Semester/Year: Fall 2006
Lecture Hours: 0  Lab Hours: 4  Credit Hours: 2
Lab Time: 6:00 - 9:50 p.m.  Day: M  Room: EI-114

Instructors’ Names: Chad Sharpe and Megan Graham

Instructors' Contact Information:
Office Phone: Megan Graham 268-2539
Chad Sharpe

Email: mgraham@caspercollege.edu
Chad_Sharpe@ncsd.k12.wy.us

Office Number: Megan Graham EI 119

Office Hours:Posted

Course Description: The principles of robotics will be explored by building a kit robot, programming the robot, and modifying the robot. Students will gain experience in the following areas: fabrication, electronics, computer programming, physics, and teamwork.

Statement of Prerequisites: None

Outcomes:
1. Working knowledge of fundamentals of a robot.
2. Design and construction of a robot.
3. Modifying robots to perform other tasks.
4. Development of team building skills.

Methodology: Students will be given written and verbal instructions to do assigned tasks during the laboratory time.

Evaluation Criteria: Grade is based on participation and projects.
Activities 40%
Q & A 25%
Mini Robot Project 25%
Teamwork 10%

Final grade for course is on the following scale:
90%-100% A
80%-89% B
70%-79% C
60%-69% D
00%-59% F
Required Text, Readings, and Materials:
Safety Glasses
Notebook
Pencil

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

Class Policies:
Makeup work will require prior notice or a written excuse for not being present. You will be working as part of a team. Your value to the team will be measured in how much you contribute to your team.

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 in order to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take your problem through the appropriate chain of command starting with the department head, then the division chair, 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.

ADA Accommodations Policy: It is the policy of Casper College to provide appropriate accommodations to any student with a documented disability. If you have a need for accommodation in this course, please make an appointment to see me at your earliest convenience.

Safety: Personal and equipment safety standards will be strictly enforced. It is the individual’s responsibility to develop a safe work attitude.
<table>
<thead>
<tr>
<th>Wk</th>
<th>Activity</th>
</tr>
</thead>
</table>
| 1   | Introduction to Robotics  
                  Video of USFirst 2006  
                  Project Design Slide Show |
| 2   | Labor Day Holiday |
| 3   | Small Robot Project Presentation  
                  Mechanical and Pneumatic Systems Presentation and Lab  
                  Technical Groups:  
                      Programming Techs – Webpage update and brochure  
                      Drafting Techs – Preliminary platform designs  
                      Mechanical Techs – Shafts for wheels  
                      Pneumatics Techs – Preliminary arm design |
| 4   | DC Electrical Systems and DC Motor Presentation  
                  Electrical Techs – Test motors, electrical parts layout, soldering lab  
                  Programming Techs – Familiarity with large robot programming  
                  Drafting Techs – Platform design for welder  
                  Mechanical Techs – Shafts and gears for wheels and chain  
                  Pneumatics Techs – Pneumatics linkage  
                  Community Techs – finish brochure and Robotics Club |
| 5   | Divide Techs into Teams:  
                  Begin design of robot – work with drafting techs  
                  Parts list for robots  
                  Programming Techs – Familiarity with small robot programming |
| 6   | Finish platform designs for welder  
                  Programming Techs – Animation software or Vision software |
| 7   | Begin drive system assembly  
                  Programming Techs – Animation software or Vision software |
| 8   | Build drive system on platform  
                  Programming Techs – Animation software or Vision software |
| 9   | Fall Break Holiday |
| 10  | Program drive system and test |
| 11  | Redesign of drive system |
| 12  | Design arm and build arm |
| 13  | Program and test arm |
| 14  | Redesign arm |
| 15  | Competition |
| 16  | Clean-Up |