NORTHWESTERN POLYTECHNIC

DEPARTMENT SCIENCE

COURSE OUTLINE – Fall 2025

MA1130 (B2): Elementary Calculus I – 3 (3-2-0) 75 Hours for 15 weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR:	**Abdel Bensouilah**	**PHONE:**	(780) 539-2052
OFFICE:	J210	**E-MAIL:**	ABensouilah@NWPolytech.ca
OFFICE HOURS:	9:00 AM to 11:00 AM on Mondays and Wednesdays, or by appointment.		

CALENDAR DESCRIPTION: The course will include a review of analytic geometry; functions, limits, continuity; differentiation of elementary functions; applications to maxima, minima and rates; introduction to integration; Fundamental Theorem; numerical integration; and areas and other applications of the definite integral to areas

PREREQUISITE(S) : Mathematics 30-1 or equivalent

COREQUISITE(S) :

REQUIRED MATERIALS:

- David Guichard, Calculus: Early Transcendentals (free pdf available at: www.lyryx.com)
- Use of calculators is not permitted on the tests or exams

DELIVERY MODE(S):

Lecture:	B2	W F	1:00 PM – 2:20 PM	J204
Seminar:	BS1	M	2:30 PM – 4:20 PM	B201
	BS2	W	2:30 PM – 4:20 PM	B206

LEARNING OUTCOMES:

At the end of this course, students should be able to…

- State the definition of a function and describe the various ways a function can be represented;
- Find the domain and range of a function;
- Identify and sketch standard algebraic, exponential, logarithmic, trigonometric and piecewise-defined functions;
- Compose functions;
- Calculate limits of functions using the limit laws;
- Identify points or intervals where a function is continuous/discontinuous;
- Calculate derivatives of functions using the limit definition and the differentiation rules;
- Estimate the value of a function at a point using the tangent line (linear) approximation or differentials;
- Calculate derivatives implicitly and solve related rates problems;
- Sketch the graph of a function and indicate the extreme values, points of inflection, asymptotes, and intervals of concavity;
- Apply calculus to solve optimization problems;
- Calculate definite integrals using Riemann sums and the Fundamental Theorem of Calculus;
- Calculate definite and indefinite integrals using substitution;
- Use the definite integral to find the area between curves

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.alberta.ca.

** For courses with alpha (letter) grading, a grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

EVALUATIONS:

Assignments: 15% (held on a weekly basis)

Quizzes: 15% (will be announced one lecture prior to the quiz)

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Midterms: 2 × 20% (Tentatively Week 6: Friday Oct 10, Week 11: Friday Nov 21)

Final Exam: 30% (Cumulative and scheduled during exam period, Dec 13-20 inclusive)

It is the student's responsibility to be available to write the final exam at the scheduled time. Writing early is not permitted.

GRADING CRITERIA:

Please note that most institutions will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines	Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100	C+	2.3	67-69
A	4.0	85-94	C	2.0	63-66
A-	3.7	80-84	C-	1.7	60-62
B+	3.3	77-79	D+	1.3	55-59
B	3.0	73-76	D	1.0	50-54
B-	2.7	70-72	F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week	Chapters

Week 1 (Sept 3-5)	Chapter 1: Review
Week 2 (Sept 10-12)	Chapter 2 Functions
Week 3 (Sept 17-19)	Chapter 3: Limits
Week 4 (Sept 24-26)	Chapter 3: Limits
Week 5 (Oct 1- Oct 3)	Chapter 4: Derivatives
Week 6 (Oct 8-10)	Chapter 4: Derivatives
Week 7 (Oct 15-17)	Chapter 4: Derivatives
Week 8 (Oct 22-24)	Chapter 5: Applications of Derivatives
Week 9 (Oct 29-31)	Chapter 5: Applications of Derivatives
Week 10 (Nov 5-7)	Chapter 6: Integration
Fall Break (Nov 12-14)	
Week 11 (Nov 19-21)	Chapter 6: Integration
Week 12 (Nov 26-28)	Chapter 7: Techniques of Integration
Week 13 (Dec 3-5)	Chapter 8: Applications of Integration
Week 14 (Dec 10)	Review for final exam
Finals (between Dec 13 and 20)	

STUDENT RESPONSIBILITIES: Students are responsible for all lecture material and readings. Students are expected to practice the material by doing problems from the textbook. Assignments are not accepted if handed in late. If a quiz/midterm is missed for a valid reason and proper documentation provided, a make-up

quiz/midterm will be scheduled. If the final is missed due to illness it will be deferred (see calendar for information). A doctor's note and a phone message or email will be required in both cases.

If a lecture or seminar is missed, it is the student's responsibility to catch up on the material and obtain the missing lecture notes.

STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at https://www.nwpolytech.ca/about/administration/policies/index.html.

**Note: all Academic and Administrative policies are available on the same page.