STUDENT INFORMATION PLAN
MATH 2414
CALCULUS II

INSTRUCTOR: DAY(S):

OFFICE: TIME:

OFFICE HOURS: ROOM NUMBER:

OFFICE PHONE NUMBER: INSTRUCTOR E-MAIL ADDRESS:

TEXT: Calculus, 8th edition, Larson, Hostetler, Edwards

Course Description This course is a continuation of MATH 2413. Topics covered include differentiation and integration of hyperbolic and inverse trigonometric functions, techniques of integration, sequences and series, and applications such as the area between curves. Graphing calculators (TI-83/84 or comparable) are recommended.

Objectives This course is designed to develop an understanding of calculus as it is used in physics, chemistry, engineering, economics, and other subjects. At the same time, mathematics majors and others needing further knowledge of calculus will be able to take MATH 2415 after the completion of this course. The student must demonstrate an understanding of the topics covered in the course through testing.

Course Outline
A. Logarithmic, Exponential, and Other Transcendental Functions
   1. Inverse Trigonometric Functions: Differentiation
   2. Inverse Trigonometric Functions: Integration
   3. Hyperbolic Functions
B. Applications of Integration
   1. Area of a Region Between Two Curves
   2. Volume: The Disc Method
   3. Volume: The Shell Method
   4. Arc Length and Surfaces of Revolution
   5. Work
   6. Moments, Centers of Mass, and Centroids
   7. Fluid Pressure and Fluid Force
C. Integration Techniques, L’Hôpital’s Rule, and Improper Integrals
   1. Basic Integration Rules
   2. Integration by Parts
   3. Trigonometric Integrals
   4. Trigonometric Substitution
   5. Partial Fractions
   6. Integration by Tables and Other Integration Techniques
   7. Indeterminate Forms and L’Hôpital’s Rule
   8. Improper Integrals
D. Infinite Series
   1. Sequences
   2. Series and Convergence
   3. The Integral Test and p-Series
   4. Comparisons of Series
   5. Alternating Series
   6. The Ratio and Root Tests
   7. Taylor Polynomials and Approximations
   8. Power Series
   9. Representation of Functions by Power Series
   10. Taylor and Maclaurin Series
E. Conics, Parametric Equations, and Polar Coordinates
   1. Conics and Calculus
   2. Plane Curves and Parametric Equations
   3. Parametric Equations and Calculus
4. Polar Coordinates and Polar Graphs
5. Area and Arc Length in Polar Coordinates (optional)

**Grading**

**A. Methods of Evaluation**
1. Maple Labs -----------------------------10%
2. Exams -----------------------------------60%
3. Comprehensive Final Exam --------30%

**B. Grading System**

<table>
<thead>
<tr>
<th>Course Average</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90 - 100</td>
<td>A</td>
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<tr>
<td>80 - 89</td>
<td>B</td>
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<tr>
<td>70 - 79</td>
<td>C</td>
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<tr>
<td>60 - 69</td>
<td>D</td>
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<tr>
<td>below 60</td>
<td>W, I, or F</td>
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**Attendance** Regular attendance in class is expected. Any work missed and not completed will affect the grade of the student regardless of the reason for the absence. Your instructor may initiate administrative withdrawal procedures for a student who exceeds course absence standards (6 hours). Withdrawal from class may affect enrollment in other courses, insurance eligibility, financial aid, and/or Veteran’s benefits. It should be noted that ceasing to attend class does not terminate enrollment. Therefore, a student who ceases to attend class without officially withdrawing from that class may receive a failing grade.

**Learning Lab/Library.** The Learning Lab is available to students enrolled in MATH 2414. The Learning Lab and the library have a copy of the *Complete Solutions Guide*, Volumes I, II, and III (complete solutions to all exercises from the text). Videotapes (instructional tapes in a lecture format, feature worked-out examples and exercises taken from each section of the text), may be checked out for 4 days (renewing the checkout is an option as long as there is no request on the waiting list). Tutoring is also offered to students enrolled in MATH 2414 during posted hours.

**Website (college.hmco.com)** Additional text-specific study and interactive features for students can be found at the Houghton Mifflin website.

**Academic Honesty is Assumed.** A student found guilty of scholastic dishonesty is subject to disciplinary action. Violations such as plagiarism, cheating on tests, and collusion are described in the ACC Student Handbook. Consequences are at the discretion of the instructor and range from receiving zero on the assignment/test to failing the course to expulsion from the College.

**Classroom Behavior** It is expected that students will behave in a mature and courteous manner. Disruptive behavior during class will not be tolerated. Students are expected to be attentive, take notes, ask pertinent questions, arrive on time, and not leave until the class is dismissed. Conflicts which arise between the scheduled class time and the student’s personal schedule must be resolved by the student.

**Camcorders.** Camcorders and any other video recording devices are prohibited in the classroom. Audio recording may be allowed ONLY WITH THE PERMISSION OF THE INSTRUCTOR.

**Cellular phones** Cell phones are not to be used and are not to ring during class. Cell phones are not to be out during tests. If there are special circumstances, arrangements must be made with the instructor.

**ADA Compliance.** This college will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the policy of ACC to provide reasonable accommodations for qualified individuals who are students with disabilities. It is the student’s responsibility to contact the Counseling Center in a timely manner to arrange for appropriate accommodations.