AGENDA
Applied & Technical Studies Faculty Council

Thursday, October 9, 2025 - 2:00 PM
Trades and Technology Centres, Rivers Dining Room 1068

Page

1. WELCOME FROM THE CHAIR

2. TERRITORIAL ACKNOWLEDGEMENT

3. PRESENTATION

3 - 4 **3.1. Speaker(s): Clair Hay, Teaching and Learning, Janelle Stzuhar, Library, and Shaun Sun, Math and Stats**
Open Education@UFV
Topic: Building an Open Education Strategy for UFV

4. ITEMS FOR APPROVAL

4.1. Agenda – October 9, 2025

5 - 20 **4.2. Minutes – September 11, 2025**

5. BUSINESS ARISING FROM THE MINUTES

5.1. Yard Committee - Chris Monkman

5.2. Action Items:

1. **Fire Alarm Update - Teresa and Chris**
2. **IT | Shop computer update - Teresa**
3. **STBC Process - Teresa**

6. NEW BUSINESS

21 - 23 **6.1. Program Changes - Engineering Common Core Certificate - Trevor M/Trevor B**
Motion - that the Program Changes for the Engineering Common Core Certificate program be approved as presented.

24 - 30 **6.2. Program Changes - Engineering Physics Diploma - Trevor M/Trevor B**
Motion - that the program changes for the Engineering Physics Diploma be approved as presented.

31 - 52 **6.3. Course Changes: ENGR 113, 123, 124, and 153 - Trevor M/Trevor B**
Motion - that the Engineering Course Chages: ENGR 113, 123, 124, and 153 be approved as presented

6.4. Discussion - Yearly Subcription for Kahoot! - Patrick Watchorn

Page

7. DEAN'S REPORT

8. COMMITTEE AND SENATE REPORTS

8.1. Senate Report | Greg/Joel/Teresa

8.2. Faculty Council Representatives

9. EVENTS

9.1.

- **Opportunity Fair - October 16, 2025**
- **Open House - October 18, 2025**
- **Regional Skills - February 26, 2026**
- **Provincial Skills - April 15, 2025**

10. INFORMATION ITEMS

10.1. Ted Zak will share information on his planned research sabbatical project presentation

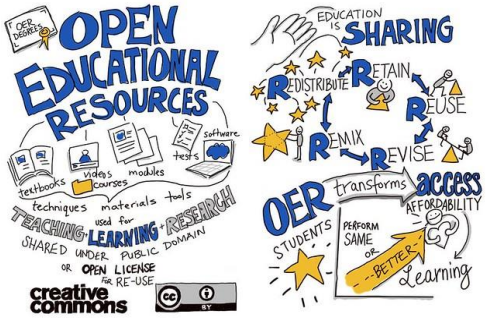
11. ADJOURNMENT & NEXT MEETING

53 **11.1. Next Meeting: November 13, 2025**

OPEN EDUCATION@UFV: Building the future

For Faculty Councils, Fall 2025

Submitted by Claire Hay (Teaching and Learning), Janelle Sztuhar (Library) and Shaun Sun (Math/Stats) – openeducation@ufv.ca



Definitions

Open Education is a set of practices directed at making the process and products of education more transparent, understandable and available to all. It can include open scholarship, open access, open textbooks and open research (Open UBC).

Open Educational Resources are "Learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others." (UNESCO, nd.). In 2019, UNESCO approved a set of Recommendations on OER.

Zero Textbook Cost (ZTC) are resources that support student learning that do not have a cost to the student. These may be textbooks, lab manuals, study guides, collated library resources, etc. A course may be identified as ZTC if course resources are free to access. A ZTC designation does not apply to other course resources such as art supplies, lab coats, drafting supplies etc. In Fall 2025, 220 course sections (from over 1500) were identified as ZTC at UFV.

Open Education in BC

BCcampus is the provincial body that supports open education in the province. In 2022, BCcampus celebrated 10 years of the open textbook project. BCcampus supports the BC Open Textbook Collection. This resource also provides links to discipline specific resources and an adoption finder where departments and instructors can see who is adopting OER in BC. In 10 years to 2022, BCcampus estimates that students have saved over $30 million in textbook costs through open education initiatives across the province. Many BC institutions have open education initiatives in place:

- Kwantlen Polytechnic University
- Thompson Rivers University

Open Education at UFV

At UFV, we have been working on building open education awareness, engagement and adoption of open education resources for over 5 years. But its time for our next stage. Funded by a BCcampus Open Education Institution Grant and supported by the Office of the Provost and Vice President, Academic, the **Open Education In-Action Initiative** is project will help UFV create its first official Open Education Strategy and expand the use of Open Educational Resources (OER) across the university. OEIAI has 4 interconnected projects: open education strategy, ZTC implementation plan, Open Education Micro Grant program, and the creation of an Open Education website.

We need your help.

Your **input** is an important part of this process. You can provide your ideas directly in this Padlet or share your ideas during our visit to your Faculty Council. We are also hosting Open Education Coffee Conversations throughout November.

For more information on Open Education, visit these resources:

- Open Education In-Action Initiative
- Open Education Resources
- Open Education at UFV video

MINUTES
Applied & Technical Studies Faculty Council
Thursday, September 11, 2025 - 2:00 PM
Trades and Technology Centres, Rivers Dining Room 1068

Present:	Alex Palameta, Avner Bachar, Brock Hartman, Daniel Smythe, Dean Key, Elmer Magsino, Greg Wedel, James Mandigo, Jeff Chizma, Jennifer Lau, Jeremy Abbott, John Garrett, Karen Cooper, Lin Long, Mark Ryan, Martin Warkentin, Nick Penner, Prabhjot Parmar, Rodney Smith, Shahrzad Malek, Sian Hurley, Ted Zak, Teresa Kisilevich, Trevor Beugeling, Trevor Murray, and Wes Macaulay
Regrets:	Carl Janzen, Carl Nienhuis, Carmen Herman, Chris Monkman, Don Weitzel, Jamie Ubell, Jim Carson, Joel Feenstra, Marc Bardaro, Mark Rempel, Matt Olafson, Mike Dieleman, Myles Andrew, Pat McGurk, Peter Mulhern, RoseAnne Timbrell, Russ Thompson, and Spenser Julsethwhite
Guests:	Kevin Brennan, Marta Ciccia
Recorder:	Marlie Murphy

1. WELCOME FROM THE CHAIR

Teresa welcomed everyone to the first meeting of the Fall 2025 term.

2. TERRITORIAL ACKNOWLEDGEMENT

Teresa provided the Territorial Acknowledgment and reminded everyone to be mindful and kind, especially as we approach the **National Day for Truth and Reconciliation on Tuesday, September 30**.

The UFV blog post *HowUFV is doing Reconcili-Action* was shared as a resource for the **National Day for Truth and Reconciliation**. Faculty and staff can find more information on upcoming events and opportunities on how to get involved.

A **YouTube**video featuring UFV Explore Trades participant **Adam Birch Douglas** was shown. Through the Explore Trades program, and in partnership with **Seabird Island**, Adam was introduced to the Welding Foundation program at UFV.

3. ITEMS FOR APPROVAL

3.1. Agenda –September 11, 2025

Motion: That the September 11, 2025 agenda be approved with the following addittion: Item 5.5. Exam Accomodations
Moved by: Trevor M.
Seconded: John G.
Carried

3.2. Minutes – April 10, 2025

Motion: That the minutes of April 10, 2025 be approved as presented
Moved: Jeff C.
Seconded: Dean K.
Carried

4. BUSINESS ARISING FROM THE MINUTES

4.1. Fire Alarm Review Update

The faculty council was notified that fire drills will be conducted at CEP campus on Wednesday, September 24th, 2025. The following times are approximate:

- 9:00 am: Building A
- 9:30 am: Building T
- 10:00 am: Building S

A discussion about floor warden training and fire drill process for building S & T took place.

Action: Teresa will ask Chris Monknam to follow up with Safety and Security to confirm floor wardens and whether a review for building S & T will be taking place.

5. NEW BUSINESS

5.1. Divisional Reports

To streamline the process for divisional reporting, a shared document has been created. Department Heads and School Coordinators can now update and enter events and activities related to UFV's Integrated Strategic Plan (ISP) as they happen.

This live document will be summarized and formatted for the Dean's review, and then submitted to the Provost's Office for inclusion in the monthly Senate meeting.

Faculty are asked to report any events to any one of the following:

- School Coordinator (Jennifer, Jenna, Marta, or Karli)
- Department Head (Chris, Trevor M., Jeff, or Trevor B.)
- Dean's Office Administrative Coordinator (Marlie)

5.2. Health & Safety

There were no Health & Safety concerns raised.

5.3. Shop Computers - Dean Key

There are ongoing issues with shop laptops that support equipment not being profiled properly. This causes update challenges for both IT staff and instructors. Faculty are requesting additional IT support to ensure they can quickly address shop laptop needs, as these issues directly affect instruction.

Action: Teresa will follow up with IT (Katie) regarding the shop laptops to ensure the student profile is set up appropriately for use in the shops.

5.4. Yard Committee - Chris Monkman

tabled to next meeting

5.5. Exam Accomodations

STBC Process Update

- Teresa shared the STBC email outlining the process and timelines for requesting accommodations through Accessibility Resources. The new requirement is **6–8 weeks' advance notice**.
- Students needing accommodations must submit requests as soon as possible, which is especially challenging for apprenticeship classes that are only 7 weeks long.
- Concerns were raised about the process, including invigilation guidelines. Miscommunication in this area could directly impact a student's ability to pass their course.
- It was suggested that we invite **Robyn Bennett** to meet with us for further discussion about accommodation needs for our students.
- Follow-up is also needed on the accessibility issue raised with the **Provost's Office** last year regarding long-term administrative support for faculty.

Action: Teresa will follow up with STBC regarding the new timelines and share our comments. She will also follow up with the Provost's Office on long-term plans for accessibility and accommodations.

6. DEAN'S REPORT

6.1. September 2025 Dean's Report

6.2. ATS Plan 2025-26

7. COMMITTEE AND SENATE REPORTS

7.1.

- **Sessional & Relief Instructor Representatives Elections**
- **Student Representative Elections**
- **Staff Representative**
- **Curriculum Committee Representative**

Elections for **Sessional and Relief Instructor Representatives** will begin next week, as well as the the **Student Representative elections**.

There is still **one staff representative position** available. Please see Teresa if

you are interested.

The **Curriculum Committee** is seeking a representative from Trades to ensure stronger representation across all areas. Current members: Trevor M., Sharhazad, and Mark Rempel.

8. EVENTS

8.1. Opportunity Fair - October 16, 2025

8.2. UFV Abbotsford Open House, Saturday, October 18, 2025

8.3. Regional Skills Competition, "Build your Future, Try-a-Trade February 26, 2026

8.4. Provincial Skills Competition, April 15, 2026

9. ADJOURNMENT & NEXT MEETING

Motion: to adjourn the meeting at 3:01 pm
Moved by: Brock H
Carried
Next meeting: October 9, 2025

Email from SkilledTradesBC regarding accommodation requests
September 11, 2025

Over the past few months, SkilledTradesBC has noticed there has been an influx of accommodation requests being submitted past the application window for class requests. In addition, there has been confusion about what accommodations can be approved within a classroom setting. To provide clarity, we have outlined the process below:

For Candidates at a Training Provider with an Accessibility Resource Center (and ARC Agreement in Place with SkilledTradesBC):

1. Apprentices must submit their accommodation request through their Accessibility Resource Center 6-8 weeks in advance of the class exam date.

a. An accommodation request (Training Provider Exam Accommodation Requests Accessibility Resource Centers Form)

2. Accommodations will be scheduled with the Accessibility Resource Center according to their availability. During peak volumes, candidates may write a few days after their class exam date.

a. **Note: Individuals unable to register with their Accessibility Resource Center will need to follow the process below**

For Candidates without an Accessibility Resource Center (or No ARC Agreement in Place with SkilledTradesBC)

1. Candidates requiring accommodations should submit their accommodation request form (Training Provider Exam Accommodation Request Form) to their training provider.

2. The Training Provider can include the accommodation form when submitting the class exam request to SkilledTradesBC, typically 6-8 weeks in advance of the exam date depending on the program.

a. **Note:** Submitting the accommodation form with the class request allows us to confirm exam eligibility and schedule them close to their class exam date. While we try to schedule candidates as close to their class end date as possible we cannot guarantee they will be writing on the last day of class. **If forms are received less than 30 days in advance of the requested exam date, the student will likely need to write on a different day than the rest of the class.**

Email from SkilledTradesBC regarding accommodation requests
September 11, 2025

3. SkilledTradesBC will pull the attached accommodation requests from the class and schedule them separately at a local Service BC or Accommodation Venue.
4. A member of the Completions Team at SkilledTradesBC will reach out to the student if they are requesting any accommodation(s) they have not been approved for previously.

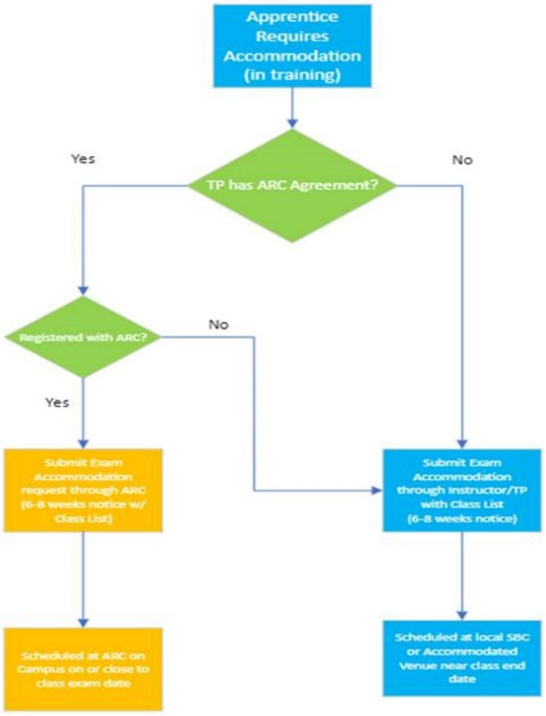
For any Candidate who is without an Accessibility Resource Center, please see the following table advising of what accommodations can be delivered on site:

Accommodations allowed in class	**Accommodations that must be off site**
Straight edge	Blue overlay
Language dictionary	Increased font size/ magnifying glass
Ear plugs	Time extension
Bilingual - French and English copy (Red Seal exams only)	Translator/ASL interpreter
	Reader
	Text-to-speech software
	Private sitting

Please see the following flow chart to view the process to request an accommodated exam:

(NOTE: UFV has a current ARC agreement)

Email from SkilledTradesBC regarding accommodation requests
September 11, 2025



Thank you for your continued partnership and cooperation.

If you have any questions or concerns, please do not hesitate to contact me.

Kind regards,

Erica Routien (She/Her/Hers)

Assessments Coordinator at SkilledTradesBC

cell: 604-362-7652

800 – 8100 Granville Avenue, Richmond, BC, Canada, V6Y 3T6

SKILLEDTRADESBC

SKILLEDTRADESBC.CA

Dean's Report

Faculty Council
Faculty of Applied and Technical Studies
Thursday, September 11, 2025

Welcome back to another academic year! It's hard for me to believe that this is my third September at UFV. As a life-long student and teacher, September has always held a special place in my heart, and this year is no exception. I know that we are in the middle of a very challenging time in post-secondary education in Canada, but I truly believe that our faculty is in the exact right time and place to make a difference to our community and our world.

As I circulated recently, we had the largest increase in domestic registrations (19%) and the only growth in international registrations across the faculties. (Note: this growth was quite small, but I'll take the good news where I can find it.) I attribute the growth in both domestic and international registrations to everyone's collective drive to excellence in all that you do. Let's continue to elevate and celebrate our programs, our learners, and the faculty and staff who make a difference every single day!

My monthly report will continue to focus on a few categories: People, Programs, Upcoming Events and Other News. An addition this year is a "Progress" section, which will give a monthly update on my ATS 2025-26 plan circulated in late August (and will also be attached to this month's minutes). As always, I'm open to your ideas, suggestions, and recommendations for inclusion in my report.

People

I want to start out by giving a huge shout-out to sessional Welding instructor Ethan Lombard (and former UFV dual credit student), who led the SD33 cohort in building our gorgeous sculpture. We heard just this week that the project, *Finding Resolution,* won an honorable mention in the Forged by Youth national contest. The award will provide our school district partners with some cash to support their own welding programs, plus it's great exposure for our Department and Faculty. **Congratulations**!

Also in Welding, Jim Carson will be retiring at the end of September after more than 24 years with UFV. Stay tuned for information about a retirement celebration in Jim's honour (likely in early October).

Welcome to new members of the ATS team: Marija (Culinary), Amber (Culinary/Cafeteria), and Sergio (Heavy Mechanical).

September 2025

Progress (on 2025-26 ATS Plan)

Engaging Learners:

- **Completed**: hallway painting TTC
- **Completed**: First Week Feast collaboration (130 students and faculty registered to attend and over 500 attended)
- Renovation to T1033 – a steering committee is now in place and a project manager has been assigned. The group met for a design workshop early in September. The project is expected to complete by May 2026, with occupancy scheduled for summer.
- Thank you to all the volunteers who helped make our display at the Chilliwack Fair a huge draw. We estimate we engaged with at least 1000 members of the public, which is truly amazing.

Transforming Lives:

- Curriculum Committee – we are looking for a representative from Trades to step forward to join this committee. Thanks to Trevor Murray and Shahrazad Malek who have already put their names forward.
- Division Review Committee (DRC)– We have a full complement this year, with several upcoming vacancies next May. My thanks to the following: Jeff Chizma (Chair), Peter Mulhern, Greg Wedel, Nick Penner, Ted Zak, and Jason Thomas.
- My thanks as well to Wes Macaulay, who serves on the University Review Committee (UFC)
- The tentative name change for Industry Services has been paused for the time being.
- The online registration CE and Industry Services courses is on track to go-live for a small number of January 2026 courses, with a full implementation for summer and fall courses.

Building Community:

- Upcoming visit from three culinary teachers from Thailand (Wednesday, Sept 24)
- Welcome to our SASET pre-Culinary students, taught this fall by John Garret
- Welcome (starting Monday, September 15) our SASET Carpentry Foundation program, taught by Patrick Watchorn

Programs

Industry Services:

Industry Services & Part-time Trades unit welcomes collaboration with your department to offer upskilling courses to our trades alumni as well as short-term courses to enhance community members' employability or for personal enrichment.

September 2025

Current courses/programs for fall 2025:

- Partnerships programs with SASET – Pre-trades culinary arts & carpentry foundation
- Motorcycle classes
- Welding classes – Essentials, MIG, TIG
- Woodworking classes – Charcuterie board, knife block
- Baking classes – Thanksgiving, Halloween, Winter
- Pesticide applicator

Plus, list below with enrolment numbers

Course/Program	Enrolment #
Trades Discovery – **full** class	16
FLORAL DESIGN CERT-BASICS I	20
Bicycle Mechanics Level 1	6
Electrical Code – **full** class	18
Powerline Technician	15
Building Service Worker (in-person)	10
CVIP Automotive	11
CVIP Heavy Mechanical	5
Building Service Worker (online) – **full** class	16

Engineering

We have excellent numbers in our first year Engineering courses this year. I had the pleasure of attending Peter & Trevor's ENG 123 class this week, and it was fabulous to engage briefly with 60 keen students.

Unfortunately, we had to cancel our second year Engineering courses (i.e. the Mechatronics diploma) this fall due to low enrollment. Trevor has been appointed the Program Chair for Engineering this year, and one of his tasks will be to find ways to translate more first-year students into second-year students. Stay tuned…

Physics

Our first-year Physics classes are all full (or with one empty seat), which is a great start to the academic year! Last year, there was an initiative between the Faculties of ATS and Science to offer all first-year science courses in Chilliwack. After a slow(ish) start last year, our Physics 111 at CEP is full this fall.

September 2025

The classes for 200- and 300-level courses range in size, with only a few courses being at capacity.

The Physics' Student Association is active again this year, showing up for Day One in Abbotsford. They have designed some new PSA merch and will also be publishing another book of puzzles as a fundraiser for student activities.

Technologies

This past spring, we invested in four additional student learning stations in the Electronics lab. This investment has already paid off, and we have 23 (out of a possible 24) new students. Our second-year numbers are also stronger than in past years, with 12 students returning to complete the Automation & Robotics diploma.

Trades

Course currently in session:

	Start Date	End date
Construction Electrician Dual Credit	August 5, 2025	January 30, 2026
Professional Cook	August 18, 2025	May 29, 2026
Heavy Mechanical Foundation	September 2, 2025	May 22, 2026
Plumbing & Piping	September 2, 2025	March 13, 2026
Welding Dual Credit	September 2, 2025	May 8, 2026
Welding Adult afternoon class	September 2, 2025	May 8, 2026
Auto Service Tech Foundation	September 2, 2025	May 8, 2026
Heavy Mechanical APP Level 2	September 2, 2025	October 24, 2025
Architectural Drafting	September 2, 2025	June 5, 2026
Carpentry Foundation	September 2, 2025	February 27, 2026
Welding A	September 2, 2025	October 24, 2025
Welding B	September 2, 2025	December 19, 2025
Auto Collision Repair & Refinishing Fdn.	September 2, 2025	May 8, 2026
Auto Service Technician Level 3	September 8, 2025	October 24, 2025
Carpentry APP Level 1	September 8, 2025	October 24, 2025

September 2025

Programs starting before our next Faculty Council:

SASET Carpenter Foundation	September 15, 2025	March 20, 2026
Auto Service Tech Foundation	September 22, 2025	May 29, 2026

Upcoming Events & Activities

- Thursday, October 16, 2025 – Trades & Technology Opportunity Fair
- Saturday, October 18, 2025 – UFV Open House (Abbotsford Campus)

FACULTY OF APPLIED & TECHNICAL STUDIES

PLAN 2025 – 2026

Dr. Teresa Kisilevich, Dean

Introduction:

As we move into a new academic year, it's a good time to set out my Faculty vision, goals and some activities for the next year. The planned activities and ideas are grouped under UFV's mission statement: engaging learners, transforming lives, and building community. These are also the categories that I use to report on during the monthly Divisional Reports that are submitted to the Provost for inclusion in the reports to Senate.

President Mandigo has directed me to examine how "trades can enhance its programming in support of increased scholarly activity and output that features innovation and entrepreneurship of the trades and its impact more prominently." I would extend this focus on increasing impact to all programs within our Faculty, and I welcome your thoughts on how we can continue to elevate and celebrate all our students, faculty, and staff.

International student numbers continue to decline across the post-secondary sector, including at UFV. To date, our Faculty has not yet been impacted; however, we will not be immune to any challenges that these declining numbers may bring to the University.

Stewardship of both financial and academic resources remains a guiding principle in my work. I continue to advocate on the local and provincial level for additional, appropriate SkilledTradesBC funding that will allow us to continue offering exceptional trades programs. Additionally, I will continue to explore opportunities to deepen industry and community connections. If you have great ideas to share, or you would just like to chat, please stop by my office, catch me in the hallway, or call me on Teams. I am here to support you as you support our students.

With my sincere thanks for all that you do,

Engaging Learners

Create a welcoming environment:

- Paint hallways in TTC Building T (in progress August 2025)
- Collaborate on inaugural *First Week* Feast September 4, 2025 (CEP)
- Update artwork and signage - TTC
- Renovation to T1033 (capital project tentatively scheduled September 2025 – June 2026). Changing from Digital Manufacturing lab to two Electrical classrooms plus one instructor office (details still to be confirmed).
- Potential upgrades to Rivers
- Create gathering spaces for students (continue to develop the TTC Student Success Centre, add picnic tables, etc.)

Support student learning:

- Technology Working Group to examine future use for T1034
- Create SLG for Engineering students (Supporting Learning Groups) – these are free, peer-led study sessions
- Working with Student Affairs, access funding for a *Student Support Navigator* for trades and technology students.
- Identify and apply for funding to support student emergency funding, scholarships, and bursaries for all programs within ATS.
- Modify Dean's Medal criteria to include trades programs
- Expand youth and adult general interest/Industry Services programs
- Support the planned Technology program review as well as curriculum and credit reviews for the Engineering Common Core Certificate.
- Support the Physics Students' Association

Elevate and celebrate faculty, staff, students and programs:

- Participation at community events to highlight and promote programs:
  - Chilliwack Fair – thank you to all the volunteers who made this a great event!
  - SASET Career Fair
  - BC Chefs' Association (tentative)
- Convocation – second year of "Red Seal" stoles for apprentices reaching final level of their program
- Create "Dean's Research Fund" for faculty members (must include students)
- Create ATS Awards
- Create pathways for Indigenous learners to enter trades and technology programs

2025-2026 ATS PLAN 3

Transforming Lives

Provide and encourage governance and committee opportunities:

- ATS Faculty Council – typically the third Thursday of every month
- Curriculum Committee
- Divisional and University Review Committees (DRC and URC)
- Standing Selection Advisory Committees (SAC)
- Individual Probation Evaluation Committees (IPEC)
- Technology Working Group

Social events for ATS faculty & staff

- December 11 holiday dinner
- May 2026 year-end barbeque (date to be confirmed)
- Tentative: ATS faculty retreat spring 2026

Continue high-impact events for student learning / career development:

- Trades & Technology Opportunity Fair (October 16, 2025)
- Skills Canada BC Regional Skills Competition (Feb 26, 2026)
- Skills Canada BC Provincial Competition (April 15, 2026)
- Skills Canada National Competition (May 28 & 29, 2026)

Work with Industry Services to create transformational learning opportunities

- Rename to Trades & Technology Continuing Studies (tentative)
- Online registration system – first go-live registration for January 2026 courses
- Continue and expand programming that serves community and industry needs and contributes financially to our Faculty

Explore and potentially develop new programs and certifications:

- Bachelor of Technology (or Bachelor of Applied Science)
- Pathway to Bachelor of Education
- Blue Seal (or equivalent) with Faculty of Business
- Accreditation for Technology programs
- Explore Technology (like Explore Trades)
- Program review – Technology
- Program revisions – Culinary

2025-2026 ATS PLAN 4

Building Community

Work with partner organizations to begin, expand, continue, or enhance learning opportunities

- SASET
- Indigenous communities
- School Districts
- Industry
- SkilledTradesBC
- BC Cancer (medical physics programs)
- Internal partnerships – Agriculture, One Health, Business & Computing, Health Sciences, Research
- Other BC post-secondary institutions
- Union trainers
- CityStudio

Represent UFV on provincial, national and international levels

- BC Association of Trades and Technology Administrators (member)
- National Council of Deans of Trades and Technology (Executive member)
- Canadian Coalition of Women in Engineering, Science, Trades and Technology (National Board Member)
- Attend Skills Canada BC as a sponsoring institution
- Attend Skills Canada National in support of UFV competitors
- Explore international opportunities as appropriate

Memo for Program Changes

To: Faculty Council – Applied and Technical Studies

From: Trevor Beugeling, Chair of Engineering Program

Date: Sept. 19, 2025

Subject: Program change of Engineering Common Core Certificate

1. Summary of changes (select all the apply):

   ☐ Program revision that requires new resources
   ☒ Addition of new course options or deletion or substitution of a required course
   ☐ Change to the majority of courses in an approved program
   ☐ Change to the duration, philosophy, or direction of a program
   ☐ Addition of a new field of specialization, such as a concentration
   ☒ Change in requirements for admission
   ☐ Change in requirements for residency or continuance
   ☐ Change in admission quotas
   ☐ Change which triggers an external review
   ☐ Deletion of a program not included in the Program Discontinuance policy
   ☐ Other – Please specify:

2. Rationale for change(s):

   Due to the high value of the First-Year Core Engineering Curriculum courses (51 credits at UFV, compared to a provincial average of 39 credits), we are in the process of reducing the credit load to be more competitive with other institutions.

   ENGR 113, ENGR 123, ENGR 124, and ENGR 153 have all been reduced from 4 credits each to 3 credits each. To compensate for the reduction in credit value, learning outcomes and/or instructional time have been reduced.

   The newly introduced PHYS 118 (5 credits) is designed to encompass all of the required Engineering Common Core content from both PHYS 112 (5 credits) and ENGR 115 (1 credit). PHYS 118 replaces these two courses in the winter semester, resulting in an additional reduction of 1 credit for the program as a whole.

   As a result of the above changes, the there is a net reduction of 5 credits for the program. This lowers the cost to students by approximately $830.00, making our program more accessible to a wider variety of students with diverse backgrounds. The reduced learning outcomes and/or instructional time will lower the workload for students, improving student success and throughput of the program.

   Math entrance requirements have been updated to match prerequisites of MATH 111. This change will help maintain consistency in prerequisites between the ECCC program, the MATH 111 course it requires, as well as the required PHYS 111 course which also matches prerequisites with MATH 111.

Learning outcomes for ENGR 113, ENGR 123, ENGR 124, and ENGR 153 have been updated to include introducing students to topics regarding EGBC programs and initiatives for Equity, Diversity, and Inclusion.

Textbook information has been updated for ENGR 113, ENGR 123, ENGR 124, and ENGR 153.

3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes:

   Learning outcomes have not been significantly changed.

4. What consideration has been given to Indigenizing the curriculum?

   The Faculty of Applied and Technical Studies Curriculum Committee discusses considerations for individual course changes. Discussions regarding indigenization are also facilitated during Physics and Engineering department meetings.

   Learning outcomes have been updated for ENGR 113, ENGR 123, ENGR 124, and ENGR 153 to include coverage of EGBC Guidelines for Indigenization and Reconciliation.

5. Will additional resources be required? If so, how will these costs be covered?

   No additional resources required.

6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program?

   Reducing the number of credits will make our program more competitive with other institutions. The changes to entrance requirements will maintain consistency with Math department requirements, and ensure that all students are better prepared to enter the program.

   We anticipate that these changes will have a net-positive effect on both student throughput and student success.

7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline?

   While multiple courses will have their credit value reduced, the only change to offered courses is the addition of PHYS 118 as a replacement for PHYS 112 and ENGR 115.

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)

   N/A

9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed.

   Number of elective courses will not change.

10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

    To be added.

Memo for Program Changes

To: ATS Faculty Council

From: Jeff Chizma, Physics Department Head

Date: September 18, 2025

Subject: Program change of the Engineering Physics Diploma in Mechatronics

1. Summary of changes (select all the apply):

   ☐ Program revision that requires new resources
   ☒ Addition of new course options or deletion or substitution of a required course
   ☐ Change to the majority of courses in an approved program
   ☐ Change to the duration, philosophy, or direction of a program
   ☐ Addition of a new field of specialization, such as a concentration
   ☐ Change in requirements for admission
   ☐ Change in requirements for residency or continuance
   ☐ Change in admission quotas
   ☐ Change which triggers an external review
   ☐ Deletion of a program not included in the Program Discontinuance policy
   ☒ Other – Please specify: *Reduction of total required number of credits due to changes in course credits.*

2. Rationale for change(s):

   As part of our initiative to reduce the overall number of credits required for the Engineering Common Core Certificate Program (ECCCP), we have reduced the number of credits from 4 to 3 for 4 of the courses shared between the Physics Diploma and ECCCP. As a result of this credit reduction, the number of credits required to earn the Diploma has decreased from 67 to 63. In addition, we have included a new course PHYS 118 as an option – PHYS 112 will soon be discontinued and replaced by PHYS 118.

3. If program outcomes are new or substantially changed, explain how they align with the Institutional Learning Outcomes:

   No changes to the learning outcomes have been made.

4. What consideration has been given to Indigenizing the curriculum?

   The Faculty of Applied and Technical Studies Curriculum Committee discusses considerations for individual course changes. Discussions regarding indigenization are also facilitated during Physics and Engineering department meetings. However, each of the 4 courses which have had their credit values reduced (ENGR 113, ENGR 123, ENGR 124, and ENGR 153) have updated learning outcomes which specifically address the topic of indigenization in order to meet the requirements of EGBC (Engineering and Geoscientists of British Columbia).

5. Will additional resources be required? If so, how will these costs be covered?

   No additional resources will be required.

6. How will students be impacted? (Indicate the projected number of students impacted.) Is the change expected to increase/decrease enrolment in the program?

   As the credit reduction will have a corresponding effect on the cost of the Diploma, students will end up paying less to earn the credential. In addition, the credit reduction of the courses will come with an associated reduction in both class time and content, so the students should be more successful and we expect to see more graduates.

7. Does the number of required core or elective credits from the program-specific discipline change? If so, will this change the total number of courses to be offered within the discipline?

   Yes, there will be an overall reduction in required credits from 67 to 63, however, the total number of courses offered remains unchanged.

8. Identify any available resources that will be used to accommodate the program changes. (Eg. seats in existing classes, conversion of sections, timetabling changes, deletion of courses, etc.)

   The available resources are not affected by the proposed changes.

9. Is the number of required or elective courses from other disciplines in the program changing? If so, what is the estimated impact to enrolments in these courses? Provide a memo from the respective dean(s) of the impacted faculty to confirm if budgetary implications have been considered and addressed.

   No, the number of elective courses will not be changing.

10. Provide a memo from the program's dean to confirm that budgetary implications of the proposed changes have been considered and will be addressed within the faculty budget.

Engineering Physics

ufv.ca/engineering

Engineering Physics diploma in Mechatronics

This is a two-year diploma program in Engineering Physics, specializing in Mechatronics.

The program is 6~~7~~3 credits, designed for students to go either directly to the workplace or to ladder to a UFV Bachelor of Science degree with a Physics major. Those completing the diploma may also be eligible to transfer to an engineering degree at another institution.

Entrance requirements

B.C. secondary school graduation or equivalent

1. English Studies 12 or English First Peoples 12 (or equivalent) with a C+ or better.
2. One of the following (see Note 1):
    - Calculus 12 with an A or better
    - Principles of Mathematics 12 with a B or better
    - Pre-Calculus 12 with a B or better
3. Physics 12 with a C or better (see Note 2).

Note 1: Students without one of these mathematics courses may present the prerequisite for MATH 111 instead.

Note 2: Students without Physics 12 may present the prerequisite for PHYS 111 instead.

Transfer applicants

Completion of nine university-level credits with a CGPA of 2.00 or better based on all university credits attempted. Applicants with eight credits or less will be assessed based on their high school record.

Note: Successful transfer applicants who do not meet course prerequisites can expect to take an additional year to complete the program.

When to apply

Applications are accepted for entrance to the Fall semester only. For application deadlines, see Specific intake application process.

How to apply

Apply online at ufv.ca/admissions/apply.

Basis for admission decision

Entrance to the program is limited and not all qualified applicants may be admitted. Qualified applicants who are not admitted due to space constraints will be offered a position in an alternate program.

Fees and additional costs

See the Fees and Other Costs section. Books and additional supplies cost approximately $50-200 per course.

Program duration

The Engineering Physics diploma in Mechatronics is designed to be a full-time program completed in two consecutive years. Transfer students who do not meet the prerequisites for the introductory courses can expect to take an additional year to complete the program. Students who do not complete the required courses in the expected timeframe, including part-time students, may not be guaranteed space in later courses.

All courses required for the program must be completed within five years after students begin in the program.

Location

Most courses are offered in Abbotsford. Courses may also occasionally be offered at the Chilliwack campus. ENGR 100 is only offered at the Trades & Technology Centre at the Canada Education Park in Chilliwack.

Program outline

The following are the courses required for the program, as well as a schedule of how the courses will normally be taken.

Semester I (Fall): 1~~7~~5 credits

Course	Title	Credits
ENGR 123	Engineering Design I: Design and Drafting	4~~3~~
ENGR 153	Structured Programming for Engineers	4~~3~~

MATH 111	Calculus I	4
PHYS 111	Mechanics	5

Semester II (Winter): 1~~7~~5 credits

Course	Title	Credits
ENGR 113	Engineering Physics - Statics and Dynamics	43
ENGR 124	Engineering Design II: Design and Sustainability	43
MATH 112	Calculus II	4
PHYS 112	Electricity and Magnetism	5
or PHYS 118	Waves, Optics, and Electromagnetism	

Semester III (Fall): 17 credits

Course	Title	Credits
ENGR 100	Production in Practice (see Note 1)	1
ENGR 210	Circuit Analysis	5
ENPH 320	Fundamentals of Digital Logic and Design	4
MATH 211	Calculus III	3
PHYS 221	Intermediate Mechanics (see Note 2)	4

Note 1: Although ENGR 100 is listed as a Fall course (students register for it in Fall), it will be offered at the end of the previous Summer semester (late August).

Note 2: Students with credit for all of ENGR 113, ENGR 152/MATH 152, and ENGR 255/MATH 255 are not required to take PHYS 221.

Semester IV (Winter): 16 credits

Course	Title	Credits
ENPH 310	Microelectronics	5
ENPH 340	Microcontrollers and Embedded Systems (formerly ENGR 340)	4
ENPH 390	Mechatronics	4
PHYS 232	Experimental Methods in Physics (see Note)	3
or PHYS 381/ MATH 381/ ENGR 257	Mathematical Physics (see Note)	

Note: PHYS 232 is recommended for students completing only the diploma; PHYS 381/MATH 381/ENGR 257 is recommended for students pursuing both the diploma and the Physics major.

Program continuance

To remain in the program, students must maintain a minimum GPA of 2.00, calculated on all courses applied to the diploma.

Undergraduate continuance

Students enrolled in undergraduate courses (courses numbered 100 or higher) must maintain an undergraduate Cumulative Grade Point Average (CGPA) of at least 2.00 to remain enrolled in Good Academic Standing at UFV. Students in Good Academic Standing will have no registration limits placed on them. Failure to meet the minimum CGPA requirement will result in restrictions on registration and may eventually lead to academic suspension from undergraduate studies at UFV. Students on Academic Warning or Academic Probation are limited to registering in 10 credits. For further details, see the Academic standing and undergraduate continuance section of the academic calendar. Academic standing is governed by UFV's Undergraduate Continuance policy (92).

Course repetition

Students are not permitted to register for the same course more than three times. Students wishing to register for a course for a fourth time should connect with the Student Rights and Responsibilities Office. No more than four 200-level or higher course duplications will be permitted on courses which apply to the diploma. Students with more than four 200-level or higher course duplications will not be able to graduate from the program. Where a course has been repeated, only the higher grade is counted in the GPA calculation.

Readmission

Students who have been required to withdraw from UFV under the Undergraduate Continuance policy (92) are subject to readmission and continuance requirements as listed in the UFV academic calendar. Students are normally only readmitted once to the same program.

Residency

Students must complete 50% of the program at UFV, including ENGR 100, ENPH 390, and four of the required 200-level or higher Physics, Engineering, or Engineering Physics courses.

Graduation requirements

Students are responsible for ensuring they are eligible to graduate, and should regularly consult with an Academic Advisor. To be eligible to graduate, students must have completed all required courses with a minimum GPA of 2.00, calculated on all the program courses.

Students must apply for graduation in the first month of their final semester. Visit the Graduation webpage for more information.

Maximum length of time to complete program

All courses required for the program must be completed within five years after students begin in the program.

Course listings

For complete details on courses see the course descriptions section.

Return to main Engineering page

Memo for Course Changes

To: Faculty Council – Applied and Technical Studies

From: Trevor Beugeling, Chair of Engineering Program

Date: Sept. 19, 2025

Subject: Proposal for revision of ENGR 113

Note that even minor changes may result in comments from committees on all aspects of the course.

1. Summary of changes (select all that apply):
   - ☐ Six-year review
   - ☐ Number and/or course code
   - ☒ Credits and/or total hours
   - ☐ Title
   - ☐ Calendar description
   - ☒ Prerequisites and/or co-requisites
   - ☐ Frequency of course offering
   - ☒ Learning outcomes
   - ☒ Delivery methods and/or texts and resource materials
   - ☐ PLAR options, grading system, and/or evaluation methods
   - ☐ Discontinuation of course
   - ☐ Other – Please specify:

2. Rationale for change:

   Credit value is being reduced from 4 to 3 credits. Instruction time has been reduced in order to compensate for this change. See program change memo for rationale.

   Class size reduced from 36 to 24 in order to maintain consistency with other courses in the cohort-based program, and to provide increased flexibility of instructional methods.

   MATH 111 changed from prerequisite to pre/corequisite to accommodate students that may take it in winter due to upcoming changes in Math course scheduling.

   Learning outcomes have been updated to include EGBC guidelines for Indigenization and Reconciliation, as well as programs and initiatives for Equity, Diversity, and Inclusion.

   Textbook information has been updated to most recent edition.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s) and contribute to students' ability to meet the Institutional Learning Outcomes (ILOs):

   No substantial changes.

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

   Not required.

5. Which program areas have been consulted about the change(s)?

   None outside of Physics/Engineering

6. In what ways does this course (not just the proposed changes) contribute to Indigenizing Our Academy? Provide explicit examples of assignment design, topic selection, curriculum delivery, or other methods, which can be in response to one or more of the following: UFV Integrated Strategic Plan, Fulfilling Our Commitment to Aboriginal Peoples policy (BRP-200.05), the TRC Calls to Action, and/or the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

   Storytelling will be integrated as a pedagogical tool to introduce new topics, and to provide context and motivation for the concepts and skills being taught.

   Correspondences between course topics and hands-on activities in related courses are emphasized when applicable.

   When possible, correspondences between course topics and current events will be highlighted and discussed.

   EGBC guidelines for Indigenization and Reconciliation will be presented and discussed, in order to provide context on the role that Indigenization has in professional practice.

7. How does the course reflect principles of equity, diversity, and inclusion, through assignment design, topic selection, curriculum delivery, or other methods?

   This course promotes equity, diversity, and inclusion by ensuring all students have equal access to the material and feel valued. The course design and teaching methods are gender agnostic, making the content accessible to everyone, and students are encouraged to share their perspectives respectfully. Instructors create a safe environment, where respect and inclusivity are prioritized. By using Universal Design for Learning (UDL) principles and emphasizing the contributions of underrepresented groups, the course ensures every student has the opportunity to succeed in a supportive, inclusive setting.

   EGBC programs and initiatives for Equity, Diversity, and Inclusion are introduced to students, demonstrating that these ideals extend beyond the scope of their education and into the engineering profession as a whole.

8. If applicable, discuss any special considerations for this course (credit value, class size limit, frequency of offering, resources required such as labs or equipment, field trips, etc.

   Credit value reduced from 4 to 3 as part of effect to reduce credit load of program as a whole. This lowers the cost to students, reducing financial barriers to those wishing to enter the program.

   Class size has been reduced from 36 to 24. With the program being based on a 1-year cohort over the fall and winter semesters, this change makes the course more consistent with the class size of other courses in the program. Reducing the class size also allows greater flexibility for the instructor to include project- and/or report-based content in the course.

9. Estimate of the typical costs for this course, including textbooks and other materials (excluding tuition):

   Textbook: Approx. $80.

ORIGINAL COURSE IMPLEMENTATION DATE: September 1999
REVISED COURSE IMPLEMENTATION DATE:
COURSE TO BE REVIEWED (six years after UEC approval)**:**
Course outline form version: 29/08/2024

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

Course Code and Number: ENGR 113	**Number of Credits:** 3~~4~~ Course credit policy (105)
Course Full Title: Engineering Physics – Statics and Dynamics **Course Short Title:** Statics and Dynamics	
Faculty: Faculty of Applied and Technical Studies	**Department/School:** Physics

Calendar Description:

Emphasizes solution techniques and proper documentation for problems involving practical applications of Newton's laws to engineering situations.

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

Prerequisites (or NONE):	~~MATH 111 and~~ PHYS 111.
Corequisites (if applicable, or NONE):	~~———~~NONE
Pre/corequisites (if applicable, or NONE):	~~———~~MATH 111

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

Former course code/number: **PHYS 113**

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	45
Tutorials/workshops	30~~45~~
[click to select]	
[click to select]	
[click to select]	
Total hours	**75~~90~~**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: **No**

Course Details

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

Directed Study course: **~~No~~Yes; no limit on repeats**
(See policy 207 for more information.)

Grading System: **Letter grades**

Delivery Mode: **~~[click to select]~~May be offered in multiple delivery modes**

Expected frequency: **Annually**

Maximum enrolment (for information only)**: 24~~36~~**

Prior Learning Assessment and Recognition (PLAR)

PLAR is available for this course.

~~———~~Yes

Transfer Credit *(See bctransferguide.ca.)*

Transfer credit already exists: **Yes**

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

Department approval	**Date of meeting:**
Faculty Council approval	**Date of meeting:**
Undergraduate Education Committee (UEC) approval	**Date of meeting:**

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:

- Accurately make free body diagrams for single objects and structures
- Use Newton's Laws to model and analyze practical situations in statics and dynamics
- Properly choose from multiple co-ordinate systems to simplify the analysis
- Use kinematics, energy, momentum or thermodynamics as appropriate for the solution of a situation
- Properly document a solution in the standard format for engineering/industrial applications
- Participate in the design and construction of group projects and subsequent presentation of the results.
- Justify the importance of EGBC guidelines for Indigenization and Reconciliation.
- Identify and explain EGBC programs and initiatives for Equity, Diversity, and Inclusion.

The learning outcomes are defined by the requirements for the Phys III component of the "First-Year Common Engineering Curriculum for the BC Post-Secondary Sector" which state the required course content, which is listed below in the Course Content section.

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

Final exam:	40%	Quizzes/tests/midterm:	35%	Assignments:	15%
Project:	10%	[click to select]	%	[click to select]	%

Details:

(Provide a full assessment breakdown and any other relevant information.)

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.)*

~~The course will be presented using lectures, tutorials, and a project. Approximately seven problems per week will be handed in and marked. During the tutorial the marked assignments will be discussed, additional problems in the same general area will be dealt with, and help will be given for those needing it for the next assignment set. There will be a close coordination between the lecture topics and the tutorials. The project will be a spaghetti bridge competition (or something similar) based on the structural chapter covered.~~

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.	Textbook	Hibbeler, R.C.	Engineering Mechanics (Statics and Dynamics), 154th ed.	2021 ~~15~~
2.	Textbook	Beer, F.; Johnston, E.R.; Mazurek, D.; Cornwell, P.	Vector Mechanics for Engineers, S.I. Metric Ed.	2015
3.	Textbook	Young and Freedman	University Physics, 15th ed.	2019
4.	[click to select]			
5.	[click to select]			

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

Engineering grade paper and simple drawing instruments.

Course Content and Topics

Lecture hours on each topic will follow provincially-mandated guidelines.

Topic	Chapters
Introduction to mechanics, fundamental concepts and principles, systems of units, solution methods and numerical accuracy; vectors	Hibb Ch1 1.1-1.6 Hibb Ch2 2.1-2.9
Newton's laws, forces as vectors, free body diagrams and equilibrium	Hibb Ch3 3.1-3.4
Rigid body equilibrium, torques as vector cross products, equivalent forces and couples; loadings and distributed forces	Hibb Ch4 4.1-4.10
Rigid body equilibrium in two and three dimensions	Hibb Ch5 5.1-5.7
Analysis of structures (trusses and frames)	Hibb Ch6 6.1-6.6
Internal forces	Hibb Ch7 7.1-7.3
Friction-wedges, square threaded screws, journal bearings, thrust bearings, and belt friction	Hibb Ch8 8.1-8.4
Particle kinematics – rectilinear and curvilinear motion (radial and tangential components)	Hibb Ch12 12.1-12.9
Newton's second law on dynamic systems	Hibb Ch13 13.1 13.6
Project: Spaghetti bridge	
Introduction to thermodynamics	~~Y&F Ch 15 15.1-15.9~~ Y&F Ch 17 17.1-17.7
Heat capacity; kinetic theory	~~Y&F Ch 16 16.1-16.7~~

Thermodynamic laws; heat engines	Y&F Ch 18 18.1-18.6 Y&F Ch 19 19.1-19.8 Y&F Ch 20 20.1-20.7

Memo for Course Changes

To: Faculty Council – Applied and Technical Studies

From: Trevor Beugeling, Chair of Engineering Program

Date: Sept. 19, 2025

Subject: Proposal for revision of ENGR 123

Note that even minor changes may result in comments from committees on all aspects of the course.

1. Summary of changes (select all that apply):
   - ☐ Six-year review
   - ☐ Number and/or course code
   - ☒ Credits and/or total hours
   - ☐ Title
   - ☐ Calendar description
   - ☒ Prerequisites and/or co-requisites
   - ☐ Frequency of course offering
   - ☒ Learning outcomes
   - ☒ Delivery methods and/or texts and resource materials
   - ☐ PLAR options, grading system, and/or evaluation methods
   - ☐ Discontinuation of course
   - ☐ Other – Please specify:

2. Rationale for change:

   Credit value is being reduced from 4 to 3 credits. Instruction time has been reduced in order to compensate for this change. See program change memo for rationale.

   Pre/co requisites have been adjusted to maintain consistency with program entry requirements. Pre/co requisite of ENGR 153 or COMP 152 has been removed as it was found to not have an impact on student success in the course.

   Learning outcomes have been updated to include EGBC guidelines for Indigenization and Reconciliation, as well as programs and initiatives for Equity, Diversity, and Inclusion.

   Textbook information updated to include new text. This text was designed specifically for the common core curriculum.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s) and contribute to students' ability to meet the Institutional Learning Outcomes (ILOs):

   No substantial changes.

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

   Not required.

5. Which program areas have been consulted about the change(s)?

   None outside of Physics/Engineering

6. In what ways does this course (not just the proposed changes) contribute to Indigenizing Our Academy? Provide explicit examples of assignment design, topic selection, curriculum delivery, or other methods, which can be in response to one or more of the following: UFV Integrated Strategic Plan, Fulfilling Our Commitment to Aboriginal Peoples policy (BRP-200.05), the TRC Calls to Action, and/or the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

   Note that ENGR 123 and ENGR 124 combine to meet the requirements of the engineering common core over two semesters, with methods of delivery remaining consistent between both courses. Students participate in an inclusive and active learning environment, where they are consistently required to learn by applying skills and concepts taught in class, both with individual and group work, evaluating the results, and providing feedback on both their own work and that of their peers. Larger projects require students to complete self-reflection documents, where they look back on their own work and attempt to assess where they performed well, and where future improvements can be made.

   Storytelling will be integrated as a pedagogical tool to introduce new topics, and to provide context and motivation for the concepts and skills being taught. Correspondences between course topics and hands-on activities in related courses are emphasized when applicable. When possible, correspondences between course topics and current events will be highlighted and discussed.

   Sustainability is one of the primary learning outcomes, and is explored through the aspects of Social, Economical, and Environmental Sustainability, both locally and planet-wide.

   EGBC guidelines for Indigenization and Reconciliation will be presented and discussed, in order to provide context on the role that Indigenization has in professional practice.

7. How does the course reflect principles of equity, diversity, and inclusion, through assignment design, topic selection, curriculum delivery, or other methods?

   This course promotes equity, diversity, and inclusion by ensuring all students have equal access to the material and feel valued. The course design and teaching methods are gender agnostic, making the content accessible to everyone, and students are encouraged to share their perspectives respectfully. Instructors create a safe environment, where respect and inclusivity are prioritized. By using Universal Design for Learning (UDL) principles and emphasizing the contributions of underrepresented groups, the course ensures every student has the opportunity to succeed in a supportive, inclusive setting.

   EGBC programs and initiatives for Equity, Diversity, and Inclusion are introduced to students, demonstrating that these ideals extend beyond the scope of their education and into the engineering profession as a whole.

8. If applicable, discuss any special considerations for this course (credit value, class size limit, frequency of offering, resources required such as labs or equipment, field trips, etc.

   Credit value reduced from 4 to 3 as part of effect to reduce credit load of program as a whole. This lowers the cost to students, reducing financial barriers to those wishing to enter the program.

Effective instructional time has been reduced from 4 blocks per week (6 hours) down to 3 blocks per week (4.5 hours). This reduction is a result of changes in course scheduling requirements originating from the Office of the Registrar.

9. Estimate of the typical costs for this course, including textbooks and other materials (excluding tuition):

   Textbook: Approx. $20. (Text shared with ENGR 124)

   Supplies for hand sketching (graph paper, pencils, etc.): Approx. $20.

   Supplies for course projects (Example: popsicle sticks and glue, etc.): Approx. $10

UNIVERSITY OF THE FRASER VALLEY

ORIGINAL COURSE IMPLEMENTATION DATE: September 2021
REVISED COURSE IMPLEMENTATION DATE:
COURSE TO BE REVIEWED (six years after UEC approval)**:**
Course outline form version: 29/08/2024

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

Course Code and Number: ENGR 123	**Number of Credits:** 34 Course credit policy (105)
Course Full Title: Engineering Design I: Design and Drafting **Course Short Title:** Engineering Design I	
Faculty: Faculty of Applied and Technical Studies	**Department/School:** Physics

Calendar Description:

Introduces students to the engineering design process through individual exercises and a series of mini-projects and labs undertaken in groups. Students will study the engineering design process, relevant technical background (including engineering drawing and CAD tools), project/group dynamics, professional responsibility, and writing and presentation skills over the course of the term.

Note: Students with credit for ENGR 151 cannot take this course for further credit.

Prerequisites (or NONE):	~~None.~~Prerequisites for MATH 111
Corequisites (if applicable, or NONE):	None.
Pre/corequisites (if applicable, or NONE):	~~MATH 111,~~ PHYS 111~~, and one of ENGR 153 or COMP 152.~~

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

Former course code/number: **ENGR 151**

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	45
Supervised laboratory hours (computer lab)	30
[click to select]	
[click to select]	
[click to select]	
Total hours	**75**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: **No**

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: ~~**[click to select]**~~**May be offered in multiple delivery modes**

Expected frequency: **Fall only**

Maximum enrolment (for information only)**: 24**

Prior Learning Assessment and Recognition (PLAR)

PLAR cannot be awarded for this course because:

Content and instruction are mandated by governing body.

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

Transfer credit already exists: **Yes**

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

Department approval	**Date of meeting:**
Faculty Council approval	**Date of meeting:**
Undergraduate Education Committee (UEC) approval	**Date of meeting:**

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:

- Describe the concept of a profession and the unique aspects of the engineering profession.
- Describe the different engineering disciplines.
- Apply engineering decision-making and design processes to well-defined and well-constrained engineering problems.
- Apply scientific principles to the understanding and analysis of engineering problems, and to the design of potential solutions.
- Describe the use of prototyping in the engineering design process.
- Describe the contributions that an engineer can make to society as well as the impact (both positive and negative) that an engineering project can have on society.
- Participate equitably as a member of a team, demonstrating initiative, professionalism, and effective intra-team communication.
- Prepare and deliver effective technical poster presentations, oral presentations, and technical reports.
- Demonstrate ability to draw engineering 2D sketching and Orthographic.
- Demonstrate ability to draw engineering 3D Isometric and perspective sketches.
- Prepare electronic drawings using CAD tools.
- Apply engineering tools, including hand tools, prototyping tools, and software tools to create, test, and analyze physical embodiments of an engineering design.
- Justify the importance of EGBC guidelines for Indigenization and Reconciliation.
- Identify and explain EGBC programs and initiatives for Equity, Diversity, and Inclusion.
- ~~Apply engineering tools, including hand tools, prototyping tools, and software tools to create, test, and analyze physical embodiments of an engineering design.~~

Commented [TB1]: Just fixing a formatting glitch with the bullets. Actual L.O. unchanged.

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

Final exam:	35%	Quizzes/tests/midterm:	25%	Project:	25%
Assignments:	15%	[click to select]	%	[click to select]	%

Details:

(Provide a full assessment breakdown and any other relevant information.)

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.)*

Lecture, tutorial work, group projects, invited speakers, field trips.

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.	Textbook	Ostafichuk and Jaeger~~Dunwoody, B. et al.~~	Introduction to Engineering~~Fundamental Competencies for Engineers~~	2023
2.	Textbook	Dunwoody, B. et al. ~~Lockhart, S.D. et al.~~	Fundamental Competencies for Engineers ~~Engineering Design Communication~~	2017~~2~~
3.	[click to select]			
4.	[click to select]			
5.	[click to select]			

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

(Use this section for supplies and materials for all sections of this course.)

Course Content and Topics

Module 1: Engineering profession

Module 2: Engineering design process
- Introduction to team work
- Communication
- Engineering design process
- Engineering fundamentals

Module 3: Engineering drawing
- Isometric / orthographic

- Computer Aided Drawing
- 3D rendering / prototyping tools

Memo for Course Changes

To: Faculty Council – Applied and Technical Studies

From: Trevor Beugeling, Chair of Engineering Program

Date: Sept. 19, 2025

Subject: Proposal for revision of ENGR 124

Note that even minor changes may result in comments from committees on all aspects of the course.

1. Summary of changes (select all that apply):
   - ☐ Six-year review
   - ☐ Number and/or course code
   - ☒ Credits and/or total hours
   - ☐ Title
   - ☐ Calendar description
   - ☒ Prerequisites and/or co-requisites
   - ☐ Frequency of course offering
   - ☒ Learning outcomes
   - ☒ Delivery methods and/or texts and resource materials
   - ☐ PLAR options, grading system, and/or evaluation methods
   - ☐ Discontinuation of course
   - ☐ Other – Please specify:

2. Rationale for change:

   Credit value is being reduced from 4 to 3 credits. Instruction time has been reduced in order to compensate for this change. See program change memo for rationale.

   Pre/corequisites have been updated to reflect PHYS 118 replacing PHYS 112 and ENGR 115.

   Required prerequisite of ENGR 153 or COMP 152 changed to a recommendation, as it has been found that it is advantageous, but not required, for success in the course.

   Learning outcomes have been updated to include EGBC guidelines for Indigenization and Reconciliation, as well as programs and initiatives for Equity, Diversity, and Inclusion.

   Textbook information updated to include new text. This text was designed specifically for the common core curriculum.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s) and contribute to students' ability to meet the Institutional Learning Outcomes (ILOs):

   No substantial changes.

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

   Not required.

5. Which program areas have been consulted about the change(s)?

   None outside of Physics/Engineering

6. In what ways does this course (not just the proposed changes) contribute to Indigenizing Our Academy? Provide explicit examples of assignment design, topic selection, curriculum delivery, or other methods, which can be in response to one or more of the following: UFV Integrated Strategic Plan, Fulfilling Our Commitment to Aboriginal Peoples policy (BRP-200.05), the TRC Calls to Action, and/or the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

   Note that ENGR 123 and ENGR 124 combine to meet the requirements of the engineering common core over two semesters, with methods of delivery remaining consistent between both courses. Students participate in an inclusive and active learning environment, where they are consistently required to learn by applying skills and concepts taught in class, both with individual and group work, evaluating the results, and providing feedback on both their own work and that of their peers. Larger projects require students to complete self-reflection documents, where they look back on their own work and attempt to assess where they performed well, and where future improvements can be made.

   Storytelling will be integrated as a pedagogical tool to introduce new topics, and to provide context and motivation for the concepts and skills being taught. Correspondences between course topics and hands-on activities in related courses are emphasized when applicable. When possible, correspondences between course topics and current events will be highlighted and discussed.

   Sustainability is one of the primary learning outcomes, and is explored through the aspects of Social, Economical, and Environmental Sustainability, both locally and planet-wide.

   EGBC guidelines for Indigenization and Reconciliation will be presented and discussed, in order to provide context on the role that Indigenization has in professional practice.

7. How does the course reflect principles of equity, diversity, and inclusion, through assignment design, topic selection, curriculum delivery, or other methods?

   This course promotes equity, diversity, and inclusion by ensuring all students have equal access to the material and feel valued. The course design and teaching methods are gender agnostic, making the content accessible to everyone, and students are encouraged to share their perspectives respectfully. Instructors create a safe environment, where respect and inclusivity are prioritized. By using Universal Design for Learning (UDL) principles and emphasizing the contributions of underrepresented groups, the course ensures every student has the opportunity to succeed in a supportive, inclusive setting.

   EGBC programs and initiatives for Equity, Diversity, and Inclusion are introduced to students, demonstrating that these ideals extend beyond the scope of their education and into the engineering profession as a whole.

8. If applicable, discuss any special considerations for this course (credit value, class size limit, frequency of offering, resources required such as labs or equipment, field trips, etc.

   Credit value reduced from 4 to 3 as part of effect to reduce credit load of program as a whole. This lowers the cost to students, reducing financial barriers to those wishing to enter the program.

Effective instructional time has been reduced from 4 blocks per week (6 hours) down to 3 blocks per week (4.5 hours). This reduction is a result of changes in course scheduling requirements originating from the Office of the Registrar.

9. Estimate of the typical costs for this course, including textbooks and other materials (excluding tuition):

   Textbook: Approx $20 (Text shared with ENGR 123)

ORIGINAL COURSE IMPLEMENTATION DATE: September 2021
REVISED COURSE IMPLEMENTATION DATE:
COURSE TO BE REVIEWED (six years after UEC approval)**:**
Course outline form version: 29/08/2024

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

Course Code and Number: ENGR 124	**Number of Credits:** 3~~4~~ Course credit policy (105)
Course Full Title: Engineering Design II: Design and Sustainability **Course Short Title:** Engineering Design II	
Faculty: Faculty of Applied and Technical Studies	**Department/School:** Physics

Calendar Description:

Expands on student's understanding of engineering design as applied to larger, more self-directed projects. Working in groups, students will follow a structured process to design a system comprising of electrical, mechanical, and software sub-systems over the term. Students will complete one major project through several milestone stages with associated technical reporting. This course includes an introduction to the concept of sustainability and its impact on engineering design, and an exposure to engineering ethics.

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

Prerequisites (or NONE):	ENGR 123, PHYS 111~~,~~ ~~and one~~ One of ENGR 153 or COMP 152 is highly recommended.
Corequisites (if applicable, or NONE):	
Pre/corequisites (if applicable, or NONE):	MATH 112 and (PHYS 112 or PHYS 118).

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	45
Supervised laboratory hours (computer lab)	30
[click to select]	
[click to select]	
[click to select]	
Total hours	**75**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: **No**

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: ~~**[click to select]**~~**May be offered in multiple delivery modes**

Expected frequency: **Winter only**

Maximum enrolment (for information only)**: 24**

Prior Learning Assessment and Recognition (PLAR)

PLAR cannot be awarded for this course because:

Content and instruction are mandates by governing body.

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

Transfer credit already exists: **Yes**

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

Department approval	**Date of meeting:**
Faculty Council approval	**Date of meeting:**
Undergraduate Education Committee (UEC) approval	**Date of meeting:**

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:

- Apply the engineering design process to open-ended engineering design problems.
- Apply mechanical and electrical concepts, modelling tools, and software principles to the understanding and analysis of engineering problems, and to the design of potential solutions at the appropriate level.
- Participate equitably as a member of a team, demonstrating initiative, professionalism, and effective intra-team communication.
- Prepare and deliver ~~effective technical poster presentations~~, oral presentations, and technical reports.
- Describe the principles of sustainability and apply these principles to engineering design and decision making.
- Define the phrases "cradle-to-grave" and "cradle-to-gate" and understand the concept of a product life cycle.
- Describe the process by which the impact of a product over its lifetime is assessed in terms inputs and outputs of both energy and matter.
- Apply engineering tools, including hand tools, prototyping tools, and software tools. to create, test, and analyze physical embodiments of an engineering design.
- Demonstrate ethical behaviour and describe the importance of engineering codes of ethics, both at the student and professional level.
- Reflect on the expectation of life-long learning and continuing professional development.
- Describe the contributions that an engineer can make to society as well as the impact (both positive and negative) that an engineering project can have on society.
- Justify the importance of EGBC guidelines for Indigenization and Reconciliation.
- Identify and explain EGBC programs and initiatives for Equity, Diversity, and Inclusion.
- ~~Describe the contributions that an engineer can make to society as well as the impact (both positive and negative) that an engineering project can have on society.~~

Commented [TB1]: Just fixing a formatting glitch with the bullets. Actual L.O. unchanged.

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

Final exam:	35%	Project:	25%	Quizzes/tests/midterm:	15%
Assignments:	15%	Lab work:	10%	[click to select]	%

Details:

(Provide a full assessment breakdown and any other relevant information.)

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.)*

Lecture and lab.

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.	Textbook	Ostafichuk and Jaeger~~Dunwoody, B et.al.~~	Introduction to Engineering~~Fundamental Competencies for Engineers~~	2023
2.	Textbook	Dunwoody, B et.al.~~Lockhart, S.D. et.al~~	Fundamental Competencies for Engineers ~~Engineering Design Communication~~	2017~~2~~
3.	[click to select]			
4.	[click to select]			
5.	[click to select]			

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

(Use this section for supplies and materials for all sections of this course.)

Course Content and Topics

This course is only to be taught by a licensed Professional Engineer.

Module 1: Engineering Design Process (10:10)

- Project Management
- Human Design Factors
- Risk Management
- Engineering Fundamentals

Module 2: Designing for the Environment (12:12)

- Pillars of Sustainability
- Life Cycle Assessment
- Impact of human activity on health, safety, and environmental systems

Module 3: Engineering Ethics (4:0)

1. Describe the Engineering Code of Ethics
2. Apply Ethical Conflict Resolution

Note: Some lab exercises and lecture material will draw from more than one topic area.

Memo for Course Changes

To: Faculty Council – Applied and Technical Studies

From: Trevor Beugeling, Chair of Engineering Program

Date: Sept. 19, 2025

Subject: Proposal for revision of ENGR 153

Note that even minor changes may result in comments from committees on all aspects of the course.

1. Summary of changes (select all that apply):
   - ☐ Six-year review
   - ☐ Number and/or course code
   - ☒ Credits and/or total hours
   - ☐ Title
   - ☐ Calendar description
   - ☐ Prerequisites and/or co-requisites
   - ☐ Frequency of course offering
   - ☒ Learning outcomes
   - ☒ Delivery methods and/or texts and resource materials
   - ☐ PLAR options, grading system, and/or evaluation methods
   - ☐ Discontinuation of course
   - ☐ Other – Please specify:

2. Rationale for change:

   Credit value is being reduced from 4 to 3 credits. Instruction time has been reduced in order to compensate for this change. See program change memo for rationale.

   Learning outcomes have been updated to include EGBC guidelines for Indigenization and Reconciliation, as well as programs and initiatives for Equity, Diversity, and Inclusion.

   Textbook information updated to include new text.

3. If there are substantial changes to the learning outcomes, explain how they align with the learning outcomes of the program(s) and contribute to students' ability to meet the Institutional Learning Outcomes (ILOs):

   No substantial changes.

4. Is this course required by any program beyond the discipline? If so, how will this change affect that program or programs?

   Not required.

5. Which program areas have been consulted about the change(s)?

   None outside of Physics/Engineering

6. In what ways does this course (not just the proposed changes) contribute to Indigenizing Our Academy? Provide explicit examples of assignment design, topic selection, curriculum delivery, or other methods, which can be in response to one or more of the following: UFV Integrated Strategic

Plan, Fulfilling Our Commitment to Aboriginal Peoples policy (BRP-200.05), the TRC Calls to Action, and/or the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Storytelling *will be integrated as a pedagogical tool to introduce new topics, and to provide context and motivation for the concepts and skills being taught. Examples could include discussions of historical and/or hypothetical scenarios to relate real world phenomena to their computational equivalence.*

EGBC guidelines for Indigenization and Reconciliation will be presented and discussed, in order to provide context on the role that Indigenization has in professional practice

7. How does the course reflect principles of equity, diversity, and inclusion, through assignment design, topic selection, curriculum delivery, or other methods?

   This course promotes equity, diversity, and inclusion by ensuring all students have equal access to the material and feel valued. The course design and teaching methods are gender agnostic, making the content accessible to everyone, and students are encouraged to share their perspectives respectfully. Instructors create a safe environment, where respect and inclusivity are prioritized. By using Universal Design for Learning (UDL) principles and emphasizing the contributions of underrepresented groups, the course ensures every student has the opportunity to succeed in a supportive, inclusive setting.

   EGBC programs and initiatives for Equity, Diversity, and Inclusion are introduced to students, demonstrating that these ideals extend beyond the scope of their education and into the engineering profession as a whole

8. If applicable, discuss any special considerations for this course (credit value, class size limit, frequency of offering, resources required such as labs or equipment, field trips, etc.

   Credit value reduced from 4 to 3 as part of effect to reduce credit load of program as a whole. This lowers the cost to students, reducing financial barriers to those wishing to enter the program.

   Effective instructional time has been reduced from 4 blocks per week (6 hours) down to 3 blocks per week (4.5 hours). This reduction is a result of changes in course scheduling requirements originating from the Office of the Registrar.

9. Estimate of the typical costs for this course, including textbooks and other materials (excluding tuition):

   Textbook: Approx. $70

UNIVERSITY OF THE FRASER VALLEY

ORIGINAL COURSE IMPLEMENTATION DATE: September 2021
REVISED COURSE IMPLEMENTATION DATE:
COURSE TO BE REVIEWED (six years after UEC approval)**:**
Course outline form version: 29/08/2024

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

Course Code and Number: ENGR 153	**Number of Credits:** 34 Course credit policy (105)
Course Full Title: Structured Programming for Engineers **Course Short Title:** Programming for Engineers	
Faculty: Faculty of Applied and Technical Studies	**Department/School:** Physics

Calendar Description:

Students will learn programming design, data types, functions, and data structures, with a focus on engineering applications.

Note: Students with credit for COMP 152 cannot take this course for further credit.

Prerequisites (or NONE):	B or better in one of Pre-Calculus 12, MATH 093, or MATH 096
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): **COMP 152**

(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	45
Supervised laboratory hours (computer lab)	30
[click to select]	
[click to select]	
[click to select]	
Total hours	**75**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: **No**

Course Details

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

Directed Study course: **[click to select]**
(See policy 207 for more information.)

Grading System: **Letter grades**

Delivery Mode: ~~**[click to select]**~~**May be offered in multiple delivery modes**

Expected frequency: **Fall only**

Maximum enrolment (for information only)**: 24**

Prior Learning Assessment and Recognition (PLAR)

PLAR is available for this course.

———Yes

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

Transfer credit already exists: **Yes**

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

Department approval	**Date of meeting:**
Faculty Council approval	**Date of meeting:**
Undergraduate Education Committee (UEC) approval	**Date of meeting:**

ENGR 153

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:

- Analyze the behaviour of simple programs involving the fundamental programming constructs variables, expressions, assignments, I/O, control constructs, functions, parameter passing, and recursion.
- Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, the definition of functions, parameter passing, constants, and enumerated types.
- Modify and expand short programs that use standard conditional and iterative control structures and functions.
- Break problems up into sub-problems using functions, when writing programs.
- Describe the concept of dynamic data structures and their uses.
- Discuss the importance of consistent and readable documentation and program style standards in an engineering design context.
- Create readable and maintainable software.
- Justify the importance of EGBC guidelines for Indigenization and Reconciliation.
- Identify and explain EGBC programs and initiatives for Equity, Diversity, and Inclusion
- ~~Create readable and maintainable software.~~

Commented [TB1]: Just fixing a formatting glitch with the bullets. Actual L.O. unchanged.

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

Final exam:	40%	Quizzes/tests/midterm:	25%	Lab work:	20%
Assignments:	15%	[click to select]	%	[click to select]	%

Details:

(Provide a full assessment breakdown and any other relevant information.)

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.)*

Lecture and lab.

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.	Textbook	Savitch, W.	Problem Solving with C++	
2.	~~[click to select]~~Textbook	Stephen Prata	C++ Primer Plus, Sixth Edition	2015
3.	[click to select]			
4.	[click to select]			
5.	[click to select]			

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

(Use this section for supplies and materials for all sections of this course.)

Course Content and Topics

These are the provincially mandated course outcomes for this course. The programming language must be C or C++ and include:

1. Program comprehension
   - Analyze and explain the behaviour of simple programs involving the fundamental programming constructs variables, expressions, assignments, I/O, control constructs, functions, parameter passing, and recursion.
2. Program design and implementation
   - Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: basic computation, simple I/O, standard conditional and iterative structures, the definition of functions, parameter passing, constants, and enumerated types.
3. Primitive data types
   - Identify and describe the appropriate use of primitive data types
   - Write programs that use primitive data types Conditional and Iterative Constructs
   - Choose appropriate conditional and iteration constructs for a given programming task
   - Modify and expand short programs that use standard conditional and iterative control structures and functions.
4. Functions
   - Describe the purpose of function definitions
   - Describe the importance of modularization when solving problems
   - Break problems up into sub-problems using functions, when writing programs

ENGR 153

5. Advanced data structures
    - Write programs that use each of the following data structures: arrays, structs, strings.
    - Write programs that use pointers for dynamic memory allocation and release
    - Describe the concept of dynamic data structures and their uses
    - Recognize the risks of pointers.
6. Code quality
    - Apply consistent documentation and program style standards
    - Describe the importance of consistent documentation and program style standards
    - Create readable and maintainable software using conventions like documentation and program style standards

These will be implemented through the following topic areas:

1. Basics and definitions; computing as an engineering design problem
2. Data types and representations
3. Operations and library functions
4. Decision making options
5. Looping options
6. Functions and passing variables
7. Arrays
8. Pointers
9. String manipulation
10. Introduction to microprocessors

UNIVERSITY OF THE FRASER VALLEY
FACULTY OF APPLIED AND TECHNICAL STUDIES

Applied & Technical Studies Faculty Council
2025-2026 Meeting Schedule

The Chair has the right to call a council meeting at any time if there is urgent business that requires the attention of the Faculty Council.

Meeting Dates	Time	Agenda Deadline
September 11, 2025	2:00 pm – 3:30 pm	September 04, 2025
October 9, 2025	2:00 pm – 3:30 pm	October 02, 2025
November 13, 2025	2:00 pm – 3:30 pm	November 06, 2025
January 15 2026	2:00 pm – 3:30 pm	January 08, 2026
February 12, 2026	2:00 pm – 3:30 pm	February 05, 2026
March 12, 2026	2:00 pm – 3:30 pm	March 05, 2026
April 9, 2026	2:00 pm – 3:30 pm	April 02, 2026

Find up to date meeting information, agendas, and minutes at:
https://www.ufv.ca/senate/college--faculty-councils/applied--technical-studies/#d.en.939817