



MATH 220 – Calculus II

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.

Course Information

Semester : July 6, 2020 - August 7, 2020
 Credit : 4
 Teaching Hours : 50 Hours
 Time : 2 hours/day, Mon-Fri
 Professor : Dr. Abdulkeni Zekeria
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Catalog Description

A study of the applications of integration, first-order linear and separable differential equations, techniques of integration, improper integrals, sequences, series, and Taylor and Maclaurin Series. Prerequisite: Completion of MATH 219 Calculus I with a minimum grade of C (2.00) or better.

Objectives

This is the second in the Calculus series. By the end of this course students should be able to:

- * Use different technique of integration
- * Use integrals to find areas, volumes, arc length and surface areas
- * Solve separable differential equation
- * Sketch curves using Parametric equation and polar coordinate
- * Use difference techniques to test for convergence of series

Required Textbook

Calculus - Early Transcendental 8th edition by James Stewart.

Course Hours

The course has 25 sessions in total. Each class session is 120 minutes in length. The course meets from Monday to Friday. Federal regulations dictate that students be required to engage in two hours of work outside of class for each credit hour. So a summer school student is expected to spend 4 hours per day outside the regular classroom reviewing notes, working homework problems and preparing for exams.

Approximate Day-to-Day Schedule

This schedule is subject to change.

Materials to be covered is contained chapters 6 -11.

| Date | Topic | Section | Date | topic | Section |
|------|-------|---------|------|-------|---------|
|------|-------|---------|------|-------|---------|



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|---------|---|--------------|--|-------------|---|--------------|
| July 6 | Area between Curves Volume | 6.1 6.2 | | July 23 | Conic in Polar Coordinate | 10.6 |
| July 7 | Volume by shell method | 6.3 | | July 24 | Sequence Series | 11.1 11.2 |
| July 8 | Work Average of a Function | 6.4 6.5 | | July 27 | Test #3 | |
| July 9 | Integration by Parts Trigonometric Integral | 7.1 7.2 | | July 28 | | |
| July 10 | Trigonometric Substitution Integration of rational functions | 7.3 7.4 | | July 29 | Integral Test Comparison Test | 11.3 11.4 |
| July 13 | Approximate Integration Test # 1 | 7.7 | | July 30 | Alternating Series | 11.5 |
| July 14 | Improper Integral Arc Length | 7.8 8.1 | | July 31 | Absolute convergence | 11.5 11.6 |
| July 15 | Area of a Surface of Revolution Probability | 8.2 8.5 | | August 3 | Strategy for testing Series | 11.7 |
| July 16 | Differential equation Exponential Growth | 9.3 9.4 | | August 4 | Power Series Representation of function | 11.8 11.9 |
| July 17 | Parametric Equations Calculus with Parametric Eq | 10.1 10.2 | | August 5 | Taylor and Maclaurin Series | 11.10 |
| July 20 | Test # 2 | | | August 6 | Application of Taylor Polynomial | 11.12 |
| July 21 | Polar Coordinate Area and length in Polar | 10.3 10.4 | | August 7 | Final Exam | |
| July 22 | Conic Sections | 10.5 | | | | |

General Suggestions

You are strongly recommended to attend classes regularly, take notes and participate in class discussions. Mastery of course work takes less effort if you keep well-organized notes, read your



notes and appropriate sections in the text before and after class. Do as many exercises as you can but at least the assigned ones. You haven't mastered the material of a section unless you are able to do most of the exercises of that section.

You should spend at least two hours studying for this course for every hour we meet.

It is your responsibility to keep up with all the course work and seek help if needed. Remember that studying is hard work. You are encouraged to seek help from your instructor, classmate, friends, and (at first indication of possible difficulty. Comments and / or suggestions from students are always welcome. It is your responsibility to make certain that you receive all assignments, and other information on time. **NO MAKE-UPS AND NO LATE HOMEWORK.**

Assignments: Homework assignment will assign every day.

Tests & Final Exam

Each Monday will have a test. At the end of the semester there will be a comprehensive 2-hour Final Exam.

Homework Grades will be considered as one test. Lowest test will be dropped.

Grade: Final 40% Each test 15 % (Total 60%)

The letter grade will be calculated as follows:

| Points | Value | Scale | Points | Value | Scale | Points | Value | Scale |
|--------|-------|-------|--------|-------|-------|----------|-------|-------|
| 95-100 | 4.0 | A | 80-82 | 2.7 | B- | 67-69 | 1.3 | D+ |
| 90-94 | 3.7 | A- | 77-79 | 2.3 | C+ | 63-66 | 1.0 | D+ |
| 87-89 | 3.3 | B+ | 73-76 | 2.0 | C | 60-62 | 0.7 | D- |
| 83-86 | 3.0 | B | 70- 72 | 1.7 | C- | below 59 | 0.0 | F |

Academic Honesty

I expect that all of your work will be your own. Integrity is essential to academic life.

Consequently, students who enroll at Framingham State University agree to maintain high standards of academic honesty and scholarly practice. They shall be responsible for familiarizing themselves with the published policies and procedures regarding academic honesty.

Academic honesty requires but is not limited to the following practices: appropriately citing all published and unpublished sources, whether quoted, paraphrased, or otherwise expressed, in all of the student's oral and written, technical, and artistic work; observing the policies regarding the use of technical facilities.

Infractions of the Policy on Academic Honesty include, but are not limited to:

1. Plagiarism: claiming as one's own work the published or unpublished literal or paraphrased work of another. It should be recognized that plagiarism is not only academically dishonest but also illegal.
2. Cheating on exams, tests, quizzes, assignments, and papers, including the giving or acceptance of these materials and other sources of information without the permission of the instructor(s).
3. Unauthorized collaboration with other individuals in the preparation of course assignments.
4. Submitting without authorization the same assignment for credit in more than one course.
5. Use of dishonest procedures in computer, laboratory, studio, or field work.



Further clarification on academic honesty will be provided, when appropriate, in individual courses.

6. Misuse of the University's technical facilities (computer machinery, laboratories, media equipment, etc.), either maliciously or for personal gain. Examples include but are not necessarily limited to: (a) accessing the private files of another person or agency without express permission, and (b) the unauthorized use of technical facilities for purposes not connected with academic pursuits. When evidence indicates that a student has improperly used a technical facility, an appropriate supervisor (faculty or staff member) may take appropriate action reflecting the seriousness of the infraction, ranging from a verbal warning to, but not beyond, denial of use of the facility. If coursework may have been plagiarized, the supervisor will also inform all concerned faculty members, who may take action as described in the procedures for handling cases of alleged infractions of academic honesty.

7. Falsification of forms used to document the academic record and to conduct the academic business of the University

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Framingham State University is committed to a policy of non-discrimination, equal opportunity, diversity, and affirmative action. The University is dedicated to providing educational, working, and living environments that value the diverse backgrounds of all people. Furthermore, the Massachusetts Civil Rights Act ("MCRA," M.G.L. c. 12, §§ 11H, 11I, 11J) protects the rights of all residents of and visitors to Massachusetts to be free from bias-motivated threats, intimidation, and coercion that interfere with their civil rights. The MCRA protects the right to attend school, live peacefully, and enjoy other basic rights.

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Please remember that I am here to help you with your work and will gladly make any appropriate arrangements to do just that.

* If change in this schedule is necessary due to unforeseen circumstance, ample notice will be given.

Have an enjoyable and productive summer !!