

COMPUTER AIDED DESIGN & DRAFTING: ARCHITECTURAL (CADA)

This is a list of the Computer Aided Design & Drafting: Architectural (CADA) courses available at KPU.

CADA 1200 **3 Credits** **Architectural Fundamentals**

Students will study and apply architectural theory, the architectural development process, and the design process related to construction. They will study historical practices, methods and materials, identify current practices, and use tools to forecast future trends. Students will study basic building and material terminology. They will study the physical qualities, manufacturing processes, installation techniques and the organizational processes of construction materials and methods. Students will study sustainable development initiatives such as LEED. They will apply and analyze energy efficiency modeling software, and study building envelope design, materials, and create detail drawings.

Prerequisites: (CADD 1100 or DRAF 1100) and (CADD 1110 or DRAF 1110) and (CADD 1150 or [DRAF 1150 plus DRAF 1306]) and (CADD 1160 or DRAF 1160)

CADA 1201 **4 Credits** **Architectural Principles**

Students will study and apply architectural theory, the architectural development process, and the design process related to construction. They will study historical practices, methods and materials, identify current practices, and use tools to forecast future trends. Students will study basic building and material terminology. They will study the physical qualities, manufacturing processes, installation techniques and the organizational processes of construction materials and methods. Students will study sustainable development initiatives such as LEED. They will apply and analyze energy efficiency modeling software, and study building envelope design, materials, and create detail drawings.

Prerequisites: (CADD 1100 or DRAF 1100) and (CADD 1110 or DRAF 1110) and (CADD 1150 or [DRAF 1150 plus DRAF 1306]) and (CADD 1160 or DRAF 1160)

Not Transferable

CADA 1210 **4 Credits** **Single Family Residential**

Students will study architectural design and residential plan set development in a working environment scenario involving the design of single family residence. They will work within a design team and complete a full plan set that will be building permit ready. Students will produce a set of drawings that includes site plan, floor plan, foundation, framing schematic, section and details, and exterior elevations. They will base their project on a unique client portfolio and custom design criteria. Students will prepare a sustainability and energy efficiency analysis of their design. They will make a presentation to the class of their completed project.

Prerequisites: (CADD 1100 or DRAF 1100) and (CADD 1110 or DRAF 1110) and (CADD 1150 or [DRAF 1150 plus DRAF 1306]) and (CADD 1160 or DRAF 1160)

CADA 1220 **4 Credits** **Commercial Buildings**

Students will develop the design and then prepare a site plan, building plans, schematics, sections and details for a commercial building. They will use glazing and storefront components, apply codes and standards, and prepare interior and exterior elevations. Students will develop schedules and specifications, explain coordination procedures to ensure completion of the project, and give a presentation of the project. They will explain Leadership in Energy and Environmental Design (LEED) standards and its applications.

Prerequisites: (CADD 1100 or DRAF 1100) and (CADD 1110 or DRAF 1110) and (CADD 1150 or [DRAF 1150 plus DRAF 1306]) and (CADD 1160 or DRAF 1160)

CADA 1250 **4 Credits** **Introduction to Building Information Modeling (BIM) Software for Architectural**

Students will identify types of 3-dimensional (3D) Architectural software. They will use 3D sketch software to create and combine assemblies to produce a building model. Students will use BIM software interface and identify principles of creating a building information model. They will identify families of components, set up a project, and set up views. Students will apply annotation and scheduling.

Prerequisites: (CADD 1100 or DRAF 1100) and (CADD 1110 or DRAF 1110) and (CADD 1150 or [DRAF 1150 plus DRAF 1302 plus DRAF 1306]) and (CADD 1160 or DRAF 1160)

CADA 2100 **4 Credits** **Multi-Family Residential**

Students will follow best practice design development procedure to prepare a site plan, floor plans, and a foundation plan for a multi-family residential building. They will prepare framing schematics, sections and details, and exterior elevations and material schedules. Students will prepare documents to applicable codes and standards, follow procedures to ensure completion and coordination of the project and present completed construction documentation. They will prepare and present project features for public reviews.

Prerequisites: Certificate in CADD - Architectural Specialty or DRAF 1110 and DRAF 1210 and DRAF 1310

CADA 2150 **4 Credits** **Building Information Model (BIM) Software for Architectural - Project**

Students will create advanced components, apply interior fittings, and use Building Information Model (BIM) software to output, input and link information. They will apply collaboration and design integration, use massing and phasing tools, and apply design options. Students will apply detailing, apply site design, and use advanced rendering techniques. They will use BIM software to complete a project.

Prerequisites: CADA 1250