CASPER COLLEGE COURSE SYLLABUS
ROBO 2690 Robot Welding

Semester/Year: Spring 2016

Lecture Hours: 2  Lab Hours: 2  Credit Hours: 3

Class Time: 6:00-9:50 p.m  Days: Th  Room: GW 103

Instructor’s Name: Tim Copper

Instructor's Contact Information:  Office: GW 116D
    Office Phone: 268-2539  Email: mgraaham@caspercollege.edu

Office Hours: M, T, W, TH 12:00-1:00 p.m.  M, W 5:00– 6:00 p.m.

Course Description:
Students will learn the fundamentals of safely programming a robot for welding applications.

Statement of Prerequisites:
ROBO 2590 or WELD 1770 or permission of the instructor

Institutional Outcomes:
☐ Demonstrate effective oral and written communication
☐ Use the scientific method
☐ Solve problems using critical thinking and creativity
☐ Demonstrate knowledge of diverse cultures and historical perspectives
☐ Appreciate aesthetic and creative activities
☐ Use appropriate technology and information to conduct research
☐ Describe the value of personal, civic, and social responsibilities
☐ Use quantitative analytical skills to evaluate and process numerical data

Program Goals:
1. To provide comprehensive training in the field of robotics technology, so that the associate degree and certificate graduates are technically qualified to obtain employment in the robotics industry or an allied field.
2. To provide the necessary training for graduates to continue on to advanced training in robotics technology in an advanced Robotics Technology program.
Course Goals:
Students will be able to safely program a robot for welding applications.

Course Objectives:
On successful completion of the course, students will be able to
1. Operate a robot safely
2. Calibrate a robot
3. Program basic robot motions
4. Program basic weld operations
5. Program a robot to weld a complete project

Methodology:
The course consists of 2 lectures and 2 lab hours once per week. In the lecture, students will learn safe robot operations, proper calibrations and programming instructions. The lab will be used to practice operating, calibrating and programming the robot for welding operations. Students will be required to perform all of the class activities, which will require attending all class sessions. Absences will result in lost points and possibly a failing grade. There are two tests and one project where students will demonstrate competency in safe robot programming.

Evaluation Criteria:
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Labs</td>
<td>30</td>
</tr>
<tr>
<td>HW</td>
<td>10</td>
</tr>
<tr>
<td>Tests</td>
<td>40</td>
</tr>
<tr>
<td>Project</td>
<td>20</td>
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<td>Total</td>
<td>100</td>
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Required Text, Readings, and Materials: None

Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade:
April 14, 2016

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

Academic Dishonesty: (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are
responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

**ADA Accommodations Policy:** If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college’s Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

**Safety:** Personal and equipment safety standards will be strictly enforced. It is the individual’s responsibility to develop a safe work attitude.
Calendar or schedule indicating course content:

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Lab</th>
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</thead>
</table>
| 1    | Robot Safety  
Introduction to the Robot System  
Jogging the Robot | EX 1: Jogging and Mastering the Robot |
| 2    | Motion Instructions | EX 2: Move J, Move L, Move C |
| 3    | Changes to a program | EX 3: Motion Program |
| 4    | Tool Calibration: TCP | EX 4: Tool Calibration |
| 5    | Work Object Calibration | EX 5: Work Object Calibrations |
| 6    | **Test1: Calibrations** | **Test1: Calibrations** |
| 7    | Welding Safety  
Welding Instructions | EX 6: WeldData |
| 8    | Welding Instructions | EX 6: WeldData |
| 9    | Welding Instructions | EX 7: SeamData and WeaveData |
| 10   | Welding Instructions | EX 7: SeamData and WeaveData |
| 11   | Robot Welding Program | EX 8: Welding Program 1 |
| 12   | Robot Welding Program | EX 9: Welding Program 2 |
| 13   | Welding Projects | Welding Projects |
| 14   | Welding Projects | **Test 2: Welding** |
| 15   | Welding Projects | **Test 2: Welding** |

Final as scheduled