Quick Chart

Oakton College

2025-2026 Dual Credit Courses at Glenbrook North High School

General Education (7 credit hours)
EGL 101: Composition I (3 credit hours) IAI Category: Communication
MAT 252: Calculus III (4 credit hours) IAI Category: Mathematics
Career-Technical Education (12 Credit Hours)
ECE 102: Early Childhood Education (3 credit hours) Pathway: Early Childhood Education
MFG 110: Introduction to Computer Integrated Manufacturing (3 credit hours) MFG 120: Introduction to Welding (3 credit hours) MFG 125: Advanced Welding (3 credit hours) Pathway: Manufacturing Technology
Elective Options (10 Credit Hours)
ACC 153: Principles of Financial Accounting (4 credit hours)
EDN 101: Introduction to Education (3 credit hours)
MAT 260: Linear Algebra (3 credit hours)

College Transitions Office | www.oakton.edu/earlycollege

Course Description

Glenbrook North High School
Dual Credit Course Guide

General Education (Gen. Ed.)

These are common 100-level college courses all students take and are accepted at other colleges/universities in Illinois as part of the Illinois Articulation Initiative (IAI). (Note: Many out-of-state colleges/universities also accept these courses but may have different general education requirements.) A combination of these courses across various subjects makes up the General Education Core Curriculum (GECC) and is required for all students seeking a college degree.

IAI Category: Communication

EGL 101: Composition I (3 credit hours)

Course introduces strategies for planning, writing, and revising expository essays based on experience and reading. Content includes purpose, context, genre, and the rhetorical situation as elements in the writing process, as well as critical reading and analysis as the basis for essay writing. The first course in a two-course sequence with EGL 102.

IAI Category: Mathematics

MAT 252: Calculus III (4 credit hours)

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 integrated throughout.

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.

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 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 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

ECE 102: Child Growth and Development (3 credit hours)

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.
Academic pathways: Early Childhood Education A.A.S, Basic Early Childhood Education Certificate, Advanced Early Childhood Education Certificate, Basic Infant Toddler Certificate, Advanced Infant Toddler Certificate, Basic Family Child Care Provider

Certificate, Advanced Family Child Care Provider Certificate, Early Childhood Education Administration 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: Advanced Manufacturing Certificate Pathway, Advanced CNC Certificate Pathway, Production Technician Certificate

MFG 120: Introduction to Welding (3 credit hours)

Course covers fundamental skills, including oxy-fuel (OFW), manual metal arc (stick), gas metal arc (MIG), and gas tungsten arc (TIG) welding. It starts with safety procedures required to set up and shut down welding equipment for various processes. The main content includes hands-on welding assignments with different welding systems using various thickness materials. The course follows American Welding Society industrial standards and prepares students for taking the AWS welding certification test.
Academic pathways: Supply Chain Automation A.A.S, Advanced Manufacturing Certificate Pathway, Welding Technician Certificate

MFG 125:Advanced Welding (3 credit hours)

Course teaches advanced electric arc welding techniques including American Welding Society (AWS) safety requirements related to welding. Students will learn about different welding methods such as Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Core Arc Welding (FCAW), and Gas Tungsten Arc Welding (GTAW). Hands-on welding experience is integrated throughout the course. The course follows AWS industrial standards and prepares students for taking the AWS welding certification test.
Academic pathways: Supply Chain Automation A.A.S, Advanced Manufacturing Certificate Pathway, Welding Technician Certificate

Transfer 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.

ACC 153: Principles of Financial Accounting (4 credit hours)

Course covers preparation and analysis of financial information using generally accepted accounting principles. Content includes the accounting cycle, financial statement preparation, merchandise accounting, internal controls, cash, receivables, inventory, payables, property, plant and equipment, intangible assets, liabilities, stockholders' equity, cash flow statement, and financial statement analysis.
Academic pathways: Accounting Associate A.A.S, Associate of Arts (A.A) Business/ Accounting Pre-Major, Accounting Associate Certificate

EDN 101: Introduction to Education (3 credit hours)

Course provides an overview of teaching as a profession in the U.S. educational system. Course examines the historical, social and philosophical development and current state of U.S. public education. Issues, policies, and trends in education are explored, including diversity and equity, organizational structure, governance, finance, law and ethics. Students will investigate the role of teacher as advocate and identify ways in which schooling might be structured to build equity and social justice. Fifteen hours in local, K-12 school settings are required.

MAT 260: Introduction to Linear Algebra (3 credit hours)

Course covers matrices and the algebra of linear systems as well as an introduction to proof-writing. 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.
Academic pathways: Associates in Art, Associates in Science