ARCHITECTURE, ENGINEERING, CONSTRUCTION (AEC)

AEC 101 Fundamentals of Drafting 5 Credits
Introduces basic drafting skills and concepts with an emphasis on projection theory.
Prerequisite: None

AEC 102 Introduction to CAD 5 Credits
Develops fundamental skills for computer aided drafting (CAD) with an emphasis on the application of AutoCAD.
Prerequisite: Prerequisite: AEC 101 or instructor's permission.

AEC 103 Introduction to 3D Modeling 5 Credits
Explores 3D modeling fundamentals and how they apply to simple geometric forms and building modeling. Hands-on use of Revit and other industry-standard 3D modeling applications.
Prerequisite: Prerequisite: AEC 101 or instructor's permission.

AEC 112 Accelerated Drafting & CAD 10 Credits
Develops fundamental skills for computer aided drafting (CAD) with an emphasis on the application of AutoCAD. This course combines all content from AEC 101 & AEC 102. It is intended for students who have not taken AEC 101.
Prerequisite: Prerequisite: Concurrent enrollment in AEC 103.

AEC 120 Construction Methods and Materials 5 Credits
Develops a fundamental understanding of construction materials, sizes, detailing, volume estimates, and applications related to the building industry.
Prerequisite: Prerequisite: AEC 102 or instructor's permission.

AEC 121 Architectural BIM I 5 Credits
Covers development of 3D models and construction drawings utilizing industry standard 3D BIM software. Emphasis on residential architectural construction in modeling and documentation.
Prerequisite: Prerequisite: AEC 120 and AEC 103 or instructor's permission.

AEC 122 Architectural BIM II 5 Credits
Covers development of construction documents utilizing industry-standard 3D building information modeling software. Emphasis on creating complete plan sets by building on work completed in AEC 121, with the goal of finalizing industry standard, permit-ready plan sets.
Prerequisite: Prerequisite: AEC 121 or instructor's permission.

AEC 160 Introduction to Civil Engineering and Survey 5 Credits
Develops fundamental concepts and skills for civil engineering and survey. Applies general survey principles in team survey activities.
Prerequisite: Prerequisite: AEC 102 or concurrent enrollment, or instructor's permission.

AEC 161 Civil CAD I 5 Credits
Develops fundamental skills to work with surfaces and points in civil engineering drafting. Emphasizes the application of Civil 3D.
Prerequisite: Prerequisite: AEC 160 or instructor's permission.

AEC 162 Civil CAD II 5 Credits
Develops fundamental skills in roadway design in civil engineering drafting. Emphasizes creating and editing plan views, profile views, section views, and corridors.
Prerequisite: Prerequisite: AEC 161 or instructor permission.

AEC 171 Commercial BIM I 5 Credits
Introduces essential Building Information Modeling tools and concepts for developing a multi-story commercial building. Emphasis on design intent and commercial industry best practices in modeling and documentation.
Prerequisite: Prerequisite: AEC 103 or instructor's permission.

AEC 172 Commercial BIM II 5 Credits
Continues on building project started in AEC 171 using intermediate to advanced BIM tools/techniques in coordinate systems, phasing, and detailing. Strong emphasis on extracting information from a building model and coordinating multiple project files. Continues development towards a full set of industry standard construction drawings.
Prerequisite: Prerequisite: AEC 171

AEC 263 Civil CAD III 5 Credits
Develops fundamental skills in site planning, pipe networks design, and quantity take-off in civil engineering drafting with an emphasis on the application of Civil 3D.
Prerequisite: Prerequisite: AEC 162 or instructor's permission. Concurrent with AEC 264.

AEC 264 Survey I 3 Credits
Develops skills in topographic survey, data collection using robotic total stations, and topographic map creation using Civil 3D.
Prerequisite: Prerequisite: AEC 162 or instructor's permission. Concurrent enrollment in AEC 263.

AEC 273 Building Information Modeling III 5 Credits
Explores multi-discipline building information modeling tools while developing structural, mechanical, electrical, and plumbing systems. Emphasizes collaboration, introduces the fundamentals of custom content creation, and integrates with AEC 274.
Prerequisite: Prerequisite: AEC 172 or instructor's permission. Concurrent enrollment in AEC 274.

AEC 274 Building Information Modeling IV 4 Credits
Integrates BIM skills acquired during the AEC program pathway while exploring virtual design and construction (VDC) processes and tools. Students work collaboratively to assemble a multi-discipline building model for evaluation of construction processes and presentation to stakeholders.
Prerequisite: Prerequisite: AEC 172 or instructor's permission. Concurrent enrollment in AEC 273.