|  |  |
| --- | --- |
| Camosun_logo3_CORP_cmyk- | **School of Arts & Science** |
| **MATHEMATICS DEPARTMENT** |
| **MATH 174B – X01** |
| **Mathematics for Electronics 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**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (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 | | |
| (f) | Website: | https://sites.google.com/site/susiewieler | | |

**2. Intended Learning Outcomes**

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

1. Find the equation of a line tangent and normal to a curve at a point. Use Newton’s Method to find an approximate solution to an equation. Solve curvilinear motion problems using equations in parametric form. Solve related rate problems including applications to electronic circuits and devices.
2. Sketch curves using the first and second derivatives, symmetry and asymptotes as appropriate. Solve optimization problems including applications to electronic circuits and devices. Find differentials, estimate errors and linearize functions.
3. Find antiderivatives of functions and use antiderivatives to solve applied problems including applications to electronics.
4. Use the Fundamental Theorem of Calculus to evaluate definite integrals. Using the trapezoidal rule and Simpson’s rule~~,~~ evaluate integrals for functions that cannot be integrated directly. Calculate areas between curves and find volumes of solids of revolution.
5. Differentiate trigonometric, inverse trigonometric, exponential and logarithmic functions.

**3. Required Materials**

(a) Textbook: *Basic Technical Mathematics with Calculus* (8th or 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 24: APPLICATIONS OF THE DERIVATIVE

24.1 Tangents and Normals

24.2 Newton’s Method

24.3 Curvilinear Motion

24.4 Related Rates

24.5 Using Derivatives in Curve Sketching

24.6 More on Curve Sketching

24.7 Applied Maximum and Minimum Problems

24.8 Differentials and Linear Approximations

Chapter 27: DIFFERENTIATION OF TRANSCENDENTAL FUNCTIONS

27.1 Derivatives of the Sine and Cosine Functions

27.2 Derivatives of the Other Trigonometric Functions

27.3 Derivatives of the Inverse Trigonometric Functions

27.5 Derivatives of the Logarithmic Function

27.6 Derivatives of the Exponential Function

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 Definite Integral

26.2 Areas by Integration

26.3 Volumes by Integration

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

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

**Test Dates** Test 1 – January 30 Test 2 – February 20 Test 3 – March 13

(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)**

|  |  |  |  |
| --- | --- | --- | --- |
| **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.

|  |  |
| --- | --- |
| **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.

|  |
| --- |
| 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). |