Project Description

For 2008, students will plan and execute a project that involves building and programming Lego robots. The robots will compete in a tournament that is scheduled for May 22/23 at BCIT.

The tournament is modeled after the First Lego League competitions held in high schools around our planet. In these competitions autonomous robots are programmed to attempt various missions, earning points for each successful mission attempt. There are many missions in a tournament.

In 2910, teams are graded based on the ***total number of successful missions*** achieved in a single match. Additionally, each successful mission earns some number associated mission points. All the mission points are tabulated and prizes are awarded to the team with the highest point total for a single match.

There are many rules that you need to read and be familiar with regarding the tournament and missions. These rules are all documented in one of the following places:

1. 2910 WebCT Rules: explains the rules for the tournament, including requirements on the robot design and operation
2. 2910 WebCT Missions: describes specific rules for each mission as well as how points are earned
3. 2910 WebCT Archived Q&A: contains answers and clarifications to mission requirements from the FLL website. You need to be careful that these clarifications do not conflict with 2910 specific rules
4. 2910 WebCT Q&A Forum: this is an online forum specifically for 2910 students to ask for clarification regarding missions and rules

For those of you who may be familiar with FLL, there are a number of differences specific to the 2910 course. These differences include:

1. There is no 'FLL project component'. We only use the 'Robot Game' portion of the FLL challenge.

2. To increase the number of missions available to students, we use challenges from two years. This year we are using:

   a. 2006 Nano Quest Challenge
   b. 2007 Power Challenge

   During a match, teams may attempt missions from one or both of the above challenges (ie: you can switch tables when the robot is in preparation mode).

3. Students have a choice of using either NXT or RCX style robots.

4. Students must only use BCIT supplied robots and Lego components, and cannot bring their own Lego into the lab.

5. Robots cannot be programmed using the 'drag-and-drop' tools supplied by Lego. Instead you must program the robots using either a Java or C-style language. If you wish to use any other language, you must first request permission from the course instructor. The choice of language is up to each team, and is a technology decision that must be made as a part of your project.

6. Each challenge (Nano Quest or Power) consists of a number of missions. Some of the missions have been changed/modified for Comp 2910. All missions (with modifications) are described on the 2910 Missions Page in WebCT.

7. Some additional (new) missions have been added for Comp 2910. Again, refer the 2910 Missions Page in WebCT for complete details.

8. Robots are expected to navigate back to the base. Although points can be earned and missions accomplished without returning to base, a points penalty is applied for each rescue performed.

9. One of the major differences for the 2910 version of the contest is the addition of a 'Construction Phase'. Each team begins the tournament with nothing constructed (ie: no connected Lego pieces), and no programs loaded in the robot. Teams have thirty (30) minutes to build and program their robots. Matches start once the Construction Phase is over.

10. The amount of lab and test time that 2910 teams have for their project is severely constrained. This is part of the overall challenge - to plan your work such that you optimize your results using only the time and resources available.

11. The rules and missions from the FLL site have been modified and placed on the 2910 WebCT Missions and Rules pages. You should always use the rules and mission instructions from WebCT, as they may be different than the FLL missions. As well, clarifications/interpretations will be answered in the 2910 WebCT Mission and Challenge Q&A Forum.

All teams and students are encouraged to post questions to this forum. Requests for clarification or interpretation received any other way will not be answered. The purpose for this rule is to ensure that all teams have access to the same answers and clarifications. If you want to ask something, please do so, but use the WebCT forum.

12. The order of precedent for rules is as follows:

- 2910 WebCT Rules (lowest priority)
- 2910 WebCT Missions Page (3rd highest priority)
- 2910 WebCT Archived Q&A Page (2nd highest priority)
- 2910 WebCT Q&A Forum (Highest Priority)