COURSE OUTLINE

MTH 1150 – Engineering Math I
Fall 2021

Lethbridge College inspires and facilitates learning and innovation to meet economic and social needs.

Centre: Technology, Environment and Design	**School:** School of Engineering Technologies
Instructor: Scott Evanson Office: TT2916 Email: scott.evanson@lethbridgecollege.ca	**Instructor Availability:** Online: By appointment and/or Face to Face: By appointment
Delivery Method: *Instruction: 6 hours/week* *Blended or Face to Face*	**Class Time & Location:** View your personal class schedule (days, times, rooms) through the myHorizon portal or on Canvas.
Credits: 3	**Pre-Requisites:** N/A **Co-Requisites:** N/A
Open to Supplemental Exam: No **Research Component:** No	**Program Chair:** Dr. Edith Olson **Associate Dean:** Candace Lewko **Dean:** Dr. Terry Kowalchuk **Main Program Contact Number:** 403-320-3468

Academic Calendar Description:
An introduction to the mathematical concepts required for the engineering technologies in preparation for calculus. Topics include unit analysis and unit conversion, the Cartesian coordinate plane, algebraic equations, trigonometric functions, and problem-solving skills. Mathematical concepts will be applied to physical problems including vector analysis, surveying applications, friction, optical instruments, and kinematics. Introductory calculus topics include limits, slope and area under the curve.

Course Outcomes:

1. Solve basic algebra equations and arithmetic questions involving fractions, decimals, signed numbers, exponents, and order of operations with and without the aid of a calculator.
2. Solve questions in Analytical Geometry and the Cartesian coordinate plane involving distances, slopes and circles.

3. Graph various functions in the Cartesian Plane and determine some of their important characteristics including symmetry, domain, range, scaling, and shifting.
4. Solve all types of algebra problems involving factoring quadratics, rational expressions, trigonometric functions, and exponential and logarithmic functions.
5. Apply vector analysis to dynamic and static engineering problems.
6. Apply Newton's Laws to engineering applications.
7. Apply work, friction and heat energy principles to engineering applications.
8. Solve for derivatives using the definition to establish a strong connection between limits and derivatives.
9. Apply the principles of optics to engineering instruments.
10. Solve problems involving limits and explain their connection to the two main operations in Calculus: differentiation and integration.
11. Calculate derivatives using rules of differentiation.

Course Assessments:

Assessment (Assignment or Exam)	Value	Due
Exam 1	26.67%	Week 4
Exam 2	26.67%	Week 8
Exam 3	26.67%	Exam Week
Assignments (x7)	10%	Week 2 Week 3 Week 5 Week 6 Week 7 Week 10 Week 12
Module Quizzes (7x)	10%	Week 2 Week 3 Week 5 Week 6 Week 7 Week 10 Week 12

Penalties/Notes about Late Assignments:

Working to deadlines is a very real aspect of industry. The student needs to develop an appreciation of the necessity of adhering to timelines. Therefore, all assignments are due by the assigned deadline. Late assignments will not be accepted. Tests are to be written on the dates assigned by the instructor, unless permission is obtained from the instructor **before** the test date. **No make-up tests will be given**.

Grading System:

Grade	Percent	Grade Point	Explanation
A+	95% - 100%	4.0	EXCELLENT
A	90% - 94%	4.0	EXCELLENT
A-	86% - 89%	3.7	EXCELLENT
B+	80% - 85%	3.3	GOOD
B	76% - 79%	3.0	GOOD
B-	70% - 75%	2.7	GOOD
C+	66% - 69%	2.3	SATISFACTORY
C	63% - 66%	2.0	SATISFACTORY
C-	60% - 62%	1.7	SATISFACTORY
D+	55% - 59%	1.3	MINIMAL PASS
D	50% - 54%	1.0	MINIMAL PASS
F	0% - 49%	0.0	FAILURE

Grading:

Official final grades will be available on Web Advisor. Grades posted in Canvas should be considered interim grades.

Note: Grade Point Average (GPA) is the standard average measure of performance. Term GPA is an average of the grade points earned in all classes for that term and determines academic standing from term to term. Maintaining the Term GPA required for your program allows for progression in your program. Program GPA is the average grade points earned in all courses required for your program. Successfully meeting the Program GPA required is one criterion for graduation eligibility. To learn more about GPA contact Career & Academic Advising.

Instructional Method:

The course will be a combination of lectures, application through assignments, module quizzes, and exams.

Required Text(s), Materials, and Technology:

Adams, R.A. & Essex, C. (2017). *Calculus.* (9th ED.). Toronto: Pearson Canada, Inc.

Note: Important Dates and Deadlines can be found on the Lethbridge College website.

Student Resources

Canvas:
Canvas is the Learning Management System (LMS) used by Lethbridge College. All students at Lethbridge College have access to Canvas, where they will locate course resources such as course outlines, grades, course materials, Canvas Inbox, and learning activities. Canvas also has a mobile app.

Lethbridge College Email:
Lethbridge College email is the main source of communication outside your individual courses. Be sure to access this often to ensure you have the most up-to-date information from across the campus.

Buchanan Library:
Use the Buchanan Library in person or online to find research materials required for class assignments and to help you with your information needs. Access over 50 databases to find articles on almost any topic and use our online catalogue to find books, ebooks, videos, articles, and more. Our staff provides guidance on how to find the resources you require.

Learning Café:
Students are encouraged to access the Learning Café in the Buchanan Library for various free services, including academic tutoring support (online and face to face), APA documentation and study skills workshops, peer tutoring, and online learning resources.

Accessibility Services:
Students requiring academic accommodation (e.g., extra time, separate space, etc.) must register with Accessibility Services to determine eligibility for and implementation of these supports. If you have further questions, please feel free to speak to your instructor or contact Accessibility Services for more information.

Health and Shepell Counselling Services:
Our Health Services health care team of registered nurses, doctors, and psychiatrists are here to provide services that positively influence your health and well-being. Shepell offers a variety of services to help you meet the challenges of achieving your personal, professional, and academic potential. The primary form of support is personal counselling, which provides an opportunity to work collaboratively with a counsellor.

Advising:
Academic advisors are a great place to start if you aren't sure where to go for help. They are experts on college policies, procedures, program requirements, academic planning, and student supports, and they can help you at any point in your college experience.

Full Class Testing Service: N/A

Other Services:
If you would like more information on the many services available to students, please check out the Current Students section of the Lethbridge College website.

Institutional Policies and Practices

Course Work Used as Examples:
Should your instructor wish to use your work in future educational purposes, you will be asked to complete and sign a Student Release Form, authorizing both the instructor and/or the College to use your course work. This form, along with a copy of your work, is retained in the official copyright files located in the College's Intellectual Property Office. If you have any questions regarding Copyright and/or Intellectual Property, please contact the Intellectual Property Office.

Retention of Assignments and Exams:
Examinations/assignments will be retained by instructors to the end of the final grade appeal period. After the appropriate retention period, records will be destroyed in a secure manner. *Note:* Practicum course evaluations may be kept for a longer period of time. Please see the Records Management policy for more information.

Student Rights and Code of Conduct:
Academic Honesty is necessary for students to achieve excellence and for the preservation of the integrity and reputation of the course, the program, and of Lethbridge College as an institution. Lethbridge College supports and demands academic honesty in all academic learning activities.

Plagiarism is a serious offence and will be handled in accordance with Lethbridge College policy. The penalties for plagiarism vary in degrees but may result in expulsion from the Lethbridge College. For definitions of what is included as plagiarism and academic dishonesty, please view the Student Rights and Code of Conduct policy.

Recording of Classes:
Audio/video recording is permitted *only* with the prior written consent of the instructor or if recording is part of an approved accommodation plan. Such a recording is for the personal use only of the student who has permission to record. Following the course all such recordings must be destroyed.

Other Policies:
Students should be aware of policies and procedures that may impact them directly. More information can be found on the Lethbridge College Policies page.

Important Notes about your Course Outline:
Please retain a copy of this course outline for future reference. It can be useful in providing documentation for course transfer credit.

Research Disclaimer:
Disclaimer 1: This course does not include any research activities that involve human participants.

Other Program Contacts

To contact the Dean or Associate Dean for the program, please contact the main program phone number on page 1 of this outline.