

**Results of the 2005 Mining Engineering Robotics Competition  
held on Wednesday, October 19, 2005 in  
MINE 432-Robotics and Industrial Automation**

Finish Position	Team Name	Robot Name	Start Position	Time (m:s) - after reset		Average Resets per run	Average Time	Mark out of 10
				Run 1	Run 2			
1	Zee-Dub Zeev Cherniasky Wylie Thibodeau	Rock-Bot	9	3:40	3:15	1	3:28	10
2	Robot-Heads Bryce Baxter Vivien Hui		4	5:10	4:53	2	4:53	9.5
3	Servo Daniel Avar Terry Gong	Pulse	2	6:30	5:00	3	5:45	9.0
4	J <sup>2</sup> -Robotics Jeet Basi Jeff Drozdiak		6	7:50	5:35	4	6:42	8.5
5	Tech-Nick Shahab Alikani Nick Williams	SpanX	8	7:40	6:30	4	7:05	8.5
6	Crash & Burn Ryan Buhler Jesse Forgues		7	8:00	6:36	4.5	7:18	8.5
7	Major Ownage Danny Kwok Justin Yu		11	10:40	6:50	5.5	8:45	8.0
8	Mongols Jun-Rang Du Cody Hopkins		10	14:10	6:15	7	10:13	8.0
9	Star-Wars Mark Adams John Anderson	R2-D2	12	12:10	9:55	7	11:03	7.5
10	Globetrotters Babak Khalili Shervin Teymouri		3	10:30	11:50	8	11:10	7.5
11	KGBot Kevin Geunter Gautam Komdar		5	9:40	15:00	-	12:20	7.0
12	Magnum Soroush Alilou Mark Jeffery Ali Rana	Turbo1000	1	15:00	14:40	-	14:40	7.0

**Outcomes and Post-mortem**

- all teams did very well although there were some disappointed faces.
- most teams successfully programmed search-routines for the black line.
- all teams except for two improved their time between run 1 and run 2.
- there were two obstacles that led to problems, the coke can and the wall.
- no teams successfully negotiated the coke can.
- the majority of failures occurred from a reliance on very-sensitive IR sensors to detect objects (walls).
- several teams made no attempt to avoid obstacles.
- the robots performed consistently on the two runs with respect to obstacle avoidance.
- dead-reckoning requires a priori knowledge about the environment with current sensors.
- use of a digital compass or IMU would help considerably.

### Groups for the Final Project

Group 1	Group 2	Group 3
Zee-Dub Zeev Cherniasky Wylie Thibodeau	Robot-Heads Bryce Baxter Vivien Hui	Servo Daniel Avar Terry Gong
Magnum Soroush Alilou Mark Jeffery Ali Rana	KGBot Kevin Geunter Gautam Komdar	Globetrotters Babak Khalili Shervin Teymouri
Tech-Nick Shahab Alikani Nick Williams	Crash & Burn Ryan Buhler Jesse Forgues	Major Ownage Danny Kwok Justin Yu
Star-Wars Mark Adams John Anderson	Mongols Jun-Rang Du Cody Hopkins	J <sup>2</sup> -Robotics Jeet Basi Jeff Drozdiak

The project involves using the 4 robots in each group to work together to achieve a particular goal.

A pile of coarse gravel will be placed on the field of play and encircled by a black line.

The objective will be to move the gravel using a pusher mounted on the front of each robot to a designated area also delineated by a circular black line.

One robot may be operated telerobotically, if the group wishes to do so.

The other three robots on each team will be programmed to follow orders from the lead robot.

One robot in each group may be fitted with tracks instead of wheels.

Required sensors

- IR Buddy (4)
- Compass (3)
- IMS unit (3)
- Bluetooth communication (1)
- Remote controller (1)

The demonstration event will take place on November 30<sup>th</sup> at 2pm.

There will be no unexpected hazards in this demo – the field will be designed collectively by all teams.

Each team is expected to hand in a final report containing all programs and a description and discussion on their strategies. Recommendations for future improvements are also to be made.