COMPUTER-AIDED DESIGN & DRAFTING: MANUFACTURING AND FABRICATION (CADM) | FACULTY OF SCIENCE

Registration in some course sections is restricted to students in particular programs. See Timetables - 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/) - 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 1230 4 credits
Process Piping
Students will identify industries that use process piping, prepare piping and instrumentation diagrams, lay out a general arrangement and prepare details of process equipment. They will develop pipe routing, output piping orthographics, output piping isometrics and use 3D piping software. Students will employ computer technology skills to retrieve and manage files, select sustainable materials and fabrication/construction processes for liquids and gases and practice project management procedures for project planning and implementation. This course is credit excluded with CADI 1220. Students may enroll in and earn credit for only one of these courses.
Level: UG
Prerequisite(s): 16 credits from courses in CADD at the 1100 level or higher
Credit Exclusion: CADI 1220
Attribute: SCIH (https://calendar.kpu.ca/courses-az/#courseattributestext)

CADM 1250 4 credits
3 Dimensional (3D) Parametric Solids Modeling Software
Students will describe 3D modeling and design intent, use sketch tools, apply modeling tools and create configurations. They will create assemblies, describe top down design, create weldments and use sheet metal tools. Students will create 2D drawings, apply motion and animation and apply rendering. They will employ computer technology skills to create 2D drawings, apply motion and animation and apply rendering. They will employ computer technology skills in 3D parametric software and research sustainable materials and fabrication/construction processes for product design.
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)

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)

CADM 2130 4 credits
Conveyor Systems
Students will identify types of materials handling equipment, collect design criteria, identify design principles and identify types of conveyors. They will draw and detail a belt conveyor, draw and detail platework and prepare chute details using 3D parametric software. Students will analyze, interpret and select sustainable materials and fabrication/construction processes in materials handling and practice project management to evaluate project development.
Level: UG
Prerequisite(s): 8 credits from courses in CADA at the 1200 level or higher and 8 credits from courses in CADM at the 1200 level or higher
Attribute: SCIH (https://calendar.kpu.ca/courses-az/#courseattributestext)

CADM 2230 4 credits
Component Assembly and Details
Students will identify assemblies and discrete parts, follow relevant codes and standards, describe manufactured materials and describe design intent. They will identify manufactured components, use measuring tools and techniques, apply tolerances and fits and describe geometric dimensioning and tolerancing (GDT). Students will prepare drawings of assemblies and discrete parts using CAD and Solidworks, follow shop safety procedures and use machines and equipment to make projects in the Millwright and Welding shop. They will use computer numeric control (CNC) software and equipment, employ computer technology skills to collect data, research sustainable materials and fabrication/construction processes in manufactured objects and practice project management procedures to research, plan and develop a product. Students will build a Capstone Project in a Millwright, Welding or Carpentry Shop, or in a Product Design Lab.
Level: UG
Prerequisite(s): 8 credits from courses in CADA at the 1200 level or higher and 8 credits from courses in CADM at the 1200 level or higher
Attribute: SCIH (https://calendar.kpu.ca/courses-az/#courseattributestext)