Math 175
Mathematics for Electronics 4

Instructor: Gilles Cazelais
Office: CBA 158 (phone number: 370-4495)
Office hours: `http://www.camosun.bc.ca/~cazelais/schedule.html`
Email address: `cazelais@camosun.bc.ca`
Course WEB page: `http://www.camosun.bc.ca/~cazelais/175.html`

Texts
Basic Technical Mathematics with Calculus (7th Edition) by Allyn J. Washington.
Laplace Transforms for Electronics, by Peter Trushel. (Optional)
Fourier Series for Electronics, by Peter Trushel. (Optional)

Evaluation

· Three term tests:	50%	or	
· Comprehensive final exam:	50%		Comprehensive final exam: 100%

Tentative Schedule

Test 1	April 29	**Test 2**	May 20	**Test 3**	June 10

Final exams are held from June 20 - 24. You **must** be available at the scheduled time.

The following percentage conversion to letter grade will be used:

Percentage:	0–49	50–59	60–64	65–69	70–74	75–79	80–84	85–89	90–94	95–100
Letter grade:	F	D	C	C+	B-	B	B+	A-	A	A+

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 for Electronics
   - Laplace Transforms (30.10)
   - Step and Impulse Functions
   - Laplace Transforms Theorems
   - Solving Differential Equations by Laplace Transforms (30.11)
   - Laplace Transforms of Combinations of Step and Ramp
   - Laplace Transforms and LRC circuits
   - Laplace Transforms and Periodic Functions
   - Convolution

5. Fourier Series for Electronics
   - Introduction to Fourier Series (29.6)
   - More about Fourier Series (29.7)

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