UNIVERSITY OF THE FRASER VALLEY

ORIGINAL COURSE IMPLEMENTATION DATE: September 2014
REVISED COURSE IMPLEMENTATION DATE: September 2023
COURSE TO BE REVIEWED (six years after UEC approval)**:** September 2028
Course outline form version: 09/08/2021

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

Course Code and Number: ENPH 390	**Number of Credits:** 4 Course credit policy (105)
Course Full Title: Mechatronics **Course Short Title:**	
Faculty: Faculty of Applied and Technical Studies	**Department (or program if no department):** Physics

Calendar Description:

A guided, self-directed project course. Learn how to run a project from start to finish. Understand the problem and try to identify/maximize value and opportunity for innovation.

Note: Students with credit for ENGR 390 cannot take this course for further credit.

Prerequisites (or NONE):	One of (PHYS 382 or ENPH 320), and one of (ENGR 153, COMP 150, or COMP 152).
Corequisites (if applicable, or NONE):	
Pre/corequisites (if applicable, or NONE):	ENPH 310 or ENPH 340.

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

Former course code/number: **ENGR 390**

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	5
Tutorials/workshops	70
Total hours	**75**

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: **May be offered in multiple delivery modes**

Expected frequency: **Annually**

Maximum enrolment (for information only)**: 18**

Prior Learning Assessment and Recognition (PLAR)

PLAR cannot be awarded for this course because:

This is the capstone course for the diploma.

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

Transfer credit already exists: **No**

Submit outline for (re)articulation: **[click to select]**
(If yes, fill in transfer credit form.)

Department approval	**Date of meeting:**	February 14, 2022
Faculty Council approval	**Date of meeting:**	April 14, 2022
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	September 23, 2022

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. Manage the design process as well as the documentation.
2. Propose, conceptualize, design, and demonstrate a significant project in physics and/or engineering.
3. Build creative solutions to real-world mechatronics problems.
4. Exhibit strong organizational skills as well as effective time and cost management by taking a project from the design phase through to its completion.
5. Collaborate, in both leadership and subordinate roles, in small teams to complete major projects.
6. Demonstrate advanced communication and professional skills.
7. Demonstrate hands-on, problem-solving, and creative thinking skills.

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

Project:	100%	%	%
	%	%	%

Details:

Project evaluation includes project proposal (15%), weekly progress report (30%), project demonstration (10%), oral presentation (10%), professionalism (5%), and a short thesis (30%).

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

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.				
2.				
3.				
4.				
5.				

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

Projects and materials designed/supplied by the instructor.

Course Content and Topics

1. Projects in physics, engineering, and computing.
2. Industry driven projects (such as agricultural technology and automation).
3. Community driven projects (such as medical device).
4. Student initiative driven projects.