Los Angeles Robotics
Fall Workshop Presentations

Room Number	Session I 8:30- 10:00	Session II 10:15-11:45	Lunch 11:45-12:45	Session III 12:45-2:15	Session IV 2:30-4:00
110X		Systems Engineering		Systems Engineering	
801	Robot Wiring Basics	Robot Wiring Basics		Pneumatics for FRC	
110X		Starting and Maintaining an FRC Team		SoCal to Districts Workshop	
110X	Winning the Chairman's Award	Winning the Chairman's Award			
805	Introduction to Robot Programming	Introduction to Robot Programming		Arduino to RoboRio	
806	Introduction to SolidWorks				
110X	Strategy & Scouting	Strategy & Scouting		Arms & Lifts	Game Breakers & Innovative Designs

Introduction to Solidworks: A single, all-day workshop, limited to 10 teams and 30 students. SolidWorks is the most popular computer aided design program used by real-world engineers and is available free of charge to FRC teams. This class covers the basics of creating parts and assemblies. Students will learn to use SolidWorks and will design and build a small vehicle that will participate in a competition at the end of the day. Students may use the school's computers or may use their own laptops with SolidWorks pre-installed. By Hope Conant, FRC 4470 TiGears, Placentia-Yorba Linda School District.

Arduino to RoboRio: Students will learn to program an Arduino compatible microcontroller and use it to offload tasks such as sensor processing and LED control from the RoboRio. By Alicia Skilton, FIT Electronics, FRC 4470 TiGears.

Game Breakers & Innovative Designs: Using novel, quirky thinking to create and build a robot design outside of convention. By Chris Husmann & Eric Husmann, SpaceX, FRC 330, FRC 1197, FRC game referee, LA Robotics, Northrop Grumman.

Introduction to Robot Programming: Know a little Java or C++ but don't know where to start in programming your robot? This course provides an overview of robot C++/Java programming from the ground up, covering control systems, sensors, code structure, development tools, and recommended development best practices. Combined lecture and demonstration. Entry-level Java/C++ knowledge is recommended but not required (focus of the course is on concepts rather than code). By Peter Johnson, Northrop Grumman, FRC 294 Beach Cities Robotics.

Systems Engineering: Taking the Game Rules and actually building a winning robot that meets objectives and then requirements. By James Montgomery, Jet Propulsion Laboratories, FRC Referee.

Winning the Chairman's Award: What it takes, and how to go about creating a team that can win the FRC Chairman's Award. By Darryl Newhouse, FRC 597 The Wolverines, LA Robotics.

Robot Wiring Basics: Students will learn how to wire and test a robot according to the FRC rules. In addition to basic wiring, topics will include use of spike relays and wiring of sensors. By Nicholas Baehr, Team 4470 TiGears.

Pneumatics for FRC: A detailed explanation of all the elements of a pneumatics system and how to add pneumatics to your robot and pass inspection, together with advice and guidance on using pneumatic mechanisms. By Andy Crick, Spirit Automation, FRC 4470 TiGears.

Arms & Lifts: Many aspects of the game require lifting heavy stuff (like robots). A workshop on getting stuff off the ground, pushing stuff around, putting stuff where the game rules say it must be put. By Chris Hussman, Northrop Grumman, FRC 330 The Beach Bots.

Starting and Maintaining an FRC Team: So you want to start a team--what's the next step? A workshop on beginning a team, and maintaining it when the going gets tough. By Joe Petito, FRC 1197 TorBots, LA Robotics, Torrance Unified School District.

SoCal to Districts Workshop: An explanation of what the FRC District model looks like and how it works, and a review of FIRST's recent announcement of the district model as

it relates to California. Includes a discussion of the impact on teams, mentors and volunteers. By Joe Petito, FRC 1197 TorBots, LA Robotics, Torrance Unified School District.

Strategy & Scouting: Covers strategies needed to perform well (and hopefully win) an FRC competition, including what to do to pick good alliance members for the elimination rounds. By Chris Hussman, Northrop Grumman, FRC 330 The Beach Bots, and Eric Hussman, SpaceX, FRC 330 The Beach Bots.