MATHEMATICS AND ENGINEERING, B.A.SC. (CLASS OF 2024)

Second Year Common Core - 2021-2022

Code	Title	Units
APSC 200	Engineering Design & Practice II	4.00
APSC 293	Engineering Communications	1.00
MTHE 212	Linear Algebra	3.50
MTHE 217	Algebraic Structures with Applications	3.50
MTHE 237	Differential Equations for Engineering Science	3.50
MTHE 280	Advanced Calculus	3.50
MTHE 281	Introduction To Real Analysis	3.50
Total Units		**22.50**

Applied Mechanics Sub-Plan (M6)

Code	Title	Units
Second Year Common Core		22.25
MECH 210	Electronic Circuits and Motors for Mechatronics	4.50
MECH 221	Solid Mechanics I	3.50
MECH 228	Kinematics And Dynamics	3.50
MECH 230	Applied Thermodynamics I	3.50
MECH 241	Fluid Mechanics I	3.50
ENPH 252	Mangmt Of Experimental Data	1.25
Total Units		**42.00**

Computing and Communications Sub-Plan (M9)

Code	Title	Units
Second Year Common Core		22.25
ELEC 271	Digital Systems	4.00
ELEC 274	Computer Architecture	4.00
ENPH 239	Eng. Electricity & Magnetism	3.50
CMPE 212	Introduction to Computing Science II	4.00
ELEC 278	Fundamentals Of Information Structures	4.00
Total Units		**41.75**

Systems and Robotics Sub-Plan (M11)

Code	Title	Units
Second Year Common Core		22.25
ELEC 221	Electric Circuits	4.25
ELEC 271	Digital Systems	4.00
ENPH 225	Mechanics	3.50
ELEC 252	Electronics I	4.25
ELEC 274	Computer Architecture	4.00
Total Units		**42.25**

Third Year Common Core - 2022-2023

Code	Title	Units
MTHE 326	Functions of a Complex Variable	3.50
MTHE 335	Mathematics of Engineering Systems	3.50
MTHE 393	Engineering Design and Practice for Mathematics and Engineering	4.00
APSC 221	Economic And Business Practice	3.00
MTHE 328	Real Analysis	3.00
MTHE 351	Probability I	3.50
Total Units		**20.50**

Applied Mechanics Sub-Plan (M6)

Code	Title	Units
Third Year Common Core		20.50
MECH 321	Solid Mechanics II	3.50
MECH 328	Dynamics And Vibration	3.50
MECH 330	Applied Thermo II	3.50
MECH 398	Mechanical Engineering Laboratory I	2.00
MECH 323	Machine Design I	4.50
MECH 341	Fluid Mechanics II	3.50
MECH 399	Mechanical Eng Lab II	2.00
Total Units		**43.00**

Computing and Communications Sub-Plan (M9)

Code	Title	Units
Third Year Common Core		20.50
ELEC 371	Microprocessor Interfacing and Embedded Systems	4.00
MTHE 353	Probability II	3.00
CMPE 320	Fndmnts Software Development	4.00
CMPE 332	Database Management Systems	3.00
CMPE 365	Algorithms I	4.00
Complementary Studies, List A, F or W		3.00
Total Units		**41.50**

Systems and Robotics Sub-Plan (M11)

Code	Title	Units
Third Year Common Core		20.50
ELEC 278	Fundamentals Of Information Structures	4.00
ENPH 239	Eng. Electricity & Magnetism	3.50
MTHE 353	Probability II	3.00
ELEC 371	Microprocessor Interfacing and Embedded Systems	4.00
MTHE 337	Intro. To Operations Research (or a Technical Elective List I or II)	3.00
Complementary Studies, List A, F or W		3.00
Total Units		**41.00**

Fourth Year Common Core - 2023-2024

Code	Title	Units
MTHE 493	Engineering Math Project	7.50
MTHE 494	Mathematics and Engineering Seminar	3.00
Total Units		**10.50**

Applied Mechanics Sub-Plan (M6)

Code	Title	Units
Fourth Year Common Core		10.50
MTHE 430	Control Theory	4.00
MTHE 433	Continuum Mechanics with Applications	3.50
Complementary Studies, List A, F or W		3.00
Complementary Studies, List A or B, F or W		3.00
Complementary Studies, List A or B, F or W		3.00
Total Units		**27.00**

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.

Mathematics and Engineering, Applied Mechanics (M6): Technical Electives (https://queensu-ca-public.courseleaf.com/engineering-applied-sciences/academic-plans/mathematics-engineering/mathematics-engineering-applied-mechanics-m6-technical-electives/)

Minimum Total Credits: 38.5

Computing and Communications Sub-Plan (M9)

Code	Title	Units
Fourth Year Common Core		10.50
MTHE 474	Information Theory	3.50
MTHE 455	Stochastic Processes & Applications	3.50
MTHE 477	Data Compression and Source Coding: Theory and Algorithms	3.00
Complementary Studies, List A or B, F or W		3.00
Complementary Studies, List A or B, F or W		3.00
Total Units		**26.50**

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.

Mathematics and Engineering, Computing and Communications (M9): Technical Electives (https://queensu-ca-public.courseleaf.com/engineering-applied-sciences/academic-plans/mathematics-engineering/mathematics-engineering-computing-communications-m9-technical-electives/)

Minimum Total Credits: 38.5

Systems and Robotics Sub-Plan (M11)

Code	Title	Units
Fourth Year Common Core		10.50
MTHE 430	Control Theory	4.00
MTHE 474	Information Theory	3.50
MTHE 472	Optimization and Control of Stochastic Systems	3.50
Complementary Studies, List A or B, F or W		3.00
Complementary Studies, List A or B, F or W		3.00
Total Units		**27.50**

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.

Mathematics and Engineering, Systems and Robotics (M11): Technical Electives (https://queensu-ca-public.courseleaf.com/engineering-applied-sciences/academic-plans/mathematics-engineering/mathematics-engineering-systems-robotics-m11-technical-electives/)

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