EGR 198
Seminar in Robotics

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Program Head: Richard Clark

Revised: Semester/Year

Dean's Review:

EGR 198
Seminar in Robotics

COURSE OUTLINE

Prerequisites:

None

Course Description:

Students are required to design, construct, and build an autonomous robot for VWCC's fall autonomous robotics competition.

Semester Credits: 1 **Lecture Hours:** 1 **Lab/Recitation Hours:** 1

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Course Outcomes

At the completion of this course, the student should be able to:

1. Construct, program, and test a robot.

2. Use CAD to design the components of a robot.

3. Write a technical report for an engineering design project.

4. Give a technical presentation for an engineering design project.

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Required Materials:

None

Textbook:

Parallax Boe-Bot Robotics Manual found at:

http://www.parallax.com/Portals/0/Downloads/docs/books/edu/Roboticsv2_2.pdf

Robotics PBASIC Editor Software found at:

http://www.parallax.com/tabid/441/Default.aspx

If using the Parallax Activity-Bot Robot based on the Propeller chip, the Manual is found online at:

http://learn.parallax.com/ActivityBot

The programming tool for the Propeller chip, SimpleIDE, can be installed from Parallax, using:

http://learn.parallax.com/propeller-c-set-simpleide

The Ardunio software can be downloaded at:

http://arduino.cc/en/Main/Software

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Topical Description:

Week #	Week of:		Topic	Parallax PBASIC Chapter
1	August	18	Introd to Engineering, Computer Basics Review	
2		25	Introduction to the Boe-Bot Robot	1
3	September	1	Servo Motors	2
4		8	Assembly & Test Boe-Bot, Team Assignments	3
5		15	Boe-Bot Navigation, Eng. Communication	4
6		22	Tactile Sensors	5
7		29	Phototransistors	6
8	October	5	Infrared Sensors	7
9		12	Distance Detection	8
10		19	Line Following	On-Line
11		26	Design, Construction, Testing	
12	November	3	Design, Construction, Testing	
13		10	Design, Construction, Testing	
14		17	Design, Construction, Testing	
15		24	Design, Construction, Testing	
16	December	1	Competition, December 6	
17		7	Finals	

If using Parallax Activity Bot (Propeller chipset) or Ardunio robot kits which use the C or C++ programming language instead of the Parallax Boe-Bot robot kit which uses the PBASIC language, equivalent chapters should be covered on the same schedule.

The autonomous robot competition is tentatively schedule to be held December 6th , 2014, and is attendance by all students is mandatory.

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Notes to Instructors

1. All instructors teaching this course will use the same robotics platforms, either Parallax Boe-Bot (PBASIC), Parallax Propeller (C++) or Ardunio(C++).

2. Course content within this course may be covered at the instructor's discretion but with all topics being understood.

3. This course and its grades will be structured primarily around the final design project for the fall VWCC Autonomous Robotics competition.

4. Quizzes should be given periodically during the semester to test students' understanding of programming.

5. At the end of the semester, all instructors will give the outcome assessment as it relates to the design project to the program head at the same time they prepare their student final grades.