COLLEGE OF THE MARSHALL ISLANDS

COURSE OUTLINE

CIP No. 27.0103

Math 201 Calculus I

Course Description
Provides a standard introduction to differential and integral calculus, and covers topics ranging from functions and limits to derivatives and their applications, definite and indefinite integrals, and the fundamental theorem of calculus.

Course prepared by: STEM Department October 2013

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Hours per Week</th>
<th>Number of Weeks</th>
<th>Total Hours</th>
<th>Credits</th>
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<tr>
<td></td>
<td>4</td>
<td>16</td>
<td>64</td>
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Total Credit Hours 4

Purpose of Course: Degree Requirement
Degree Elective X
General Education
Certification
Developmental
Other

Prerequisite(s) C or better in MATH 110 and MATH 120 and permission by instructor or C or better in MATH 140 and permission by instructor

Signature, Chair Curriculum and Assessment Committee
Date

Signature, Dean of Academic Affairs
Date

Signature, Vice President of Academic and Student Affairs
Date

Last date reviewed or revised
CIP No. 27.0103

I. Calculus I

II. Course Outcomes

A. General Learning Outcomes

The student will:

1. Define the limit of a function, and use algebraic techniques to evaluate limits (LA 3, 4)
2. Define derivatives, and use the definition to differentiate functions (LA 3, 4)
3. Demonstrate the applications of differentiation (LA 3, 4)
4. Evaluate definite and indefinite integrals of functions (LA 3, 4)

B. Student Learning Outcomes

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

1. Evaluate a one-sided limit and limits at infinity
2. Differentiate trigonometric functions, general and natural exponential and logarithmic functions, and implicitly differentiate two-variable equations
3. Recognize how derivatives affect the shape of a graph of a function, and identify the maximum and minimum values of a function
4. State the basic properties of definite integrals, and recognize the connection between integral calculus and differential calculus by application of the fundamental theorem of calculus

III. Course Content

This course provides a standard introduction to differential and integral calculus.

1. Review of functions.
2. Limits and derivatives.
3. Rules for differentiation.
4. Applications of differentiation.
5. Integrals.

IV. Methods of Instruction

1. Lecture
2. Demonstration
3. Discussion
4. Small group activities
5. Classroom activities
6. Supervised practice

V. Equipment and Materials

1. Graphing calculators and/or scientific calculators
2. Laptop and projector
VI.  Suggested Methods of Evaluation

1. Homework assignments
2. Class participation
3. In-class activities
4. Projects
5. Quizzes
6. Exams

Letter grades will be assigned per CMI Grading System.