Engineering Mathematics II

Department of Engineering Mathematics & Internetworking

MATH 1290

Winter 2025

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

We acknowledge the histories, contributions, and legacies of the African Nova Scotian people and communities who have been here for over 400 years.

Instructor:

Dr. Edward Yao, Edward.Yao@Dal.Ca, O'Brien Hall Rm 210, Sexton Campus. Tel: 902-494-3921.
Office hours: Mondays and Wednesdays 4:30 – 6:00 p.m. or by appointment.

Lectures:

MWF 1:35 – 2:25 p.m. Studley MCCAIN ARTS & SS AUD-2 (Ondaatje Hall).

Tutorials:

MWF 12:35 – 1:25 p.m. at various locations on the Studley campus. Not every Monday, Wednesday, or Friday has a tutorial – see **Schedule** for the tutorial dates. The first tutorial is held on Friday, January 10. Students should go to the tutorial rooms according to their Tutorial Sections of Registration (TSR#: T01 – T08), which are not allowed to switch after Saturday 8:00 a.m., January 25.

MATH 1290 Engineering Math II

R	**21766**	01	Lec	3	T0	M		W		F	1335-1425	Studley MCCAIN ARTS&SS AUD-2
	21767	T01	Tut	0	L0	M		W		F	1235-1325	Studley SIR JAMES DUNN BUILDING 304
	21768	T02	Tut	0	L0	M		W		F	1235-1325	Studley CHEMISTRY 125
	21769	T03	Tut	0	L0	M		W		F	1235-1325	Studley SIR JAMES DUNN BUILDING 101
	21770	T04	Tut	0	L0	M		W		F	1235-1325	Studley LSC-COMMON AREA C206
	21771	T05	Tut	0	L0	M		W		F	1235-1325	Studley HENRY HICKS ACADEMIC ADMIN 212
	21772	T06	Tut	0	L0	M		W		F	1235-1325	Studley LSC-COMMON AREA C208
	21773	T07	Tut	0	L0	M		W		F	1235-1325	Studley LSC-COMMON AREA C244
	21774	T08	Tut	0	L0	M		W		F	1235-1325	Studley CHEMISTRY 223

Course Delivery:

Lectures and tutorials are delivered in person.

Student Support:

There are many ways to seek help in this course. There are office hours with the instructor, our class discussion board on the course Brightspace page, support from Teaching Assistants in the MATH/STAT Learning Centre, and class-mates.

The MATH/STAT Learning Centre is located in Chase 119 and will be operating in person and remotely for the start of the term. It opens on Monday, January 6, and support is available Monday through Friday from 11:30 a.m. - 4:30 pm and Monday through Friday evenings from 6:30 – 7:30 p.m., until Saturday, April 26. Register for the Brightspace "course" at https://www.dal. ca/faculty/science/math-stats/about/learning-centre.html to access the online sup-port and see the latest schedule.

Course Description

This course is a sequel to MATH 1280.03. All topics of MATH 1010.03 are covered, but in greater depth. This course also introduces the students to the application of mathematics in engineering problems.

Course Prerequisites

MATH 1280.03

Learning Objectives

- Develop students' conceptual understanding of single variable functions in terms of integration applications and techniques, differential equations (elementary), sequences and series, and parametric and polar curves.
- Train students to efficiently perform fundamental calculations involved in these topics.
- Introduce engineering-related applications of this knowledge and skills.

Learning Outcomes

1. Apply the methods of slicing and shells to compute volumes.
2. Learn and apply various techniques of integration: parts, trig substitution, partial fractions, numerical integration.
3. Employ polar coordinates and parametric equations.
4. Apply various convergence theorems to sequences and series.
5. Apply Taylor series to practical problems.
6. Demonstrate an intuitive and computational understanding for calculus applications by solving a variety of problems from physics, engineering, and mathematics.

Graduate Attributes

Performance Indicator (**01A**): Explain and apply mathematics for analysis and synthesis in engineering. Performance Indicator (**02C**): Perceive sources of error and uncertainty and quantify their significance. **Engineering GA matrix**: https://go.engineering.dal.ca/ga-matrix.

Course Materials Textbook

Calculus - Early Transcendentals - third edition by Briggs and Cochran. This text covers single and multiple variable calculus topics, for which MATH 1280 covers Chapters 1- 5 and MATH 1290 covers Chapters 6 – 12, a must-have for taking both MATH 1280 and MATH 1290. The text can be purchased at the Dal Bookstore: https://bookstore.dal.ca/CourseSearch/?course[]=SUB,WINT25,MATH,MATH1290,. Please note: MyLab Math is not required for both courses.

Web Resources

See Brightspace for the course syllabus, announcements, assignments, assignment solutions, tutorial problems, quiz info sheets and demo videos, quiz answers, the discussion board[1], class and tutorial notes, etc. Log in using your NetID. You should see a link to the course MATH 1290.

Course Assessment

Assignment (20%)

All ten Assignments count. Assignments must be submitted to Brightspace in PDF. No late assignments will be accepted – the due dates are given below. Assignments must be completed independently. Copying the solutions from classmates or any sources is strictly forbidden.

Assignments without a required cover sheet will not be marked. A **subset marking**[*] policy will be adopted for all Assignments. Follow the **Student Absence Reporting** stated in Section B of the syllabus for any *legitimately* late or missed assignments up to a maximum of two times. Upon approval by the Associate Dean's Office, the missed work will be granted a waiver, and the related percentage will be equally added to the rest of the Assignments submitted. There is no alternative work to replace a missed assignment.

[1] The class notes are posted before each lecture, and the tutorial notes are posted after each tutorial session.

Assignments:

Weight	(% of final grade)	Date
Assignment 1 (Parts A-D)	2%	January 20
Assignment 2 (Parts A-D)	2%	January 27
Assignment 3 (Parts A-C)	2%	February 3
Assignment 4 (Parts A-B)	2%	February 10
Assignment 5 (Parts A-C)	2%	February 24
Assignment 6 (Parts A-C)	2%	March 5
Assignment 7 (Parts A-C)	2%	March 12
Assignment 8 (Parts A-C)	2%	March 19
Assignment 9 (Parts A-C)	2%	March 26
Assignment 10 (Parts A-D)	2%	April 9

In-Class Assignment (20%)

There are thirty-one In-class Assignments for LEC-01 ~ LEC-31, each worth 0.64516%. In-class assignment **sheets** will be delivered during the lecture. In-class assignments are completed in a class-interaction fashion and must be submitted at the end of each lecture. A **subset marking** – policy will be adopted for all in-class assignments. Follow the **Student Absence Reporting** stated in Section B of the syllabus for any *legitimately* missed in-class assignments up to a maximum of two times. Upon approval by the Associate Dean's Office, the missed work will be granted a waiver.

There is no alternative work to replace a missed in-class assignment. The related in-class assignment percentages will be added to the nearest Quiz **if** lectures are canceled due to unexpected university closures, rescheduled Quizzes 1-3, and/or other irresistible events.

Assignments:

Weight	(% of final grade)	Date
In-class Assignments 1 – 31	0.64516% each	See LEC-01 – LEC-31 dates

Quiz (60%)

All four quizzes count. The first three quizzes are held during tutorial time - the dates are given below. The last quiz will be scheduled during the exam period. Each quiz has two phases: the time for test writing and the time for test conversion and submission to Brightspace in PDF. Late submissions or submissions without a required coversheet are not accepted. No calculators of any kind are allowed except for those otherwise specified. Turn off all electronic devices that make noise. If a quiz cannot be completed due to an illness diagnosed by a physician, not a nurse, follow the **Student Absence Reporting** stated in Section B of the syllabus to fill in a form and submit it with a doctor's note to the Associate Dean's Office for approval. Upon approval by the Associate Dean's Office, the missed quiz will be replaced by a comprehensive test held on **Monday, April 7** only. If missed multiple quizzes during the term, the student will be reported to the Associate Dean's Office for their academic decisions. **If** Quizzes 1-3 are canceled due to unexpected university closures or other irresistible events, they will be rescheduled and held during the next class time in Ondaatje – see **Schedule**.

Quizzes:

Weight	(% of final grade)	Date
Quiz 1 (covering Assignments 1 – 2)	10%	**Wed** February 5 (40+10 min)
Quiz 2 (covering Assignments 3 – 4)	12%	**Mon** March 3 (40+10 min)
Quiz 3 (covering Assignments 5 – 7)	14%	**Mon** March 24 (40+10 min)
Quiz 4 (comprehensive: 40% A1-A7 + 60% A8-A10)	24%	**Mon** April 14 (170+10 min)

(*Final exam*) *Quiz 4 is treated as the final exam for the course.*

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	**B+** (77-79)	**C+** (65-69)	**D** (50-54)
A (85-89)	**B** (73-76)	**C** (60-64)	**F** (< 50)
A- (80-84)	**B-** (70-72)	**C-** (55-59)	

Course Policies related to Academic Integrity

You are strongly encouraged to collaborate with other students when working on homework and studying for your tests. When you submit your assignments online, this is done independently so that you assess your own learning.

Growth Mindset vs. Fixed Mindset

There is evidence[2] that shows that your frame of mind can greatly affect your success. In particular, if you have a growth mindset (you believe that with practice your abilities can improve) you are often more successful than if you have a fixed mindset (you believe that you can either do or not do something). We invite you to take a growth mindset to mathematics: with regular practice, you will improve your skills.

Course Content Course Outline

1. Applications of integration: regions between curves, volume by slicing and shells, length of curves, surface area, physical applications. (Chapter 6)
2. Logarithmic and exponential functions: exponential models. (Chapter 7)
3. Integration techniques: integration by parts, trigonometric integrals, trigonometric substitutions, partial fractions, numerical integration, improper integrals. (Chapter 8)
4. Differential equations (elementary): direction field and Euler's method, separable differential equations, special first-order linear differential equations, modeling with differential equations. (Chapter 9)
5. Sequences and infinite series: sequences, infinite series, the divergence, integral, comparison, ratio, and root tests, alternating series. (Chapter 10).
6. Power series: approximating functions with polynomials, properties of power series, Taylor series, working with Taylor series. (Chapter 11)
7. Parametric and polar curves: parametric equations, polar coordinates, calculus in polar coordinates. (Chapter 12)

Schedule

1. This schedule covers the dates for lectures and tutorials by week.
2. Lectures are delivered in the form of PowerPoint in Ondaatje Hall. The old lecture notes are renamed as class notes and will be posted on Brightspace at the beginning of each week. In-class assignment sheets are given during the lecture and must be submitted at the end of the lecture. Lecture attendance is mandatory. **If** a lecture is canceled due to an unexpected university closure, a rescheduled quiz, or an irresistible event, it will be replaced by a pre-recorded Panopto video on BS.
3. Each Assignment contains several parts listed beneath respective lectures. Students are encouraged to attempt these assignments after lecture to avoid procrastination.
4. Tutorial problems are posted ahead of each tutorial. Tutorial and Assignment problems match in the sense of their similarity. TAs will deliver the instructor-written solutions to a set of the selected problems. The full instructor-written solutions to all tutorial problems will be posted after each tutorial session. Tutorial attendance is mandatory. **If** a tutorial is canceled due to an unexpected university closure or an irresistible event, TAs will replace it with a pre-recorded video via Teams and the link will be sent to their tutorial students.
5. Not all sections in Chapters 6 – 12 are covered in the lectures. They are Sections 6.1, 7.1, 7.3, 8.1, 8.6, 8.7, and 12.4. These sections are assigned as the reading materials. There will be no tutorials or assignments for those sections.

[2] Dweck, C. S. (2006). Mindset: The new psychology of success. Random House.

WEEK	DATE	MATERIAL RE LECTURE, TUTORIAL, AND ASSIGNMENT
1	Jan 6	Introduction to MATH1290 (a pre-recorded video released on Brightspace) LEC-01: Sec 6.2 Regions Between Curves (pages 416 – 420) + Class-01 notes Assignment 1 (Part A): Sec 6.2 10, 20, 30. TUT-**01**: Sec 6.2 9, 19, 29.
	Jan 8	LEC-02: Sec 6.3 Volume by Slicing (pages 425 – 434) + Class-02 notes Assignment 1 (Part B): Sec 6.3 26, 28, 52. TUT-**02**: Sec 6.3 25, 27, 49.
	Jan 10	**Tutorial #1** Sec 6.2 9, 19, 29. LEC-03: Sec 6.4 Volume by Shells (pages 439 – 447) + Class-03 notes Assignment 1 (Part C): Sec 6.4 36, 48. TUT-**03**: Sec 6.4 37, 47.
2	Jan 13	**Tutorial #2** Sec 6.3 25, 27, 49. LEC-04: Sec 6.5 Length of Curves (pages 451 – 455) + Class-04 notes Sec 6.6 Surface Area (pages 457 – 462) Assignment 1 (Part D): Sec 6.5 18. TUT-**03**: Sec 6.5 17. Assignment 2 (Part A): Sec 6.6 16. TUT-**04**: Sec 6.6 17.
	Jan 15	LEC-05: Sec 6.7 Physical Applications (pages 465 – 473) + Class-05 notes Assignment 2 (Part B): Sec 6.7 24, 32, 36. TUT-**04**: Sec 6.7 23, 31, 37.
	Jan 17	**Tutorial #3** Sec 6.4 37, 47, and Sec 6.5 17. LEC-06: Sec 7.2 Exponential Models (pages 492 – 498) + Class-06 notes Assignment 2 (Part C): Sec 7.2 18, 34. TUT-**05**: Sec 7.2 19, 35.
3	Jan 20	Assignment 1 (including Parts A-D) due by 1:25 p.m. **Tutorial #4** Sec 6.6 17, and Sec 6.7 23, 31, 37. LEC-07: Sec 8.2 Integration by Parts (pages 525 – 529) + Class-07 notes Assignment 2 (Part D): Sec 8.2 24, 28, 46. TUT-**05**: Sec 8.2 25, 29, 47.
	Jan 22	LEC-08: Sec 8.3 Trigonometric Integrals (pages 532 – 536) + Class-08 notes Assignment 3 (Part A): Sec 8.3 16, 30, 34, 68. TUT-**06**: Sec 8.3 15, 31, 33, 67.
	Jan 24	**Tutorial #5** Sec 7.2 19, 35, and Sec 8.2 25, 29, 47. LEC-09: Sec 8.4 Trigonometric Substitutions (pages 538 – 543) + Class-09 notes Assignment 3 (Part B): Sec 8.4 8, 34, 60. TUT-**07**: Sec 8.4 11, 33, 61.
4	Jan 27	Assignment 1 returning, Assignment 2 (including Parts A-D) due by 1:25 p.m. **Tutorial #6** Sec 8.3 15, 31, 33, 67. LEC-10: Sec 8.5 Partial Fractions (pages 546 – 554) + Class-10 notes Assignment 3 (Part C): Sec 8.5 30, 40, 52. TUT-**07**: Sec 8.5 31, 45, 53.

WEEK	DATE	MATERIAL RE LECTURE, TUTORIAL, AND ASSIGNMENT
	Jan 29	**Tutorial #7** Sec 8.4 11, 33, 61, and Sec 8.5 31, 45, 53. LEC-11: Sec 8.8 Numerical Integration (pages 567 – 577) + Class-11 notes Assignment 4 (Part A): Sec 8.8 36, 46. TUT-**08**: Sec 8.8 35, 45.
	Jan 31	**Tutorial #8** Sec 8.8 35, 45. LEC-12: Sec 8.9 Improper Integrals (pages 582 – 590) + Class-12 notes Assignment 4 (Part B): Sec 8.9 10, 50, 58, 84. TUT-**09**: Sec 8.9 9, 49, 57, 83. Feb 1 April exam schedule posted.
5	Feb 3	Assignment 2 returning, Assignment 3 (including Parts A-C) due by 1:25 p.m. **Tutorial #9** Sec 8.9 9, 49, 57, 83. LEC-13: Sec 9.1 Basic Ideas (pages 597 – 604) + Class-13 notes Assignment 5 (Part A): Sec 9.1 8, 22, 34, 46. TUT-**10**: Sec 9.1 7, 23, 33, 45**.** Feb 3 Last day to drop winter term courses without a "W".
	Feb 5	**Quiz 1 held during tutorial time (covering Assignments 1–2).** LEC-14: Sec 9.2 Direction Fields and Euler's Method (606 – 611) + Class-14 notes Assignment 5 (Part B): Sec 9.2 22, 28. TUT-**11**: Sec 9.2 21, 27.
	Feb 7	Munro Day, university closed.
6	Feb 10	Assignment 3 returning, Assignment 4 (including Parts A-B) due by 1:25 p.m. **Tutorial #10** Sec 9.1 7, 23, 33, 45**.** (If the university is closed on Feb 5, the rescheduled Quiz 1 will be held on Feb 10 during lecture time and LEC-15 will be replaced by a video on BS) LEC-15: Sec 9.3 Separable Differential Equations (pages 614 – 618) Sec 9.4 Special First-Order Linear Differential Equations (pages 620 – 625) + Class-15 notes Assignment 5 (Part C): Sec 9.3 40. Sec 9.4 24. TUT-**11**): Sec 9.3 39. Sec 9.4 23.
	Feb 12	LEC-16: Sec 9.5 Modeling with Differential Equations (pages 627 – 633) + Class-16 notes Assignment 6 (Part A): Sec 9.5 18, 24. TUT-**12**: Sec 9.5 17, 25.
	Feb 14	**Tutorial #11** Sec 9.2 21, 27, Sec 9.3 39, and Sec 9.4 23. LEC-17: Sec 10.1 An Overview (pages 639 – 647) + Class-17 notes Assignment 6 (Part B): Sec 10.1 26, 28, 36, 62, 67. TUT-**13**: Sec 10.1 25, 27, 35, 61, *a variation of Ex 8 on pg 646.
February 17 – 21		Winter Study Break

WEEK	DATE	MATERIAL RE LECTURE, TUTORIAL, AND ASSIGNMENT
7	Feb 24	Assignment 4 returning, Assignment 5 (including Parts A-C) due by 1:25 p.m. **Tutorial #12** Sec 9.5 17, 25. LEC-18: Sec 10.2 Sequences (pages 650 – 658) + Class-18 notes Assignment 6 (Part C): Sec 10.2 26, 38, 56, 76, 84. TUT-**13**: Sec 10.2 27, 39, 55, 75, 85.
	Feb 26	LEC-19: Sec 10.3 Infinite Series (pages 662 – 667) + Class-19 notes Assignment 7 (Part A): Sec 10.3 32, 50, 60, 86. TUT-**14**: Sec 10.3 37, 49, 59, 85
	Feb 28	**Tutorial #13** Sec 10.1 25, 27, 35, 61, *a variation of Ex 8 on pg 646, and Sec 10.2 27, 39, 55, 75, 85. LEC-20: Sec 10.4 The Divergence and Integral Tests (pages 671 – 680) + Class-20 notes Assignment 7 (Part B): Sec 10.4 12, 20, 30, 42. TUT-**15**: Sec 10.4 9, 17, 31, 41.
8	Mar 3	**Quiz 2 held during the tutorial time (covering Assignments 3–4).** LEC-21: Sec 10.5 Comparison Tests (pages 683 – 686) + Class-21 notes Assignment 7 (Part C): Sec 10.5 21, 44. TUT-**15**: Sec 10.5 20, 43.
	Mar 5	Assignment 5 returning, Assignment 6 (including Parts A-C) due by 1:25 p.m. **Tutorial #14** Sec 10.3 37, 49, 59, 85. *(If the university is closed on Mar 3, the rescheduled Quiz 2 will be held on Mar 5 during lecture time and LEC-22 will be replaced by a video on BS)* LEC-22: Sec 10.6 Alternating Series (pages 688 – 694) + Class-22 notes Assignment 8 (Part A): Sec 10.6 16, 24, 34, 52, 58. TUT-**16**: Sec 10.6 17, 27, 33, 55, 60. Mar 5 Last day to drop winter term courses with a "W".
	Mar 7	**Tutorial #15** Sec 10.4 9, 17, 31, 41, and Sec 10.5 20, 43. LEC-23: Sec 10.7 The Ratio and Root Tests (pages 696 – 700) + Class-23 notes Assignment 8 (Part B): Sec 10.7 16, 24, 44. TUT-**17**: Sec 10.7 17, 25, 43.
9	Mar 10	**Tutorial #16** Sec 10.6 17, 27, 33, 55, 60. LEC-24: Sec 10.8 Choosing a Convergent Test (pages 700 – 701) + Class-24 notes Assignment 8 (Part C): Sec 10.8 14, 44. TUT-**17**: Sec 10.8 13, 33.
	Mar 12	Assignment 6 returning, Assignment 7 (including Parts A-C) due by 1:25 p.m. LEC-25: Sec 11.1 Approximating Functions with Polynomials (pages 708 – 718) + Class-25 notes Assignment 9 (Part A): Sec 11.1 10, 38, 42, 60. TUT-**18**: Sec 11.1 9, 37, 41, 59.
	Mar 14	**Tutorial #17** Sec 10.7 17, 25, 43, and Sec 10.8 13, 33. LEC-26: Sec 11.2 Properties of Power Series (pages 722 – 729) + Class-26 notes Assignment 9 (Part B): Sec 11.2 12, 18, 34, 44, 54, 62, 70. TUT-**19**: Sec 11.2 13, 19, 33, 41, 51, 61, 71.

WEEK	DATE	MATERIAL RE LECTURE, TUTORIAL, AND ASSIGNMENT
10	Mar 17	**Tutorial #18** Sec 11.1 9, 37, 41, 59. LEC-27: Sec 11.3 Taylor Series (pages 731 – 740) + Class-27 notes Assignment 9 (Part C): Sec 11.3 10, 46, 56. TUT-**19**: Sec 11.3 13, 47, 53.
	Mar 19	Assignment 7 returning, Assignment 8 (including Parts A-C) due by 1:25 p.m. LEC-28: Sec 11.4 Working with Taylor Series (pages 742 – 747) + Class-28 notes Assignment 10 (Part A): Sec 11.4 8, 34, 38, 64. TUT-**20**: Sec 11.4 9, 33, 37, 63.
	Mar 21	**Tutorial #19** Sec 11.2 13, 19, 33, 41, 51, 61, 71, and Sec 11.3 13, 47, 53. LEC-29: Sec 12.1 Parametric Equations (pages 753 – 763) + Class-29 notes Assignment 10 (Part B): Sec 12.1 18, 42, 54, 76, 78, 82. TUT -**21**: Sec 12.1 17, 41, 55, 73, 77, 81.
11	Mar 24	**Quiz 3 held during the tutorial time (covering Assignments 5–7).** LEC-30: Sec 12.2 Polar Coordinates (pages 767 – 775) + Class-2 notes Assignment 10 (Part C): Sec 12.2 12, 26, 34, 48, 58. TUT-**21**: Sec 12.2 13. TUT-**22**: Sec 12.2 25, 33, 45, 57.
	Mar 26	Assignment 8 returning, Assignment 9 (including Parts A-C) due by 1:25 p.m. **Tutorial #20** Sec 11.4 9, 33, 37, 63. *(If the university is closed on Mar 24, the rescheduled Quiz 3 will be held on Mar 26 during lecture time and LEC-31 will be replaced by a video on BS)* LEC-31 Sec 12.3 Calculus in Polar Coordinates (pages 779 – 785) + Class-31 notes Assignment 10 (Part D): Sec 12.3 26, 38, 68. TUT-**22**: Sec 12.3 25, 39, 67.
	Mar 28	No lecture.
12	Mar 31	**Tutorial #21** Sec 12.1 17, 41, 55, 73, 77, 81, and Sec 12.2 13. No lecture.
	Apr 2	Assignment 9 returning. **Tutorial #22** Sec 12.3 25, 39, 67. No lecture.
	Apr 4	No lecture.
13-14	Apr 7	No lecture. Classes end, winter term.
	Apr 9	Assignment 10 (including Parts A-D) due by 11:25 p.m.
	Apr 13	Assignment 10 returning.
	Apr 14	**Quiz 4 held in Dalplex, 12:00 – 3:00 p.m.** (Comprehensive: 40% A1-A7 + 60% A8-A10)
	Apr 18	Good Friday, university closed.

Undergraduate Studies Office

Associate Dean,	Administrative Coordinator; Advisor for Year 1 & 2 Students,	Student Engagement Coord	General Inquiries
Dr. Darrel Doman	**Jason LeCoure**	**Karyn Hemsworth**	**Erin Little**
darrel.doman@dal.ca	jason.lecoure@dal.ca	(902) 494-3850	engineering@dal.ca
		karyn.hemsworth@dal.ca	

Dalhousie Engineering Student Oath

I, as one who is preparing to enter the profession of engineering, promise to conduct myself in an honorable and ethical manner, and, as such, I will not cheat, plagiarize or be involved in any other academically dishonest activities. I shall uphold the values of truth, honesty and trustworthiness. I shall study diligently so that I will be able to safeguard human life, to protect the welfare of society and the environment, and to uphold the reputation of the profession. In all this I shall be concerned for the well-being of others, and not just myself.

Short-term Missed Work and Absence Reporting

Any absence resulting in missed academic work must be reported using the Engineering Student Absence Reporting online system. This applies to both Student Declaration of absence and Request for Accommodation. Visit forms.engineering.dal.ca for details and to submit a request.

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.
Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness. **Statement**: http://www.dal.ca/cultureofrespect.html

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).
Information: https://www.dal.ca/campus_life/communities/indigenous.html

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." https://www.dal.ca/about-dal/internationalization.html

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. (read more: http://www.dal.ca/dept/university_secretariat/academic-integrity.html)

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion please contact:

- The Student Accessibility Centre https://www.dal.ca/campus_life/academic-support/accessibility.html) for all courses offered by Dalhousie with the exception of Truro.
- The Student Success Centre in Truro for courses offered by the Faculty of Agriculture (https://www.dal.ca/about-dal/agricultural-campus/student-success- centre.html)

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcomed and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). (read more: http://www.dal.ca/cultureofrespect.html)

Fair Dealing policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie.
(read more: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html)

Originality Checking Software (Mandatory to include if being used)

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. (Read more: https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.html)

Student Use of Course Materials

These course materials are designed for use as part of the MATH1290 course at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g., uploading to a commercial third-party website) may lead to a violation of Copyright law.

Student Resources and Support

University Policies and Programs

Important Dates in the Academic Year (including add/drop dates): http://www.dal.ca/academics/important_dates.html

Classroom Recording Protocol: https://www.dal.ca/dept/university_secretariat/policies/academic/classroom-recording-protocol.html

Dalhousie Grading Practices Policies: https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Grade Appeal Process: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

Sexualized Violence Policy: https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html

Scent-Free Program: https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html

Learning and Support Resources

General Academic Support – Advising (Halifax): https://www.dal.ca/campus_life/academic-support/advising.html

General Academic Support – Advising (Truro): https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising.html

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness.html

On Track (helps you transition into university, and supports you through your first year at Dalhousie and beyond): https://www.dal.ca/campus_life/academic-support/On-track.html

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Indigenous Connection: https://www.dal.ca/about-dal/indigenous-connection.html

Elders-in-Residence (The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit the office in the Indigenous Student Centre or contact the program at elders@dal.ca or 902-494-6803: https://cdn.dal.ca/content/dam/dalhousie/pdf/academics/UG/indigenous-studies/Elder-Protocol-July2018.pdf

Black Student Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre.html

LGBTQ2SIA+ Collaborative: https://www.dal.ca/dept/vpei/edia/education/community-specific-spaces/LGBTQ2SIA-collaborative.html

Dalhousie Libraries: http://libraries.dal.ca/

Copyright Office: https://libraries.dal.ca/services/copyright-office.html

Dalhousie Student Advocacy Services: https://www.dsu.ca/dsas?rq=student%20advocacy

Dalhousie Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Human Rights and Equity Services: https://www.dal.ca/dept/hres.html

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Faculty of Science Advising Support: https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html

Safety

Biosafety: http://www.dal.ca/dept/safety/programs-services/biosafety.html

Chemical Safety: https://www.dal.ca/dept/safety/programs-services/chemical-safety.html

Radiation Safety: http://www.dal.ca/dept/safety/programs-services/radiation-safety.html

Laser Safety: https://www.dal.ca/dept/safety/programs-services/radiation-safety/laser-safety.html