DEPARTMENT SCIENCE

COURSE OUTLINE – Winter 2023

MA1150 (A3): Elementary Calculus II – 3 (3-1.5-0) 67.5 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:	**Therar Kadri**	**PHONE:**	(780) 539-3278
OFFICE:	J209	**E-MAIL:**	TKadri@NWPolytech.ca
OFFICE HOURS:	M&T 1:00 PM -3:00 PM – R 1:00 PM -2:30 PM		

CALENDAR DESCRIPTION:

Applications of integration to areas, volumes, work force and arc lengths are included in this course. Differentiation and integration of exponential, logarithmic and trigonometric functions; techniques of integration; indeterminate forms and improper integrals.

PREREQUISITE(S)/COREQUISITE: Prerequisites: MA1130, MA1140 or MA1000

REQUIRED TEXT/RESOURCE MATERIALS:

- Open (free) textbook at www.lyryx.com: Calculus: Early Transcendentals by David Guichard. (Click here to go to download page!)
- Use of calculators is not permitted on the tests or exams

DELIVERY MODE(S):

Lecture:	**A3**	**T R**	**11:30 AM – 12:50 PM**	**J226**
Seminar:	**AS1**	**M**	**11:30 AM – 12:50 PM**	**J226**

COURSE OBJECTIVES:

The course will cover techniques of integration; inverse functions; improper integrals; approximate integration; applications of integrals.

LEARNING OUTCOMES:

At the end of this course, students should be able to: evaluate integrals by integration by parts, inverse substitution, trigonometric substitution, and partial fractions; evaluate improper integrals; approximate integrals using Midpoint, Trapezoid, and Simpson's rules; identify invertible functions and differentiate their inverses; evaluate derivatives and integrals involving logarithmic, exponential, inverse trigonometric, hyperbolic and inverse hyperbolic functions; apply integration to solve problems involving volume, surface area, arc length, work, probability.

TRANSFERABILITY:

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

** 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:

Quizzes 16% (Quizzes will be held approximately weekly)
Midterms 3 × 18% (Tentatively Week 5: Mon Jan 30, Week 8: Mon Feb 27, Week 11: Mar 20)
Final Exam 30% (Cumulative, during exam period Apr 17 - Apr 24)

Attendance: A bonus of 3% will be given to each student who has more than 65% attendance.

GRADING CRITERIA: (The following criteria may be changed to suite the particular course/instructor)

Please note that most universities 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	90-100		C+	2.3	67-69
A	4.0	85-89		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:

Weeks	Chapters/Sections
Week 1 (Jan 5)	Revision
Week 2 (Jan 10,12)	Chapter 2&4: Inverse Functions
Week 3 (Jan 17,19)	7.4 Integration by Parts
Week 4 (Jan 24,26)	7.4 Integration by Parts
Week 5 (Jan 31, Feb 2)	7.5 Rational Functions
Week 6 (Feb 7,9)	7.2 Powers of Trigonometric Functions
Week 7 (Feb 14,16)	7.3 Trigonometric Substitutions
Winter Break (Feb 20-24)	
Week 8 (Feb 28, Mar 2)	7.6 Numerical Integration
Week 9 (Mar 7,9)	7.7 Improper Integrals
Week 10 (Mar 14,16)	8.1 Distance, Velocity, Acceleration
Week 11 (Mar 21,23)	8.2 Area Between Curves 8.3 Volume
Week 12 (Mar 28,30)	8.4 Average Value of a Function
Week 13 (Apr 4,6)	8.5 Work 8.6 Center of Mass
Week 14 (Apr 11)	Revision

STUDENT RESPONSIBILITIES:

Students are responsible for all lecture material, labs 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 midterm is missed due to illness the weight will be put on the next midterm or the final. 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.

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the Northwestern Polytechnic Calendar at https://www.nwpolytech.ca/programs/calendar/ or the Student Rights and Responsibilities policy which can be found at https://www.nwpolytech.ca/about/administration/policies/index.html.

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