

# MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

## Course Outline

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<b>Course Title:</b> Survey of Calculus	<b>Submitted By:</b> Math Dept.
<b>Semester Course Prefix and Number:</b> MATH 1556	<b>Approval Date:</b> January 2013
<b>Old Quarter Course Prefix and Number:</b> MATH 120	<b>Revision Date:</b> December 2012
<b>Number of Credits:</b> 4	<b>Number of Lecture Credits:</b> 4
<b>Semester(s) Offered:</b>	<b>Number of Lab Credits:</b> <b>Number of Lab Hours:</b>
<b>Class Size:</b> 35	<b>Number of Studio/Demonstration/Internship Credits:</b>
<b>Negotiated by AASC on:</b> (date)	

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### 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)
- 5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
- 9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

### Catalog Description:

This course is offered for those wishing a brief survey of calculus including some integration. This course will include a review of real numbers, graphing, functions, and inequalities. There will be an introduction of limits, continuity, differentiation, and integration, application of differentiation and integration from physics, business, social and behavioral sciences, logarithmic and exponential functions with applications of growth, decay, interest, and populations. Students planning to enroll in more than one semester of calculus should begin with Calculus (MATH 1561).

### Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): None  
Reading Prerequisite: None  
Composition Prerequisite: None  
Mathematics Prerequisite: MATH 1521 (or previous course MATH 117) or appropriate test score (offered alternate years)

### Career Programs and Transfer Majors Accessing this Course:

This course is designed for students with majors that require a one-semester survey of calculus course, such as business, social and behavior sciences, or economics.

### 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.)

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| 0. <input type="checkbox"/> None   | 6. <input type="checkbox"/> The Humanities and Fine Arts     |
| 1. <input type="checkbox"/> Communications                                 | 7. <input type="checkbox"/> Human Diversity                  |
| 2. <input type="checkbox"/> Critical Thinking                              | 8. <input type="checkbox"/> Global Perspectives              |
| 3. <input type="checkbox"/> Natural Sciences                               | 9. <input type="checkbox"/> Ethical and Civic Responsibility |
| 4. <input checked="" type="checkbox"/> Mathematical/Logical Reasoning      | 10. <input type="checkbox"/> People and the Environment      |
| 5. <input type="checkbox"/> 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:

- Demonstrate proficiency in differentiating and integrating algebraic functions.
- Demonstrate proficiency in differentiating and integrating logarithmic functions.
- Demonstrate proficiency in differentiating and integrating exponential functions
- Demonstrate proficiency in solving applications problems using differentiation and integration.

**Student Assessment Methods:**

Tests, daily assignments, and group projects, and a final exam

**Use of Instructional Technology:** (includes software, interactive video and other instructional technologies):

Students will be encouraged to use graphing calculators and one of the available math software: Derive, Maple, or Mathematica.

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

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

This course transfers to schools that have either a short course in calculus or a survey or calculus course in their curriculum

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

**Approvals:**

Body	Representative Signatures	Date
Faculty Association		
Academic Affairs Standards Committee		
Chief Academic Officer		

**Distribution:** Original – Instructional Services  
**Copies:** Transfer Specialist, Originating Faculty Member, Records  
**Revised:** December 2012