

# MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

## Course Outline

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<b>Course Title:</b> Calculus II	<b>Submitted By:</b> Math Dept.
<b>Semester Course Prefix and Number:</b> MATH 1562	<b>Approval Date:</b>
<b>Old Quarter Course Prefix and Number:</b> MATH 122	<b>Revision Date:</b> December 2012

  

<b>Number of Credits:</b> 5	<b>Number of Lecture Credits:</b> 5	
<b>Semester(s) Offered:</b> Spring	<b>Number of Lab Credits:</b> 0	<b>Number of Lab Hours:</b> 0
<b>Class Size:</b> 35	<b>Number of Studio/Demonstration/Internship Credits:</b> 0	

Negotiated by AASC on: (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 a continuation of the study of Calculus, including differentiation and integration of the Transcendental functions: logarithmic, exponential, inverse trigonometric, hyperbolic, and inverse hyperbolic. This course covers techniques of integration, infinite series, conic sections, parameterized curves and polar coordinates.

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

Course Prerequisite(s):

Reading Prerequisite:

Composition Prerequisite:

Mathematics Prerequisite: Grade of "C" or better in MATH 1561 (or previous MATH 122)

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

This course will be required for pre-engineering and math majors. It is recommended for pre-medicine, pre-veterinary, and pre-pharmacy.

### 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. Curriculum Committee 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:

- Differentiate transcendental functions
- Integrate transcendental functions
- Integrate using the method of Partial Fractions
- Graph and analyze conic sections in Cartesian, Polar, and Parametric form

**Student Assessment Methods:**

Homework Assignments  
Classroom participation  
Exams and quizzes

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

The use of a TI-89 calculator is highly 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.)  
This course transfers to all public and private colleges except the military academies.

**Course Outline Revision History:**

**Approvals:**

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

**Distribution:** Original – Instructional Services  
**Copies:** Transfer Specialist, Originating Faculty Member, Records  
**Revised:** March 2010