El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Mathematics**
COURSE RUBRIC AND NUMBER	**MATH 2314**
COURSE TITLE	**Calculus II**
COURSE CREDIT HOURS	**3 3 0**
	Credits Lec Lab

I. Catalog Description

Continues MATH 2413. Presents the applications of the definite integral in geometry, special methods of integration, infinite series, and polar coordinates. **Prerequisite: MATH 2413 with a "C" or better. (3:0).**

II. Course Objectives

Upon satisfactory completion of this course the student will be able to:

A. Unit I Solids of revolution
1. Find volumes of solids using the slicing, disk, shell method.
2. Find the length of arcs.
3. Find the area of surfaces of revolution.

B. Unit 2 Techniques of Integration.
1. Solve indefinite and definite integrals of special integral forms.
2. Solve integrals involving trigonometric functions.
3. Solve integrals with trig substitutions.

C. Unit 3 Differential Equations
1. Solve improper integral forms.
2. Solve basic differential equations.
3. Model real-life problems using differential equations.

D. Unit 4 Sequences and Series
1. Identify convergent and divergent sequences and series.
2. Generate Taylor Polynomials, integrate and differentiate them.
3. Generate series approximations for various functions.

E. Unit 5 Conic sections in polar coordinates
1. Interchange functions between polar and rectangular form.
2. Graph conics from polar form.
3. Find area in polar function form.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:
1. Use the concepts of definite integrals to solve problems involving area, volume, work, and other physical applications.
2. Use substitution, integration by parts, trigonometric substitution, partial fractions, and tables of anti-derivatives to evaluate definite and indefinite integrals.
3. Define an improper integral.

4. Apply the concepts of limits, convergence, and divergence to evaluate some classes of improper integrals.
5. Determine convergence or divergence of sequences and series.
6. Use Taylor and MacLaurin series to represent functions.
7. Use Taylor or MacLaurin series to integrate functions not integrable by conventional methods.
8. Use the concept of polar coordinates to find areas, lengths of curves, and representations of conic sections.

IV. Evaluation

A. Unit Exams

There will be at least three in class exams (100 points each).

B. Classwork Grade

There may be an additional grade based on a composite of classwork, homework, and pop tests. For details refer to the Instructor's Course Requirements.

C. Final Exam

There will be a comprehensive in class final exam given at the end of the semester during the regularly scheduled final exam time.

D. Grade Computation

Final course letter grades will be assigned on the basis of the average as indicated below:

A	90-100
B	80-89
C	70-79
D	60-69
F	Below 60 or for cheating

Note I and **W** grades will be assigned whenever the appropriate assignments and deadlines have been met. To receive an I, the students must have completed at least 80% of the course with at least a 75 average. The proper forms must also be signed by both the student and the instructor before being submitted to the registrar.

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.