# Syllabus
## ELEC 415 – Electrical Measurements Lab, Spring 2015

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| **Course** | ELEC 415 – Electrical Measurements Lab | **Instructor** | Mark McKinney |
| **Text** | *Hands-On Introduction to LabVIEW for Scientists and Engineers* by John Essick | **Email** | mckinneym@citadel.edu |
| **Meeting Place** | Grimsley Hall Rm. 328<br>Friday 10AM | **Office** | Grimsley Hall Rm. 325<br>953-4897 |
| **Web Page** | *http://ece.citadel.edu/mckinney/elec405/* | **Office Hours** | MW: 2PM-4:30PM<br>TTh: 2PM-4:30PM, by appointment |

## COURSE OBJECTIVES

- To be able to create and debug a LabVIEW VI to accomplish a set of criteria.
- To be able to design a data acquisition system utilizing LabVIEW to meet a specified need.
- To be able to integrate LabVIEW hardware and software into a measurement system comprised of bench top test and measurement equipment

## ASSIGNMENTS

- We will cover approximately one chapter of the text per week and will supplement the material with hardware specific assignments. You are responsible for reading the material and the lab period will be dedicated to working on the assigned problems. All assignments will be posted to the course CMS page and details for submission will be included with the assignment.
- There will be a self-selected final project done in groups of two. Single page proposals for two different final projects should be submitted by March 2. This project will count as 2 regular LabVIEW assignments.

## GRADING

This class will be graded along with the ELEC 405 Lecture.

| ***Grading Element*** | ***Relative Weight*** |
|---|---|
| Homework Problems/Quizzes | 20% |
| Midterm Exam | 15% |
| LabVIEW assignments | 45% |
| Final Exam | 20% |

## PRE-REQUISITES

It is assumed that each student has taken any two 300-level electrical engineering laboratory courses and is currently taking both ELEC 405 and 415

## COURSE POLICIES

***Attendance*** - According to The Citadel's absence policy, any student missing more than 20% of the scheduled classes (even if excused) will receive a failing grade regardless of class performance. As this class has only thirteen class meetings, this corresponds to 3 class meetings.

***Late assignments*** - Late assignments will not be accepted even for approved absences; if a conflict arises on a date an assignment is due, make arrangements to submit the assignment before the due date. There will be buffers built into the grading scheme to provide for at least one missed assignment.

***Special needs*** - If you need accommodations because of a disability, please see me privately after class or in my office within two weeks of the beginning of class or immediately after diagnosis. Requests for academic accommodations must be made through OASIS. OASIS can be reached at 953-1820.

***Cheating and Collaborative Work*** - According to The Citadel's policies for the preparation of work performed outside the classroom:

> All papers, reports, senior essays, theses, or other written work performed outside the classroom for which a grade is received will be the individual's work and is subject to the limitations imposed by the definition of plagiarism.

According to Webster's New International Dictionary, 3rd Edition: to plagiarize is defined as "to steal and pass off as one's own the ideas or words of another" or to "present as new and original an idea or product derived from an existing source."

*Specific ELEC 415 Guidelines*

In this course, you may obtain assistance on programming assignments, but the sharing of code in any form (visual, printed, or electronic) is prohibited. For group projects, sharing of code cannot extend beyond the members of the group.

| ***WEEK*** | ***WEEK OF*** | ***01*** | ***81*** | ***TOPICS*** |
|---|---|---|---|---|
| 1 | 01/12/15 | F | W | Introduction |
| 2 | 01/19/15 | F | W | Chapter 1 – The While Loop and Waveform Chart |
| 3 | 01/26/15 | F | W | Chapter 2 – The For Loop and Waveform Graph |
| 4 | 02/02/15 | F | W | Chapter 3 – The Mathscript Node and the XY Graph |
| 5 | 02/09/15 | F | W | Introduction to the MyRIO |
| 6 | 02/16/15 | F | W | Data Acquisition with the MyRIO |
| 7 | 02/23/15 | F | W | Chapter 5 – Data Files and Character Strings |
| 8 | 03/02/15 | F | W | Chapter 6 – Shift Registers |
| 9 | 03/09/15 | F | W | Chapter 7 – The Case Structure |
| 10 | 03/16/15 | F | W | State machines with LabVIEW |
| 11 | 03/23/15 | Spring Break | | |
| 12 | 03/30/15 | F | W | Chapter 8 – Data Dependency and Sequence Structures |
| 13 | 04/06/15 | F | W | FPGA programming on the MyRIO |
| 14 | 04/13/15 | F | W | Final Project |
| 15 | 04/20/15 | F | W | Final Project |