discuss a variety of literary works from different genres as a way to analyze and understand the value, purpose, and components of Literature. (3 credits, 3 Lecture)

LIT 144  
Introduction to Shakespeare  
Introduction to Shakespeare as a literary and dramatic writer; study of three Shakespeare plays in Elizabethan/Jacobean theater, ideas, culture, politics, modern critical debates and changing styles of production. Examination of individual plays; relationships, cultural, ideological, theatrical contexts and aspects. (3 credits, 3 Lecture)

LIT 147  
Introduction to Fiction  
H3 901, EGL 917  
Prerequisites: ENG 120; Minimum grade C  
Students will read, discuss, and analyze short stories and novels written by different authors from a variety of time periods as a way of appreciating and understanding the purposes, forms, terms, and critical approaches associated with these two literacy modes. (3 credits, 3 Lecture)

LIT 150  
Children's Literature  
Prerequisites: ENG 120; Minimum grade C  
Study of various forms and types of literature for the intellectual stimulation of the small child and storytelling and oral interpretation techniques. (3 credits, 3 Lecture)

LIT 250  
Amer Literature Survey I  
H3 914, EGL 911  
Prerequisites: ENG 120; Minimum grade C  
Students will read and study American literary works written between 1600 - 1860 that are indicative, reflective of the time period's influential authors and evolving ideas. (3 credits, 3 Lecture)

LIT 251  
Amer Literature Survey II  
H3 915, EGL 912  
Prerequisites: ENG 120; Minimum grade C  
Students will read, study, and examine American literary works written after the Civil War to the present that are reflective of the time period's significant literary movements and changing intellectual, social, and political perspectives. (3 credits, 3 Lecture)

LIT 252  
Multicultural American Lit  
H3 910D, EGL 918  
Prerequisites: ENG 120; Minimum grade C  
An introduction to the literary and cultural traditions of Native American, African American, and Hispanic American people and to general issues of cultural marginalization of minorities in the American experience. (3 credits, 3 Lecture)

LIT 260  
English Lit Survey I  
H3 912, EGL 913  
Prerequisites: ENG 120; Minimum grade C  
Students will read and study British literary works to 1800 that are indicative and reflective of the time period's influential authors and evolving ideas. (3 credits, 3 Lecture)

LIT 261  
English Lit Survey II  
H3 913, EGL 914  
Prerequisites: ENG 120; Minimum grade C  
Students will read and study British literary works from 1800 to the present that are indicative and reflective of the time period's influential authors and evolving ideas. (3 credits, 3 Lecture)

LIT 270  
Literature/Women  
IAI H3 911D  
Prerequisites: ENG 120; Minimum grade C  
Students will study women as both writers and characters in literature written by women in English. Students will explore important themes and ideas, as well as learn about form, technique, and literary terms. (3 credits, 3 Lecture)

LIT 274  
Bible As Literature  
IAI H5 901  
Prerequisites: ENG 120; Minimum grade C  
Students will read the Old Testament, Apocrypha, and New Testament. By studying in the Bible's many genres and tones, students will discover that after many centuries the Bible remains a compelling literary masterpiece. (3 credits, 3 Lecture)
This course will discuss ethics dealing with a variety of situations that can occur between therapist and client. The Massage Therapist Code of Ethics will be reviewed. Student will learn about state laws and regulations governing massage therapy and licensure. (1 credits, 1 Lecture)

**MAS 075**
**Massage Therapy III**
Prerequisites: MAS 065
This course is designed to build on more contemporary and bodywork techniques. Chair massage, hydrotherapy, sports massage, trigger point therapy, and others will be discussed and practiced. Course Level Fee 3 (5 credits, 4 Lecture, 2 Lab/Lab-Discussion)

**MAS 077**
**Massage Clinic I**
Prerequisites: MAS 065
This course is a supervised in house clinical practicum, in which the students will apply newly acquired skills of therapeutic massage to clients, including Swedish Massage, Chair Massage, Sports Massage and Reflexology. Course Level Fee 3 (1.5 credits, 3 Lab/Lab-Discussion)

**MAS 085**
**Massage Therapy IV**
Prerequisites: MAS 075
This course will introduce the student to Asian bodywork and continue to build on additional contemporary and bodywork techniques. The student will learn new and adaptive massage techniques including floor Shiatsu, myofascial release, infant massage, geriatric massage and aromatherapy. Course Level Fee 3 (5 credits, 4 Lecture, 2 Lab/Lab-Discussion)

**MAS 087**
**Massage Clinic II**
Prerequisites: MAS 077
This course is a supervised in house clinical practicum, in which the students will apply new and previously acquired skills of therapeutic massage to clients, including Swedish Massage, Chair Massage, Sports Massage, and Shiatsu. Course Level Fee 3 (1.5 credits, 3 Lab/Lab-Discussion)

**Mathematics (MAT---)**

**MAT 001▼**
**Pre-Algebra**
Prerequisites: Placement by assessment
A course enabling students to review and improve math skills. Emphasis is on the following topics: fractions, decimals, percents, proportion, measurement, simple geometry, signed numbers and algebraic equations. Techniques for overcoming math anxiety will be interwoven throughout the course. (Repeatable 3 Times) (3 credits, 3 Lecture)

**MAT 005▼**
**Beginning Algebra**
Prerequisites: Placement by assessment or MAT 001 grade of C or higher
This course is for students with little or no working knowledge of elementary algebra. Emphasis is placed on manipulative skills with real numbers, solving linear equations and inequalities and systems of equations, functions, and properties of linear functions. A graphing calculator is required. Ask instructor for calculator recommendation. (Repeatable 3 Times) (3 credits, 3 Lecture)

**MAT 006▼**
**Intermediate Algebra**
Prerequisites: Placement by assessment or MAT 005 grade of 'C' or higher
This course is for students with some working knowledge of elementary algebra. Emphasis is placed on exponents, polynomials, factoring, quadratic functions, rational expressions, roots and radicals. A graphing calculator is required. Ask instructor for calculator recommendation. (Repeatable 3 Times) (4 credits, 4 Lecture)

**MAT 008▼**
**Math Literacy**
Prerequisites: Placement by assessment or MAT 001 grade of "C" or higher
This course is an introductory course integrating numeracy, proportional reasoning, algebraic reasoning and functions. It is intended for non-math and non-science majors needing MAT 125 Statistics or MAT 116 General Education. Successful completion of this course satisfies the geometry requirement. (Repeatable 3 Times) (6 credits, 6 Lecture)

**MAT 009**
**Geometry**
Prerequisites: Placement by assessment or MAT 005
This course is an introductory course in plane geometry for students with less than one year of high school geometry. Topics included, but not limited to, are: lines, angles, proofs, triangles, Pythagorean theorem, circles, various geometrical formulas and coordinate geometry. (3 credits, 3 Lecture)

**MAT 090**
**Math for Computer Applications**
Prerequisites: Placement by assessment or MAT 005
Covers mathematical concepts used in the computer and business field. Topics include algebra; addition, subtraction, multiplication, division of decimals and fractions; hexadecimal, binary and octal number systems. Problem solving techniques will be used to solve business-related narrative problems. (3 credits, 3 Lecture)
MAT 116
General Education Math
IAI M1 904
Prerequisites: Placement by assessment or either MAT 006 or MAT 008 with a grade of 'C' or higher; also 1 year HS geometry or MAT 009
Survey of mathematical topics with emphasis on solutions to real life problems. Topics will include sets/logic, counting techniques, probability, and statistics. Problem solving projects involving detailed written solutions will be required. Calculators and computers will be used. (3 credits, 3 Lecture)

MAT 118
Math for Elem Teachers I
Prerequisites: Placement by assessment or MAT 006 grade ‘C’ or higher; also 1 year HS geometry or MAT 009
A course designed for Elementary Education majors. Topics include number theory, probability and statistics, development of numeration systems, sets, functions, mathematical reasoning and problem solving. Counts as general education requirement for elementary education majors when taken in sequence with MAT 218. (3 credits, 3 Lecture)

MAT 125
Statistics
IAI M1 902
Prerequisites: Placement by assessment or either MAT 006 or MAT 008 with a MAT 006 grade ‘C’ or higher; also 1 year HS geometry or MAT 009
Application of elementary principles of descriptive statistics including frequency distribution, graphical presentation, measure of location and variation. Elements of probability, sampling techniques, binomial and normal distribution and other topics. (3 credits, 3 Lecture)

MAT 130
College Algebra
Prerequisites: Placement by assessment or MAT 006 grade of ‘C’ or higher; also 1 year HS geometry or MAT 009
Review of the real number system, radicals, equations, and exponents, relations and functions, logarithms, complex numbers, polynomials, and theory of equations. A graphing calculator is required. Ask instructor for calculator recommendation. (3 credits, 3 Lecture)

MAT 132
Trigonometry
Prerequisites: MAT 130 with grade of ‘C’ or higher
Study of trigonometric functions, trigonometric identities, graphing, solving trigonometric equations, inverse trigonometric functions, right triangle trigonometry, application of law of sines and law of cosines, complex numbers and vectors. A graphing calculator is required. Ask instructor for calculator recommendation. (3 credits, 3 Lecture)

MAT 140
Algebra With Trigonometry
Prerequisites: Placement by assessment or MAT 006 grade of ‘C’ or higher; also 1 year HS geometry or MAT 009
A unified study of the algebraic and trigonometric concepts needed for calculus. Credit not granted for both this course and College Algebra. A graphing calculator is required. Ask instructor for calculator recommendations. (5 credits, 5 Lecture)

MAT 151
C Program W/Engineering Appl
IAI EGR 922
Prerequisites: MAT 241 with grade of ‘C’ or higher
Introduction to the programming language C. Fundamental principles, concepts, and methods of computing with emphasis on calculus-based problem-solving techniques and applications from engineering and physical science. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

MAT 210
Finite Mathematics
IAI M1 906
Prerequisites: Placement by assessment or MAT 130 with grade of ‘C’ or higher; also 1 year HS geometry or MAT 009
An introduction to Finite Mathematics, matrices, linear systems of equations and inequalities, linear programming, counting theory and probability. (3 credits, 3 Lecture)

MAT 211
Math Analysis
IAI M1 900
Prerequisites: Placement by assessment or MAT 130 with grade of ‘C’ or higher; also 1 year HS geometry or MAT 009
Mathematical analysis of polynomial calculus with applications to business and social sciences including the mathematics of finance, techniques and applications of differentiation and integration, optimization theory and area. A graphing calculator is required. Ask instructor for calculator recommendation. (3 credits, 3 Lecture)

MAT 218
Math for Elem Teachers II
IAI M1 903
Prerequisites: MAT 118 with grade of ‘C’ or higher
The study of the concepts and theory of measurement and geometry via the problem-solving approach, using both calculators and microcomputers throughout. Designed for Elementary Education majors. Counts as general education requirement for elementary education majors when taken in sequence with MAT 118. (3 credits, 3 Lecture)

MAT 241
Analytical Geometry and Calculus I
IAI M1 900-1
Prerequisites: Placement by assessment or MAT 140 with grade of ‘C’ or higher; MAT 130 and MAT 132 may be substituted for MAT 140 with Division Chair approval; also 1 year HS geometry or MAT 009
Differential and integral calculus of elementary functions of one variable, such as polynomial, rational, radical, trigonometric, inverse trigonometric, exponential and logarithmic functions, will be covered. Applications include rates of change, optimization, curve sketching and area. A graphing calculator is required. Ask instructor for calculator recommendations. (5 credits, 5 Lecture)

MAT 242
Analytical Geometry and Calculus II
IAI M1 900-2
Prerequisites: MAT 241 with grade of ‘C’ or higher
A continuation of Calculus I with emphasis on different methods of integration and applications. L’Hôpitals Rule, Sequences, series, Power series, Taylor series and Maclaurin series. A graphing calculator is required. Ask instructor for calculator recommendations. (4 credits, 4 Lecture)

MAT 243
Analytical Geometry and Calculus III
IAI M1 900-3
Prerequisites: MAT 242 with grade of ‘C’ or higher
A continuation of analytic geometry and Calculus II. The focus is on solid analytic geometry, vectors, partial derivatives, line, volume and surface integrals in various coordinate systems, and vector fields. A graphing calculator is required. Ask instructor for calculator recommendations. (4 credits, 4 Lecture)

MAT 245
Differential Equations
EGR 904,MTH 912
Corequisite: MAT 243
Designed for pre-engineering students and others who need a working knowledge of ordinary differential equations. (3 credits, 3 Lecture)
MAT 255  
Linear Algebra  
IAI MAT 911  

Prerequisites: MAT 241 with grade of 'C' or higher  
A first course in linear algebra covering linear systems, matrices, determinants, vector spaces, inner product spaces, and eigenvalues and eigenvectors, including proofs of theorems and propositions in each topic. (3 credits, 3 Lecture)

Mechanical Electrical Tech (MET—–)

MET 040  
D.C. Circuits  
This course introduces the student to basic theory of DC electricity. Corequisite courses: TEC 048 TEC 050, Course Level Fee 1 (2.5 credits, 1.5 Lecture, 2 Lab/Lab-Discussion)

MET 042  
A.C. Circuits  
Prerequisites: MET 040  
This course presents the theory of AC electricity and the application of transformers and distribution equipment. Course Level Fee 1 (2.5 credits, 1.5 Lecture, 2 Lab/Lab-Discussion)

MET 043  
Motors and Generators  
Prerequisites: EET 050 or MET 042  
This course focuses on the installation, maintenance and application of motors, equipment and controls. Course Level Fee 1 (2.5 credits, 1.5 Lecture, 2 Lab/Lab-Discussion)

MET 044  
Introduction to Robotics  
Introduced concepts of robotics by examining the history of robots, how robots are classified, how they fit into the manufacturing picture, and what is needed to program them. (1 credits, 1 Lecture)

MET 045  
Mechanical Drive Systems  
This course is designed to provide a basic understanding of mechanical drive systems and components. Students will learn industry-relevant skills including how to: install, analyze performance, maintain, and troubleshoot heavy duty mechanical transmission systems. (Repeatable 3 Times) Course Level Fee 3 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

MET 076  
Supervised Occupational Experience  
Designed to provide work experience in field while maintaining contact with occupational instructor for review and assistance. Course Level Fee NF (Variable Credit 0.5/6 credits, 15 Lab/Lab-Discussion)

MET 080  
Solid State Devices & Apps  
Prerequisites: EET 050 or MET 042  
Provides the student with a basic understanding of the most frequently used discrete semiconductors. Analog and digital integrated circuits also are studied. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

MET 084  
Technical Mechanisms  
Prerequisites: CAD 056, TEC 054  
Focuses on motion analysis of mechanical system components such as linkages, slider-crank mechanisms, working connectors, cams, gears and gear trains. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

Medical Coding Specialist (MCS—–)

MCS 040  
Health Information for Professionals  
An introduction and overview to health information management. The course will cover the history and the many applicable fields available to a health information management specialist. Students will explore the different areas of health information. (3 credits, 3 Lecture)

MCS 050  
Principles of CPT Coding  
Prerequisites: MCS 050  
A beginner's course for the CPT coding system. This class will provide students with a general understanding of the format and guidelines necessary for CPT coding. (3 credits, 3 Lecture)

MCS 055  
Principles of ICD-10-CM Coding  
A beginner's course in ICD-10-CM coding and guidelines. Students will be introduced to a wide variety of coding segments and body systems. (3 credits, 3 Lecture)

MCS 056  
Credentialing/Emerging Coding  
Prerequisites: MCS 050, MCS 055  
This course covers HCPCS coding, basic physician credentialing, and an introduction to ICD-10-CM. Prerequisites: MCS 050, MCS 055 (3 credits, 3 Lecture)

MCS 060  
Medical Ins Reimbursement  
An advanced course concerning medical insurance billing and reimbursement. This course will focus on insurance companies such as Blue Cross and Blue Shield, Medicare, and Medicaid. (3 credits, 3 Lecture)

MCS 065  
Adv CPT Coding and Modifiers  
Prerequisites: MCS 050  
An advanced course that explores the different subsections of the CPT and correct coding of procedures. Students will familiarize themselves with CPT coding by coding case studies and scenarios. (3 credits, 3 Lecture)

MCS 068  
Medical Management and Ethics  
Prerequisites: MCS 040  
This course covers the management of a medical office as well as ethics, biomedical ethics, and ethical challenges affecting the medical manager. Prerequisites: MCS 040 (3 credits, 3 Lecture)

MCS 070  
Advanced ICD-10-CM Coding  
Prerequisites: MCS 055  
An advanced course specializing in all aspects of ICD-10-CM coding. This course will focus on specific body systems and not the overall aspect of ICD-10-CM coding. (3 credits, 3 Lecture)

MCS 075  
Hospital-Med Coding Internship  
Prerequisites: PNC 055, BIO 050, MCS 050, MCS 055  
This course provides students with the opportunity to intern in a hospital setting. It provides supervised work experience coordinated with a healthcare systems related employer. A minimum of 62.5 hours of internship time is required for one credit hour. Course Level Fee NF (1 credits, 5 Lab/Lab-Discussion)

MCS 080  
Clinic-Med Coding Internship  
Prerequisites: PNC 055, BIO 050, MCS 050, MCS 055  
This course provides students with the opportunity to intern in a clinic setting. It provides supervised work experience coordinated with a healthcare systems related employer. A minimum of 62.5 hours of internship time is required for one credit hour. Course Level Fee NF (1 credits, 5 Lab/Lab-Discussion)
MCS 095
Hospital Coding Certification Prep
Prerequisites: MCS 060, MCS 065, MCS 070 or consent of instructor
An exam preparation course that will provide students with a comprehensive review for the CPC-H and CCS exams. (1 credits, 1 Lecture)

MCS 090
Clinical Coding Certification Prep
Prerequisites: MCS 060, MCS 065, MCS 070 or consent of instructor
An exam preparation course that will provide students with a comprehensive review for the CPC and CCS-P exams. (1 credits, 1 Lecture)

MCS 091
Healthcare Statistics
Prerequisites: AHE 055
This course is a statistics class focused on calculating and reporting healthcare statistics and the common formulas used by hospitals and physician offices. Prerequisites: AHE 055 (3 credits, 3 Lecture)

MCS 092
Medical Records and the Law
Prerequisites: MCS 040, MCS 068
This is an advanced course focused on the American legal system and the impact the law has on medical records, health information in general, and HIPAA. Prerequisites: MCS 040, MCS 068 (3 credits, 3 Lecture)

Military Science (MSL---)

MSL 101
ROTC-Leadership Personal Development
MSL 101 introduces the personal challenges and competencies that are critical for effective military leadership. The focus is on developing knowledge and comprehension of Army leadership dimensions while gaining an understanding of the ROTC program and advantages for the student. (1 credits, 1 Lecture)

MSL 102
ROTC-Intro to Tactical Leadership
MSL 102 overviews military leadership fundamentals: setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Dimensions of leadership values, attributes, skills, and actions in context of practical hands-on interactive exercises will be explored. (1 credits, 1 Lecture)

MUS 104
Lake Land Community Choir
IAI MUS 908
Instruction in choral music and experience. (Repeatable 3 Times) Course Level Fee NF
(M1 credits, 2 Lab/Lab-Discussion)

MUS 126
Class Instruction in Piano I
IAI MUS 901
Prerequisites: No piano experience or consent of instructor
A beginning course in piano study. Course Level Fee NF (1 credits, 2 Lab/Lab-Discussion)

MUS 127
Class Instruction in Piano II
IAI MUS 902
Prerequisites: MUS 126 or consent of instructor
Class instruction in piano literature and skills. Required of music majors. Course Level Fee NF (1 credits, 2 Lab/Lab-Discussion)

MUS 150
Music in American History & Culture
IAI F1 904
A survey of the musical forms and styles in the United States from the music of the early colonists to the popular music of today. Musical forms and styles are considered in their cultural context. (3 credits, 3 Lecture)

MUS 229
Understanding Music
IAIFI 900
A general humanities course studying various types and forms of music and the historical development of the art form. Surveys music literature from Middle Ages to present. (3 credits, 3 Lecture)

Philosophy (PHI---)

PHI 232
World Religions
IAI H4 905
This course is designed to promote cultural diversity associated with religious practices. It includes a survey of religious systems and examines concepts and theories related to the nature of deities, good and evil, reason and faith, ethics, and afterlife. (3 credits, 3 Lecture)

PHI 270
Introduction to Philosophy
IAI H4 900
An introduction to philosophical questioning and reasoning. This course will include an historical survey of western philosophy focusing on the development of specific branches within the field, including epistemology, metaphysics, ethics, philosophy of science, and social/political philosophy. (3 credits, 3 Lecture)

PHI 280
Ethics
IAI H4 904
Introduction to issues and theories of ethics. Includes historical survey of major value systems and contemporary issues. (3 credits, 3 Lecture)

PHI 290
Intro to Logic
IAI H4 906
Introduction to formal reasoning, including: language and meaning, deduction and induction, evidence, syllogistic argument and science and hypotheses. (3 credits, 3 Lecture)

Physical Education (PED---)

PED 109
Basketball
Class designed to teach basic skills, rules and regulations, and allow students to participate in physical activity. Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 112
Bowling
This course is designed for the beginning bowler and for those who wish to learn a recreational activity. Course Level Fee 3 (1 credits, 2 Lab/Lab-Discussion)

PED 113
Advanced Bowling
Prerequisites: PED 112 or proof of skill or instructor consent
Class is designed to teach advanced bowling skills, rules and regulations of bowling, and allow students to participate in physical activity. Course Level Fee 3 (1 credits, 2 Lab/Lab-Discussion)

PED 116
Golf
Designed to help a student understand and appreciate golf. Will teach the basic skills and techniques for golf as a recreational and physical activity for all ages. (Repeatable 3 Times) Course Level Fee 3 (1 credits, 2 Lab/Lab-Discussion)
PED 117
Advanced Golf
Prerequisites: PED 116
Golf instruction for the advanced golfer. Course designed to increase the skill level. (Repeatable 3 Times) Course Level Fee 3 (1 credits, 2 Lab/Lab-Discussion)

PED 119
Karate
Prerequisites: PED 119
An introduction to the world of Martial Arts with emphasis on the art of Tae Kwon Do. Students will learn basic terminology, skills, and self-defense. In about two years, the student should be close to a black belt. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 123
Karate II
Prerequisites: PED 119
Designed to continue a broad range of activities in Tae Kwon Do training, oriented toward physical fitness, positive self-attitude, a sense of respect for others in society, self-defense and fun. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 137
Tennis
Beginning course introducing the student to the game of tennis and tennis skills. Basic skills of forehand and backhand serving are emphasized. Course Level Fee 3 (1 credits, 2 Lab/Lab-Discussion)

PED 138
Advanced Tennis
Prerequisites: PED 137 or proof of skill or instructor consent
An advanced course in tennis. Emphasizing advanced skills and techniques of tennis and in setting up tournaments. Course Level Fee 3 (1 credits, 2 Lab/Lab-Discussion)

PED 141
Weight Training
To introduce to the student the basic principles of weight training, to demonstrate and participate in various programs, and increase strength. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 143
Aerobics
The course is designed to acquaint students with different exercise routines to improve their overall physical condition, progress from an intermediate level to a more advanced level. Routines are executed to upbeat music. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 152
Theory of Motor Learning
Provides a study of the different theories of the acquisition of motor skills and the nature of human locomotion. (3 credits, 3 Lecture)

PED 160
Trap and Skeet Shooting
Basic techniques of shooting the shotgun clay target games of Trap and Skeet. Students will be familiarized with the safe handling, operation, and cleaning of shotguns and shot shell reloading. (Repeatable 3 Times) Course Level Fee 4 (1 credits, 2 Lab/Lab-Discussion)

PED 172
Bsc Act Elem/Sec Child
Focuses on games and activities for elementary and secondary level including body mechanics, basic exercises and rhythms. Includes team games for secondary level. EDU-101 is taken simultaneously. (2 credits, 2 Lecture)

PED 183
Introduction to Physical Education
Focuses on the general scope, purpose, history, growth, and development of Physical Education. (3 credits, 3 Lecture)

PED 185
B-Ball/V-Ball Sports Officiate
Focuses on the general scope of sports officiating. Successful completion of the class allows the student to write IHSA for the officials exam. (3 credits, 3 Lecture)

PED 209
Aerobic Fitness
Class is designed to teach basic skills, rules and regulations, and to allow students to participate in weight training and cardiovascular activities. Student will be given a grade according to the number of minutes performed in the semester. (Repeatable 3 Times) Course Level Fee 2 (1 credits, 2 Lab/Lab-Discussion)

PED 210
P/F Aerobic Fitness
Class is designed to teach basic skills, rules and regulations, and to allow students to participate in weight training and cardiovascular activities. Pass or Fail will be given at the end of the semester. (Repeatable 3 Times) Course Level Fee 2 (1 credits, 2 Lab/Lab-Discussion)

PED 219
Karate III
Prerequisites: PED 123
Students have learned the basics and are ready for more advanced techniques. Higher physical and mental skills are emphasized. Greater confidence and awareness of personal ability will promote self improvement. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 223
Karate IV
Designed to be the final step for reaching the Black belt status. At this point the student will possess the knowledge, but must learn more self-control. Students will learn how to demonstrate power and all they have learned. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 224
Karate V
Introduces the student to leadership responsibilities and more advanced techniques. Emphasis will be placed on power and “fine” motor skills. (Repeatable 3 Times) Course Level Fee 1 (1 credits, 2 Lab/Lab-Discussion)

PED 226
Theory of Baseball
This course focuses on rules and history of baseball, basic skills, organizing practices, and acquiring a general knowledge of baseball. This prepares the student to teach and coach baseball. Course Level Fee 2 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

PED 227
Theory of Basketball
Students are taught the necessary skills to conduct classes and coach the sport of basketball. Drills, game techniques and strategies are practiced in the lab situation. Each student will teach a unit in basketball theory. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

PED 228
Tech Bowling/Golf
Prerequisites: PED 112, PED 116 or consent of instructor
Course offered for the individual who is interested in how to teach or coach golf/bowling. Course Level Fee 3 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)
PED 243
Tech Badmtn/Tennis
Prerequisites: PED 137
Course offered for the individual who may show an interest in how to teach or coach tennis/badminton. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

PED 244
Kinesiology
Prerequisites: BIO 100, BIO 299 or BIO 225
The study of functional musculoskeletal anatomy, muscle actions, and the laws of physics used in the performance of human motion. (4 credits, 4 Lecture)

PED 285
Fitness for Life
An individual approach to assist students to develop a lifetime of wellness through fitness. The course includes a thorough physical fitness/risk factor assessment battery. Students will be required 2 hours of physical workout a week. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/ Lab-Discussion)

Physical Therapist Assistant (PTA---)

PTA 080
Fundamentals of PTA I
Prerequisites: Admission to Program.
An introduction to the profession of Physical Therapy and the role of the PTA within the health profession. This course provides basic physical therapy skills including: body mechanics, transfers, bed mobility, gait training, aseptic techniques, and assessment of vital signs. (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

PTA 081
PTA Clinical Practicum I
Prerequisites: Admission to Program
An in-house laboratory practice of skills and techniques corresponding with Fundamentals of PTA I (PTA 080). Students will observe in a nursing home setting. Course Level Fee 2 (1 credits, 5 Lab/ Lab-Discussion)

PTA 082
Fundamentals of PTA II
Prerequisites: Fundamentals of PTA I (PTA 080), Clinical Practicum I (PTA 081), minimum GPA 2.00
This course provides physical therapy skills including the use of therapeutic heat and cold, electrical stimulation, massage techniques, goniometry, wound management and laboratory practice. Students will be introduced to prosthesis and orthotics. Course Level Fee 1 (6 credits, 4 Lecture, 4 Lab/Lab-Discussion)

PTA 085
PTA Clinical Practicum III
Prerequisites: Fundamentals of PTA I (PTA 080), Clinical Practicum 1 (PTA 081), Fundamentals of PTA II (PTA 082), minimum GPA 2.00
A full time, supervised clinical practice in a physical therapy facility. Students will participate in selected patient care skills and techniques learned in Fundamentals of PTA I (PTA 080), Clinical Practicum I (PTA 081) and Fundamentals of PTA II (PTA 082). Course Level Fee 2 (3 credits, 15 Lab/Lab-Discussion)

PTA 093
Pathology for PTA
Prerequisites: Fundamentals of PTA III (PTA 094), Orthopedic Concepts and Applications (PTA 095), PTA Clinical Practicum IV (PTA 097)
This course will discuss the etiology, symptoms, risk factors, pathogenesis, and prognosis of specific disease. Medical practices for treatment of these diseases and illnesses will be discussed along with special implications for the PTA. Pharmacology will also be discussed. (2 credits, 2 Lecture)

PTA 094
Fundamentals of PTA III
Prerequisites: Fundamentals of PTA II (PTA 082), Clinical Practicum III (PTA 094), minimum GPA 2.00 in PTA curriculum.
This course is a continuation of the skills and knowledge used by a PTA. Concentration is on muscle testing, length testing, therapeutic exercise and postural analysis. Course Level Fee 2 (6 credits, 3 Lecture, 6 Lab/Lab-Discussion)

PTA 095
Orthopedic Concepts & Appl
Prerequisites: Clinical Practicum III (PTA 094), Fundamentals of PTA II (PTA 082), concurrent enrollment in Fundamentals of PTA III (PTA 094), minimum GPA 2.00
The course focuses on orthopedic diagnoses and rehabilitation. Normal gait will be analyzed. (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

PTA 096
Fundamentals of PTA IV
Prerequisites: Fundamentals of PTA III (PTA 094), Orthopedic Concepts and Applications (PTA 095), Clinical Practicum IV (PTA 097), minimum GPA 2.00
This course emphasizes assessment and treatment of specific areas. These areas include: neurological conditions, pediatrics, geriatrics, obstetrics, cardiopulmonary, industrial, and manual therapy. Course Level Fee 2 (5 credits, 3 Lecture, 4 Lab/Lab-Discussion)

PTA 097
PTA Clinical Practicum IV
Prerequisites: PTA Clinical Practicum III (PTA 094), Fundamentals of PTA III (PTA 095), Orthopedic Concepts and Applications (PTA 095), minimum GPA 2.00
Full time, supervised clinical practice experience at a physical therapy facility. Students will participate in selected patient care skills and techniques learned in Fundamentals of PTA III (PTA 094) and Orthopedic Concepts and Applications (PTA 095) while continuing to progress previously learned skills. Course Level Fee 2 (2 credits, 10 Lab/Lab-Discussion)

PTA 098
PTA Seminar
Prerequisites: Fundamentals of PTA III (PTA 094), Orthopedic Concepts and Applications (PTA 095), PTA Clinical Practicum IV (PTA 097)
Preparation to enter into the work force as a Physical Therapist Assistant. This course emphasizes liability issues, Medicare guidelines, administration, health insurances, and ethical aspects. Licensure preparation and the exchange of clinical experiences are incorporated. (2 credits, 2 Lecture)

PTA 099
PTA Clinical Practicum V
Prerequisites: PTA Clinical Practicum IV (PTA 094), Pathology for PTA (PTA 093),Fundamentals of PTA IV (PTA 096), PTA Seminar (PTA 098), minimum GPA 2.00 in PTA curriculum.
Final full time, supervised clinical practicum experience at a physical therapy facility to prepare as an entry level Physical Therapist Assistant. Student will perform selected previously learned skills. Course Level Fee 2 (4 credits, 20 Lab/ Lab-Discussion)

Physics (PHY---)

PHY 110
Concepts of Physics
IAI P1 900L
Phenomena-oriented course, emphasizing everyday life applications for the general student. Elementary mechanics, electricity, heat and modern physics are studied. This course counts towards the general education science requirement. Course Level Fee 3 (4 credits, 3 Lecture, 2 Lab/ Lab-Discussion)
PHY 115
Astronomy
IAI P1 906
This course covers the history and future prospects of astronomy, the night sky, the Earth as compared to Venus and Mars, the death of stars, and cosmology. Emphasis is also placed on the influences that astronomy has had on culture. (3 credits, 3 Lecture)

PHY 130
College Physics I
IAI P1 900L
Prerequisites: MAT 132 or HS Trig
This course covers Newtonian Mechanics, heat, fluid motion. Intended for students in the pre-professional areas, arts and sciences, and four year technology majors. It is not intended for students who plan to major (or minor) in physics or engineering. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

PHY 131
College Physics II
Prerequisites: PHY 130
An introduction to electricity and magnetism, wave motion, optics and basic modern physics for pre-professional, arts and sciences, and four year technology majors. This course is to be taken with PHY-130 to form a complete sequence. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

PHY 140
University Physics I
IAI P2 900L
Prerequisites: MAT 241
This is a study of Newtonian Mechanics. The course is for physics majors and minors, engineering students and the mathematically oriented student. This is the first of a three-course sequence. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

PHY 141
University Physics II
IAI PHY 912
Prerequisites: PHY 140 with grade of ‘C’ or higher, MAT 242
This course is a study of heat, electricity, and magnetism for students in physics, engineering, chemistry, and mathematics. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

PHY 142
University Physics III
IAI PHY 914
Prerequisites: PHY 141 with grade of ‘C’ or higher, MAT 243
This course is a study of wave motion, sound, light, and modern physics for students in physics, engineering, chemistry, and mathematics. Course Level Fee 3 (4 credits, 3 Lecture, 3 Lab/Lab-Discussion)

PHY 239
Mechanics I
IAI EGR 942
Prerequisites: PHY 140 with grade of ‘C’ or higher, MAT 242
This course is a study of the mechanics of static, rigid bodies for engineering students. (3 credits, 3 Lecture)

PHY 240
Mechanics II
IAI EGR 943
Prerequisites: PHY 239 with grade of ‘C’ or higher and corequisite MAT 243 and MAT 245
This course is a study of the mechanics of rigid bodies and systems of particles for engineering students. Corequisite courses: MAT 243, MAT 245 (3 credits, 3 Lecture)

PHY 245
Solid Mechanics
Prerequisites: PHY 239 with grade of ‘C’ or higher and corequisite MAT 243
This course is the study of the relationship between the external loadings on a deformable object and the resulting deformations and internal stresses and strains. (3 credits, 3 Lecture)

Political Science (POS---)

POS 160
American National Government
SS 900, PLS 911
The fundamental principles of the American Government are summarized. Such topics as federalism, civil liberties, citizenship, parties and elections, the Presidency, Congress, Judiciary, and national policies and politics are discussed within the framework of the American Constitutional system. (3 credits, 3 Lecture)

POS 162
State/Local Govern
SS 902, PLS 915
Focuses on legal authority, structure, leadership and functions of state, county, city, township, and special district governments. The Illinois State Constitution is analyzed. (3 credits, 3 Lecture)

POS 264
Intro/Interntnl Rel
SS 904N, PLS 912
An examination of the nation-state system and the sources of conflict in the international community. Comparative political economic systems are studied, as well as the rise of multi-national corporation and international organizations. (3 credits, 3 Lecture)

Power Plant Technology (PPT---)

PPT 050▼
Power Plant Technology I
This course is designed to provide a basic understanding in the operation of equipment used in the production of electricity, including water systems, combustion systems, boiler systems, turbines, generators, cooling towers, condensers and electrical distribution systems are discussed. (Repeatable 3 Times) (3 credits, 3 Lecture)

PPT 052▼
Power Plant Technology II
This course is designed to provide an advanced understanding in the operation of power plant systems. Topics include: startup, shutdown, routine operation/maintenance and fault resolution. (Repeatable 3 Times) (2 credits, 2 Lecture)

PPT 054▼
Power Plant Technology Physics
This course is designed to provide a basic understanding of the physical measurements that are performed on various power plant systems. (Repeatable 3 Times) Course Level Fee 1 (3 credits, 2.5 Lecture, 1 Lab/Lab-Discussion)

PPT 056
Power Plant Technology III
This course provides students with an understanding of water treatment methods, instrumentation, and environmental regulations pertaining to fossil fuel power plants. (3 credits, 3 Lecture)

PPT 075▼
Supervised Occupational Experience
Designed to provide the student with work experience in the field while maintaining contact with an instructor for review and assistance. Course Level Fee NF (5 credits, 15 Lab/Lab-Discussion)

Practical Nursing (PNC---)

PNC 049
Found of Nursing
Prerequisites: Admissions to the PN Program
An introduction to human anatomy and physiology beginning at the molecular level. Nutrition essentials are covered. These topics are related to nursing and disease prevention, promotion, maintenance and restoration. (6 credits, 6 Lecture)
PNC 050  
Practical Nursing I  
Prerequisites: Admission to the PN Program  
Introduces the role of the PN as a provider of care and member of the profession. Using a concept-based approach, the nursing process, critical thinking, and technology will be used to introduce evidence-based care to diverse populations. Basic health, wellness, and illness concepts will be introduced. Course Level Fee 4 (10 credits, 7 Lecture, 9 Lab/Lab-Discussion)

PNC 052  
Practical Nursing II  
Prerequisites: PNC 049, PNC 050, PNC 051  
Student utilizes the nursing process in the health promotion, maintenance and restoration of the individual, family and community. Clinical assignments progress from simple to complex. Course Level Fee 3 (15 credits, 11 Lecture, 12 Lab/Lab-Discussion)

PNC 053  
Basic Pharmacology I  
Prerequisites: Admission to PN Program  
The nursing process and the role of drug therapy in the prevention of disease, promotion of health and treatment of disease provides the framework in this study of pharmacology and the administration of medication. Corequisite courses: PNC 052, Course Level Fee 3 (2 credits, 2 Lecture)

PNC 054  
Practical Nursing III  
Prerequisites: PNC 052 PNC 053  
Continuation of PNC 052. Student continues mastery of skills and concepts integrating the nursing process in health promotion, maintenance and restoration activities. Course Level Fee 3 (7 credits, 5 Lecture, 6 Lab/Lab-Discussion)

PNC 055  
Basic Pharmacology II  
Prerequisites: PNC 052 PNC 053  
Continuation of PNC 053. The nursing process and the role of drug therapy in the prevention of disease, promotion of health and treatment of disease provides the framework in this study of pharmacology and the administration of medication. Corequisite courses: PNC 054 (1 credits, 1 Lecture)

Print Technology (PMT---)

PMT 050  
Print Technology I  
This course provides a basic overview of the printing industry and the printing process from small job shops to large employer. (3 credits, 3 Lecture)

PMT 052  
Print Technology II  
Prerequisites: PMT 050  
Using Print Technology I as a basis for information this course outlines the overview of the industry but with emphasis on the various print processes. (3 credits, 3 Lecture)

PMT 054  
Electronic Prepress  
Prerequisites: PMT 050, PMT 052  
This course provides a basic overview with a working understanding of the printing industry and the printing process and the knowledge it takes to go from idea to reality using Electronic Prepress techniques. Course Level Fee 1 (6 credits, 12 Lab/Lab-Discussion)

PMT 074  
Print Technology Seminar  
Prerequisites: CIS 090, CIS 097  
Designed as an introduction to Print Technology and Desktop Publishing apprenticeship. Consists of an overview of print process and techniques used in the print industry. Focuses on print terminology and hands-on experience. (1 credits, 1 Lecture)

PMT 075  
Print Tech Apprenticeship  
Prerequisites: Admission to the PN Program  
Designed to provide employment experience in a position that will utilize and develop print technology skills. Corequisite courses: PMT 074, Course Level Fee NF (6 credits, 30 Lab/Lab-Discussion)

Programmable Logic Controllers (PLC---)

PLC 040  
Fundamentals of Instrumentation  
Fundamentals of DC and AC, methods of analysis, capacitance, inductance, magnetism, simple transistors, and transformers. Analysis of circuits using a variety of theorems and reasoning. Multisim software is utilized to simulate methods of analysis. (3 credits, 3 Lecture)

PLC 050  
PLC I-Allen Bradley SLC5/0x  
This course covers basic PLC operation and programming using RsLogix 500 software and Allen Bradley SLC 5/0x processors. Topics include: Serial and Ethernet communications, Basic ladder design, Input-Output, Timers, Counters, Batch Processes, Shift registers, Sequencers, Word compare, Math, and hardware. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

PLC 060  
PLC II-Allen Bradley SLC5/0x  
This course covers advanced topics of the Allen Bradley SLC 30/0 series PLCs operation and programming using RsLogix500 software and Allen Bradley SLC-3/0x PLC s. Topics include Analog I/O (Scaling, Ramping, PID), advance Math, Data handling instruction, and program flow. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

Psychology (PSY---)

PSY 271  
Intro/Psychology  
S6 900, SPE 912  
Focuses on psychology as a science, introducing concepts and research in a variety of subfields, including neuroscience, sensation and perception, consciousness, learning and memory, cognition, motivation and emotion, development, personality, disorders and therapy, and social psychology. (3 credits, 3 Lecture)

PSY 273  
Abnormal Psychology  
IAI PSY 905  
Prerequisites: PSY 271  
Takes an integrative approach to psychopathology. Areas of study include research methods; clinical assessment and diagnosis; descriptions, causes, and treatments of the major psychological disorders; and legal and ethical issues in abnormal psychology. (3 credits, 3 Lecture)

PSY 274  
Child Development  
IAI S6 903  
Study of theories and methods used to study development, from conception to adolescence. Topics include physical, sensory and perceptual, cognitive, language, emotional, social, and gender development, as well as family, peer, and institutional influences on development. (3 credits, 3 Lecture)

PSY 275  
The Psychology of Maturity and Old Age  
S6 905, PSY 903  
Prerequisites: PSY 271  
Study of theories and research findings in the physical, cognitive, and social-emotional development of individuals past middle age. (3 credits, 3 Lecture)
Course Level Fee 1 (2 credits, 1 Lecture, 8 Lab/Lab-Discussion)

**RTV 073 Spring Sportscasting**
This course is designed to improve basketball, baseball and softball announcing skills. Training and practice of sportscasting continues with coverage of Lake Land College and high school sporting events on WLKL, LLC's radio station. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

Course Level Fee NF (1 credits, 2 Lab/Lab-Discussion)

**RTV 082 Fall Athletic Announcing**
This course is designed to refine sports announcing skills. Experience includes broadcasting fall sports at local high schools and Lake Land College on WLKL, LLC's radio station. Training of broadcast equipment is also included. Course Level Fee NF (1 credits, 2 Lab/Lab-Discussion)

Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

**RTV 083 Spring Athletic Announcing**
This course is designed to enhance basketball, baseball and softball announcing skills. Experience includes broadcasting high school and Lake Land College sports on WLKL, LLC's radio station. The fundamentals of play-by-play color commentary, analysis, and interviewing are included. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

**RTV 150 Introduction to Broadcasting**
IAI MC 914
Emphasis is placed on all aspects of the broadcasting industry including history, digital radio, high definition television, programming, the FCC, advertising, and responsibility to society. A brief explanation of the technical operations of a station is presented. (3 credits, 3 Lecture)

**RTV 155 Radio TV Announcing**
IAI MC 918
The principles of broadcast announcing are discussed and are applied to reading commercials, news, voice tracking, sports, and on-air music announcing. Interviewing techniques and the relationship between the announcer and the public are included. Course LevelFee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

**RTV 160 Radio Station Operation**
IAI MC 915
A practical demonstration course to begin "on air" work. In addition to air time, other duties such as news gathering, production, programming, etc. are assigned. Reading meters, filling out operating logs and editing audio are also incorporated. Course Level Fee 2 (5 credits, 2 Lecture, 6 Lab/Lab-Discussion)

**RTV 165 Broadcast Writing**
IAI MC 917
The principles of broadcast journalism and copy writing are presented along with oral style, editing, rewriting stories, and writing commercials that sell. The legal aspects of libel and slander are discussed. Course Level Fee 2 (4 credits, 4 Lecture)

**RTV 175 Broadcast Sales**
IAI MC 916
The course is designed to acquaint students with various aspects of professional TV studio production. Technical proficiency in basic camera operation direction and non-linear editing are stressed. Actual production of interviews, commercials, and news are included. Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

**RTV 185 Advanced Radio Production**
Prerequisites: RTV 070
In this course students polish the skills and techniques of boardwork, announcing, voice tracking, news and sports writing, and production. The importance of promotion, management of station personnel, and programming a station for profit are stressed. Course Level Fee 2 (4 credits, 1 Lecture, 6 Lab/Lab-Discussion)

**RTV 190 Basic Animation**
IAI MC 924
Students will be introduced to the newest trends in Multimedia Technology. Emphasis will be placed on developing aptitude in DVD authoring, postproduction software, animation, streaming media, shooting video, editing, lighting, and audio. The course will be primarily project based. Course Level Fee 1 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

**Reading (RDG---)**

**RDG 007 Essentials of Reading**
Prerequisites: Placement determined by assessment
Required of students who need additional preparation before enrolling in RDG 009
Students will be introduced to the newest trends in Multimedia Technology. Emphasis will be placed on developing aptitude in DVD authoring, postproduction software, animation, streaming media, shooting video, editing, lighting, and audio. The course will be primarily project based. Course Level Fee 1 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)
RDG 009▼
Essentials in Reading
Prerequisites: Minimum grade of ‘C’ or better
Required of students who need additional preparation before enrolling in Reading and Study Skills (RDG 050). Emphasis is placed on six competencies, a personal reading plan, and a computerized prescriptive reading program. (Repeatable 3 Times) Course Level Fee 1 (2.5 credits, 2 Lecture, 1 Lab/Lab-Discussion)

RDG 013▼
Preparation for ACT/SAT
Designed to prepare students taking the ACT/SAT exams. Emphasis is placed on performance skills in word usage, math, reading in the content areas, and natural science. (This course does not apply toward an Associate Degree) (1 credits, 1 Lecture)

RDG 050▼
Reading and Study Skills I
Prerequisites: RDG 009 with a grade of ‘C’ or higher or placement determined by assessment
Designed to improve reading-study skills with major emphasis on comprehending college textbooks. Stress is placed on techniques for improving individual skills in listening, note-taking, study-type reading, time management, perception, library access, test-taking, memory, flexible rate, skimming/scanning. This course does not apply toward an Associate Degree. (Repeatable 3 Times) Course Level Fee 1 (2.5 credits, 2 Lecture, 1 Lab/Lab-Discussion)

RDG 051▼
CTE Reading-Study Skills
Prerequisites: RDG 009 with a grade of ‘C’ or higher or placement determined by assessment
This course is designed to improve reading-study skills with emphasis on comprehending textbooks and contextualized course work. It will include multiple context methods for improving technical reading. This course does not apply toward an Associate degree. Course Level Fee 2 (2.5 credits, 2 Lecture, 1 Lab/Lab-Discussion)

Recruitment (REC---)

REC 180
Leadership/Recreat
A theoretical overview of topics of leadership, group dynamics, and motivation as they relate to the field of recreation, and how it can be applied to specific situations. (3 credits, 3 Lecture)

REC 181
Intro/Comm Recreat
To introduce to the student the historical development of the recreation profession in the United States and to give the student an exposure to professional recreational organizations and their services. (3 credits, 3 Lecture)

REC 190
Camping
Students have the opportunity to learn outdoor living skills, camping equipment and techniques, orienteering skills. Two camping trips will be taken during the semester. Course Level Fee 4 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

RDG 013▼
Preparation for ACT/SAT
Designed to prepare students taking the ACT/SAT exams. Emphasis is placed on performance skills in word usage, math, reading in the content areas, and natural science. (This course does not apply toward an Associate Degree) (1 credits, 1 Lecture)

RDG 050▼
Reading and Study Skills I
Prerequisites: RDG 009 with a grade of ‘C’ or higher or placement determined by assessment
Designed to improve reading-study skills with major emphasis on comprehending college textbooks. Stress is placed on techniques for improving individual skills in listening, note-taking, study-type reading, time management, perception, library access, test-taking, memory, flexible rate, skimming/scanning. This course does not apply toward an Associate Degree. (Repeatable 3 Times) Course Level Fee 1 (2.5 credits, 2 Lecture, 1 Lab/Lab-Discussion)

RDG 051▼
CTE Reading-Study Skills
Prerequisites: RDG 009 with a grade of ‘C’ or higher or placement determined by assessment
This course is designed to improve reading-study skills with emphasis on comprehending textbooks and contextualized course work. It will include multiple context methods for improving technical reading. This course does not apply toward an Associate degree. Course Level Fee 2 (2.5 credits, 2 Lecture, 1 Lab/Lab-Discussion)

Recruitment (REC---)

REC 180
Leadership/Recreat
A theoretical overview of topics of leadership, group dynamics, and motivation as they relate to the field of recreation, and how it can be applied to specific situations. (3 credits, 3 Lecture)

REC 181
Intro/Comm Recreat
To introduce to the student the historical development of the recreation profession in the United States and to give the student an exposure to professional recreational organizations and their services. (3 credits, 3 Lecture)

REC 190
Camping
Students have the opportunity to learn outdoor living skills, camping equipment and techniques, orienteering skills. Two camping trips will be taken during the semester. Course Level Fee 4 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

Service Learning (SLN---)

SLN 200
Community Service
A course based on a multi-disciplinary project coordinating community service efforts through an established organization. Individual students self-assess their learning outcomes and make applications to personal educational goals, establishing a sense of community commitment. (Variable Credit 0.5/3 credits, 3 Lecture)

Short Term Study Abroad (STA---)

STA 200▼
Short Term Study Abroad
This course serves as an introduction to short-term study abroad opportunities. It will focus on the various challenges of traveling and learning in another country, cultural awareness, cross-cultural sensitivity, intercultural communication, and adaptability to a new culture. (Repeatable 3 Times) Course Level Fee NF (Variable Credit 0.5/4 credits, 4 Lecture, 6 Lab/Lab-Discussion)

Social Science (SOS---)

SOS 050
Human Relations
Provides an understanding of the human mechanism when associated with interpersonal relationships on the job. Emphasis is placed on vocational problems connected with motivation, communication, perception and how to work with others. (2 credits, 2 Lecture)

SOS 235
Death and Dying
This course focuses on the psychological and sociological effects of dying and death in our modern American Culture. Major areas studied are: psychological changes a dying person experiences; survivors and grief; death and the child; the funeral; demography of death; contemporary issues. (3 credits, 3 Lecture)

SOS 283
Introduction to Research Methods
Examination of social science research methods from theoretical, applied and ethical points of view. Acquaints students with qualitative and quantitative techniques and procedures used to measure human behavior, gather and analyze data, and evaluate and report on findings. (3 credits, 3 Lecture)

SOS 280
Introduction to Sociology
IAI S7 900
Study of human interaction focusing on social influences shaping personality, structure and dynamics of human society. Topics include: sociological perspective, culture, society, social interaction; social change in global perspective; socialization; families; social class; and social stratification; race and ethnicity; and deviance. (3 credits, 3 Lecture)

SOS 282
Social Problems
IAI S7 901
An issue oriented course. Among the issues covered are how sociologists view social problems, the changing family, poverty, race and ethnic relations, aging, crime and criminal justice, human sexual behavior, problems of physical and mental illness, urban problems, and other areas based upon student interests. (3 credits, 3 Lecture)

SOS 284
Sociology/Deviant Behavior
IAI SOC 915
Prerequisite: ENG 120
Nature and dynamics of deviant behavior. The course includes theories of deviance, social control and forms of deviant behavior. Forms may include drug use, sexual behavior (prostitution and pornography), personal violence, crime and delinquency and mental disorders. (3 credits, 3 Lecture)

SOS 286
Racial and Ethnic Groups
S7 903D
Prerequisite: ENG 120
An examination of American racial and ethnic diversity with an attempt to understand racial and ethnic relations. The examination is made emphasizing the sociological perspective while including material from the other social sciences. (3 credits, 3 Lecture)
Speech (SPE---)

SPE 111
Intro to Speech Communication
IAI C2 900
Focuses on the fundamental principles and methods of selection, analyzing, organizing, developing and communicating information, evidence, and points of view to audiences. (3 credits, 3 Lecture)

SPE 200
Interpersonal Communication
Prerequisites: SPE 111
Principles and practices of oral communication emphasizing message formation and delivery, listening, perception, awareness of verbal and non-verbal codes, and managing conflict. (3 credits, 3 Lecture)

SPE 213
Intro/Group Discussion
Prerequisites: SPE 111
Focuses on the principles and application of public and closed group discussions with emphases on purposes and common forms, critical analyses and participation. (3 credits, 3 Lecture)

SPE 220
Persuasive Speaking
Prerequisites: SPE 111
Studies audience attitudes, logical lines of reasoning, and emotional appeals used in causing an audience to accept different views or to adopt recommended courses of actions. (3 credits, 3 Lecture)

SPE 244
Intro to Acting
IAI TA 914
Focuses on approaches to acting with emphasis on basic techniques and the development of character as it relates to the role. (3 credits, 3 Lecture)

Strategies for Success (SFS---)

SFS 101
Strategies for Success
Designed to improve student performance in college and beyond. Topics include: college resources; identification of college and career goals; implementation of study, note-taking, and test-taking strategies; and development of life management skills including time management, stress management, and relationship skills. (2 credits, 2 Lecture)

SFS 102
Strategies for Money Management
Designed to improve student money management and investment skills. Topics include budgeting, banking, managing credit and debt, paying tuition and loans, saving, investing, and planning for retirement as well as protecting and recovering from identity theft and understanding advertising. (1 credits, 1 Lecture)

SFS 103
Life Strategies
Designed to assist students in improving critical thinking skills, designing effective goals and creating a successful life and financial management plan. Emphasis will be placed on career and transfer advancement as well as financial planning. (3 credits, 3 Lecture)

Technology (TEC---)

TEC 006
ATE Math Skills
This course is designed to improve math skills with emphasis on algebra, geometry and trigonometry from a technical perspective. It includes a collection of contextualized learning modules designed to present the material in context with the students’ major of study. (Repeatable 3 Times) (Variable Credit 1/3 credits, 1 Lecture)

TEC 039
Technology Seminar
Fundamentals, principals, and practices of Industrial technology. Covers basic through advanced procedures associated with current technology. Advanced work is adjusted to special interest groups. (Repeatable 3 Times) (Variable Credit 0.5/3 credits, 3 Lecture)

TEC 040
Blueprint Reading for Industry I
Fundamentals, principals, and practices involved in producing and reading industrial blueprints. Covers basic through advanced blueprint reading and basic drafting procedures. Advanced work is adjusted to special interest groups. (2.5 credits, 2.5 Lecture)

TEC 043
Industrial Safety
Designed to give the student basic information and procedures concerning industrial safety awareness and accident prevention. (1 credits, 1 Lecture)

TEC 044
Basic Tech Science
Involves activities relating to (1) basic properties of matter, (2) speed and acceleration, (3) mechanics, (4) electricity and (5) miscellaneous. Automotive applications are emphasized and memorization minimized. Course Level Fee 1 (3 credits, 1.5 Lecture, 3 Lab/Lab-Discussion)

TEC 045
Introduction to Drafting
Presents basic drafting skills and concepts preparatory to advanced drafting and computer-aided drafting courses. Portable drafting instruments will be required. Course Level Fee 1 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

TEC 046
Manufacturing Skills I
Continuation of TEC 046. Students continue study of hydraulics, pneumatics, electrical systems, mechanical drive systems, automated material handling (robotics), quality control systems, machining, and computer aided drafting. Course Level Fee 1 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

TEC 048
Applied Shop Computations
Focusses on basic arithmetic and calculations necessary for solving shop oriented problems involving geometric figures, formulas and algebra. Students draw graphs. A scientific calculator is required, so there is no memorization. (3 credits, 3 Lecture)

TEC 049
Manufacturing Skills II
Continuation of TEC 049. Heaviest concentration is on electrical theory, motors and controls. Additional time will be spent on Quality Assurance, Fluid Power, and Mechanical Drive Systems. Course Level Fee 1 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

TEC 050
Technical Math I
Fundamentals of basic arithmetic, calculator usage, simple equations, word problems, algebra, charts and graphs. (2 credits, 2 Lecture)

TEC 051
Manufacturing Skills IV
This class is a continuation of TEC 049. Heaviest concentration is on Programmable Logic Controllers. Additional time will be
spend on Fluid Power, Mechanical Drive Systems, and Electrical Motor Controls. Course Level Fee 1 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

**TEC 052**  
Technical Math II  
Offers the student an in-depth study of algebra, geometry and trigonometry including factoring, solving linear systems, volumes, areas and right triangles. (2 credits, 2 Lecture)

**TEC 053**  
Technical Project Management  
This course is designed to provide a technical foundation for Project Management. Students will evaluate comprehensive samples of various tools and techniques for industrial project, program, and portfolio management that achieve organizational success. (3 credits, 3 Lecture)

**TEC 054**  
Technical Math III  
Offers the student a more in-depth study of algebra, geometry and trigonometry through applications involving right and oblique triangles, quadratic equations, exponents, graphing, and proportioning. (2 credits, 2 Lecture)

**TEC 055**  
Special Topics in Technology  
Fundamentals, principals, and practices of Industrial Technology. Covers basic through advanced procedures associated with current technology. Advanced work is adjusted to special interest groups. (Repeatable 3 Times) (Variable Credit 0.5/5 credits, 5 Lecture)

**TEC 056**  
Technical Math IV  
Familiarizes the student with the basic concepts of logarithms, analytical geometry, vectors, and statistics. (2 credits, 2 Lecture)

**TEC 057**  
Introduction to Renewable Energy  
This course provides students with an introduction to forms of renewable energy, how it is produced and utilized. Topics include photovoltaic, geothermal, solar, wind, hydro, and biomass energy production. (Repeatable 3 Times) (3 credits, 3 Lecture)

**TEC 058**  
Alternative Energy  
This course provides students with an introduction to forms of alternative energy. Topics include fuel cells, electric powered vehicles, liquefied natural gas, and other emerging green technologies. (Repeatable 3 Times) (3 credits, 3 Lecture)

**TEC 059**  
Weatherization Technician/Installer  
Successful completion of this course prepares participants to assess and improve homes according to current industry standards for residential building weatherization. It includes blower-door testing and recommended weather sealing techniques to achieve improved resident comfort and energy cost savings. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2.5 Lecture, 1 Lab/Lab-Discussion)

**TEC 060**  
Analytical Mechanic  
Enables the student to analyze forces acting on structural elements and rigid bodies. The concepts of stress and strain in structural materials is introduced. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

**TEC 061**  
Solar Energy  
Fundamentals of solar energy collection and utilization including residential solar hot water, solar heating, passive lighting, electricity, residential and industrial applications of photovoltaics and solar electric generation. (Repeatable 3 Times) (3 credits, 3 Lecture)

**TEC 062**  
Solar Thermal Applications  
Applications of solar energy collection and utilization emphasizing solar hot water heating and space heating for domestic use. Fundamentals for residential sizing, installation, operation, and maintenance of open-loop and drain down water heating systems will be covered. (Repeatable 3 Times) (2 credits, 1.5 Lecture, 1 Lab/Lab-Discussion)

**TEC 063**  
Electric Power Distribution  
Fundamentals of the electric power distribution and transmission system, infrastructure components, power flows, and system reliability. (3 credits, 3 Lecture)

**TEC 064**  
Bioenergy  
Fundamentals of energy use and production from biogas, biofuels, and biomass including production methods, domestic and industrial uses, and sustainability of the market. (Repeatable 2 Times) (3 credits, 3 Lecture)

**TEC 065**  
Energy Efficiency  
Fundamentals of energy transfer, distribution, conservation, and efficiency as it relates to residential, commercial, and industrial use. (Repeatable 3 Times) (3 credits, 3 Lecture)

**TEC 066**  
Resource Sustainability  
This course will examine sustainable energy generation and use, housing sustainability, water use, recycling, resource reduction, and cultural issues relating to lifestyles of health and sustainability. (Repeatable 3 Times) (3 credits, 3 Lecture)

**TEC 067**  
Smart Grid Introduction  
Fundamentals of the electrical smart grid including conventional and distributed electrical generation and transmission, renewable energy issues, electrical system operability, demand response, and smart metering. (Repeatable 3 Times) (3 credits, 3 Lecture)

**TEC 068**  
Sp Topics Renewable Energy  
This course will examine fundamentals, principles, practices, and issues associated with special topics in renewable energy. It covers basic through advanced issues and topics associated with sustainability and the renewable energy field. Advanced coursework is adjusted to special interest groups. (Repeatable 3 Times) (Variable Credit 0.5/5 credits, 5 Lecture)

**TEC 069**  
Site Assessment for Renewable Energy  
This course determines the site-specific suitability of photovoltaic, solar thermal applications, and small wind energy installations. The course will focus on physical site features and how that affects the solar window and the quality of wind energy. (Repeatable 3 Times) (2 credits, 1.5 Lecture, 1 Lab/Lab-Discussion)

**TEC 070**  
Properties of Metal  
Familiarizes the student with the need for heat treatment of metals and the processes and techniques used and the resulting effects. Also includes a study of the machinability of metals and the contributing physical and metallurgical factors. (2.5 credits, 2.5 Lecture)

**TEC 071**  
OSHA General Safety  
This OSHA safety course provides entry level construction or general industry workers information about their rights, employer responsibilities, and how to file a complaint as well as how to identify, abate, and prevent hazards on a job site. (Repeatable 3 Times) Course Level Fee 2 (0.5 credits, 0.5 Lecture)
TEC 080
Strength/Materials
Develops the student's ability to analyze structural elements subjected to various types of loading. Various means of joining structural elements are also covered. (4 credits, 4 Lecture)

TEC 090
Education-To-Careers
(3 credits, 3 Lecture)

TEC 103
Engineering Graphics
IAI EGR 941
Comprehensive overview of the basic skills of engineering drawing, descriptive geometry, and computer-aided drafting (CAD). Small portable drafting equipment and a workbook are required. Course Level Fee 1 (3 credits, 1 Lecture, 5 Lab/Lab-Discussion)

Telecommunications
(TEL---)

TEL 045
Intro to Telecommunications
Provides students with an introduction into the field of telecommunications. Emphasis is placed on telecommunication technology and the different network communication operations. (3 credits, 3 Lecture)

TEL 046
Digital Communications
Designed for students to learn about the basic digital systems and how they operate. Emphasis place on trouble shooting techniques. Course Level Fee NF (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

TEL 048
Advanced Digital Services
Designed to enable students to understand the technical operations of high speed switching and protocols associated with data transfer. Emphasis placed on: bandwidth, ADSL, CCS7, LNP, and Voice over IP. Course Level Fee NF (6 credits, 4 Lecture, 4 Lab/Lab-Discussion)

TEL 051
Networking Basics
Provides the student with a basic understanding of networking, OSI model, industry standards, and IP addressing. Emphasis placed on hands on learning. Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

TEL 052
Routing Basics
Provides the student with a basic understanding of router configurations and router protocols. Emphasis placed on hands on learning. Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

TEL 053
Switching and Routing
Provides the student with an understanding of LAN switching and advanced router configurations. Emphasis placed on hands on learning. Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

TEL 055
Telephony
Provides students with an strong understanding of Telephony and the skills needed to install, troubleshoot and maintain both residential and commercial PBX phone systems. Course Level Fee NF (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

TEL 056
Outside Plant I
This course focuses on the basic skills required for a field technician in telecommunications. Emphasis is placed on skills in pole climbing, bucket truck operation, and residential installations. Course Level Fee 3 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

TEL 057
Telecom Troubleshooting
Designed to enable students to understand troubleshooting techniques used for transmission and signaling systems. Course Level Fee 1 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

TEL 061
Outside Plant II
This course focuses on the basic skills required for a field technician in telecommunications. Emphasis is placed on skills in aerial cable installation and maintenance, underground cable installation, horizontal boring and backhoe operations. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

TEL 096
Telecommunications Seminar
The student will be introduced to the local employers and experts in telecommunications and hear their thoughts on the issues that effect the telecommunication industry. (1 credits, 1 Lecture)

TEL 097
Telecommunications S.O.E.
Designed to provide the student with work experience in the field of major while maintaining contact with the instructor for review and assistance. Course Level Fee NF (3 credits, 15 Lab/Lab-Discussion)

Water Treatment Operator
(WTO---)

WTO 020
Basic Water Treat
Basic background in plant operations, including water quality, storage, distribution, chlorination, fluoridation, valves and pumps, chemistry and mathematics. Does not apply to associate degree. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

WTO 022
Adv Water Treatment
Study of the chemical, physical and biological aspects of wastewater treatment facilities and collection system maintenance. Does not apply to associate degree. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

WTO 030
Basic Waste Water Treatment
Study of the chemical, physical and biological aspects of wastewater treatment facilities. Does not apply to associate degree. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

WTO 031
Adv Waste Water Treatment
Study of the chemical, physical and biological aspects of advanced wastewater treatment facilities. Does not apply to associate degree. Course Level Fee 1 (4 credits, 3 Lecture, 2 Lab/Lab-Discussion)

Welding (WEL---)

WEL 042
Introduction to Welding
This course prepares students to identify, obtain and keep jobs in the welding field. Demonstrating appropriate work behaviors, developing effective working relationships with others, practicing work related communication skills, understanding roles, business images and adapting to change. (3 credits, 3 Lecture)

WEL 043
Intro to Welding Safety
This course covers the basic safety principles fundamental to welding, including the correct use of hand and power tools, wearing and caring for safety apparel, emergency and first aid procedures and avoiding hazardous conditions. Course Level Fee 1 (1 credits, 0.5 Lecture, 1 Lab/Lab-Discussion)

WEL 044
Metal Identification
This course prepares students to identify ferrous and non-ferrous metal using various
test procedures. Procedures for identifying low, medium and high carbon steel are also covered. Course Level Fee 1 (1 credits, 0.5 Lecture, 1 Lab/Lab-Discussion)

WEL 045
Oxy-Acetylene Welding
This course prepares students to manipulate, set-up and make acceptable welds in various positions using oxy-acetylene equipment. Course Level Fee 1 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

WEL 046
Metal Cutting Processes
This course covers the processes for cutting metal with oxy-acetylene and plasma cutting equipment and gouging with air carbon arc equipment. Course Level Fee 1 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

WEL 047
Shielded Metal Arc Welding I
This course provides an introduction to shielded metal arc welding. Students learn to set up equipment, identify electrodes, strike and run beads in the flat position. Course Level Fee 1 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

WEL 048
Shielded Metal Arc Welding II
In this course students learn to perform single and multiple pass welds with shielded metal arc welding equipment in all positions. Course Level Fee 1 (3 credits, 0.5 Lecture, 5 Lab/Lab-Discussion)

WEL 049
Shielded Metal Arc Welding III
This course requires students to weld in all positions using SMAW equipment. These welds must pass a guided bend test. Course Level Fee 1 (3 credits, 0.5 Lecture, 5 Lab/Lab-Discussion)

WEL 053
Gas Tung Arc Welding/Alum
Prepares students with the necessary knowledge and skills for employment in industry. Emphasis is placed on gas tungsten arc welding processes for aluminum. Prepare welding joints in the flat, horizontal, and vertical positions. Course Level Fee 3 (4 credits, 1 Lecture, 6 Lab/Lab-Discussion)

WEL 054
Gas Tung Arc/Ss
Prepares students with necessary knowledge and skills for employment in industry. Emphasis is placed on gas tungsten arc welding processes for stainless steel. Prepare welding joints of stainless steel in the flat, horizontal, and vertical positions. Course Level Fee 3 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

WEL 055
Pipefitting & Welding
Prerequisites: WEL 057
This is a basic course in pipefitting and welding equipment and safety. Topics include: fabrication and installation of industrial piping systems, pipe layout and welding techniques/applications. (Repeatable 3 Times) Course Level Fee 3 (3 credits, 1 Lecture, 4 Lab/Lab-Discussion)

WEL 056
Metal Cutting and Fabrication
Prerequisites: WEL 057
This course is designed to provide an understanding of metal cutting and fabricating processes and weld joint design. (Repeatable 3 Times) Course Level Fee 3 (2 credits, 1 Lecture, 2 Lab/Lab-Discussion)

WEL 057
Welding Fundamentals
Course will cover basic welding processes, including: Oxy-Acetylene welding, Arc welding, Cutting and Brazing. Course Level Fee 3 (2.5 credits, 1 Lecture, 3 Lab/Lab-Discussion)

WEL 058
Gas Metal Arc Welding I
This course introduces gas metal arc welding procedures and equipment. Students learn to perform single and multiple pass welds in the flat position with gas metal arc welding equipment. Course Level Fee 1 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

WEL 059
Gas Metal Arc Welding II
This course teaches students to perform gas metal arc welds in the horizontal, vertical and overhead positions using single and multiple pass welds. Course Level Fee 1 (3 credits, 0.5 Lecture, 5 Lab/Lab-Discussion)

WEL 060
Gas Metal Arc Welding III
Students in this course must prepare gas metal arc and flux core welds which pass guided bend tests. Course Level Fee 1 (3 credits, 0.5 Lecture, 3.75 Lab/Lab-Discussion)

WEL 061
Gas Tungsten Arc Welding
This course introduces students to gas tungsten arc welding equipment and procedures. Welds are prepared in flat, horizontal and vertical positions on both ferrous and non-ferrous metals. Course Level Fee 1 (3 credits, 0.5 Lecture, 5 Lab/Lab-Discussion)

WEL 062
Welding Blueprint Read/Layout
This course teaches students to read and interpret welding symbols and blueprints and to perform a minor welding layout. Math skills especially fractions are emphasized, reviewed and reinforced throughout this course. Course Level Fee 1 (3 credits, 0.5 Lecture, 5 Lab/Lab-Discussion)

WEL 063
Advanced Welding
Prerequisites: WEL 057
Course will cover advanced procedures of processes related to welding. MIG, TIG, plasma torch, and arc welding. Course Level Fee 2 (2 credits, 0.5 Lecture, 3 Lab/Lab-Discussion)

WEL 074
Welding S.O.E.
Welding supervised occupational experience in a welding shop or work related manufacturing company position. Course Level Fee NF (Variable Credit 0.5/5 credits, 25 Lab/Lab-Discussion)

Wind Technology (WND---)

WND 040
Introduction to Wind Technology
This course provides students with an understanding of basic wind technology concepts. Topics include turbine parts and operation, anemometry data collection and analysis, and evaluation of basic turbine technology. (Repeatable 3 Times) (3 credits, 3 Lecture)

WND 041
Wind Technology Maintenance I
This course introduces students to wind turbine maintenance. Lectures focus on gearbox and electrical system maintenance while the labs focus on tools, climbing and safety. (Repeatable 3 Times) Course Level Fee 2 (3 credits, 2 Lecture, 2 Lab/Lab-Discussion)

WND 042
Tower Rescue and Competent Climber
This course prepares the students to safely climb a variety of wind turbine towers and to safely and effectively perform self rescue and partner rescue techniques in emergency situations. (Repeatable 3 Times) Course Level Fee 4 (0.5 credits, 1 Lab/Lab-Discussion)