ORIGINAL COURSE IMPLEMENTATION DATE: September 2019
REVISED COURSE IMPLEMENTATION DATE: September 2024
COURSE TO BE REVIEWED (six years after UEC approval)**:** February 2025
Course outline form version: 28/10/2022

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: DMFG 201	**Number of Credits:** 3 Course credit policy (105)
Course Full Title: 3D Modeling **Course Short Title:** 3D Modeling	
Faculty: Faculty of Applied and Technical Studies	**Department (or program if no department):** Digital Manufacturing

Calendar Description:

Working knowledge of common 3D modeling and design tools, such as SolidWorks and Autodesk. Introduction to dynamic modeling and simulation. Migration between various approaches and software packages. Transition to Computer Aided Manufacturing. 3D design consideration for the proper fabrication equipment (machining, 3D printing, etc). Collaboration and curation methods and practices.

Prerequisites (or NONE):	ELTR 190.
Corequisites (if applicable, or NONE):	NONE
Pre/corequisites (if applicable, or NONE):	NONE

Antirequisite Courses *(Cannot be taken for additional credit.)*

Former course code/number:

Cross-listed with:

Equivalent course(s):

(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar	30
Supervised laboratory hours (science lab)	30
Total hours	**60**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: ☐ No ☒ Yes

Course Details

Special Topics course: **No**
(If yes, the course will be offered under different letter designations representing different topics.)

Directed Study course: **No**
(See policy 207 for more information.)

Grading System: **Letter grades**

Delivery Mode: **Face-to-face only**

Expected frequency: **Fall only**

Maximum enrolment (for information only)**: 20**

Prior Learning Assessment and Recognition (PLAR)

PLAR is available for this course.

Transfer Credit *(See **bctransferguide.ca**.)*

Transfer credit already exists: **No**

Submit outline for (re)articulation: **No**
(If yes, fill in transfer credit form.)

Department approval	**Date approved:**	October 27, 2023
Faculty Council approval	**Date of meeting:**	December 2023
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	March 1, 2024

Learning Outcomes *(These should contribute to students' ability to meet program outcomes and thus Institutional Learning Outcomes.)*

Upon successful completion of this course, students will be able to:

1. Design and model the machinery in 3D using 3D modeling software, such as SolidWorks and Autodesk.
2. Create fabrication drawings from 3D models.
3. Explain the concept of 3D modeling and design considerations.
4. Migrate the design between various packages.
5. Transition and implement the design with computer aided manufacturing.
6. Display a systematic approach to design and modeling.
7. Utilize cloud-based collaboration for project sharing and review.

Recommended Evaluation Methods and Weighting *(Evaluation should align to learning outcomes.)*

Assignments:	50%	Lab work:	50%		%
	%		%		%

Details:

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Instructional Methods *(Guest lecturers, presentations, online instruction, field trips, etc.)*

Lectures and Lab work with occasional guest lecture

Texts and Resource Materials *(Include online resources and Indigenous knowledge sources. Open Educational Resources (OER) should be included whenever possible. If more space is required, use the Supplemental Texts and Resource Materials form.)*

	Type	Author or description	Title and publication/access details	Year
1.		No textbook required – internal worksheets and lecture notes will be provided		
2.				
3.				
4.				
5.				

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Course Content and Topics

Unit 1: SolidWorks
Unit 2: Autodesk Inventor
Unit 3: Fusion 360 and cloud-based systems
Unit 4: Introduction to CAM
Unit 5: Design principles and techniques
Unit 6: Design approach, simulation migration