

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Fundamentals of Solid Modeling
Semester Course Prefix and Number: ENGR 1345
Old Quarter Course Prefix and Number:

Submitted By: Wm. Parker
Approval Date:
Revision Date: December 2013

Number of Credits: 3
Semester(s) Offered: Fall 30
Class Size:
Negotiated by AASC on:
(date)

Number of Lecture Credits: 1
Number of Lab Credits: 2
Number of Studio/Demonstration/Internship Credits: 0
Number of Lab Hours: 4

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 introduces the fundamentals of graphical communication for design and manufacturing with modern solids modeling software. Topics include basic 3D geometry construction, drawings, assemblies, parametric modeling, and geometric dimensioning and tolerancing.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): None
Reading Prerequisite: College Level
Composition Prerequisite: College Level
Mathematics Prerequisite: None

Career Programs and Transfer Majors Accessing this Course:

A.S. Engineering Degree

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. 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:

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

- Explain and perform necessary math functions
- Read Blueprints to determine dimension of parts shown
- Generate basic blueprints by drawing, sketching or using CAD software
- Design and manufacture course projects using CNC machinery

Student Assessment Methods:

Tests and hand-on projects.

Use of Instructional Technology:

CAD software for design, 3D modeling and manufacturing projects using CNC machines such as a Plasma Cutting Table and a Laser Engraver.

Additional Special Information:

None

Transfer Information:

This course is accepted by Iron Range Engineering as well other Engineering **schools**

Affiliated Mesabi Range College Courses and Programs:

A.S. Engineering Degree

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
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