

# EE/CprE/SE 491 – Senior Design I and Professionalism

## Introduction and Overview

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*I've never had a problem with a dumb client. There is no such thing as a bad client. Part of our job is to do good work and get the client to accept it. – Bob Gill*

# About Senior Design

## **EE / CPR E / SE 491: Senior Design Project I and Professionalism.** (2-3) Cr.

3. *Prereq: varies by major*

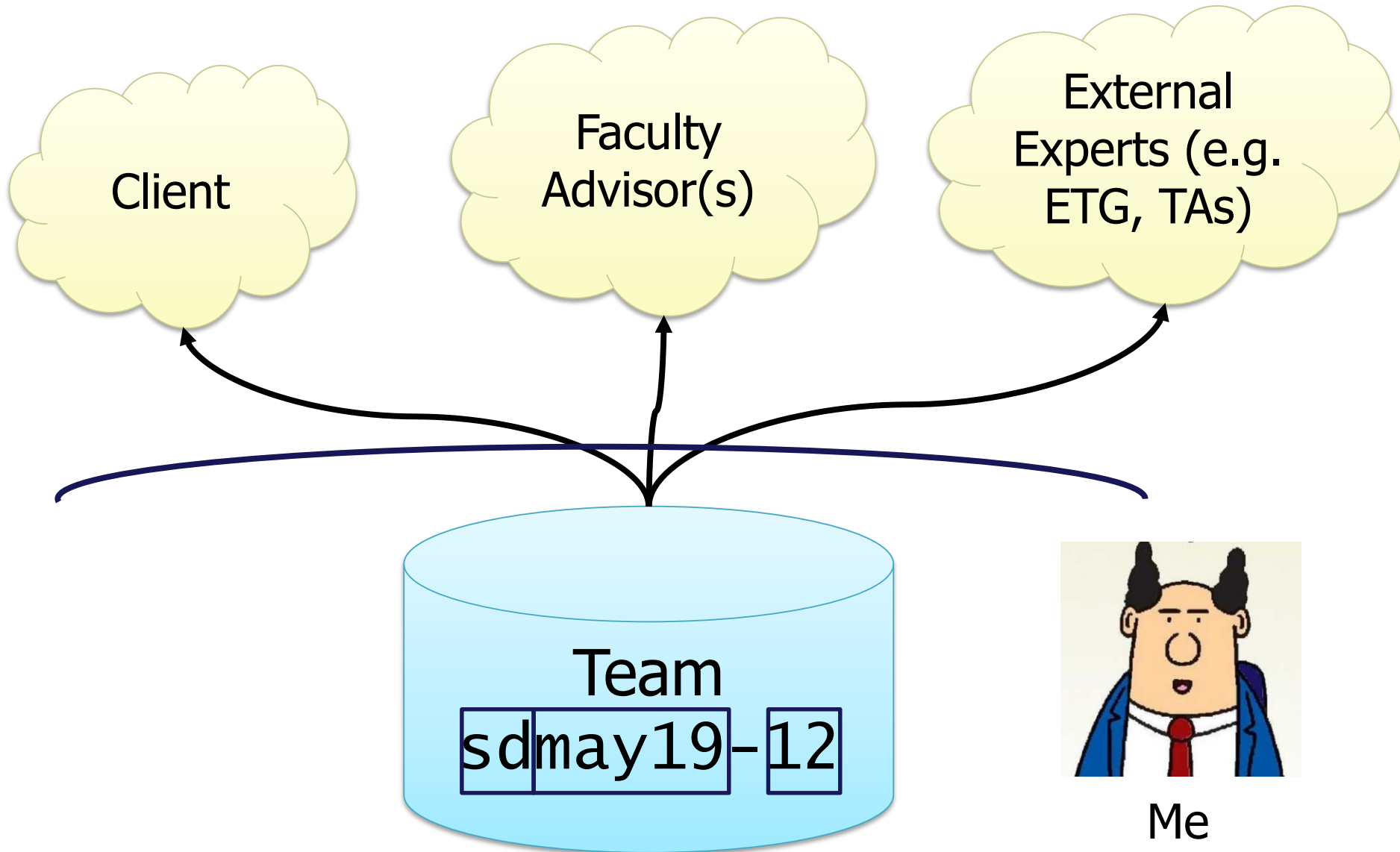
Preparing for entry to the workplace. Selected professional topics. Use of technical writing skills in developing project plan and design report; design review presentation. First of two-semester team-oriented, project design and implementation experience.

## **EE / CPR E / SE 492: Senior Design Project II.** (1-3) Cr. 2. *Prereq: EE 491, CPR E 491, or SE 491*

Second semester of a team design project experience. Emphasis on the successful implementation and demonstration of the design completed in 491 and the evaluation of project results. Technical writing of final project report; oral presentation of project achievements; project poster.

- During the first semester (EE/CprE/SE 491), students work in project teams to create a design solution to an industry, faculty, or student proposed engineering problem, and use their technical writing skills to produce a project plan and design report. 491 also includes several learning modules on professionalism.
- During the second semester (EE/CprE/SE 492), students create a design prototype and deliver a final report, a project poster, and an oral presentation.

# General Course Organization

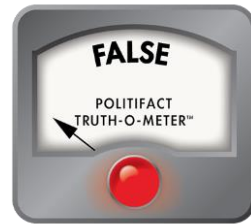


# Mutual Expectations

- My expectations for you:
  - Read all assigned material
  - Actively participate in class
  - Participate fully in your team interactions
  - Complete all work with an acceptable level of quality
  - **Main themes:** pride in your work, communication, effort and participation
- My expectations for myself:
  - Clear, fair, consistent policies
  - Provide timely, actionable feedback
  - Respect your time and efforts
  - High availability
  - Serve as your advocate when things get rough
  - **Main themes:** respect, communication, support

# Some Common 491 Misconceptions

- “491 is all planning and documentation, the real engineering happens in 492”
  - The truth: you have quite a bit of control over your plan/schedule, and successful teams start making significant technical progress on day 1
- “Nobody fails senior design, so it can take low priority in an otherwise busy semester”
  - The truth: if you are not a valued contributor to your team/project (as evaluated by peers and advisor), I will see you again next semester ☹️



# Some Common 491 Misconceptions (cont.)

- “Attendance in class isn’t really necessary (or, I can double-book my Tuesdays at 2”

- The truth: it has been the case in the past, but I am working to make each week as relevant as I can. Let me know what type of content you might like to see.

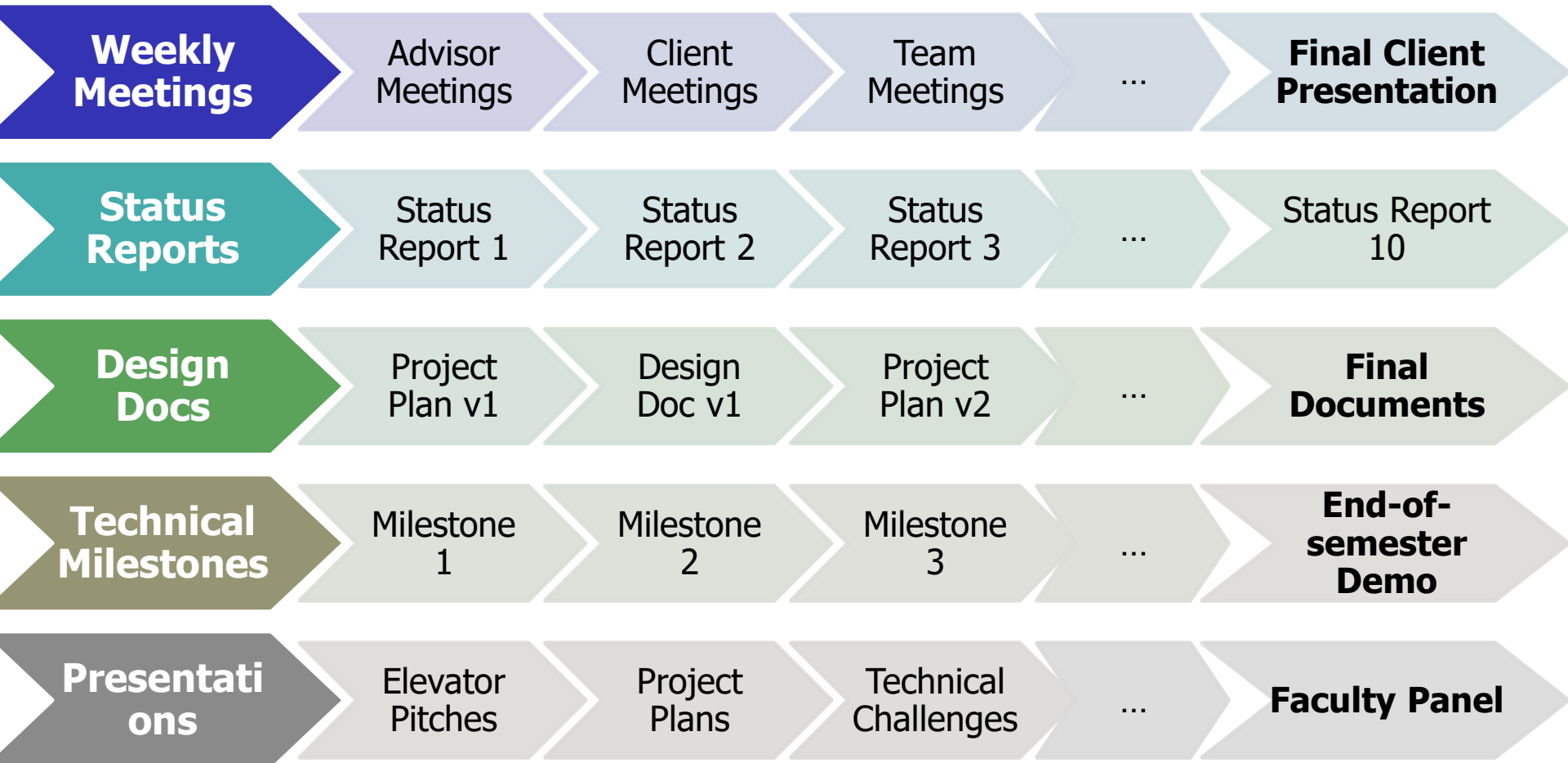


- “The instructor/clients/advisors don’t really care about senior design.”

- The truth: I’ve worked hard to put these projects together, I’m constantly making claims that ECpE/SE students are awesome, and I want to see every team do an outstanding job.



# A Typical 491 Schedule



# 491 Grading

- **40%: Class activities**
  - 10%: In-class and reflection assignments
  - 5%: Weekly status reports (10x)
  - 10%: Instructor evaluation of the project plan
  - 10%: Instructor evaluation of the design document
  - 5%: Class attendance and participation
- **25%: Final project review, performed by a faculty panel**
- **35%: Advisor grading of individual student contributions**



# Next Steps

## seniord.ece.iastate.edu/schedule.html

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ECpE Senior Design

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General Info >

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Schedules >

491 Schedule

492 Schedule


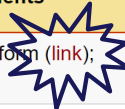
Propose a Project >

Projects >

Resources >

Canvas >

### EE/CprE/SE 491 Tentative Weekly Schedule

Weekly Topic	Tuesday (1210 LeBaron)	Individual Assignments	Other Team Deliverables
Week 1 8/20 - 8/24	Course overview Project descriptions  <a href="#">(link)</a>	Project preferences form  <a href="#">(link)</a> ; Assignments <a href="#">(link)</a>	
Week 2 8/27 - 8/31	Thinking about Graduate School? (Vicky Thorland-Oster, <a href="#">ECpE Student Services</a> ) Working with Clients (Carey Novak, <a href="#">CIRAS</a> )	Reflection: Team Expectations and Setting Roles	
Week 3 9/3 - 9/7	Building Empathy with Users (Nicholas Fila, <a href="#">College of Design</a> ) Tech Talk: Modern HW/SW Project Management (Brendan Bartels, <a href="#">Workiva</a> )		Weekly Status Report-01
Week 4 9/10 - 9/14	Lightning Talks: Elevator Pitches	Reflection: Design Thinking Pre-Workshop	Weekly Status Report-02
Week 5 9/17 - 9/21	No class - Career Fair		Project Plan (v1) Team Web Site (v1)
Week 6 9/24 - 9/28	Design Thinking Workshop (Nicholas Fila, <a href="#">College of Design</a> )	Reflection: Design Thinking Post-Workshop	Weekly Status Report-03
Week 7 10/1 - 10/5	Lightning Talks: Project Plans		Weekly Status Report-04
Week 8 10/8 - 10/12	Lightning Talks: Project Plans (cont.)	Reflection: Areas of Professional Responsibility	Design Document (v1)

# Filling out the Project Preference Form

**Fully connected graph (so I know you all want to be on the same team)**

## Senior Design Project Preference Form

\* Required

Your Net-ID \*

Choose

First Project Preference \*

Please be sure to select 5 separate projects.

Choose

Second Project Preference \*

Choose

Third Project Preference \*

Choose

Fourth Project Preference \*

Choose

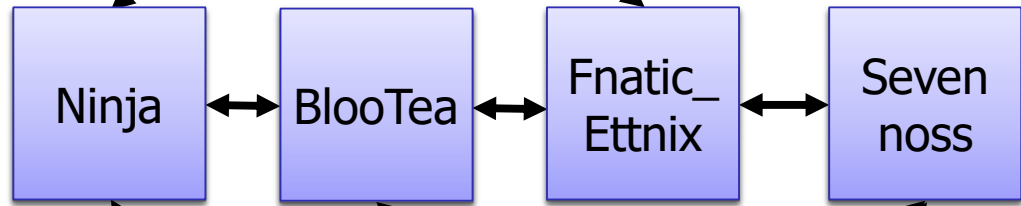
Fifth Project Preference \*

Choose

NEXT

Never submit passwords through Google Forms.

**4-6 students per team**



1. ...proj047
2. ...proj027
3. ...proj018
4. ...proj060
5. ...proj009

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2. ...proj027
3. ...proj018
4. ...proj060
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5. ...proj009

**Everyone fills out identical preferences (so I know this is what you all want to work on)**