## Course Outline

**Course Title:** Computer Aided Design  
**Submitted By:** Scott Norcia  
**Semester Course Prefix and Number:** ECM 2295  
**Old Quarter Course Prefix and Number:**  
**Number of Credits:** 2  
**Number of Lecture Credits:** 0  
**Number of Lab Credits:** 2  
**Number of Lab Hours:** 4  
**Number of Studio/Demonstration/Internship Credits:** 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:
The course is a "Hybrid" or "Blended" course with the majority of the learning environment traditional in-class lectures and hands-on lab work which also includes Web-based learning activities to complement face-to-face work. This course covers the fundamentals of computer-aided design. Basic drawing commands are covered and understanding is reinforced through hands on drawing exercises. The content will be focused on drawing electronic, electrical, loop sheets and P&ID diagrams. The proper procedures for file management and printing/plotting of completed work are also covered.

### Prerequisites and/or recommended entry skills/knowledge:
- **Course Prerequisite(s):** None
- **Reading Prerequisite:** None
- **Composition Prerequisite:** None
- **Mathematics Prerequisite:** None

### Career Programs and Transfer Majors Accessing this Course:
- Electrical Controls and Maintenance Diploma
- Electrical Controls and Maintenance AAS

### 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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Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

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

1.) Utilize the AutoCAD user interface.
2.) Utilize the basic AutoCAD drawing commands.
3.) Create two dimensional electrical diagrams.
4.) Manage AutoCAD drawing files.
5.) Layout and Plot AutoCAD drawings.

Student Assessment Methods:

Lab assignments, worksheets, papers, and tests.

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

Power Point Software and AutoCAD LT2004

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

Laptop Computer Lease and Required Tool List

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

None

Affiliated Mesabi Range College Courses and Programs:

Approvals:

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