

# *College Express*

*for High School Students*

*at DACC*

*2013-2014*

## **VVEDS**

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Vermilion Vocational Education Delivery System

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For more information

217-443-8742

[www.dacc.edu](http://www.dacc.edu)



**Danville Area  
Community College**

**DUAL ENROLLMENT**

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# Agriculture

## **AGRI 205 Grain/Drying-Storage**

**3 hours**

Principles, practices, and techniques involved in the harvesting, storing, and drying of grain. 2 lecture hours, 2 lab hours. [C]

## **AGRI 200 Agriculture Management**

**3 hours**

Study of agriculture management including economic principles, budgets, and planning of an agricultural business.

## **AGRI 102 Agriculture Economics**

**3 hours**

Introduction and application of economic principles to the agriculture economy; principles of production, consumption, marketing, supply, and demand applied to the economic problems of agriculture. [T] **IAI: AG 901**

## **AGRI 103 Ag Mechanization**

**3 hours**

Examples, problems, discussion, and laboratory exercises pointing to engineering applications in agriculture. Emphasis placed on farm power and machinery, soil and water control, farm electrification, and farm structures. 2 lecture hours, 2 lab hours. [T]

## **INFO 245 Employment Seminar**

**1 hour**

This course involves a study of contemporary problems in the general field of employment. Future graduates are counseled in career search and development techniques as well as employment opportunities. Students are urged to share their concerns and experiences encountered while preparing for employment. Prerequisite: consent of instructor. [C]

### **Agribusiness:**

Career Program at Danville Area Community College

This program prepares students for mid-management and sales positions in agri-business such as fertilizer, seed, feed, chemicals, and business related to the product service areas. This program is not designed to transfer to a senior institution; however, this program has been articulated to some senior institutions. Please contact a counselor for specific details.

Workers in agri-business can work in a variety of businesses that produce, process, or distribute agricultural goods. They may do purchasing, producing, or marketing of agricultural products and services. Mid-management work requires that a person have the managerial skills necessary to organize and operate a business. A basic knowledge of accounting and bookkeeping can be helpful in keeping financial records. Most must be familiar with complex safety regulations and requirements of government agricultural support programs. Computer skills are increasingly important.

### **Tuition Savings:**

Transfer students can save \$10,000 or more by starting their bachelor's degree at DACC. The estimated expenses for one year, including housing where applicable, is \$2,900 at DACC and anywhere from \$12,000-\$29,000 at other public and private colleges/universities in Illinois.

### **Job/Employment Information:**

*Positions You are Trained for:* Park Ranger, Landscaper (artist), Veterinarian, Vet Technician, Ag Marketing, Seed Salesman, Market Traders, to name a few.

For the most current salary information visit [www.ilworkinfo.com](http://www.ilworkinfo.com).



**Danville Area  
Community College**

# Auto Body

## **AUTO 101 Fundamentals of Collision Repair**

**4 hours**

Examines the characteristics of body metals and includes the installation of moldings, ornaments, and fasteners with emphasis on sheet metal analysis and safety.

## **AUTO 151 Non-Structural Analysis and Damage Repair**

**4 hours**

Introduces fundamentals of using hand and power tools in the repair of minor collision damage, with emphasis on safety.

## **AUTO 201 Refinishing**

**4 hours**

Introduces auto paint considerations with emphasis on the handling of materials and equipment in modern automotive technologies.

## **AUTO 131 Collision Repair Electrical Analysis**

**3 hours**

Theory and repair of electrical and electronic systems related to the collision repair industry. Includes electrical theory, DVOM usage, wire and circuit repairs, electronic diagnosis of ABS and SIR systems and schematic usage.\*\*

## **Job/Employment Information**

*Position:* A good job for people who are into cars and enjoy working with their hands. Some repairers specialist in frame straightening, refinishing, painting, door/fender repair, or glass installation. Autobody repairers usually work alone, with only general directions from supervisors. In some shops, they may be assisted by helpers or apprentices. An experienced autobody repairer with supervisory ability might advance to shop supervisor. Some repairers open their own shops. Others might become automobile damage appraisers for insurance companies.

*Salary Potential:* Entry Wage = \$14.18/hr or \$29,490/yr; Median Wage = \$19.10/hr or \$39,730/yr; Experienced Wage = \$ 23.53/hr or \$48,940/yr

*Position & Salary Information from [www.careercruising.com](http://www.careercruising.com).*



**Danville Area  
Community College**

## Auto Mechanics

### **AUTO 111 Intro. to Engine Technology**

**3 hours**

The application, theory, and design of automotive engine operation. Emphasis given to development of the skills needed for testing, disassembly, precision measuring, machining, and re-assembly of spark ignition cylinder heads.\*\*

### **AUTO 121 Engine Overhaul**

**3 hours**

Application of maintenance and service procedures to diagnose and repair a "short block" with emphasis given to skills needed to overhaul and rebuild stock automotive engine. Discussion about blueprinting and performance enhancements will be minimal. Disassembly techniques, measuring, machining, and proper re-assembly practices will be stressed\*\*

### **AUTO 128 Fuel Systems & Emission Controls**

**5 hours**

Emphasis on electronic fuel injection and emission components with discussion on carburetion, mechanical fuel injection, alternative fuels, and the environment. Injection system maintenance, testing, servicing, and repair will be stressed.

### **SECOND YEAR**

### **AUTO 134 Steering & Suspension Systems**

**3 hours**

Principles of operation, maintenance, and repair of automotive systems including electronic steering and suspension, steering columns, steering gears, and air bag safety. Emphasis given to front-wheel-drive and four-wheel drive systems.

### **AUTO 135 Braking Systems**

**4 hours**

To inspect and service hydraulic disc/drum braking systems including two and four wheel ABS and traction control systems. Use of lathes and other special tools will be utilized.

### **Job/Employment Information**

*Position:* Do you love cars and enjoy figuring out how they work? An automobile mechanic's job is to maintain and repair vehicles. The exact type of work a mechanic does, however, depends on his or her training. Some specialize in a specific brand of vehicle (for example, Fords), while others service all makes and models.

Today's mechanics have to deal with much more complicated machines than mechanics of the past. Modern vehicles have multiple on-board computer and electronic systems that mechanics must be able to access and maintain. Mechanics need to be as comfortable working with computerized diagnostic equipment as they are replacing spark plugs.

Due to the complexity of today's motor vehicles, many mechanics specialize in particular areas of repair: for example, engine and fuel systems, air conditioning, brakes, or electrical and electronic systems. Automobile mechanics working in small shops tend to perform a wider variety of tasks than those in large shops, where specialization is more common.

*Salary Potential:* Most full-time automobile mechanics earn between \$20,000 and \$55,000 a year, with a median of about \$33,000 a year. However, highly skilled mechanics, shop forepersons, and managers can earn much more—up to \$100,000 a year in some cases.

*Position & Salary Information from [www.careercruising.com](http://www.careercruising.com).*



**Danville Area  
Community College**

# Computer Aided Design

## DRAF 160 Machining Graphics

2 hours

This course is intended to provide the student with the knowledge and skills necessary to read and interpret mechanical production drawings and assemblies. The student will complete extensive drawing analysis and create 2-D orthographic multi-view sketches of simple shop projects. [C]

## DRAF 166 Intro to AutoCAD

3 hours

A study of two-dimensional computer-aided drafting using AutoCAD software. This course is designed to instruct the student in creating and modifying technical manufacturing drawings. Students will implement current industry standards as they become familiar with the drawing, editing, dimensioning and plotting commands. Prerequisite: DRAF 160, concurrent enrollment or consent of instructor. [C] IAI: EGR 941

## DRAF 276 Advanced AutoCAD Applications I

3 hours

A continuation of the study of mechanical design using AutoCAD software. This course will familiarize the student with the concept of 3-D solid modeling. Students will create, modify and analyze solid models. The course also introduces external references, raster images and object linking and embedding. [C]

## DRAF 266 Applied AutoCAD

3 hours

The student will continue the study of mechanical design, implementing three-dimensional concepts using AutoCAD software. This course will introduce the utilization of blocks, libraries, attributes, assemblies and isometric drawing. Study will focus on manipulating a three-dimensional coordinate system, viewing methods, surface creation and rendering. Prerequisite: DRAF 166 [C] 

**NOTE: DRAF 160 is a prerequisite for all courses.**

## Drafter

If you are interested in how things are constructed, and you enjoy making precise and intricate drawings, then drafting might be the career for you.

Drafters create detailed technical drawings based on the information given to them by engineers, architects, surveyors and scientists.

## Job/Employment Information

*Positions You are Trained for:* Engineering and architectural firms.

*Expected Salary Range:* Beginning drafters generally earn between \$18,000 and \$30,000 a year.

*Illinois Wages:* entry wage \$13.04 hourly, \$27,130 annually.



**Danville Area  
Community College**

# Computer Networking

## **INFO 153 A+ Software Preparation**

**3 hours**

This course provides students with the knowledge and skills necessary to provide a thorough, step-by-step process for supporting and troubleshooting computer operating systems. The course provides a general overview of how software and hardware actually relate to each other on a computer. The course takes a hands-on approach to learning the steps to installing, troubleshooting and supporting the most common operating systems in use on the personal computer. Prerequisite: INFO 110 or consent of instructor. [T, C]

## **INFO 283 A+ Hardware Preparation**

**3 hours**

This course provides students with the knowledge and skills necessary to service microcomputer hardware, supported peripherals, and build a computer from parts. The course takes a hands-on approach to learning the steps to identifying all parts of a PC, identifying and troubleshooting common PC hardware problems, selecting quality PCs and components based on performance and cost, installing, replacing, and upgrading PC hardware components, and installing and troubleshooting PC peripherals. Prerequisite: INFO 110 or consent of instructor. [C]

## **INFO 163 Client Operating Systems**

**3 hours**

This course provides students with the knowledge and skills necessary to implement, administer, and troubleshoot client operating systems. Students will learn about and use the various tools for installing, administering, and configuring task scheduling, Control Panel, and Registry Editor. Students will also learn about and manage print devices, shared and file system permissions, data storage and disk-quotas, EFS, remote access, and troubleshooting hardware devices and drivers. Prerequisites: INFO 110, concurrent enrollment, or consent of instructor.

## **INFO 213 Server Operating Systems**

**3 hours**

This course provides students with the knowledge and skills necessary to implement, administer, and troubleshoot Server operating systems. Students will learn how to install and administer Active Directory services and how to manage Active Directory objects. Students will also use Microsoft Management Console to monitor system performance, to administer Internet Information Services, and to administer accounts and policies. In addition, students will learn how to administer print services, network protocols and services, and disaster protection. Prerequisites: INFO163 or consent of instructor. [C]

## **Computer Communications & Networks AAS**

This program will provide training and education for individuals interested in developing their knowledge and skills as a local area network administrator. The courses emphasize practical skills required to perform duties in the work environment under the supervision of an experienced local area network administrator. Students will participate in occupational work-site experiences. This program prepares the student for the Microsoft Certified Professional (MCP) examination and the Cisco certification exam, CCNA.

## **Job/Employment Information**

*Positions You are Trained for:* Network or computer systems administrators.

*Where Can You Find a Job?* Many work in other areas, such as for government agencies, manufacturers of computer and related electronic equipment, insurance companies, financial institutions, and universities. A growing number of computer professionals are employed on a temporary or contract basis--many of whom are self-employed, working independently as contractors or self-employed consultants.



# Computer Programming/Web Design

*The first two courses are computer programming courses and the second two are web design courses.*

## **INFO 135 Concepts in Programming: C++**

**3 hours**

Introductory course in computer programming for all business related majors, providing a basic knowledge of the fundamentals of programming. Various number systems are studied to see how they are used in a computer. Program files will be compiled and executed. Problem solving is discussed and flowcharts are used to introduce logic concepts. Emphasis is on common applications using the C++ language and a user approach.

## **INFO 164 Visual Basic Programming**

**3 hours**

This course will first cover the basic principles and techniques for object oriented software development. Students will have a better understanding of what features are essential for Object Oriented Programming and which languages support the feature. Then, the course focuses on developing intermediate-level skills for students new to Windows programming. It is designed to introduce the student to the Visual Basic application development environment. It provides instruction on the Visual Basic language with the hands-on experience and skills development necessary to build projects.

## **INFO 174 Internet Development Tools - HTML and CSS**

**3 hours**

Students in this course will design and code World Wide Web pages using HTML (Hypertext Markup Language), XHTML (Extensible Hypertext Markup Language), and CSS (Cascading Style Sheets) will be used to create code which can be interpreted by Web Browser software. Projects will entail creating web pages that are informative, manageable and user friendly. Topics for discussion will include HTML editors, converters and generators. Labs and student projects provide practical experience.

## **INFO 224 Advanced Internet Development**

**3 hours**

Students in this course will expand on their knowledge of Website design and implementation using Web Authoring Software. The focus on Microsoft Expression Web will allow students to add interactivity and professional style to commercial and/or personal Web sites. Topics include creating a local site, adding Web pages, links and images. Table and page layout, page layout using CSS, forms, templates and style sheets will also be covered. Labs and student projects provide practical experience.

Computer Programming/Web Design



**Danville Area  
Community College**

## Criminal Justice

### **CRIM 100 Introduction to Criminal Justice**

**3 hours**

Traces the historical development of the relationship between law enforcement and society; examines the functions and jurisdictions of various agencies.

Course Placement Prerequisite: W37 or take DEVE 098 concurrently. [T, C] 

### **CRIM 204 Criminology**

**3 hours**

Provides a basic examination of the theories of criminal behavior, the problems of treatment, and corrections and social control of crime. Prerequisite:

Place into ENGL 121. [T, C] **IAI: CRJ 912** 

### **CRIM 105 Introduction to Corrections**

**3 hours**

An introduction to official ways in which society reacts to persons who have been accused and convicted of committing offenses, including theories of punishment, concepts of probation and parole, the prison community, and rehabilitative and treatment programs. Course Placement Prerequisite:

W37. [T, C] **IAI: CRJ 911**

### **CRIM 103 Patrol Techniques**

**3 hours**

Students will learn the organization and function of patrols and their methods, skills, and equipment.

Course Placement Prerequisite: W37 [T, C]

## **Criminal Justice Program**

The criminal justice curriculum is designed to give students the academic background and initial training for careers in law enforcement. Law Enforcement deals with the safety and well being of citizens by enforcing statutes, laws, and regulations. Duties vary widely, but in most jurisdictions, law enforcement officers will also spend considerable time writing reports and maintaining records that are needed when legal actions require them to testify in court. General law enforcement duties may include directing traffic, investigating crime, giving first aid to an accident victim, patrolling a designated area to prevent crime or assisting a community with it's own crime prevention endeavors.

## **Job/Employment Information**

*Positions You are Trained for:* Police officer, correctional officer, guard, and security officer.

*Where Can You Find a Job?* Police departments, security agencies, and correctional facilities.

*Expected Salary Range:* \$24,627 - \$40,290



**Danville Area  
Community College**

# Culinary Arts

## **CULA 305 Food Sanitation and Safety**

**3 hours**

This lecture/lab course is designed as a comprehensive study of food sanitation and food safety for the hospitality industry. Areas of discussion include: cause and prevention of food borne illness, desired personal hygiene practices, proper procedures for cleaning and sanitizing, and pest control and prevention. In addition, basic HACCP procedures will be introduced. HACCP is a systematic approach to food safety that identifies significant hazards for food safety and establishes controls to reduce, prevent, or eliminate them.

## **CULA 310 Culinary Essentials I**

**3 hours**

Introduction to basic cooking methods, the identification and use of ingredients, and the handling of tools and equipment are the core components of this course. The lecture aspect focuses on the basic principles and techniques of quantity food production and work methods. The laboratory aspect prepares students with the skills, knowledge, and experience necessary to work in a production facility. Customer service fundamentals will be emphasized.

## **CULA 315 Culinary Essentials II**

**3 hours**

Continuation of the fundamental concepts and techniques of food preparation. Students rotate through stations in a large commercial kitchen. Cooking skills are developed through participation in food preparation and production of a variety of food products. Emphasis will be placed on the need and procurement of supplies, work stations and attractive service. A lecture/lab course.

## **CULA 320 Nutrition and Menu Planning**

**3 hours**

This lecture/lab course identifies the categories of nutrients and explains their importance in a healthy diet and the nutrition trends that affect food service. Students will learn to appreciate the use of alternative ingredients and substitutes in developing recipes and menus to provide guests with nutritious foods. Importantly, students understand the effects of storage and preparation techniques on the nutritional value of food. Students will learn to appreciate the different types and styles of menus. An important lesson is in the conversion of recipe yield amounts. Students learn to value the need for cost controls in any food service operation.

## **Culinary Arts**

With a focus on basic food preparation and production skills, nutrition, and food safety and sanitation, the Basic Culinary Arts Certificate program prepares students for various entry-level positions in the foodservice industry. Practical hands-on lab activities in a state-of-the-art commercial kitchen environment provide opportunities for students to master the skills required for employment.



**Danville Area  
Community College**

## Early Childhood Education

### EDUC 160 Guiding Children

2 hours

Theory and practice of effective methods for guiding children's behavior using guidance techniques and classroom management principles and skills. Problem areas such as aggression, passivity, and over-activity will be addressed. The relationship between emotional growth, self-concept, and behavior will be explored. [C]

### EDUC 104 Creative Learning Experiences

4 hours

Provides experiences in creative activities (music, art, and language) for young children and integrates these activities in program planning. [C]

### EDUC 207 Children's Literature

3 hours

Introductory survey of children's literature. Includes teaching methods; criteria for selection, evaluation, and presentation of books and related materials; and community resources. Course Placement Prerequisite: Placement into ENGL 121. [C]

### EDUC 250 Math/Science for Young Children

3 hours

Students will become acquainted with basic mathematics and science concepts and will learn how to introduce them to young children through innovative methods, including songs, games, and flannel boards. Course Placement Prerequisite: W37 [C]

### Education: Paraprofessional Option (K-12)

Teaching assistants provide instructional and clerical support for classroom teachers, allowing teachers more time for lesson planning and teaching. Paraprofessionals tutor and assist children in learning class material using the teacher's lesson plans, providing students with individualized attention. They may also assist and supervise students in the cafeteria, schoolyard, or on field trips. Most perform a combination of instructional and clerical duties. This program is not designed to transfer to a senior institution.

### Job/Employment Information

*Positions You are Trained for:* Teaching assistant, instructional aide, paraeducator, and paraprofessional.

*Where Can You Find a Job?* Schools, (public and private) and libraries.

*Expected Salary Range:* Earnings vary by region, work experience, and academic qualifications. Nationally, salaries range from \$14,800-\$23,600.



**Danville Area  
Community College**

# Electronics

## **ELEC 160 Intro to Electricity/Electronics**

**5 hours**

Introduction to fundamental concepts of the nature, production, and usage of electricity. Study of circuits with emphasis on problem solving and component identification. [C] 

## **ELEC 175 PC Applications in Electronics**

**2 hours**

This course will introduce the student to a variety of skills and applications of personal computers used by the contemporary electronics technician. First, the student will be given a general overview of disk operating fundamentals, the Windows environment, the internet, and world wide web. Second, students will also be taught the basics of computer aided design as it applies to printed circuit board design and construction. Third, the student will become familiar with the use of various software packages developed for the electronics industry such as Workbench, ETCAI, and others. Finally, the student will learn the BASIC programming language and its use in controlling electronic circuits in robotics and other automated devices. [C]

## **ELEC 168 Industrial Electricity**

**4 hours**

A study of 3 phase electrical power as applied to power sources, distribution, and usage. Motors, generators, transformers, and other heavy power units stressed. Wiring of industrial 3 phase control circuits included. [C]

## **ELEC 273 Digital Electronics 1**

**4 hours**

Digital 1 is a study of the fundamentals of Digital Electronics as used in modern electronic systems. Boolean Algebra is used to minimize circuitry and solve logic problems. The connections of AND, Or, NAND, NOR, INVERTORS, and flip-flops is studied. Prerequisite: ELEC 160. [C] 

## **Electronic Technology Program**

This program is designed to give the training needed for the installation, maintenance, operation and servicing of electronic systems in industry. This program is an occupational program typically not designed to transfer. However this program has been articulated to some senior institutions. Please contact a counselor for specific details.

Graduates of this program will be knowledgeable in the operation, installation, and repair of programmable logic controllers or PLC's. Graduates are expected to access P.C. programs, locate faults/malfunions, and repair equipment or reprogram as required. Electronic repairers install, test, repair, and calibrate equipment to ensure it functions properly. They examine work orders, talk to equipment operators, and check for common causes of trouble. They may use voltmeters, ohmmeters, signal generators, ammeters, and oscilloscopes, and run diagnostic programs to determine malfunions.

## **Job/Employment Information**

*Positions You are Trained for:* Commercial and industrial electronic equipment repairer, electronic technician, manufacturer sales worker, and maintenance supervisor

*Where Can You Find a Job?* Federal government, manufacturing and industry, and communications.

*Expected Salary Range:* \$27,102-\$44,595



**Danville Area  
Community College**

# Graphic Design

## **BOFF 180 Layout & Design Principles**

**2 hours**

Graphic Design fundamentals including graphic design techniques for publications such as newsletters, brochures, pamphlets, fliers and other business forms. [C]

## **BOFF 219 Publisher**

**2 hours**

This course is an introductory course to develop skills in the use of Microsoft Publisher; a desktop publishing software program. Students will create a variety of documents utilizing and/or modifying Publisher's predefined templates, as well as designing their own layouts. Use of the many editing features of Publisher will be covered.

Prerequisite: BOFF 130. [C]

## **BOFF 217 InDesign**

**3 hours**

An introductory course in Adobe InDesign. Students will learn to use the tools of InDesign; combining text and graphics to create fliers, newsletters, brochures, invitations, and other business forms. Prerequisite: BOFF 130, BOFF 180, or consent. [C]

## **BOFF 246 Illustrator**

**2 hours**

Illustrator is part of the Adobe Creative Suite. Students will use the Illustrator tools to create artwork for print, presentations and the Web. This software provides a comprehensive vector graphics environment with new transparency gradients and multiple art boards that invite you to explore more efficient ways to design.

## **BOFF 220 Photoshop**

**2 hours**

This course is an introductory course to develop skills in the use of this graphics editing software program. Basics of image enhancement and modification will be covered. Students will create presentation quality images that can be subsequently used in other application software publications. Prerequisite: BOFF 130. [C]

## **Graphic Designer**

We are all familiar with the work of graphic designers. Just think of famous company logos and graphics, such as the ones used to present Nike, the Yellow Pages, and Microsoft. Every time you look at a magazine, brochure, advertisement, calendar, program, you're looking at the work of graphic designers.

Graphic designers are experts in visual communication. They use colors, photographs, illustrations, font styles, and other graphics to convey a message, tell a story, or create a particular feeling. Graphic designers create identities for products, services, companies, organizations, and the government. Their work can persuade, inform, and entertain the public.

## **Job/Employment Information**

*Positions You are Trained for:* Graphic designers work for advertising and design firms and large companies. They can also work on their own as freelancers.

*Expected Salary Range:* In general, graphic designers earn between \$20,000 and \$60,000 annually. Illinois Wages: entry wage \$13.77 hourly, \$28,650 annually.



## Health Occupations

### **NURS 107 Orientation to Health Occupations Fields**

**2 hours**

Students will have the opportunity to research and discuss the areas in which they are interested. By the end of the class students will know the educational requirements the employment opportunities and salary expectations for numerous health occupations. This course also serves as an introduction to the Certified Nurse Assistant Program.

### **NURS 111 Basic Nursing Procedures**

**2 hours**

A forty hour program designed to prepare students to provide basic health care in hospitals and nursing homes. This course, the clinical portion of the curriculum, is a continuation of NURS 110. Prerequisite: successful completion of NURS 110.

### **NURS 112 Seminar/Internship/Health Occupations III**

**3 hours**

This preparation level course provides learning experiences to further enhance the student's preparation to perform more advanced skills than covered in Health Occupations I-II. Students are placed on extended campus seventy-five percent (75%) of the time for clinical experience and twenty-five percent (25%) of the time on independent study in the classroom. Instructional and clinical experiences will be in community health, industrial health, mental health, recreational therapy, occupational therapy, speech therapy, physical rehabilitation, social service geriatrics and advanced patient care. Second year students who have met performance/task completion criteria may be placed in paid or unpaid internships in a related business/industry. Internships, in general, will provide advanced skill development and last longer than an extended campus.

### **NURS 113 Seminar/Internship/Health Occupations IV**

**3 hours**

Description is same as NURS 112 (see above).

### **NURS 120 Health Occupations I**

**3 hours**

The initial 45 hours of a 99 hour program meets fall semester and is designed to prepare students to provide basic health care in health care facilities such as hospitals and nursing homes. Instruction will include such topics as: Understanding healthcare settings, the healthcare team, legal and ethical issues, human growth and development, the aging process, common acute and chronic conditions, and Alzheimer's Disease. Prerequisites: High School junior or senior. 8<sup>th</sup> grade reading level, and 7<sup>th</sup> grade math level, based on standardized testing. A resident of college district #507

### **NURS 121 Health Occupations II**

**3 hours**

The final 54 hours of a 99 hour program meets spring semester and is designed to prepare students to provide basic health care in health care facilities such as hospitals and nursing homes. Instruction will include such topics as: Infection control, safety and body mechanics, emergency care, lifting and moving a resident, personal care skills, basic nursing skills, nutrition and elimination, and rehabilitation and restorative care. Prerequisites: High School junior or senior. 8<sup>th</sup> grade reading level, and 7<sup>th</sup> grade math level, based on standardized testing. A resident of college district #507. Students must have met all requirements for Health Occupations I.



## Horticulture

### **HORT 101 Intro to Horticulture Science** **3 hours**

An introduction to the principles and practices involved in the development, production, and use of horticultural crops (fruits, vegetables, greenhouse, turf, nursery, floral, and landscape). This class is a Transfer Ag. course. [T] **IAI: AG 905**

### **HORT 288 Greenhouse Culture** **3 hours**

Commercial production and cut flower crops in the greenhouse. Work in the greenhouse will be the responsibility of the students as it pertains to all phases of crop production. [C]

### **HORT 160 Intro to Floral Design** **4 hours**

Instruction in and application of principles in the art of floral design as to form, styles, and composition. [T, C] **IAI: AG 912**

### **HORT 176 Landscape Principles** **3 hours**

Basic design principles, site analysis, and layout techniques in landscaping. Prerequisite: HORT 284. [C]

## **Golf Course Management**

The Golf Course Management program gives the student the technical and practical knowledge needed to maintain golf course turfgrass. Emphasis will be placed on disease and insect identification and control. Grass establishment, fertilization, irrigation, aerification, and thatch control are also covered. An introduction to golf course hole design, layout, and construction techniques are also discussed. Students will also have a six month internship program starting in April and ending in October.

### **Job/Employment Information**

*Positions you are Trained for:* Graduates interested in working on golf courses usually start as a 1<sup>st</sup> or 2<sup>nd</sup> assistant golf course superintendent, spray technician, or irrigation technician. Many other positions are available in sales with turf equipment manufacturers, dealers, and distributors.

*Where Can You Find a Job?* Any of the 15,000 private country clubs, daily fee, or municipal golf courses in the United States.

*Expected Salary Range:* Locally, 1<sup>st</sup> or 2<sup>nd</sup> assistant superintendents can expect to earn \$16,000 - \$20,000 per year. Golf Course Superintendent salaries can be over \$80,000 per year depending on location and experience.

## **Landscape Design/Construction**

The Landscape Design/Construction program gives the student the technical and practical knowledge needed to design and install landscape plant materials. Graduates also will be able to build patios, install decks, erect fences and landscape walls. Grass establishment, fertilization, irrigation, aerification, and thatch control are also covered. Students will also have a six month internship program starting in April and ending in October.

### **Job/Employment Information**

*Positions you are Trained for:* Graduates interested in working for landscape companies usually start as a crew foreman, spray technician, irrigation technician, or landscape designer.

Many other positions are available in sales with garden centers, turf equipment manufacturers, and plant nurseries. Other job opportunities are in fertilizer, seed, and chemical companies

*Where Can You Find a Job?* Illinois has thousands of landscape companies in both large and small communities.

*Expected Salary Range:* Locally, foreman are paid \$ 7.00-\$10/hr. Earnings vary greatly depending on occupation.



# Industrial Technology

## **MFRG 101 Introduction to Industrial Technology** **2 hours**

This course is designed to provide an overview and foundation for persons interested in or currently employed in the industrial technology industry. The class provides the student abbreviated instruction in a variety of academic, skill and attitude areas considered to be an integral part of successful employment within the industry. Students will engage in learning activities focused upon mathematics, precision measuring, employee "soft" skills, safety, quality, blueprint reading and basic manufacturing processes. Overall, the class will explore the various roles and responsibilities of employees related to production and company performance. This course is considered to be an excellent beginning course to expose the student to the many areas involved in a certificate of applied Science degree program in the manufacturing area.

## **MFRG 200 Industrial Technology Management Quality** **3 hours**

This course will introduce to the student the types of management often utilized in the manufacturing industry. It will discuss leadership, ethics, conflict resolution, diversity, emotional intelligence, and communication skills. Students will also learn about quality control strategies such as TQM, SPC, GMP, SOP and other efforts. Certain specialization certificates such as HAACP will be addressed.

## **MFRG 285 SOE Industrial Paid Internship (Summer)** **3 hours**

Paid Internship with local industrial technology employers performing entry-level work. Internship may lead to full-time employment for students who are not entering college directly after high school graduation. For students who must finance their own expenses, some employers do provide post-secondary education benefits and can assist the student with post-secondary degrees while working. One week of class work before internship: Positive Image and Interview Skills.



# Logistics/Distribution

One year program for high school seniors

Offered Fall Semester:  
Warehouse Operations I

Offered Spring Semester:  
Warehouse Operations II

## LGST 110 Working in the Warehousing Environment

1.5 hours

This course provides learners with an overview of the functional and structural composition of warehousing and distribution centers. Topics include: Introduction to the Certified Warehousing Specialist Program; Introduction to Business Principles; General Plant Safety; Learning for Success; Managing Change; Self Management and Personal Wellness; and Positive Work Ethic.

## LGST 130 Warehousing and Distribution Process

2.5 hours

This course provides learners with the knowledge and core skills associated with warehousing and distribution. Units in this course include: Warehousing and Distribution; Warehousing Productivity Measures; Methods of Inventory Management; Protecting Materials and Merchandise; Palletizing; Handling Systems; and Processing Hazardous Materials.

## LGST 140 Warehousing Technology Skills

2.0 hours

Warehousing technology skills are those practices important to working in a technical environment. This course covers the use of scanners and data applications along with the understanding of industrial controls and computers and automation. Units in this course include: Scanners and Data Entry; Warehouse Data Applications; Problem Solving; Introduction to industrial Controls; and Introduction to Computers and Automation.

## LGST 150 Representative Warehousing Skills

2.5 hours

This course discusses mathematical concepts used in warehousing and distribution. It also focuses on powered material handling equipment and safety requirements. Units in this course include: Math and Measurement; Calculators; Powered Industrial Truck Operator; Warehousing Simulations.

## LGST 120 Warehousing & Workforce Skills/ Paid Internship - Summer

1.5 hours

This course provides training in the workplace practices that contribute to success on the job. Units in this course include: The Art of Effective Communication; Working Together; Positive Image; and Interview Skills.

## Certified Warehousing and Distribution Specialist

The Certified Warehousing and Distribution Specialist Program is designed for those individuals who seek employment in the Logistic field, as well as those individuals currently employed in warehousing and distribution who want greater responsibility and growth in their careers. The curriculum consists of five courses, a warehousing and distribution center simulation, and a final assessment of knowledge and skills. Each course can be taken independently and courses can be taken in any sequence. Admission requirements: Asset English score of 35; Asset Reading score of 38; and Asset Math score of 35.



# NIMS

## **MFRG 160 Machining I**

**3 hours**

This course is an introduction to machine tools and processes associated with the machine trade. Students are taught the fundamentals of shop safety, the use of metal hand tool, bench and layout work and the skills needed for the preparation for metal removal processes. Machine shop measurements using precision measuring devices are stressed in the course. [C]

## **ELEC 104 Industrial Safety**

**3 hours**

An explanation of requirements and recommended programs for improvement of job safety and health under current Federal and State mandates. Emphasis given to preventive program procedures. [C]

## **MATT 132 Technical Math**

**4 hours**

Review of arithmetical processes with special topics in measurement, formula usage, solution of simple equations, applied geometry, and ratio and proportion. [C]

## **MFRG 161 Machining II**

**3 hours**

This course is an introduction to the lathe engine. Students are taught the fundamentals of shop safety and skills associated with the operation of the lathe engine for metal removal processes. Prerequisite: MFRG 160. [C]

## **MFRG 162 Machine Tools III**

**3 hours**

This course is an introduction to the mill and surface grinder. Students are taught the fundamentals of shop safety and skills associated with the operation of the mill and surface grinder for metal removal processes. Prerequisite: MFRG 161. [C]

## **MFRG 163 Machine Tools IV**

**3 hours**

This course will allow the student to demonstrate and advance the skills acquired in Machining I, II and III through the development of an independent project. Students are further prepared for NIMS testing. Prerequisite: MFRG 162. [C]



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# Welding

## WELD 170 Gas Welding

4 hours

Designed to provide an opportunity to learn skills and the fundamental knowledge in Oxy-Acetylene welding and safety. Instruction will be given covering brazing cast iron welding and flame cutting. Emphasis will also be given to vertical weldments and the proper method of welding non-ferrous metals. [C]

## WELD 180 Arc Welding

4 hours

Electric arc welding processes are discussed. Flat, horizontal, vertical and overhead positions will be stressed. Alloying elements and their uses in various steel will be covered. Welding of aluminum and castings will also be covered. [C]

## WELD 280 MIG Welding

4 hours

All aspects of MIG welding are covered including set up and adjustment of equipment. Shielded gas systems and shielded gases will be discussed. Practice on the vertical and overhead positions on mild steel, stainless and aluminum. Students should become proficient with the MIG process. [C]

## WELD 270 TIG Welding

4 hours

All aspects of TIG welding are covered. Electrode preparation, striking the TIG arc, length of TIG arc and breaking of the arc. The students will enhance their skills by making vertical and overhead welds on pipe, aluminum, and stainless steel. Set up and adjustment of equipment is stressed. [C]

## Welding Program

Welding is the most common way of permanently joining metal parts. In this process, heat is applied to metal pieces, melting and fusing them to form a permanent bond. Because of its strength, welding is used in shipbuilding, automobile manufacturing and repair, aerospace applications, and thousands of other manufactured products. Welding is also used to join beams when constructing buildings, bridges, and other structures, and to join pipes in pipelines, power plants, and refineries. Types of welding include manual welding, semi-automatic welding, and automated welding. The work of arc, plasma, and flame cutters is closely related to that of welders. However, instead of joining metals, cutters use the heat from burning gases or an electric arc to cut and trim metal objects to specific dimensions.

NOTE: All welding classes are taught open entry/open exit. Students move from one course to the next as they satisfy the objectives and meet the skill levels of each class.

## Job/Employment Information

*Job Outlook:* Job prospects should be excellent for welders with the right skills, as many employers report difficulties in finding qualified applicants.

### Expected Salary Range:

<u>Position</u>	<u>Entry</u>	<u>Median</u>	<u>Experienced</u>
Welders & Cutters	\$9.50/hr	\$13.18/hr	\$15.59/hr
Welding Machine Operator	\$8.01/hr	\$11.33/hr	\$14.05/hr
Welding Machine Setters	\$11.12/hr	\$14.56/hr	\$18.18/hr



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# Project Lead The Way

## **DRAF 161 Introduction to Engineering Design** **3 hours**

Required of engineering students. Introduction to design concepts used on production drawings with emphasis on current engineering standards, terms and symbols. Freehand sketching and AutoCAD software is utilized for creating and modifying orthographic multi-view drawings, dimensions, section and auxiliary views. [T] **IAI: EGR 941**

## **MFRG 120 Principles of Engineering** **4 hours**

This course is an introduction to engineering careers and the engineering process. Student will be taught the engineering process, design and development through classroom lectures, online research and project work.

## **ELEC 273 Digital Electronics I** **4 hours**

Digital 1 is a study of the fundamentals of Digital Electronics as used in modern electronic systems. Boolean Algebra is used to minimize circuitry and solve logic problems. The connections of AND, OR, NAND, NOR, INVERTORS, and flip-flops is studied. [C] 

## **MFRG 280 Computer Integrated Manufacturing** **3 hours**

Theory and laboratory experience in the fundamentals of programming a CAD based system to generate numerical control programs for production machinery. Creation of tool data bases, machining curves, tool paths for lathes and mills are covered. In addition, tool and turret statements, machine characteristics, post processor are covered. [C] **IAI: MTM 933**

## **Job/Employment Information**

**Position:** Engineering techs provide the technical support needed to transform engineers' ideas into reality. They use their expert knowledge of science, engineering, and mathematics to assist in the completion of many different kinds of projects. An engineering tech's job tends to be more limited in scope and more practical than that of an engineer. Their contribution and input is highly valued and crucial to the process of everything from designing new machines to the construction of buildings to estimating the cost of a new manufacturing plant. The specific duties of an engineering techs depend on the position they hold. They may include things like setting up and repairing equipment, preparing and conducting experiments, collecting data, and recording results. If they are involved in design work, techs use computer-aided design (CAD) software to produce three-dimensional drawings. They may also assist in the creation of prototype versions of the design. Others work in quality control or equipment maintenance positions. People in this occupation have many areas of specialization to choose from: Civil engineering techs help civil engineers design and build highways, buildings, bridges, dams, and other structures. They are also involved in surveys and studies. Some inspect water and water filtration plants to ensure that pollution control requirements are being met. Others estimate construction costs and specify materials to be used. Electrical and electronics engineering techs help develop, manufacture, and service electrical and electronic equipment. They work on things like televisions, radar, sonar, and computers, often using measuring and diagnostic devices to test, adjust, and repair the equipment. Industrial engineering techs study the efficient use of people, materials, and machines in factories, stores, warehouses, and offices. They prepare layouts of machinery and equipment, plan the flow of work, study statistics, and analyze costs. Mechanical engineering techs help engineers design machinery and other equipment by making sketches and rough layouts. They also record data, analyze results, and write reports. When planning production, mechanical engineering techs prepare layouts and drawings of the assembly process and parts. They estimate labor costs, equipment life, and plant space. Some test and inspect equipment in manufacturing departments, or work with engineers to eliminate problems.

**Salary Potential:** Engineering techs mainly work in the manufacturing, professional, scientific, and technical service industries. Some work for government agencies. An engineering tech's income depends on his or her level of experience and area of specialization. An engineering tech's assistant, for example, may earn between \$15,000 and \$25,000 a year. Once an assistant has full certification as an engineering tech, however, they usually make somewhere between \$25,000 and \$75,000 a year. The area of specialization that engineering techs choose to study greatly impacts their earnings. Median annual earnings range from about \$37,000 for environmental engineering techs to about \$52,000 for aerospace engineering and operations techs. Other medians include \$38,000 for civil engineering techs, \$41,000 for mechanical engineering techs, and \$43,000 for electrical and electronic engineering techs. Experienced engineering techs can earn salaries high above the medians. Those who have advanced to senior or management positions can earn more than \$75,000 a year.



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