# LabVIEW Summer Class 2017

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### Materials:

LabVIEW 2016 with the FRC 2017 Update

Microsoft Visual Studios

### Description:

This course will teach LabVIEW from very basic programming all the way to everything needed to know to program a competition robot. Your grade in this class will let you know how much you know LabVIEW. It will also help us to see who is ready to program the competition robot.

### Goals:

To learn Programming basics.

To learn LabVIEW and how to properly use it.

To learn LabVIEW to program a FRC Robot.

### Requirements:

You will be required to attend lecture twice a week. You will also be required to complete 1 Project and 1 Lab per week. Labs will be due on Wednesday at 6:30 PM and Projects will be due on Saturday at 6:30 PM.

Expectations

* Attend lecture.
* Do your own work on all assignments.
* Do not ask or answer code related questions of your fellow students. When you and a fellow student work in this way it is likely that you'll produce overly similar code and you increase the likelihood that you'll get called in on a possible plagiarism violation.
* Start all programming-related assignments early so you have ample time to resolve any difficulties.

### Resources:

Only use these resources to assist you if you get stuck. I have made up these projects and labs. You will not find these assignments by trying to google them. Trust me I have looked.

Chief Delphi: <https://www.chiefdelphi.com/forums/portal.php>

NI Examples: Under the help tab in LabVIEW click on Find Examples

Source Control Examples

Mentors

### Evaluation:

This course will use the standard grading scale. Your overall grade will be determined by the following categories.

Projects: 50%

Exams: 50%

### Course Schedule:

| Week | Topic | Required Work |
| --- | --- | --- |
| 1 | Downloading LabVIEW and Source Control. Learn how to navigate source control | Download LabVIEW and Source Control |
| 2 | Programming Basics |  |
| 3 | Robotics Basics | Lab 1 (Due 6/14), Project 1 (Due 6/17) |
| 4 | Walk Through Program / 3026 custom VI Lib | Lab 2 (Due 6/21), Project 2 (Due 6/24) |
| 5 | Command and Control | Lab 3 (Due 6/28), Project 3 (Due 7/1) |
| 6 | 4th of July No Class This Week |  |
| 7 | CMD and Exam 1 Prep | Lab 4 (Due 7/12), Project 4 (Due 7/15) |
| 8 | Robot Drive and NavX | Exam 1 Tuesday |
| 9 | Manipulators and Autonomous | Lab 5 (Due 7/26), Project 5 (Due 7/29) |
| 10 | Vision / PID / periodic tasks | Lab 6 (Due 8/2), Project 6 (Due 8/5) |
| 11 | Loose Ends / Tips and Tricks | Lab 7 (Due 8/9) Exam 2 Saturday |
| 12 | DRIVE SOME ROBOTS!!!!!! |  |

### Examinations:

Exam 1: 6:30 PM on July 19, 2017

Exam 2: 6:30 PM on August 12, 2017

Extra Things to Note

All my Power Points will be uploaded to the 3026 website. [www.ocr3026.com](http://www.ocr3026.com)

If you must miss a class, you are responsible to make up all missed material

Due dates will not be extended for individual students

5 bonus points on Exam 2 for whoever has the high score in the class on SteamPowered

This can be found on source control

Picture must be taken with a note in the picture with your name on it.

DO NOT CHEAT! THIS CLASS IS FOR THE BENEFIT OF THE STUDENT PROGRAMMERS TO LEARN LABVIEW. IT WILL ONLY HARM THE TEAM, AND YOURSELF, IF YOU CHEAT.