

Learning Plan 2025-26

Course Name: Technical Mathematics with Calculus

Course Code: Math 7

Program(s): Energy Systems Engineering Technology/Energy Systems Engineering Technician/Instrumentation and Control Engineering Technology/Instrumentation and Control Engineering Technician

Delivery Method: Face to Face ☒ | Hybrid ☐ | Hyflex ☐ | Online (Synchronous) ☐ | Online (Asynchronous) ☐

Name of Faculty: Frank Secretain

Contact Information: fsecretain@sl.on.ca

Name of Associate Dean: Brad Barbeau

Date prepared: 6/9/2025

Semester: Fall ☒ | Winter ☐ | Spring ☐ | Summer ☐

Location of Course Offering: Kingston Campus ☒ | Brockville Campus ☐ | Cornwall Campus ☐ | Online ☐ |
or Other (e.g., off-campus location):

Assessment Plan

Students will demonstrate learning in the following ways:

Assessment Strategy*	CLO**	VLO / PLO***	Description (e.g. Frequency, details)	% of Grade	Total %	Tentative Due Dates
BB Quizzes	2,4-6,9-10	-	x10 Online practice module quizzes	10x1	10	Week 2 to 12
Written tests	2,4-6,9-10	-	x3 In class tests on modules	3x20	60	Week 4,7,12
Project	2,4-6,8-11	-	x1 Take home project	10	10	Week 7 to 13
Final exam	2,4-6,9-10	-	x1 In class test on course	20	20	Week 14

Assessment Strategy:** refer to [Academic Assessment Policy](#) for more details; *CLO:** Course Learning Outcome; *****VLO/PLO:** Vocational Learning Outcome / Program Learning Outcome. Information about CLO/VLO/PLO is provided in the associated Course Outline document.

Program Specific Continuance Policy

Does this course belong to a program with a “program specific” continuation policy?

Yes ☐ No ☐

If “Yes”, the details of the program specific [Progression Policy \(see Appendix A\)](#) are included in the table below.

If “No”, this table will include a “N/A” and the course will adhere to the standard continuation requirements outlined in the [Progression Policy](#).

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Academic Policies

Academic Policies at St. Lawrence College ensure that protocols for grading, advancement and related academic elements are established, reviewed and publicly communicated to students. The college's [Academic Policies](#)¹ are all available online via the college website.

Required Learning Resources & Materials

The required learning resources (e.g., readings, web links, etc.) and materials (e.g., software, lab equipment, etc.) are listed in the table below.

Text Book:

Basic Technical Mathematics with Calculus by Allyn J. Washington (Pearson, 10th edition)

The textbook is optional in this course. The textbook will be an essential part of your college career and will be required in other courses in your program. The textbook will provide further explanation on topics covered in class.

Calculator:

A scientific calculator is required in this course. A recommended calculator that will be referred to in class is: Casio fx-991 MS calculator.

Blackboard and YouTube:

Students are required to access their blackboard account to obtain class material, track grades and performance, get access to important announcements, access assessments (such as quizzes and tests) online, get in contact with the instructor. Students are required to access YouTube links (available in blackboard) to watch videos of required lecture material before the assigned dates assigned.

Homework:

You must be prepared and willing to do homework in this course. For each hour in the physical or virtual classroom you should expect to devote approximately one hour to practice questions and assigned homework.

As per the Ministry of Colleges & Universities (MCU) directive on Education costs, please reference the College Bookstore for the most recent textbook cost for this course. Students may also explore options to rent or purchase used textbooks using the posted ISBN. Some courses may also use Open Educational Resources.

- [Learn more about the College Bookstore*](#)

*Please note that this information is subject to change.

¹ Academic Policies are posted online within the [Reports and Policies](#) section of the website.

Additional Notes

Information about this course, such as regulatory and accreditation requirements, is listed below.

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Delivery Schedule

Please Note:

- i) If this is a lab-based course, lab safety procedures and protocol must be specifically taught or reinforced prior to any activity taking place in the lab environment.
- ii) Any changes to this delivery schedule will be communicated in writing by the professor to the students.

Module Title	Module Topic(s)	CLO*	Learning Experiences	Resources	Dates
Math Review	Operations with algebraic expressions Solve for x using BEDMAS	2,4-6,8-11	given problems and projects with solutions	instructor's long and shorthand notes, textbook, in class tutorials	week 1-2
Exponents and logs	exponent rules base e, 10 and a (convert) summarize exponent rules logarithms base e, 10 and a (convert) logarithm rules solve exp. and log equations using rules	2,4-6,8-11	given problems and projects with solutions	instructor's long and shorthand notes, textbook, in class tutorials	week 2-6
Trigonometry Review	Scalar and vectors Degrees and Radians Right angle triangle Vector addition	2,4-6,8-11	given problems and projects with solutions	instructor's long and shorthand notes, textbook, in class tutorials	week 6-7
Complex Introduction	Transforms Polar form to rectangular form Rectangular form to polar form	2,4-6,8-11	given problems and projects with solutions	instructor's long and shorthand notes, textbook, in class tutorials	week 8-10
Complex Analysis	Solve for x using BEDMAS Evaluate polar form equations Evaluate rectangular form equations	2,4-6,8-11	given problems and projects with solutions	instructor's long and shorthand notes, textbook, in class tutorials	week 11-14
Introduction to Calculus	Mathematical limits to functions Concept of slope	2,4-6,8-11	Direct Instruction Demonstrations Hands-on practice	Material available on Blackboard.	week 1

Module Title	Module Topic(s)	CLO*	Learning Experiences	Resources	Dates
Derivatives	Definition of a derivative Derive the derivative for: $y = ax^n$ (polynomial form) $y = a^x$ (exponential form) $y = \sin(x)$ (trigonometry form) Rules of differentiation Product rule Quotient rule Chain rule	2,4-6,8-11	Direct Instruction Demonstrations Hands-on practice	Material available on Blackboard.	week 2-9
Anti-Derivative (integral)	Definition Indefinite integrals Polynomial form Exponential form Trigonometric form Rules of integration Substitution By parts	2,4-6,8-11	Direct Instruction Demonstrations Hands-on practice	Material available on Blackboard.	week 10-14

*CLO: Course Learning Outcome

July 7 2025

Associate Dean Signature: Brad Barken Date: Click or tap to enter a date.