SAAST Robotics

Syllabus-Summer 2012

Instructors:
Dr. Jonathan Fiene (Lead)
Lecturer and Director of Laboratory Programs, MEAM (fiene@me.upenn.edu)
Rebecca Stein
GRASP Associate Director, Research and Educational Outreach (restein@seas.upenn.edu)
Ian McMahon
Teaching Assistant
Nikolay Vladimirov
Teaching Assistant

Course Description: The purpose of this course is to provide an introduction to robotics technology.
The course ties together engaging classroom discussions on a variety of topics including sensing,
actuation, control, and embedded programming with a rigorous series of laboratory exercises and
projects to provide hands-on experience with mechanical prototyping methods, electronic circuits,
robotic systems, and much more.
Course Materials: All lectures, assignments and labs will be available online. The SAAST Robotics
website (https://alliance.seas.upenn.edu/~medesign/wiki/index.php/Courses/SAAST) will have
general course information and Blackboard (https://courseweb.library.upenn.edu/) will be used to post
grades.
Assignments: Assignments will reinforce lecture material. All assignments will be done individually
unless otherwise specified.
Assignment 1: Mechanical Design- SolidWorks and the Laser Cutter
Assignment 2: Basic Circuits- LEDs and Phototransistors
Assignment 3: Introduction to the microcontroller
Assignment 4: Controller Design- Preliminary Project Plan
Assignment 5: Controller Realization
Assignment 7: Robot Test (Group)
Assignment 8: Poster (Group)
Quizzes: The quizzes will cover material discussed in the lectures and will be given without notice.
Final Project: Students will be split into groups of three for the final project. Each group will design
and build three robots to work cooperatively to solve a challenge.

**Grading Policy**

Individual Assignments: 50%
Team Assignments: 15%
Quizzes: 10%
Final Project: 25%