

EEL4924C: Elec Engr Design 2, Fall 2018

EEL 4924C – Electrical Engineer Design 2 Fall 2018

modified 8/17/18

Schedule: MWF 3rd period 9:35 – 10:25 AM, LAR 330 (~1st month) then NEB Design2 Lab
MWF 7th period 1:55 – 2:45 PM, LAR 310 (~1st month) then NEB Design2 Lab

Instructors:

David Cheney (djcheney@ufl.edu)

NPB 2232 x2-7545

Office Hours: M-F 9:30-5 in NPB 2232 (please schedule or call first, I might be in the lab)

Michael Stapleton (mstap@ece.ufl.edu)

NEB 261 x2-2727

Eric Liebner (ericl@ece.ufl.edu)

NEB 263 x2-4923

TA: TBD

Course

Objectives: To provide the framework for specification of a design problem in a written design proposal, communication and discussion of design progress at oral project briefing meetings at weekly intervals, documentation of technical approaches in a patent style notebook checked and signed at weekly intervals, and demonstration, presentation, and written documentation of the completed design project

Prerequisites: ECE Design 1

Class

Attendance:

- **ATTENDANCE** at your weekly meeting is **MANDATORY**.
- You will be allowed one absence, excused or otherwise, without any impact on your grade.
- The second absence will drop your grade by one letter.
- After **TWO ABSENCES** you automatically **FAIL** the course
- There are six class times a week when meetings occur. If you cannot make it to your assigned meeting time, **YOU must reschedule** to avoid an absence.
- <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>
(<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>)

Grading Rubric:

Abstract 5%

Preliminary Design Report 10%

Reports 10%

Report check 1 2%

Report check 2 3%

Final report 5%

Design Project 75%

A working project that meets the design spec 50%

Project Complexity 25%

All of the above must be completed to receive a passing grade!

Significant

Dates:

Wednesday, August 22 -- Classes begin

Wednesday, August 29 -- Abstracts Due

Monday, September 3 -- Labor Day, no class

Wednesday, September 12 -- Preliminary Design Reports Due

Monday, October 22 -- Report Check #1 Due

Friday, November 2 - Homecoming, no class

Monday, November 12 - Veterans Day, no class

Monday, November 19 -- Last Day to Withdraw

Wednesday, November 21-Friday, November 23 -- Thanksgiving, no class

Monday, November 26 - Friday, November 30 -- Project Demonstrations, Preliminary Grades

Saturday, December 1 -- Report Check #2 Due

Wednesday, December 5 -- Last Day of Classes

Thursday, December 6 -- Final Demonstrations in NEB Rotunda, Final Reports Due, Final Grades

Academic

Honesty:

Please do your own work, or you will fail. Students are expected to abide by the UF Academic Honesty Policy, which defines an academic honesty offense as "the act of lying, cheating, or stealing academic information so that one gains academic advantage." Familiarize yourself with the academic honesty guidelines set forth by the University of Florida: <http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php>
(<http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php>)

Accommodation

for Students:

Students requesting classroom accommodation must first register with the Dean of Students office. The Dean of Students will provide documentation to the student who will then provide this to the instructor when requesting an accommodation. The ADA office is located in Room 232 Stadium. Phone: (352) 392-7056 TDD: (352) 846-1046
<http://accessibility.ufl.edu> (<http://accessibility.ufl.edu/>)

UF Counseling 3190 Radio Rd.

and Wellness PO Box 112662

Center: Gainesville, FL 32611-2662 Phone: 352.392.1575

<http://www.counseling.ufl.edu/cwc/> [\(http://www.counseling.ufl.edu/cwc/\)](http://www.counseling.ufl.edu/cwc/)

Very Important [Senior Design Documents and Tutorials](http://www.add.ece.ufl.edu/4924/documents.html) [\(http://www.add.ece.ufl.edu/4924/documents.html\)](http://www.add.ece.ufl.edu/4924/documents.html)

Links: [Parts Distributors](http://www.add.ece.ufl.edu/4924/distributors.html) [\(http://www.add.ece.ufl.edu/4924/distributors.html\)](http://www.add.ece.ufl.edu/4924/distributors.html)

[Suggested Equipment & Spec Sheets](http://www.add.ece.ufl.edu/4924/specs.html) [\(http://www.add.ece.ufl.edu/4924/specs.html\)](http://www.add.ece.ufl.edu/4924/specs.html)

[Senior Design PCB Mill Request](http://seniordesign.ece.ufl.edu/) [\(http://seniordesign.ece.ufl.edu/\)](http://seniordesign.ece.ufl.edu/)

Altium Links:

[Altium Designer Installation and Server Settings](https://mediasite.video.ufl.edu/Mediasite/Play/ec0790cdbcee4dd4afadac65acb08c481d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/ec0790cdbcee4dd4afadac65acb08c481d\)](https://mediasite.video.ufl.edu/Mediasite/Play/ec0790cdbcee4dd4afadac65acb08c481d)

[Altium Designer Starting a Project 1](https://mediasite.video.ufl.edu/Mediasite/Play/3a151c9c949945429ed0d26d92fac0721d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/3a151c9c949945429ed0d26d92fac0721d\)](https://mediasite.video.ufl.edu/Mediasite/Play/3a151c9c949945429ed0d26d92fac0721d)

[Altium Designer Starting a Project 2](https://mediasite.video.ufl.edu/Mediasite/Play/939bbfa8840146a79100a12929ce957a1d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/939bbfa8840146a79100a12929ce957a1d\)](https://mediasite.video.ufl.edu/Mediasite/Play/939bbfa8840146a79100a12929ce957a1d)

[Bypass Capacitors](https://mediasite.video.ufl.edu/Mediasite/Play/78d42c5deeb64ce38796d12acd2661831d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/78d42c5deeb64ce38796d12acd2661831d\)](https://mediasite.video.ufl.edu/Mediasite/Play/78d42c5deeb64ce38796d12acd2661831d)

[Adding Libraries](https://mediasite.video.ufl.edu/Mediasite/Play/02a24c95626c42dbadbbf52f14255c901d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/02a24c95626c42dbadbbf52f14255c901d\)](https://mediasite.video.ufl.edu/Mediasite/Play/02a24c95626c42dbadbbf52f14255c901d)

[Moving Parts to the PCB](https://mediasite.video.ufl.edu/Mediasite/Play/db4331cc3ae040b19e84b311663daf3f1d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/db4331cc3ae040b19e84b311663daf3f1d\)](https://mediasite.video.ufl.edu/Mediasite/Play/db4331cc3ae040b19e84b311663daf3f1d)

[PCB Routing & Rules](https://mediasite.video.ufl.edu/Mediasite/Play/b6b7970cb0d1407c9bb9eb8f0022ddc31d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/b6b7970cb0d1407c9bb9eb8f0022ddc31d\)](https://mediasite.video.ufl.edu/Mediasite/Play/b6b7970cb0d1407c9bb9eb8f0022ddc31d)

[Adding a Copper Pour and File Generation](https://mediasite.video.ufl.edu/Mediasite/Play/618bc2c3504e46f6ba330c39c2fc1a851d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/618bc2c3504e46f6ba330c39c2fc1a851d\)](https://mediasite.video.ufl.edu/Mediasite/Play/618bc2c3504e46f6ba330c39c2fc1a851d)

[Making a Panel of Boards](https://mediasite.video.ufl.edu/Mediasite/Play/09c14b820420469c89084d61cba122011d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/09c14b820420469c89084d61cba122011d\)](https://mediasite.video.ufl.edu/Mediasite/Play/09c14b820420469c89084d61cba122011d)

[Integrated Libraries](https://mediasite.video.ufl.edu/Mediasite/Play/4a0430a6c3964ca08cb58e68bf7333141d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/4a0430a6c3964ca08cb58e68bf7333141d\)](https://mediasite.video.ufl.edu/Mediasite/Play/4a0430a6c3964ca08cb58e68bf7333141d)

[Altium Designer How to Filter and Edit Properties on your Schematic and PCB](https://mediasite.video.ufl.edu/Mediasite/Play/7457e71f2f4e4f478ae2dbce31c3375e1d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/7457e71f2f4e4f478ae2dbce31c3375e1d\)](https://mediasite.video.ufl.edu/Mediasite/Play/7457e71f2f4e4f478ae2dbce31c3375e1d)

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[install and server settings](https://mediasite.video.ufl.edu/Mediasite/Play/1827db1c9572452a8fe2c8fac9c916281d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/1827db1c9572452a8fe2c8fac9c916281d\)](https://mediasite.video.ufl.edu/Mediasite/Play/1827db1c9572452a8fe2c8fac9c916281d)

[Starting a project 1](https://mediasite.video.ufl.edu/Mediasite/Play/c839678d85874b5a834381d13e8739951d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/c839678d85874b5a834381d13e8739951d\)](https://mediasite.video.ufl.edu/Mediasite/Play/c839678d85874b5a834381d13e8739951d)

[Starting a project 2](https://mediasite.video.ufl.edu/Mediasite/Play/67eefab039754012b15aee9532d850781d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/67eefab039754012b15aee9532d850781d\)](https://mediasite.video.ufl.edu/Mediasite/Play/67eefab039754012b15aee9532d850781d)

[Bypass Capacitors](https://mediasite.video.ufl.edu/Mediasite/Play/3eccdbde872b4bfb936b784689466b941d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/3eccdbde872b4bfb936b784689466b941d\)](https://mediasite.video.ufl.edu/Mediasite/Play/3eccdbde872b4bfb936b784689466b941d)

[Adding Libraries](https://mediasite.video.ufl.edu/Mediasite/Play/60706dcd25b04d8ba0649eddde0c28741d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/60706dcd25b04d8ba0649eddde0c28741d\)](https://mediasite.video.ufl.edu/Mediasite/Play/60706dcd25b04d8ba0649eddde0c28741d)

[Moving parts to PCB](https://mediasite.video.ufl.edu/Mediasite/Play/928e72fb177c41cb9a947dca18bd8c711d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/928e72fb177c41cb9a947dca18bd8c711d\)](https://mediasite.video.ufl.edu/Mediasite/Play/928e72fb177c41cb9a947dca18bd8c711d)

[PCB routing and rules](https://mediasite.video.ufl.edu/Mediasite/Play/2b18fad031694517a54eba1648edc6d31d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/2b18fad031694517a54eba1648edc6d31d\)](https://mediasite.video.ufl.edu/Mediasite/Play/2b18fad031694517a54eba1648edc6d31d)

[Adding a copper pour and file generation](https://mediasite.video.ufl.edu/Mediasite/Play/341bac5a72384ad6ab0b4bb471852ed01d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/341bac5a72384ad6ab0b4bb471852ed01d\)](https://mediasite.video.ufl.edu/Mediasite/Play/341bac5a72384ad6ab0b4bb471852ed01d)

[Making a panel of boards](https://mediasite.video.ufl.edu/Mediasite/Play/b28af7e54e444c0aad580dd212dab7931d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/b28af7e54e444c0aad580dd212dab7931d\)](https://mediasite.video.ufl.edu/Mediasite/Play/b28af7e54e444c0aad580dd212dab7931d)

[Integrated libraries](https://mediasite.video.ufl.edu/Mediasite/Play/8a5da1d3c9da491e868d41223b676aec1d) [\(https://mediasite.video.ufl.edu/Mediasite/Play/8a5da1d3c9da491e868d41223b676aec1d\)](https://mediasite.video.ufl.edu/Mediasite/Play/8a5da1d3c9da491e868d41223b676aec1d)

[Filter and edit properties of your schematic and PCB](https://mediasite.video.ufl.edu/Mediasite/Play/8613373288814ad3aa57a1acbe30f1a81d)

[\(https://mediasite.video.ufl.edu/Mediasite/Play/8613373288814ad3aa57a1acbe30f1a81d\)](https://mediasite.video.ufl.edu/Mediasite/Play/8613373288814ad3aa57a1acbe30f1a81d)

[Upgrading to Altium 18](https://www.altium.com/documentation/18.0/display/ADES/Upgrading+to+Altium+Designer+18+-)

[\(https://www.altium.com/documentation/18.0/display/ADES/Upgrading+to+Altium+Designer+18+-\)](https://www.altium.com/documentation/18.0/display/ADES/Upgrading+to+Altium+Designer+18+-)

[+a+Visual+Transition+Guide+for+Existing+Users\)](#)[New features and Updates to Altium 18](#)

[https://www.altium.com/documentation/18.1/display/ADES/Altium+Designer+18.1+-+\(\(New+Features+and+Updates+Summary\)\)_AD](https://www.altium.com/documentation/18.1/display/ADES/Altium+Designer+18.1+-+((New+Features+and+Updates+Summary))_AD)

Other Links: Components:

[Octopart](https://octopart.com/) [\(https://octopart.com/\)](https://octopart.com/)

[Digikey](http://www.digikey.com/) [\(http://www.digikey.com/\)](http://www.digikey.com/)

[Mouser](http://www.mouser.com/) [\(http://www.mouser.com/\)](http://www.mouser.com/)

[Jameco](http://www.jameco.com/) [\(http://www.jameco.com/\)](http://www.jameco.com/)

[Newark](http://www.newark.com/) [\(http://www.newark.com/\)](http://www.newark.com/)

[Sparkfun](https://www.sparkfun.com/) [\(https://www.sparkfun.com/\)](https://www.sparkfun.com/)

Microprocessors:

[Texas Instruments](http://www.ti.com/lscds/ti/dsp/embedded_processor.page) [\(http://www.ti.com/lscds/ti/dsp/embedded_processor.page\)](http://www.ti.com/lscds/ti/dsp/embedded_processor.page)

[Microchip](http://www.microchip.com/selection-tools) [\(http://www.microchip.com/selection-tools\)](http://www.microchip.com/selection-tools)

[Atmel](http://www.atmel.com/products/microcontrollers/default.aspx?src=parent) [\(http://www.atmel.com/products/microcontrollers/default.aspx?src=parent\)](http://www.atmel.com/products/microcontrollers/default.aspx?src=parent)

LCD's:

[New Haven](http://www.newhavendisplay.com/) [\(http://www.newhavendisplay.com/\)](http://www.newhavendisplay.com/)

[Crystalfontz](https://www.crystalfontz.com/?ref=tm&gclid=Cj0KEQiAtK3DBRCBxt-Yxduq5p4BEiQAbFiaPc92gbY87ZQRGpSTYf6PIEb6Sd9eEe14erJp8VVInCoaArEo8P8HAQ) [\(https://www.crystalfontz.com/?ref=tm&gclid=Cj0KEQiAtK3DBRCBxt-Yxduq5p4BEiQAbFiaPc92gbY87ZQRGpSTYf6PIEb6Sd9eEe14erJp8VVInCoaArEo8P8HAQ\)](https://www.crystalfontz.com/?ref=tm&gclid=Cj0KEQiAtK3DBRCBxt-Yxduq5p4BEiQAbFiaPc92gbY87ZQRGpSTYf6PIEb6Sd9eEe14erJp8VVInCoaArEo8P8HAQ)


Robotics platforms:

[Actobotics](https://www.servocity.com/actobotics/?utm_source=Actobotics+Bike+12%2F17%2F2016&utm_campaign=Bike+Built+Out+of+Actobotics&utm_medium=email) [\(https://www.servocity.com/actobotics/?utm_source=Actobotics+Bike+12%2F17%2F2016&utm_campaign=Bike+Built+Out+of+Actobotics&utm_medium=email\)](https://www.servocity.com/actobotics/?utm_source=Actobotics+Bike+12%2F17%2F2016&utm_campaign=Bike+Built+Out+of+Actobotics&utm_medium=email)

[Robotshop](http://www.robotshop.com/) [\(http://www.robotshop.com/\)](http://www.robotshop.com/)

[Parallax](https://www.parallax.com/catalog/robotics) [\(https://www.parallax.com/catalog/robotics\)](https://www.parallax.com/catalog/robotics)

Course Outline: Refer to the course calendar for details

Week 1: Introduction – course guidelines. Design ideas & group selection
 [SD_Guidelines_Requirements](#) ▾

Week 2-3: Initial Project ideas finalized. Project presentations.





Week 4: Altium refresher Weekly updates begin.

Week 5-9: Project Design. Weekly updates.

Week 11-14: Project Design. Weekly updates.

Weeks 15: Projects due – demonstrations, reports, grades.

Course Summary:

Date	Details
Wed Aug 29, 2018	 Project Abstract (https://ufl.instructure.com/courses/356657/assignments/3593217) due by 11:59pm
	 Final Design Report (https://ufl.instructure.com/courses/356657/assignments/3593214)
	 Final Report Revisions (https://ufl.instructure.com/courses/356657/assignments/3593215)
	 Preliminary Design Report (https://ufl.instructure.com/courses/356657/assignments/3593216)