

# ME2110: Creative Decisions and Design

Christopher Saldana, Ph.D.

Woodruff School of Mechanical Engineering

Georgia Institute of Technology

Atlanta, Georgia, USA

# ME2110 course details

## ❖ Lecture

- MW, 3:00 – 3:50 PM, IC103

## ❖ Websites

- <http://2110.me.gatech.edu>
- Canvas

## ❖ Studio Instructors:

- K. Mehaffey (B)
- R. Cowan (C, I)
- C. Adams (D)
- R. Simmons (E)
- H. Rashidi (F, J, L, M)
- C. Saldana (G)

## ❖ Studio

- 2h 45m long
- Various timings by section
- IDEA Classroom (MRDC2101)
- IDEA Laboratory (MRDC2101)

## ❖ Head TAs:

Patrick Jung      Zoe Klesmith

## ❖ Studio TAs:

Lisa Dewitte  
Nathan Devol  
David Gamero  
Arnoldo Castro  
Alexandra Schueller  
Caroline Massey  
Muyang Guo  
Anastasia Schauer



# Course Objectives

## To learn:

- fundamental procedures for solving engineering design problems
- the essential details of analyzing, synthesizing, and implementing design solutions with flexibility, adaptability, and creativity
- the techniques which allow an engineer to tackle new, unsolved, open-ended problems
- by doing through team and individual projects and assignments

# Characteristics of Design

- Multi-stage - hierarchical decomposition
- Large quantities of data - modularized
- Support design tools - analysis, optimization, simulation, etc. - in various design phases
- Uncertain design path
- Alternatives, revisions, versions
- Iterative and cyclic
- Teamwork - interactions between designers
- Multidisciplinary
- Dynamic

# ME2110: Creative Decisions and Design



This course is about:

- understanding alternatives
- problem solving
- organization
- writing
- presenting
- fabrication

Professionalism

- projects
- reports
- attendance

# Suggestions for this course

## Do

- be in class on time
- be in studio on time
- pay attention
- use the tools that are presented
- read the book
- give professional presentations
- act professionally
- follow procedures (safety)
- clean-up in studio
- report damaged equipment
- have fun

## Don't

- miss class
- turn in hand written reports
- turn in unprofessional reports
- close your minds to the alternatives
- bring food into studio
- leave a mess in studio

# Your Grade



## Graded Elements

Canvas Assessments	5%
Homework	10%
Class Participation	10%
Studio Preparedness	5%
Catapult Project Report	3%
Lab Stewardship	2%
Introductory Project and Presentation	15%
Major Project	50%
Design Report and Presentation	(10%)
Interim Report and Presentation	(5%)
Machine Performance	(15%)
Design Review	(5%)
Final Report and Presentation	(15%)

## P/F Elements

- Safety Training and IDEA Lab User Form
- Give at Least 1 Oral Presentation
- Mechatronics Task Completion
- Machining Task Completion

\*Note: Receiving an F for a P/F item will result in 1 letter grade reduction in your final grade for every F received.

# Attendance

## You must attend all studios:

- attendance will be taken
- missing a studio results in a 0 for that studio grade
- missing a studio assignment results in a letter grade reduction

## You must attend all lectures:

- attendance will be taken at 3:00 PM
- being late (arriving between 3:00 and 3:15) is 0.5 of a missing lecture
- we will be using a seating chart
- missing lectures (rounded down) will result in a final grade penalty
  - 2-3 missed lectures = 1 letter grade reduction
  - 4-5 missed lectures = 2 letter grade reduction
  - 6-7 missed lectures = 3 letter grade reduction
  - 8-9 missed lectures = 4 letter grade reduction.



# Course Materials

National Instruments myRIO  
(and LabVIEW)



Lab Virtual Instrument Engineering Workbench (LabVIEW)  
Reconfigurable IO Modules (RIO)

Course Text



# Critical Information

Studios (labs) are being held this week

Do not miss your studio section

Competition date Friday, 15 November 5 PM

Final reports / presentations the week of 18 November

# Some Advice

Get to know your TA and instructor

Know where you are going

Keep on top of the assignments and reports

Learn your material, it is valuable (\$\$\$)

Learn to tell your story, this course can help you in the future

You learn more from failure than from success

- Fail early / fail often / understand your failure mode

Prototypes

- Build / run / fatigue