

CASPER COLLEGE COURSE SYLLABUS

**ELTR 1750, 01**

**Electronic Design & Fabrication**

<b>Semester/Year: Fall 2015</b>		
<b>Lecture Hours: 1</b>		
<b>Lab Hours: 2</b>		
<b>Credit Hours: 2</b>		
<b>Class Time: 1-3:50 PM</b>		
<b>Days: T</b>		
<b>Room: GW 207</b>		
<b>Instructor's Name: David Arndt</b>		
<b>Instructor's Contact Information:</b>		
<b>Office Phone: (307) 268-2521</b>		
<b>Email: darndt@caspercollege.edu</b>		
<b>Office Hours: M, W 8-8:50 AM</b>		
<b>M, W, F : 9-9:50 AM</b>		
<b>Course Description:</b>		
A course using industrial processes to design and fabricate electronic circuitry. Topics include: computer generated schematic design and industrial soldering techniques.		
<b>Statement of Prerequisites: None.</b>		
<b>Goal:</b>		
Upon completion of this course, the student will:		
1. Read schematic diagrams and design circuit diagrams using Multisim electronic design software.		
2. Practice industrial soldering techniques.		

**Outcomes:**

The student will:

1. Read schematics and layout simple schematic diagrams using, the electronic design software, Multisim.
2. Solder and de-solder electronic components on through-hole and surface mounted printed circuit boards.
3. Use soldering techniques to splice electrical cables.
4. Build a electronic multi-meter from a kit.

**Methodology:**

This course is set up for 3 hours a week of lecture/lab over a 15-week period. The individual assignments will be completed within a specified time frame. Lectures and demonstrations will be given concurrently with each assignment and ample time will be given for questions and one on one instruction. Your feedback is valuable as the instructor uses course evaluations in determining course methodology.

**Evaluation Criteria:**

Student evaluation will be based throughout the course on performance of the individual assignments. The grading will be based on established norms of design and the quality of work. The assignments are due on the date of completion. The schematic design will be 50% of the final grade and the assignments on soldering and building the multimeter will be 50% of the final grade.

**Attendance** is essential, if the student is going to be absent from class arrangements should be made with the instructor before class. Assignments that are late due to absences will be dropped by one letter grade per class.

The student's grades will consists of the following:

Schematic design: average of 3 to 4 labs	= 50%	= 100 points
<u>Soldering: average of 4 labs</u>	<u>= 50%</u>	<u>= 100 points</u>
Total	= 100%	= 200 points

<u>Course Grading Scale:</u>	<u>Lab grading scale</u>
200 – 180 points = A	100-90 = A
179 – 160 points = B	89–80 = B
159 – 140 points = C	79-70 = C
<u>139 – 120 points = D</u>	<u>69-60 = D</u>
129 – 0 points = F	59-0 = F

**Casper College may collect samples of student work demonstrating achievement of the above**

**outcomes. Any personally identifying information will be removed from student work.**

**Required Text, Readings, and Materials:**

Safety glasses, one Flash Drive, small needle nose pliers, small side cutters

**Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade:**

Please refer to the current Casper College Catalog.

**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.

**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](mailto: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.

**Calendar or schedule indicating course content:**

Topic Outline

<u>Week</u>	<u>Topic</u>
1	Through hole soldering techniques
2	Through hole soldering techniques
3	De-soldering electronic components for through hole circuit boards
4	De-soldering components
5	Surface mount soldering
6	Cable splicing
7	Building a multi-meter
8	Building a multi-meter
9	Testing the multi-meter
10	Overview of Multisim software
11	Multisim, Lab 1
12	Multisim, Lab2
13	Multisim, Lab 2
14	Multisim, Lab3
15	Multisim, Lab3
16	Multisim, Lab4