

COMPUTER-AIDED DESIGN & DRAFTING: MANUFACTURING AND FABRICATION (CADM)

Registration in some course sections is restricted to students in particular programs. See Timetables - [kpu.ca/registration/timetables](http://www.kpu.ca/registration/timetables) (<http://www.kpu.ca/registration/timetables/>) - for current section information.

Visit the BC Transfer Guide - [bctransferguide.ca](https://www.bctransferguide.ca) (<https://www.bctransferguide.ca/>) - for information about course transfer in B.C.

CADM 1155 4 credits

Manufacturing Design and Software

Students will learn to create 2-dimensional (2D) drawings and 3-dimensional (3D) models using Computer Aided Design and Drafting (CADD) software. They will apply dimensions, symbols and annotation to fabrication drawings. Students will apply Computer Numeric Control (CNC) software to 3D models. They will design a project that can be produced using rapid prototyping or manufactured on CNC equipment. Students may be required to participate in field trips.

Level: UG

Attribute: SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

CADM 1200 3 credits

Fundamentals of Manufacturing and Fabrication

Students will use manufacturing terms and definitions, follow safety procedures, and describe the characteristics of manufacturing materials. They will identify the roles of manufacturing professionals, and describe the manufacturing process flow. Students will identify manufacturing and fabrication equipment, identify heat treatments, and describe manufacturing and fabrication processes. They will describe assembly processes, identify sources of parts and materials, use measuring tools and techniques and apply geometric tolerance and dimensioning. Students will describe tolerancing and its effect on processes. They will identify welding processes, and identify common material stock shapes.

Level: UG

Prerequisite(s): 16 credits from courses in CADD at the 1100 level

Attribute: SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

CADM 1210 4 credits

Component Assembly and Details

Students will apply information from reference sources, follow relevant codes and standards, and follow Enterprise Resources Planning (ERP) and Material Resources Planning (MRP) procedures. They will describe the design intent of the assembly, source manufactured components, and prepare assembly and sub-assembly detail drawings. Students will prepare drawings of discrete parts, weldment drawings and sheet metal drawings. They will apply methods of dimensioning and specify machining techniques. Students will follow document control procedure for revised parts and identify quality control procedures. They will prepare bill of materials and material pull sheets, and follow document control procedures.

Level: UG

Prerequisite(s): 16 credits from courses in CADD at the 1100 level

Attribute: SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

CADM 1220 4 credits

Integrated Machine Design Systems

Students will identify the systems involved in machine design, and differentiate between the design concepts; function and form. They will describe alternative approaches to problem solving and the relationship to design. Students will identify structural, mechanical, electrical, electronic, and electro-mechanical principles related to machine design. They will identify software platforms used in industrial applications, apply trouble-shooting techniques, perform diagnostics, and perform analysis of basic designs.

Level: UG

Prerequisite(s): 16 credits from courses in CADD at the 1100 level

Attribute: SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

CADM 1250 4 credits

3 Dimensional (3D) Parametric Solids Modeling Software

Students will identify 3D software for each discipline, and list types of 3D parametric modeling software. They will use 3D parametric software interface and viewing commands and use 2 dimensional (2D) sketches to create 3D solids and surfaces. Students will create multiple configurations using tables and apply top-down modeling techniques to create assemblies with constraints. They will identify output formats and their applications. Students will create 2D rendered pictorial drawings, exploded assembly drawings and animation of assemblies.

Level: UG

Prerequisite(s): (CADD 1100 or DRAF 1100) and (CADD 1110 or DRAF 1110) and (CADD 1150 or [DRAF 1150 and DRAF 1306]) and (CADD 1160 or DRAF 1160)

Attribute: SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

CADM 1900 4 credits

Special Topics - Manufacturing

Students will engage in an intensive study of a special topic in Manufacturing design and drafting and/or related technology as selected by the instructor. They will receive instruction in and perform research in the topic. They will analyze and demonstrate the theory and application of the selected topic.

Level: UG

Prerequisite(s): 16 credits from courses in CADD at the 1100 level or higher

Attribute: SCIH (<https://calendar.kpu.ca/courses-az/#courseattributestext>)