MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty is required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. _____ Agri ______ COURSE NUMBER: _____ 2222 ______

NUMBER OF CREDITS: 3

COURSE TITLE: Current Technical Competencies

CATALOG DESCRIPTION:
Introduces instructional and laboratory experiences to learners that are preparing for a career as an Agricultural Education teacher. The course will include laboratory experiences in basic mechanical and technical competence for manufacturing and workshop mechanics. Competency will be expected in a wide variety of skills including, but not limited to welding, small engines, fluid power, hydraulics and pneumatics. Teaching and learning strategies will demonstrate research based best practices that are proven effective in teaching manufacturing and mechanical technologies to high school students.

AUDIENCE: Students pursuing a 4 year degree in Agricultural Education along with those interested in gaining an understanding of basic shop techniques.

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area: by meeting the following competencies:
Area: by meeting the following competencies:
Area: by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:
None

LENGTH OF COURSE:
One Semester

THIS COURSE IS USUALLY OFFERED:
Every other year [ ] fall [ ] spring [ ] summer [ ] undetermined x [ ]

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. To analyze the physical properties of metals used in fabrication
   b. To demonstrate safe and effective welding procedures
   c. To develop an understanding of hydraulic, fluid, and pneumatic power
   d. To demonstrate an understanding of small gasoline engines
2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. Identification of proper use of laboratory tools and equipment.
   b. Analysis of a laboratory facility layout.
   c. Recognition of quality finished shop laboratory projects.
   d. Development of mechanical and technical aptitudes and skills.
   e. Development of the ability to make appropriate judgment decisions in the laboratory.

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Interactive lectures and laboratories.
   b. Demonstration of proper use of tools to classmates

4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. Working with others in small groups or partners in the laboratory setting

TOPICS TO BE COVERED:
   1. Laboratory Management
   2. Laboratory Tools
   3. Small Engine Mechanics
   4. Welding Fundamentals
   5. Fluid Power
   6. Hydraulics / Pneumatics

COURSE LEARNING OUTCOMES (GENERAL):
To gain an overall knowledge and appreciation for mechanical and technical competencies in the laboratory setting relating to welding, small gasoline engines, fluid power, hydraulics and pneumatics.

STUDENT LEARNING OUTCOMES (SPECIFIC):
   1. Develop a safe attitude and ability to safely learn in a laboratory setting
   2. Identify, use, maintain and repair tool and equipment in the laboratory setting
   3. Analyze a laboratory facility layout, including work zones, safety considerations, first aid stations, and fire extinguishers
   4. Understand, interpret and incorporate the underlying principles and practices in mechanical / technological processes
   5. Analyze the physical properties of metals used in fabrication.
   6. Demonstrate safe and effective use of welding techniques.
   7. Develop an understanding of and appreciation for mechanical processes in the areas of power and welding.
   8. Identify skills exhibited by a mechanical / technical craftsperson.
   10. Develop self-confidence in mechanical/technical aptitudes and skills.
   11. Develop the ability to make appropriate judgement decisions in the laboratory.
   12. Utilize authentic teaching / learning strategies and assessments.
LEARNING/TEACHING TECHNIQUES used in the course are:
- Collaborative Learning
- Problem Solving
- Student Presentations
- Interactive Lectures
- Creative Projects
- Individual Coaching
- Lecture
- Films/Videos/Slides
- Demonstrations
- Other (describe below)
- Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
- Reading
- Tests
- Oral Presentations
- Individual Projects
- Textbook Problems
- Worksheets
- Collaborative Projects
- Group Problems
- Papers
- Other (describe below)
- Term Paper

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

The information in this course outline is subject to revision.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

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Revised 10/1/16