PR102 Robot Competition

2007
Ahmet Onat, Ender Kazan
Aim

• Learn how to accomplish goals of a project
  – cooperating in a group,
  – working under changing conditions,
  – making predictions about material and time,
  – meeting deadlines,
• Design a robot,
• Learn about mechatronic systems;
  – microcomputer, electronics
  – mechanical design
  – control
  – sensors, motors etc.
Competition Rules

- Collect objects from your side
- Drop them on your opponents’
- After timeout, who has more objects on his side loses...
- See documentation!
Game Plan
Game Plan
Grading

• Remember the aims of PR102:
  – Project management
  – cooperation
  – time and resource planning
  – learning mechatronics

• Each student must hand-in a progress report every week, by Monday 5pm.

• Must accomplish preset goals by deadline.

• Scoring in the competition has little effect on grade...
Supplied Tools

• Full kit of parts to build robot base.
• Extra motor, switches
• Expendables
  – wood, plastic, screws, glue, wire etc.
• Soldering equipment (HOT!)
• Hand tools
  – screwdriver, pliers, etc.

• Must return tools and equipment undamaged!
Supplied Tools

• You will receive equipment in a box.
• When you receive the equipment you will sign a document that you have received everything in working order, and give it to the assistant.
• After the project, you must bring our equipment back in working order and receive the same document, signed by the assistant.
• Only after that you will receive your grade.
Suboard II

- Microcomputer board
- Programmable with Assembly, BASIC and ‘C’
- USB connectivity (program and comm.)
- Many features. Read the manual…
SuboardII
Previous Competitions 2001
Previous Competitions 2001
Previous Competitions 2001
Previous Competitions 2001
Previous Competitions 2002
Previous Competitions 2002
Previous Competitions 2002
Previous Competitions 2004
Previous Competitions 2004
Robot Competition 2004
Robot Competition 2005
Robot Competition 2005
Robot Competition 2005
Last Year
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2006
Robot Competition 2007?
Secrets to success:

• Work consistently!
  – divide major chunks of the work
  – schedule two weekly group meetings.
  – this is not a last-night cram lesson
Secrets to success:

• Keep a logbook of your progress, decisions, mistakes etc.
• Read the handbooks!
• Errors that “just disappear” will come back; solve them!

• A medium performance robot which works every time, is better than a technology marvel that might work if everything goes right.
Features

• Experienced students for guidance.
• Workshops on various subjects.
• Someone always available to ask even the simplest questions.
• The robot control board will be used: “SUBOARDII”

• Please contribute!!!
Web Resources

• mechatronics web site
  http://embserv.sabanciuniv.edu/RobotComp

• Microchip web site:
  www.microchip.com
Remember!

In robot competition, there is NO single "Correct" way of doing things!

Let your IMAGINATION take over!