

OAKTON DUAL CREDIT COURSES

NEW TRIER HIGH SCHOOL

OAKTON COURSE	COURSE NAME	SEMESTER HOUR OF CREDIT	COURSE DESCRIPTION
ART 115	Beginning Photography	3	Course explains basic photography. Student, using their own cameras, explore basics of film exposure, development and printing. Focus is on realizing camera's ability to record fine delineation of tone and detail using black and white materials. Content includes use of studio cameras, studio lighting, brief history and basic aesthetics of photography. Studio work outside of regular class time required.
ATA 102	Introduction to Automotive Technology	4	Introductory course to familiarize students with the history of the automobile. Students will learn basic service shop organizational skills, basic vehicle inspection, multi-meter use, light duty vehicle maintenance, proper vehicle lifting, proper use of hand and power tools required for entry level automotive positions, and how to navigate online service manual information. Students will also learn about career options within the automotive industry and how to write a resume.
CAD 105	Industrial Design Engineering	4	Course introduces industrial design and its place in the manufacturing process. Content includes design visualization, creation and application of three-dimensional (3D) computer-generated models in today's manufacturing, communication, and publishing industries; creating a 3D computer model component design from original idea, pencil sketching, concept analysis and use of surface and solid modeling software.
CAD 107	Introduction to 3D Printing	4	This course is an introduction to 3D printing with emphasis on operation of 3D printers and design of 3D printed parts. The computer will be used by students to create 3 dimensional models and prepare the models to print using plastic modeling material. Course content covers step by step approach to creating models and setting up a 3D printer.
CAD 116	Basic AutoCAD	3	Course is first of three in drafting and design using AutoCAD software. Content includes setting up a drawing electronically; drawing and editing; construction techniques; display commands; effective layering; dimensioning and detailing; using blocks, and plotting.

CAD 117	Intermediate AutoCAD	4	Course is second of three in AutoCAD. Content includes assigning attributes to blocks; using external references; grouping and filtering entities, and slide shows; three-dimensional (3D) topics cover dynamic viewing, defining coordinate systems, extrusions, wireframe modeling, surface modeling; introduction in to solid modeling. Recommended: CAD 116 or consent of instructor.
CAD 134	Basic AutoCAD for Interior Design	4	Course introduces Computer-Aided Design with emphasis on interior design applications. Students use the computer to draw and plot floor plans, lighting and electrical plans, and elevations. The course covers setting up a drawing electronically, drawing and editing, construction techniques, display commands, effective layering, dimensioning and detailing, using blocks, and plotting.
CAD 210	Industrial Design Techniques	4	Course teaches skills for creating prototypes of computer models using 3D modeling and prototyping software. Hands-on lab course involves critical thinking skills related to industrial design, digital prototyping and manufacturing. Content includes industrial design techniques using computer models for laser cutting, fasteners, 3D printing and production processes that employ computer-controlled machines and prototyping equipment.
CAD 220	Introduction to Building Information Modeling - Revit	4	Revit is a Building Information Modeling (BIM) software widely used by architects, engineers and contractors to create a unified model that all disciplines and trades can use to complete their work. Revit enables students to create full 3D architectural project models and place them in working drawings. Topics include creating floor plans, adding views, adding various building components, and creating sheets for plotting.
ELT 114	Residential Wiring	3	Course provides technical skills and knowledge of residential wiring, to conform to the National Electrical Code. Content includes safe installing, maintaining, replacing and repairing residential wiring and distribution systems. Hands-on labs, using of variety of tools and equipment to complete and troubleshoot residential electrical wiring projects.
ELT 221	Digital Circuit Fundamentals	3	Course involves study of discrete devices and integrated circuits. Content includes application of inverters, AND, OR, NAND, and NOR gates, and all circuits necessary to operation of a computer including microprocessors. Focus is on analysis of functions from a systems and circuit standpoint.
MFG 102	Industrial Drafting and Design	3	Course provides a comprehensive overview of industrial drafting and design. It covers major components of technical drawing including geometry, dimensions, and annotations to create part/assembly per specifications. Additional topics include detail and assembly drawings, metric versus standard projections and dimensioning, and advanced drawing views. The course concludes with an overview of Geometric Dimensioning and Tolerancing (GD&T). Introduction to 3D Computer Aided Design (CAD) software is integrated throughout the course.

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