Quick Chart

Oakton College

Dual Credit Courses offered at New Trier High School

Career-Technical Education (47 Credit Hours)
ATA 102: Introduction to Automotive Technology (4 credit hours) Pathway: Automotive Technology
CAD 105: Industrial Design Engineering (4 credit hours) CAD 107: Introduction 3D Printing (4 credit hours) CAD 116: Basic AutoCAD (3 credit hours) CAD 117: intermediate AutoCAD (4 credit hours) CAD 118: Advanced AutoCAD (4 credit hours) CAD 134: Basic AutoCAD for Interior Design (4 credit hours) CAD 210: Industrial Design Techniques (4 credit hours) CAD 220: Introduction to Building Information Modeling - Revit (4 credit hours) CAD 224: Advanced Building Information Modeling - Revit (4 credit hours) Pathway: Computer-Aided Design
ELT 114: Residential Wiring (3 credit hours) Pathway: Electronics and Computer Technology
MFG 102: Industrial Drafting and Design (3 credit hours) MFG 110: Introduction to Machining (3 credit hours) Pathway: Manufacturing Technology
Elective Options (3 Credit Hours)
ART 115: Beginning Photography (3 credit hours)

Course Description

Career-Technical Education (CTE)

These courses are within the academic pathway of a career-focused certificate or degree program at Oakton and may transfer to other colleges/universities in various ways. They help students gain the knowledge and skills necessary to enter the workforce after high school graduation or continue their education journey beyond an Oakton certificate/degree.

ATA 102: Introduction To Automotive Technology (4 credit hours)
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.
Academic pathways: Automotive Technology A.A. S, Automotive Electrical Systems Certificate, Automotive Engines Certificate, Automotive Engine Performance and Emissions Certificate, Automotive Heating and Air Conditioning Certificate, Automotive Transmission and Powertrain Certificate, Automotive Under Car Certificate

CAD 105: Industrial Design Engineering (4 credit hours)
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.
Academic pathways: General Design Certificate

CAD 107: Introduction to 3D Printing (4 credit hours)
Course is an introduction to 3D printing with emphasis on design of 3D printed parts and operational theory of 3D printers. The computer will be used by students to create three-dimensional models and prepare the models to print using a variety of filaments for applications in mechanical design, manufacturing and industrial design. Course content covers a step by step approach to creating models and setting up a 3D printer.
Academic pathways: Mechanical Design/ CAD A.A.S, Industrial Design Engineering Certificate, General Design Certificate

CAD 116:Basic AutoCAD (3 credit hours)
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.
Academic pathways: Mechanical Design/ CAD A.A.S, Mechanical Design/ CAD Certificate, Industrial Design Engineering Certificate, Computer-Aided Design Certificate, General Design Certificate, Technical Communication Certificate

CAD 117: Intermediate AutoCAD (4 credit hours)
Course is the second of three in drafting and design using AutoCAD software. It covers assigning attributes to blocks, using external references, grouping and filtering entities. Three-dimensional (3D) topics include dynamic viewing, defining coordinate systems, extrusions, wireframe modeling, surface modeling, and an introduction into solid modeling..
Academic pathways: Mechanical Design/ CAD A.A.S, Mechanical Design/ CAD Certificate, Industrial Design Engineering Certificate, Computer-Aided Design Certificate, General Design Certificate, Technical Communication Certificate

CAD 118: Advanced AutoCAD (4 credit hours)
Course is the last of three in drafting and design using AutoCAD software. Content includes solid modeling, including 3D Modeling, parametric design and rendering. The focus is on practical application for digital manufacturing, prototyping, 3D printing and assemblies for mechanical and architectural drawings.
Academic pathways: Mechanical Design/ CAD A.A.S, Mechanical Design/ CAD Certificate, Industrial Design Engineering Certificate, Computer-Aided Design Certificate, General Design Certificate, Technical Communication Certificate

CAD 134: Basic AutoCAD for Interior Design (4 credit hours)
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.
Academic pathways: CAD Interior Design Certificate, General Design Certificate

CAD 210: Industrial Design Techniques (4 credit hours)
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.
Academic pathways: Industrial Design Engineering Certificate, General Design Certificate

CAD 220: Introduction to Building Information Modeling - Revit (4 credit hours)
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.
Academic pathways: General Design Certificate, Revit- Building Information Modeling (BIM) Certificate

CAD 224: Advanced Building Information Modeling - Revit (4 credit hours)
This is the second course in Building Information Modeling (BIM) Technologies for Revit Architecture. Course examines how to use Revit to design 3D models that simultaneously document the project and generate 2D and 3D architectural drawings. Topics include site development, interoperability, linking and managing projects, advanced modeling methods, design options, phasing, work sharing and 2D and 3D presentation techniques.
Academic pathways: General Design Certificate, Revit- Building Information Modeling (BIM) Certificate

ELT 114: Residential Wiring (3 credit hours)
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.

MFG 102: Industrial Drafting and Design (3 credit hours)
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.
Academic pathways: Advance Mechatronics A.A.S Pathway, Advance Manufacturing Certificate Pathway, Welding Technician Certificate, Advanced CNC Certificate Pathway, Production Technician Certificate

MFG 110: Introduction to Machining (3 credit hours)
Intended for students with no experience in precision metalworking, the course starts with industrial safety and OSHA policies. The main content examines principles and operations of a drill press, a lathe, and a mill. Students will learn about common machining operations along with related tooling and fixtures. Additional topics include an overview of precision measurements and basic technical math including speeds and feeds calculations. The course concludes with an introduction to Computer Numerical Control (CNC).
Academic pathways: Advance Manufacturing Certificate Pathway, Advanced CNC Certificate Pathway, Production Technician Certificate

Electives

These courses may count toward college certificate/degree programs in various ways. Each college certificate/degree program requires different electives; therefore, students should consider their potential college or career pathways when taking these types of courses.

ART 115: Beginning Photography (3 credit hours)
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.
Academic pathways: Graphic Design A.A.S, Photography Certificate