School of Engineering

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A School within the Faculty of Applied Science

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The School of Engineering at the UBC Okanagan campus offers the Bachelor of Applied Science (B.A.Sc.) degree in Civil Engineering, Electrical Engineering, and Mechanical Engineering. Each program is accredited by the Canadian Engineering Accreditation Board. The School also offers a Bachelor of Applied Science (B.A.Sc.) degree in Manufacturing Engineering. Qualified applicants can be admitted directly from secondary school into Engineering One. Students may also enter the Engineering program after having successfully completed the equivalent of first-year Science. There are also admission routes via engineering transfer programs at various colleges and Engineering Bridge programs with Okanagan College and Camosun College.

Following entry from secondary school, the B.A.Sc. degree generally requires four or five years to complete.

The first-year program is common to all Engineering disciplines and lays the foundation for Engineering specializations in subsequent years. It is equivalent to first-year Engineering at the UBC Vancouver campus. The engineering-specific curriculum emphasizes project-based team learning, and offers first-year students the opportunity to implement the principles of engineering in a second-term design project. Upon successful completion of year one, students have the option of continuing at the UBC Okanagan campus in the second year of the integrated program or transferring to the UBC Vancouver campus. Students who elect to transfer compete for program spaces with students at the UBC Vancouver campus and limited seats are available.

Scheduled field trips and the activities of professional and technical societies complement the undergraduate programs, and students are expected to participate in them as fully as circumstances permit.

An optional Co-operative Education program, which integrates academic study with supervised work experience, is available during the second year.

Bachelor of Applied Science Program

Bachelor of Applied Science Program > Admission Requirements

Application for admission to the School of Engineering must be made through Enrolment Services. Procedures, policies, and admission requirements of UBC and the School of Engineering are specified in Admissions (http://www.calendar.ubc.ca/okanagan/index.cfm?tree=2,0,0,0).
Due to limited resources, the School has been authorized to restrict enrolment in year one and within individual Engineering programs at the second-year level. Attainment of the minimum academic requirements listed below implies that the applicant is eligible for selection, but does not provide assurance of admission. The selection is based on academic standing. For most Engineering programs, the competition for places is such that standing above the minimum prescribed requirements is necessary to ensure admission.

**Note:** proficiency in mathematics is an important part of preparing for Engineering courses. Experience has shown that UBC students with grades below 65% in mathematics (below B at a college) are likely to have difficulty with many Engineering courses.

**Admission from BC/Yukon Grade 12 (or equivalent)**

In addition to satisfying University admission requirements, applicants must have completed mathematics, physics, and chemistry at the British Columbia Grade 12 level, or the equivalent. Students will be selected on the basis of their standing in Grade 12 courses in mathematics, chemistry, physics, and English. Applicants from schools where either Physics 12 or Chemistry 12 is not available may petition to be excused this deficiency.

**Admission from a Post-Secondary Institution**

Applicants from another faculty at UBC or another post-secondary institution may be considered for admission to the School of Engineering. An overall average of at least 65%, including any failed courses, is required. The overall average is calculated in accordance with the general admission requirement for undergraduate admission as specified in [Applicants from a College or University](http://www.calendar.ubc.ca/okanagan/index.cfm?tree=2,344,0,0).

Applicants must also have an average of at least 70% in all chemistry, mathematics, and physics courses that transfer to the first-year Engineering program. Courses to be considered in this average of mathematics, chemistry, and physics courses are not limited to the last 30 credits only. Where two courses, or one repeated course, have been taken which transfer to one of the courses of the first-year engineering program, only the grade of the latest course will be used in calculating this average.

Admission to the Engineering program is competitive. Applicants who meet all of these criteria are not guaranteed admission.

Applicants with fewer than 24 transferable credits from a post-secondary institution are evaluated against both secondary and post-secondary admission criteria.

Applicants with more than 24 credits that transfer to first-year Engineering may be eligible for second-year Engineering. Advice on transfer credit is available from the School of Engineering. Deficiencies from first year must be completed prior to graduation.

Students admitted to second year must complete a Second-Year Program Preference Form by June 15.

**Admission from UBC Engineering Transfer Programs**

Students who have completed first-year Engineering at a college offering a UBC transfer program are eligible to be considered for admission to second-year Engineering provided that they have obtained an overall grade average of at least 65%.

**Transition from UBC Vantage College**

The Faculty of Applied Science delivers engineering programs at both UBC campuses: Okanagan and Vancouver. The Faculty has reserved space for all UBC Vantage College Engineering Stream students to be able to transition to a second year program. Half of
the reserved spaces are located on the Okanagan campus, and the other half are allocated at the Vancouver campus.

UBC Vantage College students who pass all courses in the Engineering stream with an average of at least 60% will be eligible for year two of the BASc degree program.

Program selection is competitive, and all students will be asked to rank both their preferred campus and their eligible program.

Academic performance at the end of the winter session and a personal statement are considered in placing students into programs in second year. Students who do not successfully complete the full UBC Vantage College Engineering Stream or who achieve an average lower than 60% in the full program can apply to be reviewed on a case-by-case basis for evidence of academic promise for continued study in Engineering at UBC. The UBC Vantage College Engineering Stream is not equivalent to the direct entry BASc first-year program. Therefore, while successful completion of the Vantage College Engineering Stream will result in eligibility for second-year standing, there are program requirements normally completed in first year that will not have been met and that must be completed prior to graduation. Please consult here for details on Vantage Engineering programs and here for details on Okanagan Engineering programs.

Selecting a Co-operative Education option in the first year will have the option of continuing their Engineering program at the UBC Okanagan campus in Civil Engineering, Electrical Engineering, Manufacturing Engineering or Mechanical Engineering, or transferring to the Faculty of Applied Science's School of Engineering at Vancouver.

First Year

Students must complete APSC 176 and APSC 201 (or the equivalent).

Session.

(five Winter Sessions if completing the Co-operative Education program). With the approval of the Dean's Office, students may be allowed to study on a part-time basis. Credit will be granted for courses completed during the Summer Session.

Students who are required to participate in field trips will be responsible for expenses incurred during such trips.

Students who have passed their year. Students must have failed a course but received a final grade of at least 40% in order to be eligible to write a supplemental examination in that course. Supplemental examinations are only offered during the supplemental examination period in July-August. Examinations Examinations held in December and in April. In a course that includes both lecture and laboratory components, students must complete the laboratory assignment satisfactorily standing before being admitted to the written examination of the course, and must pass in the material of both components before standing will be granted in the subject. The minimum passing mark in each course is 50%. Applications for special consideration for examinations missed due to a medical condition, emotional or other problems, or religious observance must be submitted to the Engineering Student Services office before or immediately after the missed examination(s). For more information, see Academic Concession (Calendar page 36).

A student will be granted a maximum of 60% in each course and a maximum of 60% in all courses to be considered for admission to the B.A.Sc. program. Admitted students will be required to take additional Okanagan campus courses from a list provided by the School of Engineering to fulfill B.A.Sc. degree requirements. Typically, students admitted from each Engineering program will require two and a half years of additional study at the UBC Okanagan campus to complete the B.A.Sc. degree requirements -- or following Two-Year Technology Diploma Programs. Not including Bridge Programs. Students are eligible to be considered for admission if they have completed an appropriate two-year technology diploma program with an overall average of at least 60%. Admission is normally into first-year Engineering, unless the student has completed an approved Engineering Bridge program.

Bachelor of Applied Science Program > Academic Advising

Academic advising is available through Engineering Advising. Engineering Advising assists students in academic planning, interpreting Faculty course requirements and regulations, and resolving academic and personal problems.

Bachelor of Applied Science Program > Academic Regulations

Dean's Honour List Students in any Winter Session with a sessional average of at least 80% while taking 30 or more credits will receive the notation "Dean's Honour List" on their record. Degree with Distinction A student will be granted a degree with distinction upon graduation if he or she achieves an overall average of at least 85% on an 100-level and higher courses while registered in the B.A.Sc. program. Program Classification The required courses and electives for the Winter Session are shown in the following sections. The normal completion time is four years. Students may take higher loads than those shown below with the approval of the Dean's Office. To be considered full time, students must carry a full load in the Winter Session equal to at least 80% of the standard credit load for the year and program in which they are registered. Note: the Faculty's definition of full-time status may differ from that of the Student Financial Assistance and Awards office in determining eligibility by financial assistance. Check with Student Financial and Awards Support (http://www.calendar.ubc.ca/vancouver/index.cfm?event=show&c=100, 101, 00120) to ensure eligibility for scholarships and awards. Students taking courses from more than one year level will normally be given academic year status based on the program year of the majority of credits being taken. Examinations Examinations are held in December and in April. In a course that includes both lecture and laboratory components, students must complete the laboratory assignment satisfactorily standing before being admitted to the written examination of the course, and must pass in the material of both components before standing will be granted in the subject. The minimum passing mark in each course is 50%. Applications for special consideration for examinations missed due to a medical condition, emotional or other problems, or religious observance must be submitted to the Engineering Student Services office before or immediately after the missed examination(s). For more information, see Academic Concession (Calendar page 36).

Students must pass APSC 176 (or equivalent) and APSC 169 (or equivalent) prior to promotion to second year. Students must pass APSC 201 (or equivalent) and APSC 258 (or equivalent) prior to promotion to third year. In addition, to be promoted to the subsequent year, students must have completed all courses from the prior year and at least 27 credits from the current year's exams and examination papers may be refused a passing mark if they are noticeably deficient in English. Computer Examinations There are no supplemental examinations for courses offered within the Faculty, with the exception of final year of study. Note: supplemental examinations may not be offered in all courses. At the discretion of the faculty, a supplemental exam may be granted to a student for a 300-level course, provided that the course is the last remaining course required for degree completion. Supplemental examinations are available only to students who have passed their year. Students must have failed a course but received a final grade of at least 60% in order to be eligible to write a supplemental examination in that course. Supplemental examinations are only offered during the deferred supplemental examination period. Supplemental examinations for courses terminating in December will normally be made available to students only during the supplemental examination period in July-August. Appeals Current students must appeal standing decisions to the Faculty of Applied Science Committee on Admissions, Standing, and Courses. Applications for readmission from non-current students should be directed to Enrolment Services. Field Trips Students who are required to participate in field trips will be responsible for expenses incurred during such trips.

Bachelor of Applied Science Program > Degree Requirements

Students will be granted a B.A.Sc. degree only after obtaining credit for all courses listed in the program of study for a given Engineering program. This requirement will normally be met by completing four Winter Sessions with full credit load (five Winter Sessions if completing the Co-operative Education program). Students with approved for a Winter Session credit load less than that required for full-time status will be considered part-time. Part-time status will not normally be eligible for scholarships or for "Degree with Distinction" status. Students taking courses from more than one year level will normally be given academic year status based on the program year of the majority of credits being taken. Examinations Examinations are held in December and in April. In a course that includes both lecture and laboratory components, students must complete the laboratory assignment satisfactorily standing before being admitted to the written examination of the course, and must pass in the material of both components before standing will be granted in the subject. The minimum passing mark in each course is 50%. Applications for special consideration for examinations missed due to a medical condition, emotional or other problems, or religious observance must be submitted to the Engineering Student Services office before or immediately after the missed examination(s). For more information, see Academic Concession (Calendar page 36).

Bachelor of Applied Science Program > Years 1 and 2

First Year Students admitted into the Engineering program directly from secondary school will take the first-year Engineering curriculum. Other students will need to contact Engineering Advising for advice on their first-year program. Students proceeding to second year will have the option of continuing their Engineering program at the UBC Vantage College in Civil Engineering, Electrical Engineering, Manufacturing Engineering or Mechanical Engineering, or transferring to the Faculty of Applied Science's School of Engineering at Vancouver.

The School of Engineering recognizes that good communication skills in English are essential to the understanding of course material and to the successful practice of engineering. To qualify for the B.A.Sc. degree a student must meet the following requirements:

- Complete a minimum of 12 credits in English
- Complete a minimum of 3 credits in Social Sciences
- Complete a minimum of 3 credits in History
- Complete a minimum of 3 credits in Humanities
- Complete a minimum of 1 credit in the arts
- Complete a minimum of 3 credits in Social Sciences
- Complete a minimum of 3 credits in History
- Complete a minimum of 3 credits in Humanities
- Complete a minimum of 1 credit in the arts

Details of the specific courses conforming to the above requirements are available from Engineering Advising.

Bachelor of Applied Science Program > Scholarships and Awards

Students admitted into the Engineering program directly from secondary school will take the first-year Engineering curriculum. Other students will need to contact Engineering Advising for advice on their first-year program. Students proceeding to second year will have the option of continuing their Engineering program at the UBC Vantage College in Civil Engineering, Electrical Engineering, Manufacturing Engineering or Mechanical Engineering, or transferring to the Faculty of Applied Science's School of Engineering at Vancouver.

The School of Engineering recognizes that good communication skills in English are essential to the understanding of course material and to the successful practice of engineering. To qualify for the B.A.Sc. degree a student must meet the following requirements:

- Complete a minimum of 12 credits in English
- Complete a minimum of 3 credits in Social Sciences
- Complete a minimum of 3 credits in History
- Complete a minimum of 3 credits in Humanities
- Complete a minimum of 1 credit in the arts
- Complete a minimum of 3 credits in Social Sciences
- Complete a minimum of 3 credits in History
- Complete a minimum of 3 credits in Humanities
- Complete a minimum of 1 credit in the arts

Details of the specific courses conforming to the above requirements are available from Engineering Advising.

Bachelor of Applied Science Program > Scholarships and Awards

The annual awards may be awarded in the following fields of study:

- Mechanical Engineering
- Electrical Engineering
- Manufacturing Engineering
- Civil Engineering
- Biomedical Engineering
- Chemical Engineering
- Biological Engineering
- Computer Engineering
- Electronic Engineering
- Engineering Physics
- Geological Engineering
- Integrated Engineering
- Materials Engineering
- Mining Engineering

Engineering Analysis I

Engineering Analysis II

Engineering Drawing and CAD/CAM

Engineering Economics - ENGR 305: Engineering Economic Analysis (3 credits);

Impact of Technology on Society - APSC 169: Fundamentals of Sustainable Engineering Design (3 credits);

Management - ENGR 303: Project Management (3 credits);

Engineering Economics - ENGR 305: Engineering Economic Analysis (3 credits);

Humanities and Social Sciences elective (3 credits); In general, scientific geography courses, statistical courses, and studio/performing courses in visual arts, music, and theatre will not satisfy this requirement. Courses that teach language skills are not acceptable. Suggested subjects include Anthropology, Art History, Cultural Studies, Economics, English (not ENGL 109, 112, 114), Geography (GEOG 128 or 129), Health Studies (HEAL 100), History, Indigenous Studies, Philosophy (not PHIL 120 or 125), Political Science, Psychology, and Sociology.

Details of the specific courses conforming to the above requirements are available from Engineering Advising.

Bachelor of Applied Science Program > Scholarships and Awards

The annual awards may be awarded in the following fields of study:

- Mechanical Engineering
- Electrical Engineering
- Manufacturing Engineering
- Civil Engineering
- Biomedical Engineering
- Chemical Engineering
- Biological Engineering
- Computer Engineering
- Electronic Engineering
- Engineering Physics
- Geological Engineering
- Integrated Engineering
- Materials Engineering
- Mining Engineering

Engineering Admission to a selected program is dependent on performance in first year. Proceeding to second year will have the option of continuing their Engineering program at the UBC Okanagan campus in Civil Engineering, Electrical Engineering, Manufacturing Engineering or Mechanical Engineering, or transferring to the Faculty of Applied Science's School of Engineering at Vancouver.
Criteria must be met and include completion of 37 credits of first year UBC Okanagan Campus Applied Science. The admission process is competitive, with limited seats available.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>APSC 201</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>APSC 246</td>
<td>System Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>APSC 248</td>
<td>Engineering Analysis</td>
<td>3</td>
</tr>
<tr>
<td>APSC 252</td>
<td>Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>APSC 254</td>
<td>Instrumentation and Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>APSC 258</td>
<td>Numerical Methods for Analysis</td>
<td>3</td>
</tr>
<tr>
<td>APSC 260</td>
<td>Mechanics of Materials I</td>
<td>3</td>
</tr>
<tr>
<td>APSC 181</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>APSC 182</td>
<td>Matter and Energy I</td>
<td>3</td>
</tr>
<tr>
<td>APSC 183</td>
<td>Matter and Energy II</td>
<td>3</td>
</tr>
<tr>
<td>APSC 184</td>
<td>Engineering Computation and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>APSC 185</td>
<td>Electricity, Magnetism, and Waves</td>
<td>3</td>
</tr>
<tr>
<td>APSC 186</td>
<td>Linear Algebra for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>APSC 187</td>
<td>Statics</td>
<td>3</td>
</tr>
<tr>
<td>APSC 188</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>APSC 189</td>
<td>Matter and Energy I</td>
<td>3</td>
</tr>
<tr>
<td>APSC 190</td>
<td>Matter and Energy II</td>
<td>3</td>
</tr>
<tr>
<td>APSC 201</td>
<td>Technical Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

*Criteria must be met and include completion of 37 credits of first year UBC Okanagan Campus Applied Science. The admission process is competitive, with limited seats available. Second Year*

### Bachelor of Applied Science Program > Civil Engineering

In the third year and fourth years, students will follow a program in Civil Engineering, Electrical Engineering, or Mechanical Engineering.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 303</td>
<td>Engineering Project Management</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 305</td>
<td>Engineering Economic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 307</td>
<td>Civil Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 309</td>
<td>Reinforced Concrete Design</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 330</td>
<td>Optimization and Decision Analysis for Civil Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 331</td>
<td>Infrastructure Management I</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 332</td>
<td>Surveying and GIS Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 335</td>
<td>Transportation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 340</td>
<td>Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 341</td>
<td>Engineering Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 342</td>
<td>Open-Channel Flow</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 347</td>
<td>Environmental Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 432</td>
<td>Design of Processes for Water and Wastewater Treatment</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 449</td>
<td>Engineering Capstone Design Project</td>
<td>6</td>
</tr>
</tbody>
</table>

### Design Electives

- ENGR 475 Technical Electives
- ENGR 488 Foundation Engineering
- ENGR 497 Civil Engineering Design Project

Bachelor of Applied Science Program > Electrical Engineering

In the third year and fourth years, students will follow a program in Civil Engineering, Electrical Engineering, or Mechanical Engineering.

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 303</td>
<td>Engineering Project Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Note that in the student's responsibility to ensure that the electives chosen meet the program requirements for design and technical elective graduation requirements. The option consists of a typical third year, followed by a set of prescribed fourth year courses. Only one of the options requires that the student remain in Good Standing. Upon successful completion of the option, the notation "Resilient Infrastructure Management Option" will be added on the student's transcript. Students pursuing the Civil Program will take APSC 255 Electric Circuits and Power and APSC 262 Digital Systems Design. Students pursuing the Mechanical Program will take APSC 253 Fluid Mechanics I and APSC 255 Thermodynamics. Students pursuing the Electrical Program will take APSC 255 Electric Circuits and Power and APSC 262 Digital Systems Design.
Applications for admission must be submitted to the Engineering Advising Office by May 31st. Admission will be competitive based on GPA. The Biomedical Option under Electrical Engineering requires the following courses:

- APSC 260 Mechanics of Materials I
- APSC 253 Fluid Mechanics I
- APSC 252 Thermodynamics
- APSC 248 Engineering Analysis III
- APSC 246 System Dynamics

Required 4th year courses (as listed above) and:
- 12 credits of Technical Electives from a list of approved Biomedical Elective courses provided by the School of Engineering.

Bachelor of Applied Science Program > Manufacturing Engineering

Program Overview

In the second, third and fourth years, students will follow a program Manufacturing Engineering.

The mission of the MANF program is to develop engineers with technical and managerial skills preparing them for sought-after careers in the exceptionally demanding and evolving domain of advanced design and manufacturing.

Program Requirements

- APSC 201 Technical Communication
- APSC 246 System Dynamics
- APSC 248 Engineering Analysis III
- APSC 252 Thermodynamics
- APSC 253 Fluid Mechanics I
- APSC 254 Instrumentation and Data Analysis
- APSC 255 Electric Circuits and Power
- APSC 259 Materials Science II
- APSC 260 Mechanics of Materials I
- COSC 210 Software Construction
- MANF 240 Manufacturing Engineering Laboratory
- MANF 270 Production Systems Management I

Total Credits: 38
Third Year Manufacturing Engineering

Credits

ENGR 305 Engineering Economic Analysis 3
ENGR 320 - Electromechanical Devices 3
ENGR 376 Materials Science II 3
ENGR 381 Kinematics and Dynamics of Machinery 3
ENGR 387 Vibration of Mechanical Systems 3
ENGR 439 Manufacturing Processes II 3
ENGR 476 Mechanics of Materials II 3
COSC 310 Software Engineering 3
MANF 330 Manufacturing Engineering Project I 6
MANF 388 Engineering Measurements and Instrumentation 3
MANF 370 Production Systems Management II 3
MANF 386 Industrial Automation 3

Total Credits: 39

Fourth Year Manufacturing Engineering

Credits

ENGR 413 Law and Ethics for Engineers 3
MANF 430 Manufacturing Capstone Design Project 6
MANF 450 Life Cycle Analysis and Sustainability 3
MANF 455 Factory Planning 3
MANF 466 Supply Chain Tactics and Strategies 3
MANF 467 Digital Enterprises 3
MANF 470 Production Systems Management III 3
Technical Electives 9
Humanities/Social Sciences Elective 3

Total Credits: 36

To be chosen from a list of Manufacturing Engineering elective courses provided by the School of Engineering.

In general, scientific geography courses, statistical courses, and studio/performance courses in the arts, music, and theatre will not satisfy this requirement. Courses that teach language skills are not acceptable. See Complementary Studies Courses.

Contact Information

School of Engineering
EME 4242 – 1137 Alumni Ave
Kelowna, BC Canada
(250)-807-8723
Engineering.okanagan@ubc.ca

Bachelor of Applied Science Program > Mechanical Engineering

In the third year and fourth years, students will follow a program in Civil Engineering, Electrical Engineering, or Mechanical Engineering.

Third Year Mechanical Engineering

Credits

ENGR 303 Engineering Project Management 3
ENGR 305 Engineering Economic Analysis 3
ENGR 310 Fluid Mechanics II 3
ENGR 315 Systems and Control 3
ENGR 320 Electromechanical Devices 3
ENGR 375 Energy System Design 3
ENGR 376 Materials Science II 3
ENGR 377 Manufacturing Processes 3
ENGR 380 Design of Machine Elements 3
ENGR 381 Kinematics and Dynamics of Machinery 3
ENGR 385 Heat Transfer Applications 3
ENGR 387 Vibration of Mechanical Systems 3

Total Credits: 36

Fourth Year Mechanical Engineering

Credits

ENGR 413 Law and Ethics for Engineers 3
ENGR 476 Mechanics of Materials II 3
ENGR 499 Engineering Capstone Design Project 6

Design Electives 3
Technical Electives 12

Total Credits: 36

To be chosen from a list of Mechanical Engineering design elective courses provided by the School of Engineering.

To be chosen from a list of technical elective courses provided by the School of Engineering. Up to two third- or fourth-year courses offered outside the School of Engineering may qualify as technical electives with permission from the Mechanical Program Coordinator.

To meet graduation requirements, students must take at least one of ENGR 491: Computational Fluid Dynamics and ENGR 492: Finite Element Methods as part of the 4th year elective requirements.

Biomedical Option

Available to Mechanical and Electrical students, the Biomedical Option allows students interested in biomedical Engineering and wearable technology to have courses focused in these areas.

Application to the Biomedical Option is open to students in year 2 and above in the Bachelor of Applied Science program specializing in Mechanical or Electrical Engineering. Applications for admission must be submitted to the Engineering Advising Office by May 31 each year. Admission to this option is limited and admission will be competitive based on GPA. The Biomedical Option under Mechanical Engineering is offered by the Mechanical Engineering Undergraduate Coordinator.

The Biomedical Option under Mechanical Engineering requires the following courses:

- ENGR 351 Microelectronics I
- ENGR 401 Bioinstrumentation
- ENGR 402 Biotechnology: Fundamentals and Applications
- ENGR 406 Microelectromechanical Systems
- ENGR 423 Wearables
- ENGR 430 Clinical Engineering

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Bachelor of Applied Science Program > Minor in Computer Science

Application to the Minor in Computer Science is open to all students in the Bachelor of Applied Science program. Admission will be competitive based on GPA. Applications for admission must be made through the Co-operative Education Office by May 31st. Students who meet all requirements of the School and have a GPA of 3.0 or higher will be admitted to the Minor in Computer Science, provided they meet the following requirements:

- Completion of the following foundation courses: CSOC 111, CSOC 121, and two other CSOC courses of the student's choosing.
- No more than six CSOC upper-level credits may be counted toward the technical elective requirements for the B.A.Sc.
- Entry into and continuation in the Minor requires that the student remains in Good Standing.

Bachelor of Applied Science Program > Minor in Management

Students desiring a stronger foundation in management and entrepreneurship are encouraged to consider the Minor in Management. Upon successful completion of the minor program, the notation "Minor in Management" will be placed on the student's transcript. The program is open to all students in the Bachelor of Applied Science program. Applications for admission must be made to the Engineering Advising Office by May 31st. For admission to the minor, the student must be eligible for admission to the Bachelor of Applied Science program and have an overall average of 4.0 or higher in the School of Engineering. The minor consists of 21 credits, including a minimum of 12 credits of management courses. Admission will be based on core requirements and a statement of intent to be submitted at the time of application. The minor consists of 21 credits:

- 3 credits: MGMT 100
- 18 credits: 400-level MGMT Courses (Prerequisite Courses may be required but will not count toward the 18 credits)

Bachelor of Applied Science Program > Pre-Medical Alternative Path (P-MAP)

The P-MAP is intended for students with an engineering background who wish to apply to UBC's medical school and generally others. It provides access to students who, with special permission from the School of Engineering, can complete many medical school courses while enrolled in their academic program. Students must be at least in their third year of study but may start in the program in the fourth year as well. The program normally applies between the end of first year, May 31st and beginning of second year, September. Application at the beginning of third year may also be considered. Admission requirements are only part of the criteria used for medical schools to assess applicants. It is the student's responsibility to inform the admissions office of the courses taken in the P-MAP program.

Bachelor of Applied Science Program > Co-operative Education Program

The Engineering Co-operative Education program provides motivated and qualified students workshops, coaching and support, including the employer job placement process, to search and secure paid, program monitored work experience which is directly related to their academic program. Through participation in work terms completed at their former institution, if they meet the following requirements:

- Minimum of a B+ (76%) in the completion of the Bachelor of Applied Science degree.
- Completion of the Bachelor of Applied Science degree is normally required for admission.
- Admissions must be completed within 6 months of the expected graduation date.
- Upon successful completion of the option, the notation “Biomedical Option” will be added to the student’s transcript.

The completion time for this program is 12 semesters (8 years). This program fulfills the requirements for the Bachelor of Applied Science degree. Students should consult with their academic advisor to plan their course requirements accordingly.

For more information, please visit engineering.ubc.ca/co-op.

Note: Completion of this degree alone does not form an acceptable basis for application to associations of professional engineers in Canada or for other professional standards for admission of students.

Contact: Engineering Co-op Program, School of Engineering, Engineering Building C, Room 120, 2036 Main Mall, Vancouver, B.C., V6T 1Z4; Telephone: 604-822-9503; Email: coop@eng.ubc.ca; Website: http://coop.engineering.ubc.ca/
The right to practice engineering and accept professional responsibility in Canada is limited to those who are registered Professional Engineers. Registration in Canada is overseen by the 12 provincial and territorial engineering regulatory bodies that regulate the engineering professions in Canada. During the period between graduation and registration, the graduate who intends to practice in BC should be enrolled with Engineers and Geoscientists British Columbia as an Engineer in Training. Last updated April 2, 2020

The Faculty of Engineering offers programs in the Master of Applied Science (M.A.Sc.), the Master of Engineering (M.Eng.), and the Doctor of Philosophy (Ph.D.). Information on the Master of Applied Science (M.A.Sc.) programs can be found under the College of Graduate Studies. Last updated: April 2, 2020

Professional Associations

For further information on the program, please see the Master of Engineering Leadership in Resource Engineering Management. (http://apscpp.ubc.ca/programs/mel/resource-engineering-management/) Last updated: April 2, 2020

Other Graduate Programs (M.A.Sc., M.Eng., Ph.D.)

Information on the Master of Applied Science (M.A.Sc.) (http://www.calendar.ubc.ca/okanagan/index.cfm?tree=18,285,981,1163), the Master of Engineering (M.Eng.) (http://www.calendar.ubc.ca/okanagan/index.cfm?tree=18,285,981,1164), and the Doctor of Philosophy (Ph.D.) (http://www.calendar.ubc.ca/okanagan/index.cfm?tree=18,285,981,1165) programs can be found under the College of Graduate Studies. Last updated: April 2, 2020

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