# MATHEMATICS AND ENGINEERING, B.A.Sc. (Class of 2026)

## Second Year Common Core - 2023-2024

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>APSC 200</td>
<td>Engineering Design &amp; Practice II</td>
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</tr>
<tr>
<td>APSC 293</td>
<td>Engineering Communications</td>
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<tr>
<td>MTHE 212</td>
<td>Linear Algebra</td>
<td>3.50</td>
</tr>
<tr>
<td>MTHE 217</td>
<td>Algebraic Structures with Applications</td>
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</tr>
<tr>
<td>MTHE 237</td>
<td>Differential Equations for Engineering Science</td>
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</tr>
<tr>
<td>MTHE 280</td>
<td>Advanced Calculus</td>
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</tr>
<tr>
<td>MTHE 281</td>
<td>Introduction To Real Analysis</td>
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</tr>
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## Applied Mechanics Sub-Plan (M6)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Year Common Core</td>
<td></td>
<td>22.50</td>
</tr>
<tr>
<td>MECH 221</td>
<td>Solid Mechanics I</td>
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</tr>
<tr>
<td>MECH 210</td>
<td>Electronic Circuits and Motors for Mechatronics</td>
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</tr>
<tr>
<td>MREN 230</td>
<td>Thermodynamics and Heat Transfer</td>
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<td>MREN 241</td>
<td>Fluid Mechanics and Fluid Power</td>
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<td>Mechanics</td>
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## Computing and Communications Sub-Plan (M9)

<table>
<thead>
<tr>
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<tr>
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<tr>
<td>CMPE 212</td>
<td>Introduction to Computing Science II</td>
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</tr>
<tr>
<td>ELEC 271</td>
<td>Digital Systems</td>
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</tr>
<tr>
<td>ELEC 274</td>
<td>Computer Architecture</td>
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</tr>
<tr>
<td>ELEC 278</td>
<td>Fundamentals Of Information Structures</td>
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<tr>
<td>ENPH 239</td>
<td>Eng. Electricity &amp; Magnetism</td>
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<tr>
<td><strong>Total Units</strong></td>
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## Systems and Robotics Sub-Plan (M11)

<table>
<thead>
<tr>
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<td>ELEC 278</td>
<td>Fundamentals Of Information Structures</td>
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## Third Year Common Core - 2024-2025

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<tr>
<td>APSC 221</td>
<td>Economic And Business Practice</td>
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<td>MTHE 326</td>
<td>Functions of a Complex Variable</td>
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<td>MTHE 328</td>
<td>Real Analysis</td>
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<tr>
<td>MTHE 335</td>
<td>Mathematics of Engineering Systems</td>
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<tr>
<td>MTHE 351</td>
<td>Probability I</td>
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<td>MTHE 393</td>
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## Applied Mechanics Sub-Plan (M6)

<table>
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<tr>
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<tr>
<td>MECH 321</td>
<td>Solid Mechanics II</td>
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<tr>
<td>MECH 328</td>
<td>Dynamics And Vibration</td>
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<td>MECH 330</td>
<td>Applied Thermo II</td>
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<td>MECH 398</td>
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<td>MECH 323</td>
<td>Machine Design I</td>
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## Computing and Communications Sub-Plan (M9)

<table>
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<tr>
<td>Third Year Common Core</td>
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<tr>
<td>ELEC 371</td>
<td>Microprocessor Interfacing and Embedded Systems</td>
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<td>MTHE 353</td>
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<td>CMPE 332</td>
<td>Database Management Systems</td>
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<tr>
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queensu.ca/academic-calendar
## Systems and Robotics Sub-Plan (M11)

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td></td>
<td>Third Year Common Core</td>
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<tr>
<td>MTHE 353</td>
<td>Probability II</td>
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<tr>
<td>ENPH 334</td>
<td>Electronics For Applied Scientists</td>
<td>5.00</td>
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<tr>
<td>ELEC 371</td>
<td>Microprocessor Interfacing and Embedded Systems</td>
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<td>MTHE 337</td>
<td>Intro. To Operations Research</td>
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### Fourth Year Common Core - 2025-2026

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<tbody>
<tr>
<td>MTHE 493</td>
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## Applied Mechanics Sub-Plan (M6)

<table>
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<td>MTHE 430</td>
<td>Control Theory</td>
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<td>MTHE 433</td>
<td>Continuum Mechanics with Applications</td>
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## Electives

M6 students must choose 4 technical electives: a minimum of one (1) technical elective must be taken from MTHE 430/433/472/474/477; and the remaining from List I or II, at least two of which must be taken from List II, subject to the requirement that the elective selection satisfies the following two criteria:

1. the selection exceeds the minimum of 40 Accreditation Units (AUs) in Engineering Design (ED) and
2. the selection exceeds the minimum of 120 AUs in Engineering Design + Engineering Science (ES+ED).

### Please Note:
The term in which a course is offered can change from one academic year to the next. This can occur due to instructor availability or a change to departmental resources. Please refer to the on-line Course Timetable to determine the terms in which the courses in this Technical Elective section will be offered.

## Minimum Total Credits: 38.5

## Computing and Communications Sub-Plan (M9)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fourth Year Common Core</td>
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<tr>
<td>MTHE 455</td>
<td>Stochastic Processes &amp; Applications</td>
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<tr>
<td>MTHE 474</td>
<td>Information Theory</td>
<td>3.50</td>
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<td>MTHE 477</td>
<td>Data Compression and Source Coding: Theory and Algorithms</td>
<td>3.00</td>
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<tr>
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<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Complementary Studies, List A or B, F or W</td>
<td>3.00</td>
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<tr>
<td></td>
<td><strong>Total Units</strong></td>
<td><strong>26.50</strong></td>
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</table>

## Electives

M9 students must choose 4 technical electives: a minimum of one (1) technical elective must be taken from MTHE 430/433/472/474/477; and the remaining from List I or II, at least two of which must be taken from List II, subject to the requirement that the elective selection satisfies the following two criteria:

1. the selection exceeds the minimum of 40 Accreditation Units (AUs) in Engineering Design (ED) and
2. the selection exceeds the minimum of 120 AUs in Engineering Design + Engineering Science (ES+ED).

### Please Note:
The term in which a course is offered can change from one academic year to the next. This can occur due to instructor availability or a change to departmental resources. Please refer to the on-line Course Timetable to determine the terms in which the courses in this Technical Elective section will be offered.

## Minimum Total Credits: 38.5

## Systems and Robotics Sub-Plan (M11)


Electives
M11 students must choose 4 technical electives: a minimum of one (1) technical elective must be taken from MTHE 430/433/472/474/477; and the remaining from List I or II, at least two of which must be taken from List II, subject to the requirement that the elective selection satisfies the following two criteria:

1. the selection exceeds the minimum of 40 Accreditation Units (AUs) in Engineering Design (ED) and
2. the selection exceeds the minimum of 120 AUs in Engineering Design + Engineering Science (ES+ED).

Please Note: the term in which a course is offered can change from one academic year to the next. This can occur due to instructor availability or a change to departmental resources. Please refer to the on-line Course Timetable to determine the terms in which the courses in this Technical Elective section will be offered.


Minimum Total Credits: 39.5

Complementary Studies
Refer to the Complementary Studies section of this calendar for details regarding the requirements for all Engineering programs. For the Mathematics and Engineering Program, the Engineering Economics course is APSC 221 Economic And Business Practice, and the Communications requirements are met through courses taken in the core program (MTHE 393 Engineering Design and Practice for Mathematics and Engineering, MTHE 494 Mathematics and Engineering Seminar, MTHE 493 Engineering Math Project and APSC 293 Engineering Communications)