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| Camosun_logo3_CORP_cmyk- | **School of Arts & Science** |
| **MATHEMATICS DEPARTMENT** |
| **MATH 187 - X02** |
| **Math for Civil/Mech 2** |
| **2014 Quarter 2** |

**FACULTY INSTRUCTIONS (these instructions are unseen in print):**

**1. Save this "read-only" template as your course outline**

-- Click on File and then Save as

-- Save each course outline template using the following naming convention “**MATH-107-001 John Doe”** for each course and each section you are teaching.

**2. Add your information (see blue text)**

- add your information to paragraphs 1, 3, 4, and 5 below

- add any additional comments at the end of this document

**3. Save and close your completed course outline**

- click File and then *Save*

- click File and Exit or *Close*

**COURSE OUTLINE**

**The course description is online @** [**http://camosun.ca/learn/calendar/current/web/math.html**](http://camosun.ca/learn/calendar/current/web/math.html)

*Please note: the College electronically stores this outline for five (5) years only.  
It is* ***strongly recommended*** *you keep a copy of this outline with your academic records.  
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.*

**1. Instructor Information**

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| --- | --- | --- | --- | --- |
| (a) | Instructor: | Susie Wieler | | |
| (b) | Office Hours: | Monday – Friday 11:30 -12:30 | | |
| (c) | Location: | CBA 147 | | |
| (d) | Phone: | 250-370-4448 | Alternative Phone: |  |
| (e) | Email: | [wielers@camosun.bc.ca](mailto:wielers@camosun.bc.ca) | | |
| (f) | Website: | https://sites.google.com/site/susiewieler | | |

**2. Intended Learning Outcomes**

Upon completion of this course the student will be able to:

1. Integrate algebraic, exponential, logarithmic and trigonometric functions. Use integral calculus to determine the area under a curve.
2. Use the trapezoidal rule and Simpson’s Rule to approximate a definite integral.
3. Use integration to find the area between curves, volumes of solids of revolution, moments of area and mass, centroids and centres of mass and moments of inertia.
4. Use techniques of integration, including integration by parts, trigonometric substitution, and partial fractions.
5. Find the Maclaurin and Taylor series of functions and use these expansions to evaluate integrals.
6. Find partial derivatives of functions.
7. Evaluate double integrals using both Cartesian and polar coordinates and use double integration to calculate volumes under three-dimensional surfaces.

**3. Required Materials**

(a) Textbook: *Basic Technical Mathematics with Calculus (9th Edition)* by Allyn J. Washington.

(b) Calculator: Any scientific, non-graphing, non-programmable calculator. The *Sharp EL-531X* is recommended.

**4. Course Content and Schedule**

Chapter 25: Integration

25.1 Antiderivatives

25.2 The Indefinite Integral

25.3 The Area Under a Curve

25.4 The Definite Integral

25.5 Numerical Integration: The Trapezoidal Rule

25.6 Simpson's Rule

Chapter 26: Applications of Integration

26.1 Applications of the Indefinite Integral

26.2 Areas by Integration

26.3 Volumes by Integration

26.4 Centroids

26.5 Moments of Inertia

26.6 Other Applications

Chapter 28: Methods of Integration

28.1 The General Power Formula

28.2 The Basic Logarithmic Form

28.3 The Exponential Form

28.4 Basic Trigonometric Forms

28.5 Other Trigonometric Forms

28.6 Inverse Trigonometric Forms

28.7 Integration by Parts

28.8 Integration by Trigonometric Substitution

28.9 Integration by Partial Fractions: Nonrepeated Linear Factors

28.10 Integration by Partial Fractions: Other Cases

Chapter 29: Partial Derivatives and Double Integrals

29.1 Functions of two variables

29.2 Curves and Surfaces in Three Dimensions

29.3 Partial Derivatives

29.4 Double Integrals

Chapter 30: Expansion of Functions in Series

30.1 Infinite Series

30.2 Maclaurin Series

30.3 Certain Operations with Series

30.4 Computation by Use of Series Expansion

30.5 Taylor Series

**5. Basis of Student Assessment (Weighting)**

**Quizzes** A short quiz will be given at the beginning of class on Thursdays.

**Test Dates** Test 1 – January 31 Test 2 – February 21 Test 3 – March 14

(a) Quizzes 5% *Your lowest two quiz marks will be dropped*.

(b) Tests 45%

(c) Final Exam 50%\*

\*If your final exam grade is higher than your term grade and your term work is complete and 50% or higher, then your final exam grade will count as 100% of your final grade.

**6. Grading System**

**Standard Grading System (GPA)**

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| --- | --- | --- | --- |
| **Percentage** | **Grade** | **Description** | **Grade Point Equivalency** |
| 90-100 | A+ |  | 9 |
| 85-89 | A |  | 8 |
| 80-84 | A- |  | 7 |
| 77-79 | B+ |  | 6 |
| 73-76 | B |  | 5 |
| 70-72 | B- |  | 4 |
| 65-69 | C+ |  | 3 |
| 60-64 | C |  | 2 |
| 50-59 | D | Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite. | 1 |
| 0-49 | F | Minimum level has not been achieved. | 0 |

**Temporary Grades**

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at **camosun.ca** for information on conversion to final grades, and for additional information on student record and transcript notations.

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| **Temporary Grade** | **Description** |
| **I** | *Incomplete*: A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family. |
| **IP** | *In progress*: A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. *(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)* |
| **CW** | Compulsory Withdrawal: A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement. |

**7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course**

**LEARNING SUPPORT AND SERVICES FOR STUDENTS**

There are a variety of services available for students to assist them throughout their learning.  
This information is available in the College calendar, at Student Services, or the College web site at  
[camosun.ca](http://camosun.ca/services).

**STUDENT CONDUCT POLICY**

There is a Student Conduct Policy **which includes plagiarism**.  
It is the student’s responsibility to become familiar with the content of this policy.  
The policy is available in each School Administration Office, at Student Services,  
and the College web site in the Policy Section.

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The MATH LAB is located in TEC 142. This drop-in centre is freely available for your use to work on math homework and to seek help from the tutor on staff (see hours posted on door).