

**SYLLABUS**  
**MATH 220 - Calculus II**  
**Framingham State University**  
**Summer 2018**

*Disclaimer: This syllabus is intended to give the student guidance in what may be covered in the course and will be followed as closely as possible. However, the professor reserves the right to modify, supplement and make changes as needs arise.*

**General Information**

**Session:** Summer 2018(May 28th, 2018-June 29th, 2018)

**Credit:** 4

**Teaching Hours:** 50 Hours

**Time:** 2 hours/day, Mon.-Fri.

**Professor Name:** Professor Sandberg

**Title:** Professor Emerita of Mathematics

**Home Institution:** Framingham State University

**Email:** [ssandberg@framingham.edu](mailto:ssandberg@framingham.edu)

**Office Hours:** By appointment

**Content**

This course is the second part of a traditional two semester long sequence with a focus on integration. It will cover single variable integral calculus and its applications.

**Required Textbook**

"Calculus: Early Transcendentals", 10<sup>th</sup> edition by Anton, Bivens and David.

Coverage: Chapters 6 - 7, 9 - 10, Select Sections

**Course Description**

Chapter	Sections	Topic
Chapter 6	6.1 - 6.6	Applications of the Definite Integral
Chapter 7	7.1 - 7.8	Principals of Integral Evaluation
Chapter 9	9.1 - 9.10	Infinite Series
Chapter 10	10.1 - 10.3	Parametric and Polar Curves; Conic Sections

**Course Hours**

The course has 25 sessions in total. Each class session is 120 minutes in length. The course meets from Monday to Friday.

**Prerequisites:**

We assume students are familiar with the standard content of a calculus I course for scientists and engineers. This includes the study of limits, derivatives, optimization of functions of a single variable, using derivatives to sketch graphs, ant derivatives and the method of substitution, definite integrals and Riemann sums, and the fundamental theorem of calculus.

Moreover, they should have studied this material in the context of algebraic, exponential, logarithmic, and trigonometric functions.

**Calculators:** No calculators may be used on tests. Cell phones must be turned off and put away during tests.

**Assignments and Graded Work:**

**Homework:** There will be regular homework assignments. Students are encouraged to work together on the homework problems, but the homework will not be graded. However it is very important to do all the homework

**Attendance and in-class work:** Students are expected to be in class every day for the full class period. Material will be covered very quickly; it will be difficult to catch up, should one fall behind. We will spend some time in class working on problems. Some of this work may be presented or turned in.

**Exams:** There will be four exams and a comprehensive final exam.

**Grading :** The exam average will count 70% of the final grade and the final exam will count 30%. The letter grade will be calculated as follows:

Overall Average Grade	Letter Grade
95 - 100	A
90 - 94	A-
87 - 89	B+
83 - 86	B
80 - 82	B-
77 - 79	C+
74 - 76	C
70 - 72	C-
67 - 69	D+
63 - 66	D
60 - 62	D-
00 - 59	E

**Approximate Day-to-Day Schedule:** This syllabus is subject to change.

	<u>Topics</u>	<u>Textbook Sections</u>
<b>Week 1</b>		
5/28	Area Between Two Curves	section 6.1
5/29	Volumes by Slicing, Disks and Washers	section 6.2
5/30	Volumes by Cylindrical Shells	section 6.3
	Length of a Plane Curve	section 6.4
5/31	Area of a Surface of Revolution	section 6.5
6/1	Work	section 6.6
	Moments, Centers of Gravity, Centroids	section 6.7

### Exam 1

#### Week 2

6/4	Fluid Pressure and Force	section 6.8
	Overview of Integration Methods	section 7.1
6/5	Integration by Parts	section 7.2
6/6	Integrating Trig Function	section 7.3
	Trig Substitutions	section 7.4
6/7	Partial Fractions	section 7.5
6/8	Tables of Integrals	section 7.6

### Exam 2

#### Week 3

6/11	Numerical Integration	section 7.7
6/12	Improper Integrals	section 7.8
6/13	Sequences	section 9.1
6/14	Monotone Sequences	section 9.2
6/15	Infinite Series	section 9.3
	Convergence Tests	section 9.4

### Exam 3

#### Week 4

6/18	Comparison, Ratio and Root Tests	section 9.5
	Alternating Series Convergence	section 9.6
6/19	Absolute and Conditional Convergence	section 9.6
6/20	Maclaurin and Taylor Polynomials	section 9.7
6/21	Maclaurin and Taylor Series, Power Series	section 9.8
6/22	Convergence of Taylor Series	section 9.9

### Exam 4

#### Week 5

6/25	Differentiating and Integrating Power Series	section 9.10
6/26	Parametric Equations	section 10.1
6/27	Polar Coordinates	section 10.2
6/28	More Polar Coordinates	section 10.3
6/29	Review	

## Final Exam

**Exams:** There will be an hour-long, closed-book exam each week. THERE WILL BE NO MAKE-UP EXAMS. In the event that a student misses an exam and presents an acceptable reason to the instructor, the final exam grade will be counted for the missed exam. If you are able to do the homework problems, then you should do well on the exams because the questions on the exams will look very similar to the homework. If they don't, please come and see me right away.

I have frequent exams so that you and I both know how you are doing throughout the semester. If you start doing poorly on the exams, please come and see me so that we can together figure out how you can improve. Don't get behind in this class because it is very difficult to catch up when you do.

**Final Exam:** A comprehensive final exam will be given during the last week.

**Grading:** The exam average will count 70% of the final grade and the final exam will count 30%. The letter grade will be calculated as follows:

Overall Average Grade	Letter Grade
95 - 100	A
90 - 94	A-
87 - 89	B+
83 - 86	B
80 - 82	B-
77 - 79	C+
74 - 76	C
70 - 72	C-
67 - 69	D+
63 - 66	D
60 - 62	D-
00 - 59	E

**Academic Honesty:** I expect that all of your work will be your own. Please see the undergraduate catalog for the college's policy on academic honesty ( <http://www.framingham.edu/undergraduate-catalogs/documents/1011/academic-regulations.pdf> ).

**Blackboard:** There is a blackboard site for this class. Homework assignments, the quiz schedule and your quiz and exam grades will be listed there.