## Information Packet

# 5-Day Rookie Robo-Camp

**Note – Two Locations & Schedules**

- **Northern Robo-Camp** — **Stevens Institute of Technology**
  **Hoboken, New Jersey**
  **From Tuesday, July 28th through Saturday, August 1st**

- **Southern Robo-Camp** — **Egg Harbor Township Police Athletic League**
  **2590 Ridge Ave (Area 51 Building)**
  **Egg Harbor Township NJ 08234**
  **From Tuesday, August 25th through Saturday, August 29th**

**Overview**

- **7th – 12th grade students learn about being on a FIRST Tech Challenge (FTC) Team.**
- **Participants receive introductory training on Tuesday and will be introduced to the kit of parts that will comprise the Robot which they will drive on Saturday.**
- **In between the 1st and 5th day, participants will work in small groups to learn, build, wire, program and practice driving an FTC Tetrix Robot.**
- **Students that recently joined an FTC team and want some focused summertime training, or people who are interested in robotics and may wish to start a team, will find this Camp very useful and fun.**
- **New coaches and mentors are also welcome.**

**Prerequisites**

- **Participants who are new to robotics but have a genuine interest is what we are seeking.**
- **No other formal training or experience is required.**
- **There will be a Consent Form that will be sent to registrants that must be completed prior to acceptance.**

**Fee**

- **It is NJ FTC policy to charge zero or the absolute minimum for all FIRST Tech Challenge events in the state. With the exception of the annual NJ FTC Championship, all competitions in New Jersey are free.**
- **The cost of this 5-Day Robo-Camp is $100 (total). That fee covers the costs of consumed materials and other unavoidable expenses.**
- **This very minor charge for the 5-Day Camp is possible due to the generous donation of the site hosts and of the volunteers who are making the Robo-Camp happen.**

**Benefits**

- **Participants will have a chance to be exposed to the FIRST Tech Challenge team experience. They will get a taste of the many different roles on the team.**
- **A person considering starting a team will have the opportunity to determine if FTC is really for them. They will get a good feeling for the amount of resource needed.**
- **If already a team member, the Robo-Camp may help the student to decide what role in which they would like to specialize on their team, be it programming, building, electrical work, drive team, etc.**
- **Some students learn at a more gradual pace than is available through full-day focused workshops. This 5-day Camp meets that need.**
- **A new or prospective coach can learn all aspects of creating a competing robot and the STEM theory behind it. This will make them well-grounded for the road ahead. They can participant fully as a team member or they can work with us as facilitators (as they learn what it is like to lead a group of students through the build and programming process).**

## Curriculum Detail

- **Below is the Curriculum that was the basis for the two 5-Day Robo-Camps that were held last year.**
- **This provides a good overview, though it is currently being updated with the intent of accelerating the robot build to allow more time for debug, some design iteration and more driving.**

### Day 1

- Workshop Overview
- Introduction to FIRST
- Building a Basic Chassis
- Engineering Design Process

### Day 2

- Review of Electrical Components
- Wiring the Robot & Making It Move
- All About Sensors
- Robot Movements w/Sensors

### Day 3

- Basic Programming Concepts
- Introduction to Robot Programming
- Pgm Deployment & Demos
- Entering a Line-Following Pgm

### Day 4

- Learning to Write Programs
- Brainstorming & Consensus
- Actuators & End Effectors
- Harvester & Transporter Robot

### Day 5

- Game Reveal & Design Process
- Build, Pgm, Demo Your Bot
- Improve Design & Verify
- Lessons Learned & ReCap