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:

(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)

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, 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):	Admission to the Digital Manufacturing diploma or department permission.
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:

Dual-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.)

Special Topics *(Double-click on boxes to select.)*

This course is offered with different topics:

☒ No ☐ Yes *(If yes, topic will be recorded when offered.)*

Independent Study

If offered as an Independent Study course, this course may be repeated for further credit: *(If yes, topic will be recorded.)*

☒ No ☐ Yes, repeat(s) ☐ Yes, no limit

Transfer Credit

Transfer credit already exists: *(See **bctransferguide.ca**.)*

☒ No ☐ Yes

Submit outline for (re)articulation:

☒ No ☐ Yes *(If yes, fill in transfer credit form.)*

Typical Structure of Instructional Hours

Lecture/seminar hours	30
Tutorials/workshops	
Supervised laboratory hours	30
Experiential (field experience, practicum, internship, etc.)	
Supervised online activities	
Other contact hours:	
Total hours	**60**

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

Grading System

☒ Letter Grades ☐ Credit/No Credit

Maximum enrolment (for information only): 20

Expected Frequency of Course Offerings:

Annually *(Every semester, Fall only, annually, etc.)*

Department / Program Head or Director:	**Date approved:**	October 2018
Faculty Council approval	**Date approved:**	November 8, 2018
Dean/Associate VP: John English	**Date approved:**	November 8, 2018
Campus-Wide Consultation (CWC)	**Date of posting:**	January 18, 2019
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	February 1, 2019

Learning Outcomes:

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

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

Prior Learning Assessment and Recognition (PLAR)

☒ Yes   ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods *(Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.)*

Lectures and Lab work with occasional guest lecture

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

Typical Text(s) and Resource Materials *(If more space is required, download Supplemental Texts and Resource Materials form.)*

	Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	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.)*

Typical Evaluation Methods and Weighting

Final exam:	%	Assignments:	50%	Field experience:	%	Portfolio:	%
Midterm exam:	%	Project:	%	Practicum:	%	Other:	%
Quizzes/tests:	%	Lab work:	50%	Shop work:	%	Total:	100%

Details (if necessary):

Typical 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