

## 7RRC Training Day Schedule - Dec 7, 2019

The Auxiliary Gym will be open all day for Robot Driving Practice

	Room 1104	Auditorium	Choir Room	Band Room	Room 1800	Computer Lab
8:45-9:00		Welcome / Housekeeping				
9:10 – 10:00 <b>Session 1</b>	<i>Project Management Communication Trello and Slack - Westby</i>	<i>What to Expect at a Regional - Yoji Shimizu and Team 1816</i>	<i>Kit of Parts – Gary Baumgarten (Good for experienced teams also)</i>	<i>Scouting For Match Strategy and Alliance Selections with Jacob Lee</i>	<i>Controls, Sensors and Interconnection Paul Ulland</i>	<i>Java Programming Part I - UWL CODERS</i>
10:00 – 10:10	<b>Break</b>					
10:10 – 11:00 <b>Session 2</b>	<i>Leadership Boot Camp- Part 1 Ed Pedretti</i>	<i>Team Decision Making / Implicit Bias - Team 1816</i>	<i>Mechanical Quick Build Part 1 - Mark Moulton</i>	<i>Why should my team use SOLIDWORKS? Betty Baker</i>	<i>Electronics Quick Build 1 Willy Hoskins, Erik Mathison</i>	<i>Java Programming Part II - UWL CODERS</i>
11:00 – 11:10	<b>Break</b>					
11:10 – Noon <b>Session 3</b>	<i>Leadership Boot Camp- Part 2 Ed Pedretti</i>	<i>Project Management in the No Bag Era - Team 1816</i>	<i>Mechanical Quick Build Part 2 - Mark Moulton</i>	<i>How to use SOLIDWORKS to quickly change the design of your robot. Betty Baker</i>	<i>Electronics Quick Build 2 Willy Hoskins</i>	<i>Game Analysis &amp; Strategic Design – Randy Hafner</i>
Noon – 12:30	<b>Lunch (included)</b>					
12:30 – 1:20 <b>Session 4</b>	<i>Pneumatics- The Muscle of Control – Paul Ulland</i>	<i>Bumpers 101 - Erik Mathison</i>	Final Assembly with Electrical in Choir Room	<i>Core Values- Yoji Shimizu and Teams 1816 &amp; 2977</i>	<i>Final Assembly with Mechanical in Choir Room</i>	<i>Java - Code, Build, Test Tom Harron</i>
1:20 – 1:30	<b>Break</b>					
1:30 – 2:20 <b>Session 5</b>	<i>Scholarships and Internships Duane Lom</i>	<i>Age Appropriate Outreach (hands on activities)- Holmen</i>	Final Assembly with Electrical in Choir Room	Hands - on Pneumatics - Tom McPeak	<i>Getting started with FLL JR. - Mark Moulton</i>	<i>Java-GitHub Repository Tom Harron</i>

## Session Descriptions

### Project Management & Communication Trello and Slack -

*Basic use of Trello for tracking your team's projects. Signing up and using Slack to help your teams stay in touch. If time permits, we will also show how you can integrate Trello and Slack for even better communication!*

### Leadership Boot Camp -

Everything you wanted to know and more about effective leadership. Very helpful for first time department heads/supervisors.

### Core Values - Yoji and Teams 2977 and 1816

What are core values? Why are they important for an FRC team? This session will provide an overview of one process that can be used to identify and define a team's core values. Two FRC teams will discuss how they developed their core values, and the impact of having core values on team dynamics and function.

### Scholarships and Internships -

This session is an overview of what scholarships and internships are available through FIRST and how to find them on the FIRST website. This session is especially important for Juniors and Seniors, but all grade levels are welcome.

### What To Expect at a Regional - Yoji Shimizu and Team 1816

This session will help you get the most out of your competition experience. Get an overview of a FRC regional - setting your goals, what happens on and off the field, alliance selection, awards, and qualifying for Champs.

### Team decision making and the FRC experience: the hidden role of culture and bias - Yoji Shimizu

How does your team make decisions? How do unconscious assumptions or biases that come from our culture impact the FRC student experience? This session will explore the team decision making process, and we will discuss ways in which to minimize the negative impact of these biases.

### Bumpers 101 -

Bumpers can be the bane of any team. Learn how to take the pain out of creating them and add some great techniques for making your robot look'in good in blue or red. This is a hands on session. You should plan to bring a stapler (and extra staples) to staple the fabric to the plywood boards.

### Project Management in the No Bag Era - Team 1816

*FIRST* Robotics will take all that you are willing to give! Time, resources, sleep. The No Bag era is your opportunity to implement new project management processes and techniques. Together, we'll explore the implications and opportunities.

### Age Appropriate Outreach -

Our team will share hands on activities to share with a wide range of age ranges with a discussion regarding what level explanation will meet the needs of the audience. Participants will actively work on tasks to understand the challenges and advantages.

### Rookie Mentors -

Are you a new FRC Mentor? Have you been around for a while and just need a refresher or tips on how to work with a team and it's members? Join some long term mentors as they go through what it takes and how you can help the team be most effective. Learn about resources you may (and may not) have heard of.

### Kit of Parts -

*The Kit of parts is a major source of material you can use to build your Robot. Learn what you can expect to get in the Kit and how to get the most from the resources provided by FIRST. This session discusses the Kickoff Kit, Virtual Kit, FIRST Choice and local part sources.*

### Getting Started with FLL Jr. -

Learn about and work with the very first FIRST program. This is where it all begins with kindergarten through 3rd grade students. This hands-on session with the Lego WeDo 2.0 system will have you building and programming a robot just like the younger kids would. This program is a great way to get your FRC students involved with mentoring in their community.

### Mechanical Quick Build -

*This set of sessions is a hands on chassis build of the Andy Mark AM14U chassis. This session is lead by a 6 season build mentor whose team has used this chassis in several configurations including Pneumatic and omni wheel options. There is a pre-session signup required, and your team will need to bring their own tools. There are 7 chassis kits available for checkout on a first come first serve basis. Your team needs to have a maximum of 4 assembly people, and a Mentor. Please contact Gary Baumgarten at [LeadMentor24021@gmail.com](mailto:LeadMentor24021@gmail.com) to register or ask questions. The registration deadline is November 23, 2018. You are welcome to bring your own AM14U if you have one available.*

### Inspection & Bill of Materials -

*Join the Lead Robot Inspector for the Seven Rivers Regional as he talks about the inspection process, what to expect and how to get through smoothly. Learn what inspectors are looking for, what they don't want to see and the quickest way to get your robot out on the field.*

### SWOT - Strengths, Weaknesses, Opportunities, Threats -

*Every team has things it is doing awesome, opportunities to improve and concerns that can harm your program. Knowing what these are for your team can make all the difference. Learn about an easy process to identify these areas and then to do with them once they are identified.*

### Game Analysis & Strategic Design -

*Every year FIRST comes up with some incredibly in-depth games and understanding the game is key to designing a robot that plays effectively on the field. Each year the game is different and unique and it evolves throughout the season, is your robot and strategy able to evolve with it.*

### All About Awards in FRC-

*What are ALL those awards at Saturday closing ceremonies? Do you understand the different types of awards? How can your team be better positioned for an award? Learn a bit more about the FRC awards and how your team can be in the running (if they want to be) during the upcoming season.*

### Controls, Sensors and Interconnection -

*There are wires going to and from different components all over an FRC robot. Ever wonder where they go, where they come from and what they are connected to? Join retired Electrical Engineer an 11 year electrical mentor as he explains the in's and out's of those components and how they all can work together to make an awesome robot.*

### Electronics Quick Build -

*This session is for learning the basic wiring skills for the FRC control systems. The control components will be mounted, although the students will wire the control systems following the wiring diagram and utilizing the 2017 FRC control system manual.*

### Final Assembly -

*During this session the Electronics Quick Build and the Mechanical Quick Build will be melding their parts together to complete a robot.*

### Pneumatics- The Muscle of Control -

*Learn how, why and when you would use Pneumatics. They are a powerful tool in the FRC toolbag but also come with a whole new subsystem.*

### Hands-on Pneumatics -

*Using the Pneumatics Trainers from the Mobile Skills Lab you will have a chance to see and work with some actuators and understand their capabilities, limitations and the applications where they can be best used.*

### Why Should My Team Use SOLIDWORKS -

This class will give a brief overview of why it is important for your team to use SOLIDWORKS or some 3D CAD to design your robot. I will show the benefits of taking the time to design your robot upfront so you can send your parts for machining, 3D printing, check tolerances, check the weight and also change parts quickly. For more information email [bbaker@ashleyfurniture.com](mailto:bbaker@ashleyfurniture.com).

### How To Use SOLIDWORKS To Quickly Change The Design Of Your Robot -

This class will go a step further to show you how to make changes quickly to your robot. We will talk about importing purchased parts, proper ways to assemble the parts so when you make a change it will update correctly. I will show you how to take weight out of your robot when it is too heavy. We will talk about how to make the parts move on your robot. And I will show you how to reuse your CAD model to draw different variations of your robot quickly and easily. For more information email [bbaker@ashleyfurniture.com](mailto:bbaker@ashleyfurniture.com).

### Java Programming -

Java is the programming language of choice for the 7RRC. Requires that you bring your own laptop with Java preloaded. All the students participating should have both Eclipse and the Java JDK installed on their laptops, then should run a "Hello World" program to make sure it works. A "Hello World" program should look something like this:

```
public class Hello {  
    public static void main(String[] args) {  
        System.out.println("Hello World!");  
    }  
}
```

}

Eclipse: Download either the "Eclipse IDE for Java Developers" or use the Eclipse installer tool

<http://www.eclipse.org/downloads/eclipse-packages/>

Java JDK: "Java SE Development Kit 8u151" should work

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

Let me know if you or the other participating teams have any questions! We're very excited for this!

For more information contact Michael Anderson [anderson.michael@uwlax.edu](mailto:anderson.michael@uwlax.edu)

#### Java - Code, Build, Test (Robot Project Overview)

1. Using VS Code
2. Using Gradle (and talk about Maven)
3. Using Junit - Testing Java programs with Junit
  1. What is Junit? What is a unit test?
4. Installation of Junit
5. Write a few tests

#### Github – Put your code in a repository

1. What is github?
2. What is a repository? (master versus local)
3. What is Git?
4. Installation of Github
5. Perform a few basic operation
  - i. Make a repository
  - ii. Submit a file
  - iii. Another user clone the repository and edit file
  - iv. Perform a "pull request" to update master repository

#### Scouting For Match Strategy and Alliance Selections

Lessons on how to develop a scouting system and how to turn scouting data into match strategy and a pick list.