

# **Course Outline**

## **Math 174b – Mathematics for Electronics 3b**

### **Q2, 2002/3**

#### **Course Description**

This course is one of the first-year components of the Electronics Engineering Program. Topics include applications of derivatives, differentiation of transcendental functions, integration, and applications of integration.

**Instructor:** Patricia Wrean (Pat)  
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**Website:** <http://www.camosun.bc.ca/~wrean/>  
**Office:** CBA 153, Interurban Campus  
**Phone:** (250) 370-4542

**Office hours:** 11:30 – 12:20 Tuesday, Wednesday, Friday  
12:30 – 13:20 Wednesday, Thursday  
The Tuesday office hour is a drop-in hour held in CBA 101. Please feel free to work on homework while eating your lunch.

**In-class workload:** 3 hours lecture  
**Out-of-class workload:** 3 to 6 hours per week  
**Prerequisites:** Math 174a

**Textbook:** Washington, Allyn J., Basic Technical Mathematics with Calculus, 7th Edition, Addison-Wesley Publishing Company.

**Grade Calculation:** The final grade will be calculated according to the following breakdown:

Quizzes (3): 35%  
Assignments: 15%  
Final Exam: 50%

If you miss a quiz, then your quizzes will be worth 23.3% and your final will be worth 63.7%. If you miss two quizzes, then your quizzes will be worth 11.7% and your final will be worth 73.3%. If you miss all quizzes, then your final will be worth 85%. (Please note that the Math department does not recommend this approach. ☺) There is no provision for “making up” a missed quiz.

If your final exam grade is higher than your term work grade, then your final exam grade will count as 100% of your final grade.

**Late Policy:** Late assignments will be given a penalty of 25% per week.

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### Applications of the Derivatives

Hours	Reference	Topic
1	24-1	Tangents and Normals
1	24-2	Newton's Method for Solving Equations
1	24-3	Curvilinear Motion
2	24-4	Related Rates
1	24-5	Using Derivatives in Curve Sketching
1	24-6	More on Curve Sketching
2	24-7	Applied Maximum and Minimum Problems
Total = 9		

### Differentiation of Transcendental Functions

Hours	Reference	Topic
1	27-1	Derivatives of the Sine and Cosine Functions
2	27-2	Derivatives of the Other Trigonometric Functions
2	27-3	Derivatives of the Inverse Trigonometric Functions
1	27-5	Derivatives of the Logarithmic Function
1	27-6	Applications of Derivatives of the Exponential Function
Total = 7		

### Integration

Hours	Reference	Topic
1	25-1	Differentials
1	25-2	Antiderivatives
1	25-3	The Indefinite Integral
1	25-4	The Area under a Curve
2	25-5	The Definite Integral
1	25-6	Numerical Integration: The Trapezoidal Rule
1	25-7	Simpson's Rule
Total = 8		

### Applications of Integration

Hours	Reference	Topic
2	26-1	Applications of the Indefinite Integral
1	26-2	Area by Integration
1	26-3	Volumes by Integration
Total = 4		

Total Lecture Hours: 28

Total Test Hours: 3

Review and Holidays: 2

Total Hours: 33

**Math Room:** Technologies Centre (TEC) 142, phone: 370-4492. 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).

**Study Time:** It is recommended that between 3 and 6 hours per week (or more for students with a weak background) be spent studying for this course outside of class time.

**Grade Scale:** Final letter grades are normally assigned as follows (subject to the conditions above):

Percentage	Letter Grade
95 to 100	A+
90 to 94	A
85 to 89	A-
80 to 84	B+
75 to 79	B
70 to 74	B-
65 to 69	C+
60 to 64	C
50 to 59	D
below 50	F