

Architecture, Construction & Design Engineering

PLTW Computer Int Mnfg(CIM) (TEC363) and *PLTW Computer Int Mnfg(CIM) (TEC364) @ Central Campus

Recommended prior courses: Intro to Engineering Design, Principles of Engineering, or Introduction to Computer Aided Design (Engineering/Manufacturing or Architecture/Construction) | Duration: 1 Semester (block) | Grades: 10-12

TEC364 offers DMACC EGT 450, PLTW-Computer Integrated Manuf, 3 credits

Computer Integrated Manufacturing (CIM) is one of the specialization courses in the PLTW Engineering program. The course deepens the skills and knowledge of an engineering student within the context of efficiently creating the products all around us. You will build upon your Computer Aided Design (CAD) experience through the use of Computer Aided Manufacturing (CAM) software. CAM transforms a digital design into a program that a Computer Numerical Controlled (CNC) mill uses to turn a block of raw material into a product designed by you! You will also learn and apply concepts related to integrating robotic systems such as Automated Guided Vehicles (AGV) and robotic arms into manufacturing systems. Industry leading software packages learned and used include Autodesk products: Inventor CAM, and Fusion. Software certified user certifications are available.

***PLTW Introduction to Engineering Design (IED) (TEC501/5012/502)**

Corequisite: Algebra I or higher, meets / exceeds proficiency in previous math course or teacher's approval. Duration: 1 Year | .5 Credit each for TEC501/5012 and 1.0 credit for TEC502 Duration at Central Campus: 1 Semester (block) DMACC EGT 400, PLTW Intro to Engr Design, 3 credits

Introduction to Engineering Design (IED) is a high school engineering course in the PLTW Engineering Program. In IED, you will explore engineering tools and use the engineering design process to solve engineering problems. You will progress from completing structured activities to solving open-ended projects and problems that require you to plan, document, communicate, and develop other professional skills. You will apply systems thinking and consider various aspects of engineering design including material selection, human-centered design, manufacturability, assemblability and sustainability. You will develop skills in technical representation and documentation, especially through 3D computer modeling using a Computer Aided Design (CAD) application. You will develop algorithms, perform statistical analyses, and develop mathematical models to inform design and problem solutions. You will build competency in professional engineering

practices including project management, peer review, and environmental impact analysis as part of a collaborative design team. Ethical issues related to professional practice and product development are also presented.

***PLTW Principles of Engineering (POE) (TEC503/504)**

Prerequisite: Typical progression is TEC501/502 (Intro to Engineering Design) is taken first: Grade Level or Higher Math Course Duration at Central Campus: 1 Semester (block) | 1.0 Credit DMACC EGT 410, PLTW Principles of Engineering, 3 credits

Principles of Engineering (POE) is a foundational course of the high school engineering pathway. You will explore a broad range of engineering topics, including mechanisms, the strength of materials and structures, automation, and kinematics. You will be challenged to continually hone your interpersonal skills, creative abilities, and problem-solving skills.

Intro to Robotics/Electronics (EGR218) @ Central Campus, Engineering Academy

Grades: 9-12 | Duration: 1 Semester | .5 credit

Intro to Robotics is a course that introduces eager students to the world of robotics. You will work with multiple robotic platforms and learn the C++ programming language. In addition to programming, you will assemble multiple circuits to enable your robot to navigate their world through the use of touch sensors, infrared light sensors, and ultrasound sensors. You will apply this knowledge to project-driven course work, including the operation and programming of robotic and automation systems. This course is designed for students interested in STEM. Although not a prerequisite, this class will greatly prepare the student for the Digital Electronics & Robotics class.

Creative Engineering & Design (EGR323/324) @ Central Campus Prerequisites: None | Duration: 1 Year (block) | 1.0 Credit/Semester | Grades: 10-12

In this course, you will come together with students from various backgrounds and strengths to solve real-world problems and prepare for national technology competitions. The focus of the course will be creating physical/electronic solutions in a “makerspace” environment. The course will be student driven, with most of the teaching based on project management and problem-solving techniques.

***Computer Aided Design (CAD) Technology (EGR327/EGR3272/EGR328) and CAD Tech HS S2 (EGR3282) @ Central Campus**

Recommended prior courses: Introduction to Computer Aided Design (Engineering/Manufacturing or Architecture/Construction) or Mechanical/architectural drafting/design recommended | Duration: 1 Year (block) | Grades: 10-12 EGR327 offers DMACC CAD 119, Intro Computer-Aided Drafting, 3 credits EGR3272 offers DMACC CAD

125, Intermediate CADD-Mechanical, 3 credits EGR328 offers DMACC CAD 126, Intermed CADD-Architectural, 3 credits

In this course, industry based 2D and 3D computer aided design skills will be taught, as well as introduction to computer aided machining (CAM) and computer aided coordinate measuring (CMM). Rapid prototyping will be integrated with the use of multiple types of 3D printers and computer numerically controlled (CNC) equipment. The architectural curriculum of this course emphasizes design studies and technical information, and the production of construction drawings. Interior design, landscape design and the development and study of energy efficient housing is incorporated into the course to prepare students for changes in the housing industry. 2D and 3D computer aided design skills in architecture and construction industries are practiced and critiqued by professionals. Model building is used to improve visualization skills. Industry leading software packages learned and used include Autodesk products: AutoCAD, Inventor, Revit; Dassault Systems Solidworks, and CNC Software Inc. Mastercam. Software certified user certifications are available.

PLTW Digital Electronics HS (EGR505) @ Central Campus *PLTW Digital Electronics (EGR506)

Corequisite: Recommended proficiency in math | Duration: 1 Year (block) | Grades: 10-12
Prerequisites: Intro to Robotics EGR506 offers DMACC EGT 420, PLTW-Digital Electronics, 3 credits Digital Electronics is the foundation of all modern electronic devices such as cellular phones, MP3 players, laptop computers, digital cameras and high-definition televisions. The major focus of the course is the process of combinational and sequential logic design, teamwork, communication methods, engineering standards and technical documentation.

College Civil Engineering & Architecture (CEA) (EGR507/5082) @ Central Campus *College Civil Engineering & Architecture (EGR508)

Recommended prior courses: Intro to Engineering Design, Principles of Engineering, or Introduction to Computer Aided Design (Engineering/Manufacturing or Architecture/Construction) | Duration: 1 Year (block) | Grades: 11-12 EGR508 offers DMACC EGT 460, PLTW-Civil Engr/Architecture, 3 credits

In this course, you will have the opportunity to develop skills needed for residential and commercial design. You will learn about structural systems, mechanical systems, building codes, and site considerations. You'll learn through problem-solving activities and projects in a team-based approach. Civil Engineering and Architecture emphasizes design studies and technical information, and the production of construction drawings.

Arts, Communications, Information Solutions/Multimedia

Multimedia Production (TEC347) @ Central Campus Prerequisite: None | Duration: 1 Semester (block) | 1.0 credit

In this course, you will learn how to bring multimedia designs to life using a variety of tools, like Adobe Audition, DaVinci Resolve, and Adobe Animate. You'll learn how to select images to use in multimedia content and you'll use audio, video, and animation techniques for creating engaging multimedia content. This course is a great introduction to a future career in marketing, advertising, production, or design.

Advanced Graphic Communications is a 3-year program @ Central Campus

Prerequisites: Two courses in any of the following areas is highly recommended: Art, Graphic Design, and Journalism. Duration: 1 Year (block)

Year 1 = *Advanced Graphic Communications (ART361/3622) ART361 offers DMACC GRD 403, Communication Design, 2 credits ART3622 offers DMACC GRD 459, Illustrator, 3 credits

Year 2 = *Adv Graphic Comm II (ART461/462) and Adv Graphic Comm II HS (ART4614/4622) ART461 offers DMACC GRD 301, Illustrator, 3 credits ART462 offers DMACC GRD 405, Illustrator, 3 credits

Year 3 = *Adv Graphic Comm III GRD463 (ART4692) and Adv Graphic Comm III HS (ART4693/470) ART4692 offers DMACC GRD 463, Photoshop, 3 credits

Advanced Graphic Communication provides education, training and real-world graphic design and print production experiences. Through close relationships with industry experts, the program's curriculum and industry experiences reflect the technological expectations of the graphic communication industry. First-year students complete a wide variety of hands-on projects in design, pre-press, print production, and bindery. Participation in frequent industry tours allows you to increase the range and depth of your understanding. As a second year student, you will be expected to complete a variety of increasingly complex project work. You will also participate in the design, layout and production of various "live jobs." Third-year students may choose the privilege of participating in job-shadow and internship experiences. Job shadowing and internships provide a stronger foundation and background for the advanced student desiring to enter the industry. For students planning to continue their postsecondary education, these foundational experiences provide the opportunity to earn additional college credit.

Information Technology I-III HS (ITP201/202/203/205/301/302/303/401/402) @ Central Campus Prerequisites: None | Duration: 1 Year (block) | Grades: 10-12

Year 1 = *Information Technology ITP203 offers DMACC NET 166, Applied Computer Security, 3 credits and **ITP205** offers DMACC NET 182, IT and Security Fundamentals, 3 credits

Year 2 = *Information Technology II ITP303 offers DMACC NET 213, Cisco Networking, 4 credits

Information Technology is a multi-year program designed to give you the knowledge and skills needed for success in one of today's fastest growing career areas. You will learn about firewalls, vpns, computer forensics, ethical hacking, and so much more! We have a ton of fun doing hands-on work, going on field trips, and especially participating in the Cyber Defense Competition where we defend servers from hackers. Students who complete this course can earn IT certifications. You may have the opportunity to participate in paid registered apprenticeships. The skills learned in this course will be a solid foundation for a career in Information Technology!

Comp Programming HS (ITP435) @ Central Campus

Prerequisite: Computer class recommended along with strong interest in field | Duration: 1 Semester | .5 credit

In information systems, you will learn to code using Python coding language. You will also have the opportunity to explore other coding languages. This course will focus on preparing you for a future in the software side of technology. This industry is in great demand for talented professionals. Locally there are always many opportunities for work in this field that covers a wide variety of job titles.

Broadcasting & Film is a 3-year program @ Central Campus Prerequisite: None | Duration: 1 Year | Grades: 10-12 (Year 1), 11-12 (Year 2), and 12 (Year 3)

Year 1 = Broadcasting/Film I HS (MDA211/212) and *Broadcasting/Film I (MDA2112/2122) MDA2112 offers DMACC HUM 120, Introduction to Film, 3 credits
MDA2122 offers DMACC HUM 121, America in the Movies, 3 credits

Year 2 = Broadcasting & Film II (MDA311/312) and *Broadcasting/Film II (MDA3112/3122) MDA3112 offers DMACC MMS 480, Video Production I, 3 credits
MDA3122 offers DMACC MMS 484, Premiere/Video Editing I, 3 credits

Year 3 = Broadcasting & Film III HS (MDA411/412)

The Broadcasting & Film Department at Central Campus is a dynamic, three-year program which concentrates on the creative and communication aspects of the radio/television/film industry. Emphasis is placed on analysis of career paths and the production techniques associated with gainful employment. Considerable time is spent working on the craft of writing, reading, equipment operation, announcing, creative thinking and management skills. The program may include studio assignments in the FCC-licensed radio station, KDPS 88.1 FM (and streaming live online: kdpcentral.streamon.fm), or submission of film and television projects to DMPS-TV. Students also have the opportunity to submit work to various contests and festivals, such as the Wild Rose Film Festival, 48 Hour Film Festival, Iowa Motion Pictures Association Film Festival, Cedar Rapids Film Festival and John Drury Radio Awards. Projects may be submitted to colleges and universities in pursuit of scholarships in the area of Broadcasting & Film.

Business / Technology

Money, Banking, and Finance Courses:

Accounting (BUS301)

Prerequisite: None | Duration: 1 Semester | .5 credit | Grades: 10-12

Join the class that every business student needs! If you are planning on studying business (most colleges will have you take this as a business major) and enjoy solving problems, Accounting is the course for you. Students will participate in accounting competitions with other schools throughout the course.

Money Matters (BUS347) @ Central Campus

Prerequisite: Highly recommended to take this class with Investment and Real Estate | Duration: 1 Semester | .5 credit Join the class where you learn about all things money. Learn about budgets, insurance, and financial planning. Learn skills that will help you enter some of Des Moines' largest employers and prepare you to be successful with your finances. Build your financial knowledge!

Investments & Real Estate (BUS369) @ Central Campus

Prerequisite: Highly recommended to take this class with Money Matters | Duration: 1 Semester | .5 credit

Have you ever wondered how investing works or what cryptocurrency is? This course will dive into the investing process and give you practical experience establishing and maintaining an investment portfolio. We will learn about stocks and bonds, mutual funds, retirement investments, real estate, and cryptocurrency. You will gain experience analyzing information to determine if, and how, your investment portfolio is growing.

Marketing Courses:

Sports Entertainment Marketing (BUS359) @ Central Campus

Prerequisite: None | Duration: 1 Semester | 0.5 credit

Learn how stadiums run soccer games, how to start your own music festival, and how your favorite streaming service gets you to watch more episodes. The course will be a mix of simulation learning and working with real world concert venues and local sports teams. Students can earn an industry certification from the course.

Digital Marketing – Social Media and Advertising (BUS357) @ Central Campus

Prerequisite: None | Duration: 1 Semester | 1.0 credit

Learn how to use social media and content marketing to generate interest in your product or service. Investigate the risks and rewards with digital marketing and learn how to create dynamic ads that make people want to buy! Students will develop and implement a social media and digital marketing plan and will learn how to use data analysis tools to assess its effectiveness. In addition to exploring social media tools and advertising principles, students will learn about using websites, blogs, search engine optimization (SEO), lead generation, and email to market their business.

Business Start Up (BUS355) @ Central Campus

Prerequisite: None | Duration: 1 Semester | 0.5 credit

This class will teach you how to turn your passion and skills into a small business opportunity where you are the boss. You will learn what you need to know to develop and start your successful business. In this course, you will: find a business niche, determine legal requirements for start-up, develop budgets and marketing strategies, determine human resources needs, and present your start-up plan. Students have the opportunity to take a proficiency exam. Upon passing, students will be awarded University of Iowa credit in ENTR:1010 Exploring Entrepreneurship, 3 s.h.

***Student CEOs (BUS371) @ Central Campus**

Prerequisite: None | Duration: 1 Semester | .5 credit DMACC BUS 148, Small Business Management, 3 credits

Do you want to be the boss? This class is for you! You'll learn about business operations from managing employees and customers to using data to make decisions that will make your business a success. This course gives you a little bit of everything you need to be a leader in the fancy corner office!

Business Incubator (BUS373) @ Central Campus

Prerequisite: None | Duration: 1 Year | .5 Credit/Semester

This course is for juniors and seniors who are ready to apply what they already know about business. In this class students will work with our school business partners to complete their real-world projects that are helping the other programs at Central Campus. Students will join DECA (student organization that prepares high school students for careers in business and management) where they can compete at the regional, state, and/or national level(s). There is also opportunity for students to intern with a community partner. This course is repeatable.

Construction Skilled Trades

Intro to Const (Skilled Trades) (STA221) @ Central Campus

Prerequisite: None | Duration: 1 Semester (block) | 1.0 credit ***This course is a good option for students who are unable to take Industrial Technology classes, such as Woodworking and Carpentry at their home school.***

In this course, you will be introduced to the Carpentry, Welding, Plumbing/Mechanical, and Electrical trades. You will learn about the materials used in these industries and develop an understanding of the fundamentals of construction within each of these types of industries. You will work with various power tools and hand tools common to the different industries and will learn how to analyze workplace hazards and identify how to safely work around these hazards. You will learn to take precise and accurate measurements, what a jobsite looks like, and how a project is completed from start to finish. The course will help you identify the type of construction you enjoy and provide you with the starting point towards a pathway in skilled trades.

Carpentry is a 2-year program @ Central Campus

Prerequisites: Technical Education course recommended (TEC101, STA221, or TEC211) 1
Duration: 1 Semester (block) Grades: 10-12

Year 1 = *Carpentry (STA265/2652/2653/2654) and Carpentry HS (STA2662) STA265 offers DMACC CON 336, Care/Use of Hand/Power Tools, 1 credit STA2653 offers DMACC CON 337, Common Blueprint Reading, 1 credit

Year 2 = Carpentry II HS (STA3653/3662) Duration: 1 Year (block) | 1.0/Semester

This program concentrates on craftsmanship in the areas of woodworking and carpentry. In year one, you will develop machine techniques as you construct various projects including cabinets, tables, and finish carpentry construction applications. During year two, you will continue to develop machine techniques as you construct individual projects which will be developed by the student and teacher together. During both years, you will be exposed to home building concepts and techniques including: framing, flooring, trim, roofing, and other aspects of residential types of building projects. Work-based learning experiences will be provided during both years to allow you to gain understanding of the various opportunities for future employment in a carpentry career. In addition, you will learn teamwork, budgeting, purchasing, and estimating to prepare for careers in contracting. This experience has direct links to the local union apprenticeship programs, DMACC and other training programs after graduating from high school.

Electrical Construction is a 2-year program @ Central Campus

Prerequisite: Technical Education course recommended | Duration: 1 Year | 1.0
credit/semester | Grades: 11-12

Year 1 = Electrical Construction HS (STA371/372)

Year 2 = Electrical Construction II HS (STA471/472)

The electrical program is a multi-year program that provides students with hands-on skills, knowledge, and attitude needed to begin their career in the electrical industry. You will explore and identify how to safely work around electricity. You will spend time building and understanding electrical circuits, practice with and learn the safe and proper use of working with common electrical tools and electrical materials, practice bending; cutting; and threading electrical conduit, use full scale construction drawings to become proficient in reading blueprints, install a residential electrical service, electrical panel, and common residential electrical devices. Throughout the program, you will be given the opportunity to tour, work with, and apply for local electrical apprenticeships and local industry leaders. You will spend time working on your math and measurement skills needed for passage through an electrical apprenticeship. Students will demonstrate employability skills;

practicing needed communication skills, expected workplace skills, and collaborative team skills. Successful completion of the electrical program will result in receiving certification of Interim Credentialing and can provide advanced placement into the Des Moines Electrical Apprenticeship.

Welding is a 2-year program @ Central Campus

Prerequisite: DMACC requires all students in the Welding Program to be 16 years old on the first day of classes.

Year 1 = *Welding (STA375/3752/3753/3763) and Welding HS (STA3762) STA375 offers DMACC WEL 228, Welding Safety/Health: SENSE1, 1 credit STA3753 offers DMACC WEL 274, SMAW I: SENSE1, 3 credits STA3763 offers DMACC WEL 244, GMAW Sh Cir Transfer: SENSE1, 2 credits

Year 2 = *Welding II (STA475/4754/4755/4764) STA475 offers DMACC WEL 233, Print Read/Sym Inter: SENSE1, 3 credits STA3754 offers DMACC WEL 275, SMAW II: SENSE1, 3 credits STA4755 offers DMACC WEL 245, GMAW Spray Transfer: SENSE1, 2 credits STA4764 offers DMACC WEL 251, GTAW Carbon Steel: SENSE1, 2 credits

Welding provides opportunities for students to gain skills in blueprint reading, design, layout, and fabrication of specific projects large and small. Throughout the program, you will develop skills in different welds such as oxy-acetylene, shield metal arc, MIG, and plasma arc cutting. You will also receive instruction on key construction welding techniques to include pipe welding, and TIG welding with a variety of steels and steel alloys. Welding students have the opportunity to meet and work with employers in the second year of the welding program. This program has a registered apprenticeship with John Deere where students get paid, earn credit and credentials, and could gain employment at John Deere.

Education and Leadership

Career Opportunities Education HS (TAC275) @ Central Campus

Prerequisite: None | Duration: 1 Semester | .5 credit | Grades: 9-10

Career Opportunities in Education is for freshman and sophomores who are interested in working with youth and are considering a career in education. You will learn employability skills, explore a variety of career opportunities, learn legal requirements for education, history of education, and educational systems. You will enjoy guest speakers who work with youth in differing roles, develop their own career goals, and create resumes to help them pursue those goals.

Dream to Teach is a 2-year program at Central Campus

Prerequisite for Year I: Career Opps in Education. Recommended to take Child Development 1 and 2 Duration: 1 Year (block) | Grades: 10-12

Year 1 = Dream to Teach I HS (TAC251/2522) Prerequisite for Year 2: Recommended to take Child Development 1 and 2 | Duration: 1 Year (3 periods) | Grades: 11-12

Year 2 = *Dream to Teach II (TAC351/352) and Dream to Teach II HS (TAC3513/3522) @ Central Campus TAC351 offers DMACC EDU 210, Foundations of Education, 3 credits
TAC352 offers DMACC EDU 218, Initial Field Experience, 2 credits

Dream to Teach I is an introduction to the field of education/teaching and is offered to ninth through twelfth grade students. The course introduces students to a variety of careers in education through a curriculum that integrates academic and workplace skills. You will learn from guest speakers from different backgrounds and educational roles. You will also learn about the foundations of education, educational theories/theorists, and pedagogy through a social justice lens. Dream to Teach II is offered to eleventh and twelfth grade students who have either taken Dream to Teach Year One or who have participated in their school's Dream to Teach club. The course will examine education from a historical, philosophical, and sociological perspective. Challenges and issues in education today will be discussed in the context of school organization, politics, funding, and curriculum through a social justice lens. First semester will help prepare you for your upcoming student teaching internships by reviewing topics such as professionalism, mandatory reporting, cultural responsiveness, etc. Second semester, you will acquire extensive field experience through student teaching internships, observation, and field trips. You will work to develop leadership skills toward becoming agents of change in their schools

ROTC Marines (MIS169/170/171/172) @ Central Campus

The primary purpose of the MCJROTC Program is Leadership Education. It prepares high school students for responsible leadership roles while making them aware of their rights, responsibilities, and privileges as American citizens. In order to be a good leader, one must first learn to be a good follower. As a cadet gains experience and knowledge, he or she will be given active, hands-on leadership responsibilities within the JROTC Program. The Marine Corps JROTC Leadership Education Program emphasizes the development of self-discipline, leadership, honor, integrity, and the value of community service. Citizenship training is emphasized throughout the program and reinforced by using current events and activities occurring in the Polk County area, the state of Iowa, our nation and the entire world. In addition, students are acquainted with basic military skills and Marine Corps traditions. Satisfactory completion of the program can lead to preferential consideration for

a service academy appointment, advanced placement credit in the Senior ROTC program or advanced rank in the Armed Forces. The ROTC program offers 0.125 pe credit through the course PHY137, ROTC Fitness.

Environmental & Agri-Sciences

***Marine Biology/AqSci (AQS445/446) and Marine Biology/AqSci Lab (AQS4452/4462) @ Central Campus**

Prerequisite: None AQS445 offers DMACC BIO 225, Marine Biology I, 4 credits AQS446 offers DMACC BIO 227, Marine Biology II, 4 credits

The Marine Biology program puts you face to face with hundreds of marine organisms found around the world. You won't just learn about the ocean from books, you will also take care of over 100 "tiny oceans" during the year and personally interact with sharks, jellyfish, corals, nautilus, and hundreds of fish in a new facility modeled after university laboratories and public aquariums. Students are also given the opportunity to conduct their own research projects, participate in science fairs, practice field work by kayaking, dissect different organisms, and more. What makes this program so unique is that it is a student-run laboratory and aquarium which gives each student the opportunity to literally get their hands wet in everything that goes on, but to also leave a legacy for other students by coming up with new ideas for aquariums and different marine organisms to have in the program. An optional Field Studies course occurs in the spring where the students are able to put their skills to the test, earn college credit, and have a lot of fun! For 1-2 weeks, students become "Marine Biologists" and participate in several activities to gain an understanding of life as a marine biologist. Previous trips have gone to California, Texas, and Florida. Most expenses for this trip are the responsibility of the student. At least one fundraiser is made available to students to help offset the cost. Marine Biology is an elective credit course and does not satisfy high school science credit requirements.

***Aquarium Science (AQS465/466) and Aquarium Science Lab HS (AQS4652/4662) @ Central Campus**

Prerequisite: None AQS465 offers DMACC AGS 222, Aquaculture/Aquarium Sci I, 3 credits AQS466 offers DMACC AGS 249, Aquaculture/Aquarium Sci II, 3 credits

In Aquarium Science, you will experience aquatic animal husbandry and aquaculture in a facility modeled after a professional public aquarium laboratory. You will learn to replicate environmental conditions in the lab similar to those on a coral reef by studying the effects of lighting, water quality, and nutrition on the saltwater organisms in their care. Hands-on activities in the laboratory include breeding saltwater clownfish, propagating live corals

and anemones on the coral farm, breeding jellyfish, and live food culture. This program prepares students for careers in Marine Biology, Environmental Science, commercial aquaculture (fish hatcheries), public aquariums, aquarium maintenance, pet industries and most environmental fields. Students in Aquarium Science are eligible to participate in an optional marine field ecology trip in the spring semester for DMACC credit. Aquarium Science is an elective credit course and does not satisfy high school science credit requirements.

Animal Science (SCI239/2403) and *Animal Science (SCI240/2402) @ Central Campus, 201 County Line Rd

Plant Science HS (SCI2412/2421) Adv Plant Science HS (SCI335/336)

Agri-Science year 1 Plant Science was formerly titled Horticulture SCI240 offers DMACC AGS 114, Survey of the Animal Industry, 2 credits At our Agriculture Science Academy at 201 County Line Road on the southside of Des Moines (south of Blank Park Zoo), you will learn about animals and plants through hands-on activities and exciting projects. The nation's largest secondary school student-run greenhouse and livestock facility allow you to gain practical experience in fields including agricultural business, environmental science, horticulture, landscaping, and veterinary careers. Students are enrolled as members of FFA, the national youth leadership organization, which enhances communication and leadership skills while attending the academy.

Floral/Greenhouse Production HS (SCI355/356) @ Central Campus, 201 County Line Rd

Animal Science/Vet Careers HS (SCI443/4443) @ Central Campus, 201 County Line Rd

Prerequisites: SCI239/2403 Recommended Agri-Science year 2 option

The focus of the Floral and Greenhouse Production class at Central campus is to explore the world of flowers, floral arrangements, greenhouse management and maintenance. In this class you will build on your knowledge of the horticulture industry in specific ways. The time spent in class is split between planning and designing floral arrangements and learning and demonstrating how to successfully run our greenhouses. This class is full of hands-on learning opportunities to engage students in exciting ways. Upon completion of this course, students will have the skills necessary to arrange flowers and efficiently work in the greenhouse. Veterinary Science and Careers covers the skills necessary to be successful in an animal science career. All animal science careers are explored. The class includes the origins of common medical terms used in the veterinary field. The class will center on diseases of large and companion animals, including discussion of causes, transmission, prevention and control. You will work with all animals and be involved in their

care. Upon completion of this program, you will feel comfortable with the nomenclature and skills necessary to work in the animal science industry.

Family and Consumer Sciences/Human Services

Culinary Arts is a 3-year program at Central Campus

Prerequisites: Nutrition & Food Prep 1/2 recommended | Duration: 1 Year (block) | 1.0 credit/semester

Year 1 = *Culinary Arts (CUL365/3652/366/3663) and Culinary Arts HS (CUL3653)

CUL365 offers DMACC HCM 100, Sanitation & Safety, 2 credits CUL366 offers DMACC HCM 143, Food Preparation I, 3 credits CUL3663 offers DMACC HCM 144, Food Preparation I Lab, 3 credits

Year 2 = *Culinary Arts II (CUL465/4652/4653/466/4662/4663) CUL465 offers DMACC HCM 110, Baking (lab), 2 credits CUL4652 offers DMACC HCM 320, Intro to Hospitality Industry, 2 credits CUL466 offers DMACC HCM 152, Food Preparation II, 2 credits CUL4663 offers DMACC HCM 153, Food Preparation II Lab, 2 credits

Year 3 = *Culinary Arts III (CUL469/4692/4694/4695/472) and Culinary Arts III HS (CUL4693) CUL469 offers DMACC HCM 231, Nutrition, 2 credits CUL4694 offers DMACC HCM 240, Menu Planning & Design, 2 credits CUL472 offers DMACC HCM 510, Work Experience, 3 credits

Culinary Arts students have the opportunity to explore potential employment opportunities in the hospitality, food service, and nutrition industries through the courses offered at Central Campus. You are able to complete and receive your ServSafe Certification within your first year of the program under the instruction of three chefs with over 40 years of combined experience. You will plan and prepare menus, use restaurant-grade equipment, serve a multitude of different styles of dining potentially including corporate events, weddings, restaurant style and buffet style services, and pre-order fulfillment. Courses also include baking, nutrition, menu planning, and work experience.

Hospitality & Tourism I HS (CUL385) @ Central Campus

Prerequisite: None | Duration: 1 Semester (block) | 1.0 credit | Grades: 11-12

In this course for 10th – 12th grade students, you will learn about the exciting world of hospitality, lodging operations, food and beverage operations, event management, travel and tourism, and hospitality business and leadership skills. Through real-life examples and hands-on projects, you will develop necessary skills for a competitive advantage when pursuing a career in the hospitality and tourism industry.

Intro to Garment Construction (FDM227) at Central Campus

Prerequisite: None | Duration: 1 Semester | .5 credit

This course is intended for the student with very little or no sewing experience who would like to learn the basics of sewing. The course includes construction of two or more simple garments and/or projects. This course is intended to be a feeder class to the Fashion Design class. Sophomores are encouraged.

Fashion Design & Merchandising is a 2-year program at Central Campus

Prerequisites: None | Duration: 1 Year (block) | 1.0 credit/semester

Year 1 = Fashion Design & Merch HS (FDM3274/3284) *Pending approval* - DMACC APP 255, Intro to Garment Construction, 3 credits

Year 2 = *Fashion Design & Merchandising II (FDM427/4274) & Fashion Design & Merch II HS (FDM4273/428) FDM427 offers DMACC APP 261, Fashion Industry Analysis, 3 credits
FDM4274 offers DMACC APP 109, Creative Design Foundations, 3 credits

Within the creative discipline of Fashion Design, you will discover fascinating fundamentals of the fashion industry and learn about all of the exciting behind-the-scene details that make every show and every display perfect. Study famous and up-and-coming designers, explore historical and current trends, and learn the importance of alterations and proper fit. In this program, students build upon their sewing skills, create fashion drawings, and analyze the designs of others. The program enhances entrepreneurial skills and techniques to successfully market their designs in the fashion industry. The culminating event for this program is a spring fashion show that is created and produced by the fashion students and other cooperating Central Campus programs.

Health Sciences

Anatomy & Physiology (A&P) + Med Term for Health Science (HLTH235) @ Central Campus

Prerequisite: None | Duration: 1 Semester (block) | 1.0 credit

If you've thought about a career in health care, this course is for you! You will learn the structure and function of the human body from the cellular level to organ systems. You will also learn how to communicate effectively in the health care setting by learning the breakdown and reconstruction of medical word parts and their definitions. This course is designed for students wanting to pursue a career in the health care field, including those who wish to enroll in the CNA and/or EMT programs at Central Campus.

Career Opportunities in Health HS (COH311) @ Central Campus

Prerequisite: Current immunizations as required. Students must be 16 at the start of the course. Duration: 1 Semester (three periods) | 1.5 credit

Career Opportunities in Health introduces students to a variety of health careers through a curriculum that integrates academic and workplace skills. Rotations at UnityPoint Health-Des Moines hospital and clinic locations, as well as other private clinics throughout the metro, provide observation experiences that allow you to explore careers of your interest, learn about medicine and work towards an understanding of the big picture of healthcare while developing personal skills.

Intro to Public Health (HLTH331)

Prerequisite: Anatomy & Physiology or Anatomy & Physiology for Health Science AND Medical Terminology Duration: 1 Semester (three periods) | 1.5 credit | Grades: 11-12

Introduction to Public Health is an upper-level course designed to equip you with a foundational understanding of public health principles and practices. This course aims to inspire the next generation of health leaders by exploring the complex factors that influence the health populations. You will learn through hands-on projects and frequent work-based learning experiences. The class is open to Juniors and Seniors only.

***Emergency Medical Tech Clinical Internship (CNA387) @ Central Campus**

Prerequisite: Criminal/abuse background check; Immunization form as required by clinical site; influenza vaccine – October through April. Must pass with a C or higher to continue. See DMACC website for more information. DMACC requires students to be 17+ at start of class. Duration: 1 Semester (three periods) | 1.5 credit CNA387 offers DMACC EMS 214, Emergency Medical Technician, 6 credits

The Emergency Medical Technician certificate is designed to provide an introductory learning experience for persons interested in the field of pre-hospital emergency medicine. This course includes practical and computer-based testing in the classroom, as well as clinical and field experience in area hospitals and with local EMS agencies. National Registry certification testing will be available upon successful course completion in both the cognitive and hands-on psychomotor skills areas. Area fire departments and EMS agencies, as well as some hospital emergency departments, urgent care clinics and industrial settings utilize EMTs.

***Basic Nurse Aide Clinical (CNA391) @ Central Campus Basic Nurse Aide Clinical HS (CNA3913)**

***Adv Nurse Aide Clinical (CNA393/394) Adv Nurse Aide Clinical HS (CNA3933/3944)**

Prerequisites: Criminal/abuse background check; Immunization form as required by clinical site; influenza vaccine – October through April. Must pass with a C or higher to continue. See DMACC website for more information.

Duration: Basic = 1 Semester (three periods) | 1.5 credit

Duration: Advanced = 1 Year (three periods) | 1.5 credit/semester CNA391 offers DMACC HSC 172, Nurse Aide, 3 credits CNA393 offers DMACC HSC 172, Nurse Aide, 3 credits CNA394 offers DMACC HSC 182, Advanced Nurse Aide, 3 credits

These programs give students the opportunity to learn the necessary skills and training to work in various health care settings. You will experience classroom and laboratory instruction along with supervised clinical experience in local long-term care (nursing home) and hospital settings. The advanced program also provides students the opportunity to obtain health care provider BLS certification. Nurse Aide certification is required for admission to most Iowa nursing schools. Either of these courses prepares students for the nurse aide certification. This course includes classroom and laboratory instruction at Central Campus and supervised clinical experience at various health care settings. In addition to the content of the 75-hour Nurse Aide class, the 150-hour Advanced Nurse Aide class covers skills and knowledge utilized by nurse aides in skilled-care units and in hospital areas. Content in the 150-hour course is presented at a faster pace than in the 75-hour Nurse Aide class.

Transportation

Intro to Automotive (CAR228) @ Central Campus

Prerequisite: None | Duration: 1 Semester | .5 credit

This course covers basic physical and mechanical principles related to the transportation field, including ownership, maintenance, and related careers. Through instruction, demonstrations, hands-on and problem-solving activities, you will gain knowledge of skills involved in the operation and servicing of internal combustion engine systems, and the body and structural systems of various vehicles, including their parts and accessories. You will also learn to apply safety as related to the vehicle, hand and power tools, test equipment, and materials common to this course. Students gain additional knowledge and skills in the cranking and charging systems, fuel systems, power transmission devices,

body and chassis systems, steering components, and accessory systems. Instruction will emphasize technologies related to modern vehicles with an introduction to electronic and computer-controlled systems.

Automotive Collision is a 2-year program @ Central Campus

Prerequisite: Intro to Automotive recommended

Year 1 = Automotive Collision HS (CAR3133/3144)

Year 2 = Automotive Collision II HS (CAR4133/4142)

Auto Collision Repair provides students with experience through repairs on late model, damaged automobiles. Quality workmanship, shop safety, good work habits, cooperation, dependability, and responsibility are stressed. You will become familiar with and work with the latest hand and power tools and equipment unique to this trade. The course is designed to prepare students to operate at the same level of workmanship that is found in local auto body shops. Refinishing products have been updated to the current state of the art waterborne paints that are found in many of the area dealership collision shops.

Automotive Technology is a 2-year program @ Central Campus

***Automotive Technology I (CAR3177/3178) @ Central Campus**

Prerequisite: Intro to Auto CAR228 or other TEC course or interest in career Duration: 1 Year (block) | 1.0 credit/semester CAR3177 offers DMACC AUT 111, Intro to Auto Tech I, 6 credits CAR3178 offers DMACC AUT 112, Intro to Auto Tech II, 6 credits

***Automotive Technology II (CAR4312/4322) and Automotive Technology II HS (CAR431/432)** CAR4312 offers DMACC AUT601, Auto Electrical I, 4 credits CAR4322 offers DMACC AUT612, Auto Electrical II, 4 credits

In the Automotive Technology program students complete competencies and gain skills in working with automotive engines, brakes, steering and suspension, electricity/electronics, HVAC, engine performance, and transmissions. The program is also affiliated with most of the major automotive manufacturers including Ford, General Motors, Toyota, Honda and Chrysler through AYES (Automotive Youth Educations Systems). Students are engaged academically in the classroom learning basic automotive knowledge and skills. You are then exposed to real world activities in the automotive lab learning how to safely diagnose, disassemble, assemble and repair all aspects of the modern automobile. You are introduced to automotive apprentice training programs through dealership tours and job shadowing. The AYES program allows successful students the opportunity to get a head start on their career with early entrance into dealerships and repair facilities through

internships and co-op agreements. Students also have the opportunity to certify in four automotive areas.

Aviation Technology Academy @ Central Campus

Prerequisites: Technical education courses recommended along with strong career interest in Aviation and/or Aerospace. The Aviation Technology Academy is comprised of two tracks: Aviation Maintenance and Private Pilot Ground School. Upon successful completion of Introduction to Aviation and Aerospace students may enroll in either track, or both. The Aviation Maintenance program is located at 201 County Line Road on the southside of Des Moines and is designed to train students for careers in various areas of the rapidly growing Aviation Industry. Students have opportunities to become adept in aircraft Airframe & Powerplant (A&P) mechanics. The Aviation Technology Academy is the only high school FAA Certified Part 147 in the entire Midwest. Students earn both high school credit graduation and FAA certified training toward an Airframe Mechanic Certificate. The Private Pilot Ground School classes are located Central Campus, 1800 Grand Ave, and is designed to prepare students for the FAA Private Pilot Knowledge Test and/or FAA Commercial Remote Pilot (Drone) Certificate. The Central Campus aircraft/drone pilot program is one of only 300 educational institutions using the AOPA (Aircraft Owners and Pilots Association) Foundation You Can Fly High School Aviation STEM Curriculum which earned the prestigious STEM.org Accredited Educational Program Trustmark. The curriculum, along with several Redbird Flight Simulators, allow students' passions to take flight.

Introduction to Aviation (AVI225/226) @ Central Campus, 1800 Grand Ave

Prerequisite: None | Grades: 9-10-11-12 | Duration: 1 Year | .5 Credit/Semester

Introduction to Aviation's core curriculum provides the foundation for any aerospace and/or aviation career. It is designed to give students a clear understanding of career opportunities in aviation and aerospace and the critical issues affecting the aviation system. It serves as a prerequisite for either the Aviation Maintenance Technician or Private Pilot Ground School programs. Introduction to Aviation will provide the foundation for advanced exploration in the areas of flying, aerospace engineering, and unmanned aircraft systems. Students will learn about engineering practices, problem-solving, and the innovations and technological developments that have made today's aviation and aerospace industries possible. Students will look at the problem-solving practices and innovative leaps that transformed space exploration from the unimaginable to the common in a single generation. Students will also gain historical perspective, starting from the earliest flying machines and leading to the wide variety of modern aircraft and the integral role they play in making today's world work. Students will also begin to drill down into the

various sectors of aviation and the elements that make up the aviation and aerospace ecosystem. They will discover how advances in aviation created a need for regulation and will learn about the promulgation of civil aviation oversight. Students will explore modern innovations and develop their own innovative ideas to address real-world challenges facing the aviation industry. They will be exposed to a variety of career options in aviation and aerospace and take an in-depth look at the opportunities available. This course will allow students to begin to define their individual interests, whether it be Aviation Maintenance Technician and/or Private Pilot Ground School programs.

Aviation Maintenance 1 (AVI235/236) @ Central Campus, 201 County Line Rd

Prerequisite: Introduction to Aviation | Grades: 10-11-12 | Duration: 1 Year (block) | 1.0 credit/semester

Certificated Aviation Maintenance Technicians (AMT) work in highly-technical specialty occupations involved in keeping aircraft operating safely. AMTs hold highly-transferable skills that can be used in a broad-range of industries in, and out of, the aviation sector. An AMT is certificated by the Federal Aviation Administration (FAA) based on personal knowledge gained through training and experience, which is demonstrated via successful completion of written, oral, and practical tests. The AMT program is the only high-school FAA certified aviation maintenance program in Iowa. The program uses a modern lab, classroom, and six aircraft to provide students with the knowledge & skills to possibly earn an FAA Airframe and/or Powerplant (A&P) Certificate. The AMT program consists of up to three years of intense half-day daily study. Beginning with General during year 1, students explore certification, FAA regulations, human factors, technical areas applicable to both Airframe and Powerplant studies, and skills needed to be an entry-level aviation professional.

Aviation Maintenance II (AVI335/336) @ Central Campus, 201 County Line Rd

Prerequisite: Aviation Maintenance I | Grades: 11-12 | Duration: 1 Year (block) | 1.0 credit/semester

The General curriculum continues during year two in which students expand on the previous year's knowledge and skills and focus on technical areas applicable to both an Airframe and/or Powerplant Certificate.

Aviation Airframe 1 (AVI341/342) @ Central Campus, 201 County Line Rd

Prerequisite: Aviation Maintenance II | Grade: 12 | Duration: 1 Year

The first year of Airframe consists of airplane and helicopter structures. Students use a modern lab, classroom, and six aircraft to learn hands-on skills such as aluminum construction, composite construction, electricity, and flight controls.

Aviation Airframe 1I (AVI441/442) @ Central Campus, 201 County Line Rd

Prerequisite: Aviation Airframe I | Grade: 12 | Duration: 1 Year

The second year of Airframe consists of airplane and helicopter systems. Students use a modern lab, classroom, and six aircraft to learn hands-on pertaining to aircraft hydraulic systems, navigation systems, nondestructive testing, painting, and pneumatic systems.

Aviation Powerplant 1 (AVI352/353) @ Central Campus, 201 County Line Rd

Prerequisite: Aviation Maintenance II | Grade: 12 | Duration: 1 Year

The first year of Powerplant is a study of theory, inspection, and repair of airplane and helicopter reciprocating and turbine engines and propellers.

Aviation Powerplant 1I (AVI452/453) @ Central Campus, 201 County Line Rd

Prerequisite: Aviation Powerplant I | Grade: 12 | Duration: 1 Year

The second year of Powerplant is a study of theory, inspection, and repair of airplane and helicopter reciprocating and turbine induction, ignition, exhaust, starting, and electrical systems including engine inspection and troubleshooting.

Pilot Ground School 1 (FLT441/442) @ Central Campus, 1800 Grand Ave

Prerequisite: Introduction to Aviation | Grades: 10-11-12 | Duration: 1 Year

In the Pilot Ground School I Course students will take a closer look at aircraft operation. Students will begin with an exploration of the types of aircraft in use today before going on to learn how aircraft are made and how they fly. Students will understand how aircraft are categorized, be able to identify their parts, and learn about aircraft construction techniques and materials. They will gain an in-depth understanding of the forces of flight—lift, weight, thrust, and drag—including how to make key calculations. They will then touch on aircraft design, looking at stability, aircraft controls, and maneuvering flight. The course will also focus on career skills related to these topics. Students will take an in-depth look at the systems that make aircraft work as well as the instrumentation powered by those systems. Beginning with aircraft powerplants and fuel systems, students will learn about the different options available and how they affect aircraft design and performance. They will go on to explore other key aircraft systems, including electrical, pitot-static, and vacuum systems. Throughout, they will learn about the flight instruments associated with

each system and how to identify and troubleshoot common problems. This course also covers airplane flight manuals, the pilot's operating handbook, and required aircraft documents. Students will learn about the factors that affect aircraft performance and how to determine critical operating data for aircraft. 7

Pilot Ground School II (FLT451/452) @ Central Campus, 1800 Grand Ave

Prerequisite: Introduction to Aviation | Grades: 10-11-12 | Duration: 1 Year

Pilot Ground School II is foundational for any pilot career and will prepare students to take the Private Pilot Knowledge Test. Topics include pre-flight procedures, airspace, radio communications, aviation phraseology, regulations, airport operations, aviation safety, weather, cockpit management, and emergency procedures. Students will learn pilot and aircraft qualifications, cross-country flight planning, weight and balance, performance and limitations, human factors, chart use, night operations, navigation systems, and aeronautical decision making. Students will be provided with the opportunity to participate in multiple practice examinations. At the end of this course, students may have the opportunity to be signed off to take the Federal Aviation Administration's Private Pilot written exam.

Work Based Learning

***Career Exploration A (MIS241) @ Central Campus** MIS241 offers DMACC WBL100, Career Exploration, 1 credit The Dream 2 Teach II and Civil Architecture and Engineering programs offer a WBL component. Please read the description listed above under the program title for additional information on specific WBL experiences in these areas.

***Employability Skills (MIS347) @ Central Campus** MIS347 offers DMACC WBL110, Employability Skills, 2 credits The Broadcasting and Film III offer a WBL component. Please read the description listed above under the Broadcasting and Film program for additional information on specific WBL experiences in this area.

***Job Shadowing (MIS349) @ Central Campus** MIS349 offers DMACC WBL150, Job Shadowing, 1 credit The Dream 2 Teach II, Vet Careers, Com Photography II, Broadcasting and Film III, and Career Opportunities in Health programs offer a WBL component. Please read the descriptions listed above under the program titles for additional information on specific WBL experiences in these areas.

Educational Programs

Des Moines Public Schools provides students with more options to meet their educational needs and interests than any place in Iowa. Through programs like Central Campus and Central Academy and the English Language Learners Program, the school district provides educational programming as diverse as the people who learn and live in our community.

Central Campus

Central Campus complements and extends the programs of Central Iowa Schools, offering unique academic and career opportunities that direct, inspire, and motivate a diverse group of students.

Central Campus serves as a Career Center within the Des Moines Public Schools where students can explore and specialize in career pathways. We specialize in work-based learning and ensuring our students gain access to their career fields prior to graduation. Students completing a Career and Technical program will earn industry recognized certifications, meet and interview with employers, and have access to both unpaid and paid internship/apprenticeship opportunities with local businesses and employers. With academic planning and support in high school, students have the opportunity to earn community college credit at no extra cost.

Campus offers hands-on, real-world work-based educational programs to a highly diverse community and surrounding areas. One of our greatest strengths is the friendships and networking of students from diverse backgrounds and communities. Central Campus commits itself to providing equal access and prospects through rigorous academic and career training experiences for all.

Requests for Central Campus courses begin with inquiries made through your home high school counselor. You are also welcome to call Central Campus at 515-242-8117. Central Campus is open to all qualifying high school students regardless of home district. Students wishing to request a program at Central Campus need to find the course request document at <https://centralcampus.dmschools.org/enrollment/>. Out of district students will also need to reference the course request document just mentioned to make their course requests as it is a different process than what DMPS students follow.

For additional information about Central Campus, please talk with your school counselor and visit <http://centralcampus.dmschools.org>.

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