

## OAKTON DUAL CREDIT COURSES

## GLENBROOK SOUTH 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
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.
HIT 103	Introduction to Medical Language	1	Course offers brief overview of medical terminology suitable for developing basic vocabulary. Content includes deciphering, building and understanding medical terms by studying their parts. (Course does not substitute for HIT 104.)
LAE 135	Forensics I	3	Course provides students with hands-on experience with the different disciplines of forensic science, the types of examinations conducted in crime scenes, and other applications of forensic science in the modern criminal justice system. Topics include crime scene investigations, death investigations, evidence-gathering techniques, and the analysis of physical evidence in the field and laboratory setting.
MAT 252	Calculus III	4	Course surveys topics of calculus for multivariable functions. Content focus is on vectors, functions of several variables, curves and surfaces, differentiation, partial derivatives, multiple integrals, and line integrals. Technology is integrated throughout. IAI General Education: M1 900-3
MAT 260	Linear Algebra	3	Course covers matrices and the algebra of linear systems. Content includes equations, vector spaces, real inner product spaces, linear transformations, determinants, eigenvalues, eigenvectors, diagonalizability, quadratic forms and symmetric matrices. Calculators/computers used when appropriate. IAI Major: MTH 911