FIRST® LEGO® League Challenge Professional Development

Course Description

FIRST® LEGO® League Challenge professional development gives participants a strong understanding of how to implement the Challenge program and how to achieve science, technology, engineering, and math (STEM) learning objectives. In Challenge, teams of students in grades 4-8 engage in research, problem-solving, coding, and engineering - building and programming a LEGO® robot that navigates the missions of a robot game. Friendly competition is at the heart of Challenge, and participants will walk in the footsteps of the students as they engage in hands-on experiences.

Course Requirements

FIRST® **Provides:**

- *FIRST*® LEGO® League Challenge Set, *Team Meeting Guide*, *Engineering Notebooks*, Robot Game Rulebook, Field Mat, and Mission Model Elements
- LEGO® Education SPIKE™ Prime Set and LEGO® MINDSTORMS® EV3 Core Set and corresponding software downloaded

Participant Brings:

- Computer with internet access
- Software downloaded prior to first session – https://education.lego.com/en-us/downloads. Select EV3 or SPIKE Prime then click on the drop arrow to choose your device for downloading – note: be sure to download, install and restart your computer.

Course Objectives

By the end of this course, you will:

- Participate in the *FIRST* experience from a student's point of view
- Become familiar with *FIRST* LEGO League Challenge materials and program implementation
- Learn how to guide students through the science behind the Challenge theme and facilitate the creative design of a solution (or modify an existing solution) to a real-world problem
- Build a LEGO Education SPIKE Prime or LEGO MINDSTORMS EV3 robot and program the robot using the corresponding software
- Understand how to prepare students for a culminating celebration/competition
- Be able to foster computational thinking, collaboration, and problem-solving skills
- Have experience with Project-Based Learning, the Engineering Design Process, and 21st Century Skills
- Implement Diversity and Inclusion practices
- Utilize, model, and reinforce the *FIRST* Core Values