Course Title: Differential Equations and Linear Algebra
Submitted By: S. Jurgens
Semester Course Prefix and Number: MATH 2544
Approval Date: 6/2018
Old Quarter Course Prefix and Number: 
Revision Date: 6/2018

Number of Credits: 4
Number of Lecture Credits: 4
Number of Lab Credits: 0
Number of Lab Hours: 0
Number of Studio/Demonstration/Internship Credits: 
Semester(s) Offered: Fall
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.
9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:
This course covers ordinary differential equations with emphasis on solution techniques and applications. It includes first-order equations, linear equations of higher-order, Laplace Transforms, infinite series methods, and systems of differential equations. In the linear algebra component, it includes matrices, systems of linear algebraic equations, and determinants.

Prerequisites and/or recommended entry skills/knowledge:
Course Prerequisite(s):
Reading Prerequisite:
Composition Prerequisite:
Mathematics Prerequisite: Calculus II

Career Programs and Transfer Majors Accessing this Course:

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
1. Communications
2. Critical Thinking
3. Natural Sciences
4. X Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment
Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

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

- Solve systems of equations using several techniques
- Apply the appropriate method to an equation involving derivatives to find the general solution or specific solution with initial conditions
- Apply the techniques to situational problems.

Student Assessment Methods:
Graded Exams and Homework

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):
TI-89 or Voyage 200

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:
IRE (Itasca Community College)

Approvals:

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<td>Faculty Association</td>
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Distribution: Original – Instructional Services
Copies: Transfer Specialist, Originating Faculty Member, Records
Revised: December 2012