

OAKTON DUAL CREDIT COURSES

GLENBROOK NORTH HIGH SCHOOL

OAKTON COURSE	COURSE NAME	SEMESTER HOUR OF CREDIT	COURSE DESCRIPTION
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 3-D computer-generated models in today's manufacturing, communication, and publishing industries; creating a 3-D computer model component design from original idea, pencil sketching, and concept analysis, to use of surface and solid modeling software; use of Boolean operations in model construction and editing, display commands, detailing, geometric translation, rendering and presentation.
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 210	Industrial Design Engineering Techniques	3	Course continues CAD 105, to increase skills for creating prototypes of computer models using 3-D modeling software. Hands-on lab course involves critical thinking skills related to industrial design and manufacturing. Content includes industrial techniques such as extrusions, laser cutting, fasteners, welding, sheet metal production, injection molding, and stereo lithography; production process utilizing computer controlled machining centers and prototyping equipment.
ECE 102	Child Growth & Development	3	Course provides an overview of the theory and principles of human development. Content includes in-depth study of physical, social, emotional and cognitive aspects, from conception to adolescence. Special emphasis placed on child development theories of Piaget, Erikson, Vygotsky, Skinner, etc., and significance of family, peers, culture and school. Field observations required. IAI Major: ECE 912
MFG 120	Introduction to Welding	4	Course covers basic electric arc, oxy-fuel, gas metal arc, and gas tungsten arc welding processes. Safety procedures required to set up and shut down welding equipment for the various processes. Hands-on experience includes practice with the four welding systems using various thickness materials. Industrial standards and American Welding Society (AWS) standards for quality are discussed.
MFG 125	Advanced Welding	4	Course teaches advanced electric arc, tungsten inert gas, gas metal arc welding processes. Safety procedures required to set up and shut down welding equipment for the various processes are enforced. Hands-on experience includes practice with the three welding systems using various thickness materials. Industrial standards and American Welding Society (AWS) standards for quality are discussed. Previous welding experience is recommended. Recommended: MFG120