



NEW JERSEY FTC

Southern NJ

Summer Workshop

Information Packet

MFS, August 6 2016

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Moorestown Friends School
32 East Main Street
Moorestown NJ 08057



Overview

Overview

- Welcome to NJ FTC's 2nd Annual Southern NJ Summer Workshop ...and to the 2016 / 2017 Season!
 - We compliment our teams and coaches who have taken time from their busy summer schedule to come to the workshop for this training. You and your team will be in much better position to hit the ground running thanks to the investment of your time on August 6th.

Location

- Moorestown Friends School is the host this year for our 2nd Annual Workshops for lower half of NJ. MFS has generously provided all of the Workshop classrooms, conference rooms and facilities.
- Campus Map, Parking and Entrance information is located on pages 3 & 4 of this document.

Thank You's

1. First and foremost, we'd like to thank [Moorestown for hosting this event](#) for us. As many know, in addition to hosting this Workshop, Moorestown has a history of supporting FTC including last year's AM/PM JAVA Training Day and past Qualifiers. They're great; we really appreciate the MFS support
2. We also thank our [NJ FTC Program Sponsor, PSE&G](#). They have been with New Jersey FTC from the beginning and it is thanks to their steadfast support that our teams enjoy so many free events throughout the year. PSE&G is loyal and generous supporter.
3. [NJ FTC Committee and Volunteers](#): We have a very active robotics program in New Jersey. Our young people have many opportunities to come together, to work, to learn, to compete, and to have a great experience. We are thankful for all of the adult support that we receive from our coaches, parents, committee members and wonderful associates.
4. [FTC Teams](#): This year, we continue the Workshop tradition. We have great adult presenters and we also have [team presenters](#). The success of the event will be due in large part to the philosophy of "teams-helping-teams". There is a great learning community in NJ and the surrounding states. All of our team contributions are priceless and really appreciated. There simply would be no Workshop without this kind of help.

Tracks:

1. We are delighted to continue the Southern Workshop tradition in 2016 (as well as the Southern Kick Off on September 10th at Hightstown).
2. Although mentioned on the Cover Sheet, let us mention again here that it is very important that the Track Selection form be completed and submitted asap. Eight Tracks of Topics were advertised and we are committed to deliver on those topics however, there may be some combining of Tracks or splitting of Track necessary, depending on participant needs. This is not easily done at the last minute, so in order to deliver the best Workshops possible, please submit your requests immediately if you have not done so. Then, bear with us as we adapt the Workshops a bit in order to best make the day most worthwhile for everyone.
3. With numerous guests attending the Workshop we must insist that [attendees stay within their Tracks for the full day](#). Otherwise, the variance in session attendance would cause significant problems for our presenting volunteers and push the event off track and off schedule.

MFS – Address, Campus & Parking

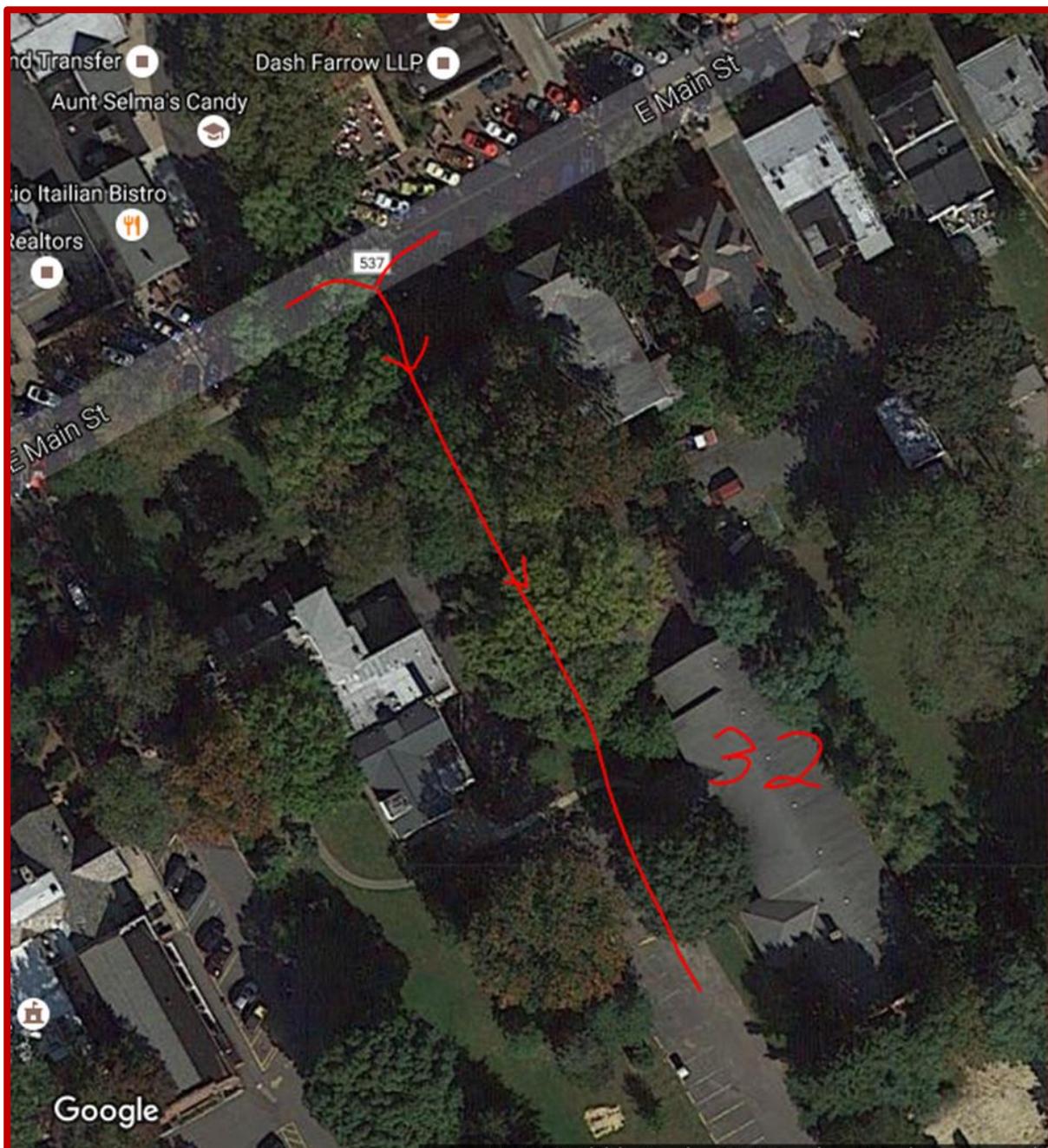
Address

Moorestown Friends School
32 East Main Street,
Moorestown NJ 08057

The Workshops are being held in Hartman Hall (located adjacent to the main campus)

Parking

- Access to the driveway is from Main Street and the building and parking is about 200 feet off of Main Street. The driveway is diagonally across from a Starbucks and next to a pedestrian crossing.
- Bus Parking information is on the next page.



MFS – Bus Parking

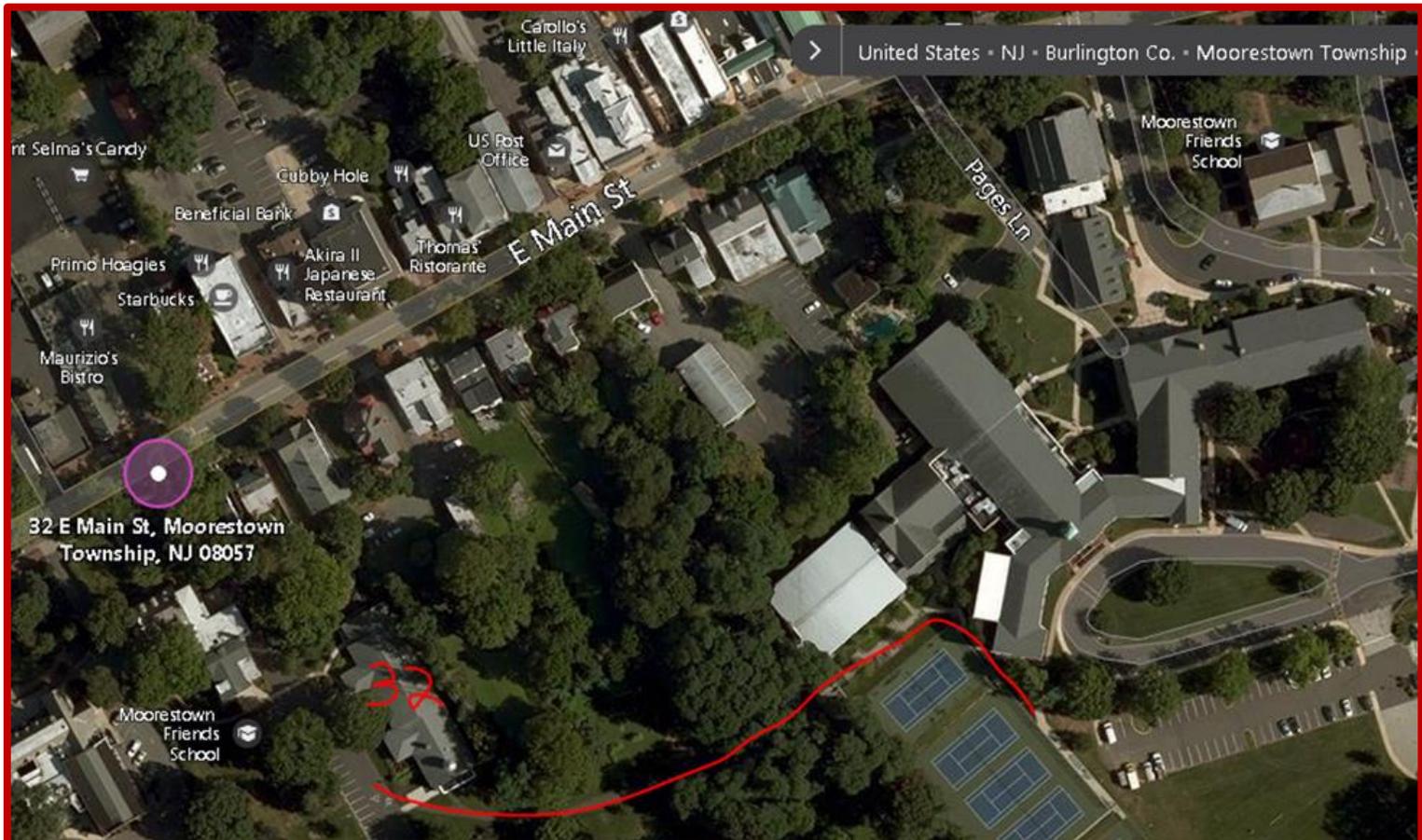
Address

Moorestown Friends School
32 East Main Street,
Moorestown NJ 08057

The Workshops are being held in Hartman Hall (located adjacent to the main campus)

Parking

Busses can park at the main campus (Moorestown Friends School, 110 East Main Street) and follow the path in red to Hartman Hall (32 East Main Street)



SAFETY:

- All team members and their guests are expected to behave in a safe manner and obey all safety rules. Individuals not acting safely will be asked to leave the event premises.
- Please notify an Workshop Track Lead if you have any safety issues or concerns. Please report any illness or injuries to the event organizers.

Emergency Contact Information:

- If you are running very late or unable to come for some reason, Vince's cell phone number is 862-432-1526.

Check-In, Classrooms & Off-Campus Food

Check In:

- When you arrive, please report to the Registration Table near the front of Hartman Hall. (There will be signage.) It is there that you will **pick up your Track Admission Tickets (or Buttons)**.
- These have been pre-made for you (as individual or team) based upon the registration form that you have submitted to NJ FTC.
- We ask that registered Track assignments be strictly followed.

Classrooms

- There are 2 classrooms on the lower floor and 6 classrooms on the main floor in addition to a large Sun Room that has tables and chairs for about 36. Each class room has a white board and LCD projector with 20 to 23 desks and chairs.
- We will provide a Room Map at Check-In so that you can easily find your Track(s)

Start / Stop Times

- Team Registration starts at 8am
- **General Season Information Session** for all occurs at 8:30 in the Sun Room*.
- The Tracks begin at 9:00..
- Wrap Up of the Day occurs at ~4pm

(* If space does not allow or if there are latecomers, another General Information Session will be held in the Sun Room in the latter half of the lunch period.)

LUNCH

- An hour is being allocated for lunch. There are many nearby spots at which teams can obtain food. Please bring the needed pocket money. MFS will not have lunch facilities open.
- The longer lunch will allow time to stretch your legs, the 2nd Info Session if necessary, more lab time for those who wish to double back and an opportunity for other activities.
- Generally speaking, lunch will take place at noon, though the timing is likely to be staggered in order to shorten lines at the food locations and in light of certain folks deeply involved in their hands-on activities.

Off-Campus Food: There are many local eateries within a 5-10 minute walk of Hartman Hall on Main Street.

Maurizio Italian Bistro
Passariello's Pizzeria
Cubby Hole (Sandwiches)
Carollos Little Italy
La Vitia's Pizzeria

Starbucks
Akira (Japanese Restaurant)
Healthy Garden
Primo Hoagies
Wawa

Track Descriptions – 1 of 3

TRACK #1 - - Team Topics

Purpose: This track provides a comprehensive overview of the many topics related to the basic operation of a FIRST Tech Challenge Team. Time permitting, increasingly advanced topics, described below, will be covered.

Who Should Attend: This track is designed for the new coach or team captain. It is also intended for those seeking a refresher. If you are veteran team and not sure if you have all of the bases fully covered, it is smart to invest a member's time to attend this track. The topics covered in this track are also very suitable for prospective coaches/volunteers, team members, parents, and sponsors.

Topics: Organizing Your Team, Time Management, Team Support and Sustainment, Marketing and Fundraising, Tournament Day Expectations and Judged Awards Overview.

More Topics: Best Practices and Sample Judged Interviews, Engineering Notebooks, Video Awards, Helping FTC Growth through Volunteers, Outreach, Mentoring and Event Hosting.

Requirements: None. This is meant to be entry level track. However, if you have anything that you would like to share with the group, bring it. This track flows best with interaction.

Supplemental: If you have last year's Engineering Notebook and would like some critique of it, please bring it along. Otherwise, our veteran teams are asked to bring their great experiences to share, along with any marketing materials that they would like to display. We'd like our new folks to see some of the banners, team shirts, and other neat branding developed by our teams.

TRACK #2 - - Robotics Hardware - Mechanical & Electrical

Purpose: This track introduces the assortment of parts in the Mindstorms, Matrix and Tetrax kits. Best Practices are reviewed so that members learn the nuances of the parts and how to use them correctly. Basic concepts of the design process and mechanical systems are covered. It also introduces the various electrical components, including the new Modules.

Who Should Attend: This track is intended for new team members involved with the design / build of the robot. It is also helpful to veteran team members who need a better understanding of the new modules that were introduced by FIRST in 2015/2016.

Mechanical Topics: The Design Process, Kit of Parts, Brainstorming, Tying the Challenge to Robot Design, Mechanical Systems, Build-a-Bot Lab

Electrical Topics: Basic Electrical Devices, Wiring your Robot, Power Distribution, Motors, Servos and Sensors are covered in overview fashion.

Build a Bot: In the afternoon, participants will team up to build a basic robot from loaned material (or receive assistance in building the Tetrax "Harvester" robot from their kit). This track includes the **Build-A-Bot Lab**. Kits for 4-5 "Jersey Bots" will be available for assembly. This year, we are also including End Effector kits. Groups of 4-5 will work together on this. If you have your own Tetrax kit and you wish to build a Bot to take home, bring your kit and we will set you in separate area of the lab.

Requirements: None. This is meant to be entry level track. However, if you have anything that you would like to share with the group, bring it. This track flows best with interaction.

Goal: Attendees who complete this track will understand the basic use of the parts and how they are properly assembled and wired into a basic, functioning, robot. The focus of this track is developing a basic familiarity with the components and their safe/appropriate use.

Supplemental: Time permitting, other topics involving alternative sensors, interface boards and electrical assembly best practices will be covered.

TRACK #3 - - Robotics Design – Beyond Basics

Purpose: This track is intended to take your team to the next level. Use of parts and materials not in the standard kit (such as sheet materials, approved alternate parts, and 3-D printing) is covered. The track examines complex design practices and iterative design, including a review of some of the complex successful robot designs from the 2015/2016 season.

Who Should Attend: This track is intended for veteran FTC members or students/mentors who already have some solid robotics experience.

Topics: Complex End Effector Design, Use of Plastics and Sheet Metal, Gears and Gear Ratios, Motor Capabilities & Limits, Omni Wheels, 3D Printing.

Topics: This year, the Track will also include a focused discussion on how to become more complete through both the design AND use of your robot.

Supplemental: Bring your tournament bot! We really love to have teams bring last year's bot so that we can share some of the great designs that we have seen. There are numerous beyond-the-kit topics which will be covered in the presentation materials. We've learned that the track is much more beneficial to all when we can reference some in-person real-life examples of best design practices. Please bring your bot and help out.

Track Descriptions – 2 of 3

TRACK #4 - - Basics of JAVA / Android Control

Purpose: This track will teach how to set up your Software Development Environment, configure your hardware and be able to make the basics of JAVA/Android Control of your robot.

Who Should Attend: A team member who may be new to programming or JAVA is the target attendee for this hands-on track. The participants may not yet have their laptop configured (though we encourage an attempt to be made).

Start of Day: The first part of the day will be dedicated to explain configuring the environment for the Android Studio Software Development System slowly. The goal is that attendees leave the Workshop not only with a loaded laptop but can load it themselves the future.

Topics: Installing Software, Configuring Android Devices, Mapping the Robot Configuration, Basic Programming Concepts, and Sample Program Execution.

More Track Detail: After a short review of the new electronics modules, the group will move into the configuration of your Android device as a Driver Station or Robot Controller. Next, students will be taught how to map a specific robot configuration (i.e., motor and sensor I/O locations) into the Android device. Basic programming concepts will be covered and sample programs will be reviewed. Finally, the group will move into their hands-on programming workdownloading an existing program and demonstration of it.

Requirements: Students should definitely bring a laptop and an Android ZTE Speed to participate in this Track. It is OK, in fact preferred, for two students to share a laptop and Android set up. Paired training has a number of advantages. Having your laptop and Android Studio already on it will really save time, of course.

Goal: Attendees should leave the Track with a loaded laptop, the knowledge of how to re-load it, an understanding of the software development environment, and experience in downloading a sample program, and in moving a robot.

Hardware Resource: Naturally, attendees who have a robot with the electronics modules on it, should bring it to the Track. Otherwise students will program their Android device then mount it onto a captive NJ FTC robot for check-out. Note – This sharing of the limited number of robots means that any one team cannot tie up the bot too long for debug efforts. The more robots, the better. Please bring the new hardware if you have it.

TRACK #5 - - Intermediate Level : JAVA / Android Control

Purpose: This track teaches how to program the FTC robots using JAVA. The approach is to review JAVA code, understand the operation of functional programs (Tele-Op and Autonomous), then develop proficiency and confidence in modifying the programs. We will skip over the Android configuration and mapping materials (or treat them very lightly) and get into hands-on programming sooner [Note – Students should attend Track #4 if that training is needed.]

Who Should Attend: This track is intended for programmers who have some experience with the new JAVA/ Android environment. If you've received your hardware, looked at the training materials on line, and tinkered SUCCESSFULLY, this more Track is for you.

Prerequisite: It is expected that the attendee has loaded the Software Development environment onto their laptop and can prove it with some minor navigation skills) upon Check-In on Workshop day. We would hope that participants had spent some time playing with sample programs available on the website prior to coming to the Workshop.

Start of Day: Downloading sample programs, executing them, and minor modifications will be the start of day activities. No time is spent in helping participants configure/load their laptop. Participants evidencing that kind of need will be assessed quickly and relocated into the reserve positions in the Basic Track before the morning proceeds too far.

Topics: JAVA Programming Basics and Understanding/Modifying Sample JAVA programs for FTC Robots. Participants will also work with very basic sensors and create some of the typical (and most useful) autonomous mode programs.

Requirements: Students should definitely bring a laptop and an Android ZTE Speed, to participate in this Track. Your laptop should already have Android Studio loaded on it. See the Hardware Resource comment for Track #4 (i.e., bring your own robot if you will be sharing a captive with other class members).

Goal: Throughout the Track, participants will learn more and more about basic JAVA programming and will be given assorted challenges to program, debug and demonstrate. The focus will be developing a proficiency in programming Tele-Op and Autonomous modewith a variety of scenarios and perhaps one basic sensor (but not many).

TRACK #6 - - Advanced Level : JAVA / Android Control

Purpose: This track is intended for programmers who have experience with the JAVA/ Android Control. If you participated in FTC last year or have tinkered extensively with it on your own, this more advanced Track is for you.. We will skip over the Android configuration and mapping materials and get into hands-on programming very early in the Track. In addition to modifying some sample programs, the Track will delve more deeply into the use of various sensors with the JAVA/Android controlled robots. Autonomous mode, including Following and Ultrasonic guidance of the robot will also be covered.

Who Should Attend: Participants in this Track have been JAVA Programmers with teams in the 2015/2016 season or folks who already have a basic proficiency in JAVA programming.

Start of Day: Similar to the Intermediate Track, folks come with a fully loaded and ready-to-go laptop. After a beginning exercise, to assess that all have the basic skill level to continue, the Track moves into the variety of sensors available for use in FTC. Those who do not prove themselves on the beginning exercise will be asked to relocate to the Intermediate Track.

Topics: Working with Sensors, Autonomous Mode, Software Engineering & Best Practices, Sensor Challenge Hands-On Workshop and Introduction to Android App Inventor.

Material Requirements: See Track #5 for the recommendation about laptops and Android devices.

Supplemental: In addition to standard sensors, alternate sensors will be addressed, along with more advanced programming techniques. A survey to be sent to the Advanced Track participants prior to the Workshop in order to solicit sensors-of-interest information.

Track Descriptions – 3 of 3

TRACK #7 - -Basics of PTC CAD Software Tools

Purpose: Attendees will receive an overview of PTC software such as the WindChill collaboration tool through which models may be created and stored. The CREO modeling application will be taught and students will learn how to attach parts from the existing library of model to design mechanical subassemblies.

Who Should Attend: If your team has not yet taken advantage of the great CAD Software package, made available by PTC without charge, here's your opportunity.

Prerequisites: This track assumes no prior CAD knowledge or experience. Help in "getting started" with PTC software is the goal of this track.

Topics: CREO, WindChill, Library of Part Models, Assembly of Part Models to Mechanical Subassemblies

Requirements: To get the most out of this track, student needs a laptop with the free PTC software loaded on it. Those who apply for this Track will receive guidance on how to download the software prior to coming to the Workshop. We will have the ability to download the software but your WindChill account must already have been set up at home. This is not difficult to do.

This track is largely comprised of hands-on CAD modeling and keyboarding. PTC may bring a few loaner laptops with them. Having your own laptop properly loaded at, or before, the event is a major milestone for many teams. Smart to do.

TRACK #8 - -Intermediate & Advanced PTC Topics

Purpose: The Track addresses more advanced PTC topics and is useful for those who have used the CAD modeling tool in a superficial way and wish to develop a stronger understanding.

Who Should Attend: If the student has successfully mastered the basic of Creo and would like to explore some of the advanced features, this Track is for you.

Prerequisites: This track assumes that the student arrives with their own PTC-loaded laptop and that they are able to navigate around the Creo application with relative ease.

Requirements: To get the most out of this track, student needs a laptop with the free PTC software loaded on it. This track is largely comprised of hands-on CAD modeling and keyboarding. Little time will be spent on basic set up during this Track. If that kind of help is needed, please register for the Basic PTC Track.

Topics (Tailoring): Teams signing up for PTC Training will be asked to advise NJ FTC regarding their experience level. If there are enough participants who have already been working with the PTC software, and are ready for more, it is possible to augment Track #8 with some extended training topics such as Analyzing a Model, Part Modeling, Assembly Modeling, Structure and Drivetrain Subassemblies, Simulating and FMEA.

- o Creating a Drawing Package with PTC.
- o Exploded Assembly Drawing with Bill of Materials
- o Robot System Design in Creo
- o Robot Sub-System Definition
- o Drivetrain Design
- o System Integration
- o Dynamic Simulation
- o Advanced Part Creation (including exporting an STL file for 3D Printing)

Note: As mentioned elsewhere, all of the Track Descriptions are meant to provide a general overview of the information to be covered. It is understood that the instructors will make adjustments based on the number of attendees and areas of particular interest.

Addendum

- Preparing your PTC Laptop
- Setting Up for JAVA Tracks
 - What We Have / What You Bring
 - Step-by-Step Set-Up Instructions
 - FIRST link and Other Helpful links

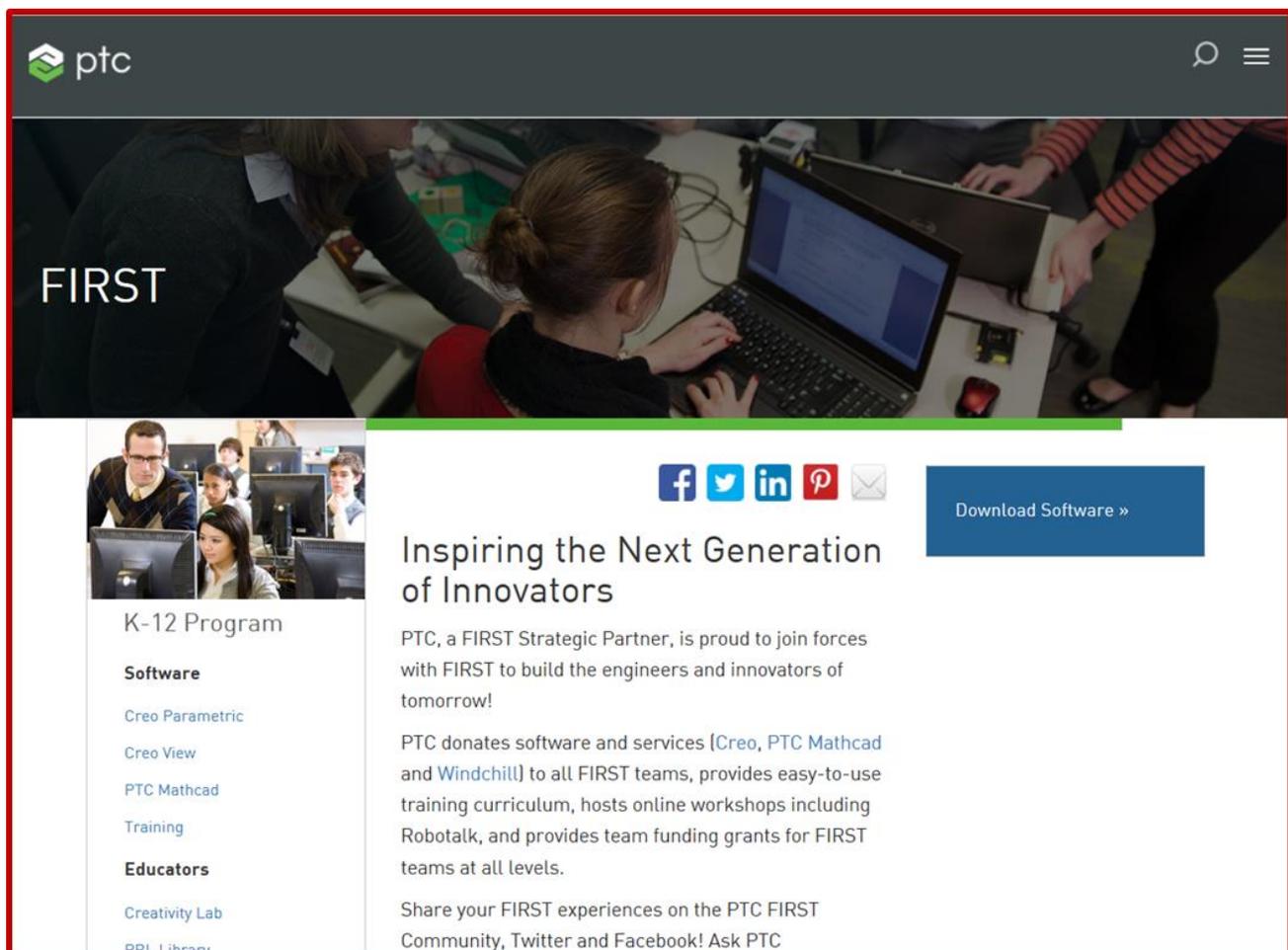
PTC Track: Preparing your Laptop

The PTC Track is very much hands-on. This is the big opportunity to really begin developing a proficiency with the software. Ideally, every student in the class has a laptop with the free software loaded onto it.

At the other extreme, the class can get bogged down if too much time is spent at the outset of it, in getting everyone set up. So, ... it would be really good if as many students as possible were able to download and install CREO prior to the event.

For downloading and installing software and the Kit of Parts, the instructions can be found here: <http://www.ptc.com/academic-program/products/free-software>

It is possible for participants in the CREO class to activate their licenses at MFS and download PTC software. To do that, teams need to register with PTC, and then access their personal email to get the email with their student key. We'll also have some memory sticks at MFS but all of this detracts from class time, so please do your best to preload your laptop before coming.



ptc

FIRST

Download Software »

Inspiring the Next Generation of Innovators

PTC, a FIRST Strategic Partner, is proud to join forces with FIRST to build the engineers and innovators of tomorrow!

PTC donates software and services (Creo, PTC Mathcad and Windchill) to all FIRST teams, provides easy-to-use training curriculum, hosts online workshops including Robotalk, and provides team funding grants for FIRST teams at all levels.

Share your FIRST experiences on the PTC FIRST Community, Twitter and Facebook! Ask PTC

K-12 Program

Software

- Creo Parametric
- Creo View
- PTC Mathcad
- Training

Educators

- Creativity Lab
- PBL Library

Here, also is a more general link to the FIRST page on the PTC Website. <http://www.ptc.com/communities/academic-program/k12/students/first>

Preparing for JAVA Tracks

The Materials We Have

- We have extension cords and utility strips
- We have (at least) two jersey-bot sized robots (per Track) that have new electronics on them.
- We have software for the students in the Basic JAVA/Android Robot Control Track.
- That said, even those students are encourage to attempt to load the environment before coming to MFS, if at all possible.
 - We strongly encourage all to attempt loading software before coming. It will help you to ask meaningful questions about any issues encountered, and it will save some Track time. Don't get frustrated if unsuccessful, but take a stab at it.
 - See the page(s) that follow.

The Materials You Should Try to Bring

- Please bring a laptop on which you can program.
 - One laptop per two attendees is optimum.
 - **We really recommended 'Paired Training' for the JAVA Tracks.**
- Please bring your two Android (ZTE Speed, or other FIRST authorized devices)/
- Unless you are in the Basic JAVA/Android Robot Control Track, it is expected that the student will bring a laptop already set up with the Android Studio development environment on it.
 - Footnote – Information on pre-loading is given below. If you have real difficulties, email us during the week prior to the event and we'll try to help you through it.

Step-by-Step Set Up Instructions (1 of 3)

One of our FTA Instructors (John McDonnell of CT) has created the listing below. It is an abbreviated version of the information that is posted by FIRST on line. This focused instruction list may make it easier for you to set up your laptop.

These instructions should be used to setup the 2016-17 Java-based development environment.

1. Download "Java SE Development Kit 8u102" for your computer from <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html> .
2. Install the Java 8 SDK (just click Next -> Next, but if you're short on disk space, you can de-select the "Source Code" and "Public JRE" icons during the installation)
3. Download the FTC SDK, beta version, from https://github.com/ftctechnh/ftc_app/archive/beta.zip . This will create a file named ftc_app-beta.zip. If you downloaded the SDK before July 1, 2016, download it again and use the new version.
4. Unzip the FTC SDK's ftc_app-beta.zip file to a convenient directory.
5. Download Android Studio 2.1 from <https://developer.android.com/sdk/index.html>
6. Install Android Studio. You can follow the directions at <https://developer.android.com/studio/install.html> or just click Next -> Next -> I Agree -> Next -> Install. If you're short on disk space, you can uncheck the "Android Virtual Device" option on the "Choose Components" page.
7. Run Android Studio (the last panel of the installation may have started Android Studio for you). The first time you run Android Studio, it will prompt for some configuration options, but the default settings do not need to be changed. If you get the message, "Unable to access Android SDK add-on list", see Note 1 below.
8. At the "Welcome to Android Studio" screen, choose Configure -> SDK Manager. In the dialog which appears, click "Launch Standalone SDK Manager".
9. Click "Deselect All", then click the checkboxes to add these items:
 - * Tools -> Android SDK Build-tools, Rev 21.1.2
 - * Android 4.4.2 (API 19) -> SDK Platform. API 19, Rev. 4
 - * Android 4.4.2 (API 19) -> Google APIs. API 19, Rev. 20
 - * Extras -> Android Support Repository. Rev. 30 or 35
 - * Extras -> Google USB Driver. Rev. 11 (not needed or selectable on Mac OS)
10. Click "Install 4 packages", then click the "Accept License" button, then click Install.
11. After the installation has finished, exit Android Studio.

Step-by-Step Set Up Instructions (2 of 3)

12. Find the "ftc_app-beta" directory where you unzipped the FTC SDK. Under this directory will be a "FtcRobotController" directory with a build.gradle file. Open this file in a text editor and look near the end of the file for the 'dependencies' section. Change the first line which begins with 'compile' from:

```
compile files('libs/android-support-v4.jar')
```

to

```
compile "com.android.support:support-v4:24.1.1"
```

The sections should look like this when you're done:

```
dependencies {  
    compile "com.android.support:support-v4:24.1.1"  
    compile(name: 'RobotCore-release', ext: 'aar')  
    compile(name: 'Hardware-release', ext: 'aar')  
    compile(name: 'FtcCommon-release', ext: 'aar')  
    compile(name: 'ModernRobotics-release', ext: 'aar')  
    compile(name: 'Analytics-release', ext: 'aar')  
    compile(name: 'WirelessP2p-release', ext: 'aar')  
}
```

13. Run Android Studio again and choose "Import project (Eclipse ADT, Gradle, etc)".

14. Find the "ftc_app-beta" directory where you unzipped the FTC SDK, then select the "build.gradle" file (this is NOT the same file as the one modified in step 12!) and click OK.

15. Android Studio will compile. This will take a while, and it will require network access to get some additional files which aren't included in the SDK. When it's done, click the "Gradle Console" button on the bottom right and you should see a line at the end which says, "BUILD SUCCESSFUL".

16. You may need to wait a few minutes before the next two steps will become available; Android Studio indexes the FTC SDK and may not allow you to do any more builds until the indexing is completed. Once the indexing has completed (the status bar line that says "Indexing" will disappear), select the Gradle Scripts node and choose Build -> Make Project.

17. Expand the FtcRobotController node, then browse to the java - com.qualcomm.ftcrobotcontroller - opmodes folder. This has the sample opmodes you can try out if you've built the PushBot or K9Bot. It also has the FtcOpModeRegister class, which you will need to modify to create your own op modes.

Step-by-Step Set Up Instructions (3 of 3)

18. (Optional) To customize an opmode, right click one and choose Copy, then choose Paste. Give it a new name and press OK. Open the FtcOpModeRegister file, find a line that starts with "manager.register", copy and paste it, then change the values to the new name you just entered.

19. Plug in your ZTE Speed to your computer's USB port. In Android Studio's Run menu, select Run 'FtcRobotController'.

20. This will prompt you to run the FtcRobotController app on a device; select your ZTE Speed and run your new app!

**** Note 1:** Some networks (typically those in schools or large organizations) require a proxy server in order to connect to the Internet. Browsers can usually determine how to connect to a proxy server, but Java applications such as the Android Studio usually need to be configured separately. Ask the organization's network administrator for how to connect to the proxy server. At a minimum, you will need to know the host name and port number of the proxy server; some proxy servers will require a username and password, too. Once you have this information, you can go through the rest of the instructions, but you will need to do some steps differently:

******* In step 7, when prompted to set up a proxy server, click Cancel (don't set up the proxy server yet!) and go through the rest of the set up steps. You will receive a message, "Android SDK is up to date." Continue with the next step.

******* At the end of step 8 (after launching the SDK Manager), select Tools -> Options and fill in the information for the proxy server. Close the SDK Manager. In the "Welcome to Android Studio" screen, choose Configure -> Settings. Under "Appearance & Behavior" -> "System Settings" -> "HTTP Proxy", enter the proxy information and close the dialog. Close the Settings dialog and Android Studio. Re-open Android Studio and re-launch the SDK Manager, then continue with the next step.

******* At the end of step 10, double-check that all the installations worked OK. Repeat them again for any items which failed. Continue with the next step.

******* During step 13, Android Studio will prompt you, "Would you like to have the IDE's proxy configuration be set in the project's gradle.properties file?", choose Yes.

FIRST's Set Up Guidance

The Set-Up Instruction list (provided on the previous page) is consistent with that posted by FIRST at the link below.

The advantage of the Step-by-Step listing is that it is a lot shorter and may be less intimidating for some than the 90+ page document.

That said, the FIRST posting does have the advantage of many, many pictorials. It may be easier for some who are visual learners.

Other Useful Links

If you'd like to take an advance look at some of the Intelitek information that we'll review on Saturday, check out the link below. (As noted previously, Intelitek is creating additional training materials so this is a great link to safely save somewhere.

<http://ftc.edu.intelitek.com/login/index.php>

Footnote - For full access to Intelitek courses you'll need to take a minute to create a new account for yourself on this web site. Each of the individual courses may also have a one-time "enrolment key", which you won't need until later. Here are the steps:

Fill out the [New Account](#) form with your details.

An email will be immediately sent to your email address.

Read your email, and click on the web link it contains.

Your account will be confirmed and you will be logged in.

Now, select the course you want to participate in.

If you are prompted for an "enrolment key" - use the one that your teacher has given you. This will "enrol" you in the course.

You can now access the full course. From now on you will only need to enter your personal username and password (in the form on this page) to log in and access any course you have enrolled in.

Here is a link to the FTC forum, which also discusses set –up of laptop and Android devices.

<http://ftcforum.usfirst.org/showthread.php?4235-Community-generated-Phone-Setup-vidoes>

You can also find some short youtube videos of possible interest here.

<https://www.youtube.com/watch?v=BuZiDPa8Rjk>

<https://www.youtube.com/watch?v=mxJ8-KZJW5w>