|  | School of Arts & Science<br>**MATHEMATICS DEPARTMENT**<br><br>**MATH 175**<br>**Mathematics for Electronics 5**<br>**2007 Q3** |
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# COURSE OUTLINE

**The Approved Course Description is available on the web @** _____

Ω *Please note:  this outline will be electronically stored for five (5) years only.*
*It is strongly recommended students keep this outline for your records.*

## 1.  Instructor Information

| (a) | Instructor: | Gilles Cazelais | | |
|---|---|---|---|---|
| (b) | Office Hours: | On my web site | | |
| (c) | Location: | CBA 158 | | |
| (d) | Phone: | 370-4495 | Alternative Phone: | |
| (e) | Email: | cazelais@camosun.bc.ca | | |
| (f) | Website: | http://pacificcoast.net/~cazelais/ | | |

## 2.  Intended Learning Outcomes
*(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)*

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

1.  Solve applied problems in physics and engineering using the basic tools of matrix algebra and differential calculus (including vector and matrix operations, determinants, the deriviates of exponential, logarithmic, and trigonometric functions).

## 3.  Required Materials

| (a) | Texts | Allyn J. Washington, *Basic Technical Mathematics with Calculus*, 8th Edition |
|---|---|---|
| (b) | Other | |

## 4.  Course Content and Schedule
*(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)*

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## 5.  Basis of Student Assessment (Weighting)
*(Should be linked directly to learning outcomes.)*

| (a) | Assignments | |
|---|---|---|
| (b) | Quizzes | 50% |
| (c) | Exams | 50% |
| (d) | Other (eg, Attendance, Project, Group Work) | |

## 6. Grading System

*(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)*

### Standard Grading System (GPA)

| Percentage | Grade | Description | Grade Point Equivalency |
|---|---|---|---|
| 95-100 | A+ | | 9 |
| 90-94 | A | | 8 |
| 85-89 | A- | | 7 |
| 80-84 | B+ | | 6 |
| 75-79 | B | | 5 |
| 70-74 | B- | | 4 |
| 65-69 | C+ | | 3 |
| 60-64 | C | | 2 |
| 50-59 | D | | 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 at **camosun.ca** or 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 are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course. |
| **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. |

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.

## 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.

### 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 on the College web site in the Policy Section.

### ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED

### Course Outline

1. METHODS OF INTEGRATION
· The General Power Formula (28.1)
· The Basic Logarithmic Form (28.2)
· The Exponential Form (28.3)
· Basic Trigonometric Forms (28.4)
· Other Trigonometric Forms (28.5)
· Inverse Trigonometric Forms (28.6)
· Integration by Parts (28.7)
· Integration by Trigonometric Substitution (28.8)
· Integration by Partial Fractions: Nonrepeated Linear Factors (28.9)
· Integration by Partial Fractions: Other Cases (28.10)

2. EXPANSION OF FUNCTIONS IN SERIES
· Infinite Series (29.1)
· Maclaurin Series (29.2)
· Certain Operations with Series (29.3)
· Computation by Use of Series (29.4)
· Taylor Series (29.5)
3. DIFFERENTIAL EQUATIONS
· Solutions of Differential Equations (30.1)
· Separations of Variables (30.2)
· The Linear Differential Equations of First Order (30.4)
· Elementary Applications (30.5)
· Higher-Order Homogeneous Equations (30.6)
· Auxiliary Equations with Repeated or Complex Roots (30.7)
· Solutions of Nonhomogeneous Equations (30.8)
· Applications of Second-Order Equations (30.9)

4. LAPLACE TRANSFORMS
· Laplace Transforms (30.10)
· Solving Differential Equations by Laplace Transforms (30.11)
· Step and Impulse Functions
· Periodic Functions
· Convolution

5. FOURIER SERIES
· Introduction to Fourier Series (29.6)
· More about Fourier Series (29.7)