Course Title: Calculus I

Submitted By: Math Dept-Pavek/Jurgens

Semester Course Prefix and Number: MATH 1561
Old Quarter Course Prefix and Number: MATH 121

Approval Date: 11/12/19
Revision Date: Oct 2019

Number of Credits: 5
Number of Lecture Credits: 5
Number of Lab Credits: Number of Lab Hours:
Number of Studio/Demonstration/Internship Credits:

Semester(s) Offered: F, Sp
Class Size: 35
Negotiated by AASC on: (date)

Course Purpose Code:

- 0 – Developmental Courses
- 1 – Non-transferable
- 2 – Technical course related to career programs
- 3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
- 4 – Other college course not considered a part of MNTC (e.g. computer science, health, physical education)
- X 5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
- 6 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:
This course examines limits, continuity, fundamentals of differentiation and integration of functions of one variable, and applications of differentiation and integration.

Prerequisites and/or recommended entry skills/knowledge:
Course Prerequisite(s):
Reading Prerequisite:
Composition Prerequisite:
Mathematics Prerequisite: MATH 1521 (or previous MATH 117 or MATH 119) and MATH 1547, or satisfactory math placement scores

Career Programs and Transfer Majors Accessing this Course:
The course is intended for math and science majors, students in pre-professional curriculums (such as pre-engineering, pre-medicine, pre-pharmacy), and would be an added advantage in other curriculums (such as business), though it is not required.

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:
(Notes: No more than two goals may be met by any one course. AASC review and the Chief Academic Officer’s approval are required.)
0. None 6. The Humanities and Fine Arts
1. Communications 7. Human Diversity
2. Critical Thinking 8. Global Perspectives
3. Natural Sciences 9. Ethical and Civic Responsibility
5. History and the Social and Behavioral Sciences
**Learning Outcomes:** (including any relevant competencies listed in the Minnesota Transfer Curriculum)

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

- Apply rules of differentiation to algebraic and trigonometric functions.
- Apply rules of integration to algebraic and trigonometric functions.
- Apply high-order problem solving and modeling strategies for related rate problems, optimization problems, and integration applications.
- Communicate mathematically.

**Student Assessment Methods May Include:**
Will be determined by the Instructor.

**Use of Instructional Technology May Include:** (includes software, interactive video and other instructional technologies):
Students are encouraged to use graphing calculators. (TI-89 recommended but not required.)

**Additional Special Information:** (special fees, directives on hazardous materials, etc.)

**Transfer Information:** (Please list colleges/majors that accept this course in transfer.)

**Affiliated Mesabi Range College Courses and Programs:**

**Approvals:**

<table>
<thead>
<tr>
<th>Body</th>
<th>Representative Signatures</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Association</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Affairs Standards Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chief Academic Officer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Distribution:** Original – Instructional Services

**Copies:** Transfer Specialist, Originating Faculty Member, Records

**Revised:** February 2019