

Each team must write a 4-5 page report on a current application of robotics or current research area of robotics from the following list of topics or one approved by the instructor. In this case, robotics means any use of computerized machinery in place of mobile human effort. This includes everything from tele-operated devices to fully autonomous vehicles. Current means something announced within the last 5 years in the application or research area. At most two teams may write reports in the same area. They will be allowed on a first-come, first-serve basis.

Possible topics include:

Tele-operated robots:

- remote surgery robots
- deep-sea submersible explorers
- military reconnaissance robots

Assembly-line robots

- auto assembly welders

Semi-autonomous vehicles:

- unmanned ground and air vehicles
- planetary explorers (e. g., Mars Rover)

Autonomous vehicles:

- office delivery systems
- lawn mowers
- vacuum cleaners

Research areas:

- legged motion (robots that walk)
- cooperative swarms (e. g., RoboCup Soccer)
- nanotechnology

The report should include the following information:

- Introduction
- Any background necessary to understand the application area
- Description of the robot including technical details of how it works
- Discussion of the benefits and costs of this application for the robot manufacturer, the robot users, the people the robot replaces, if any, and the general public. These benefits and costs may be tangible (e. g., money, lives saved) or intangible (e. g., more reliability, less pollution)
- Conclusion describing how the robot affects you personally.
- References to at least 2 different reputable sources

Logistics

- **Friday, September 5** - Teams must have chosen a report topic
- **Wednesday, September 17** - Teams must turn in an outline of their report and a list of at least 2 references from reputable sources
- **Wednesday, September 24** - Final report due at the beginning of class