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

E E / CPR E / S E 491: Senior Design Project I and Professionalism. (2-3) Cr. 3. *Prereq: varies by major*
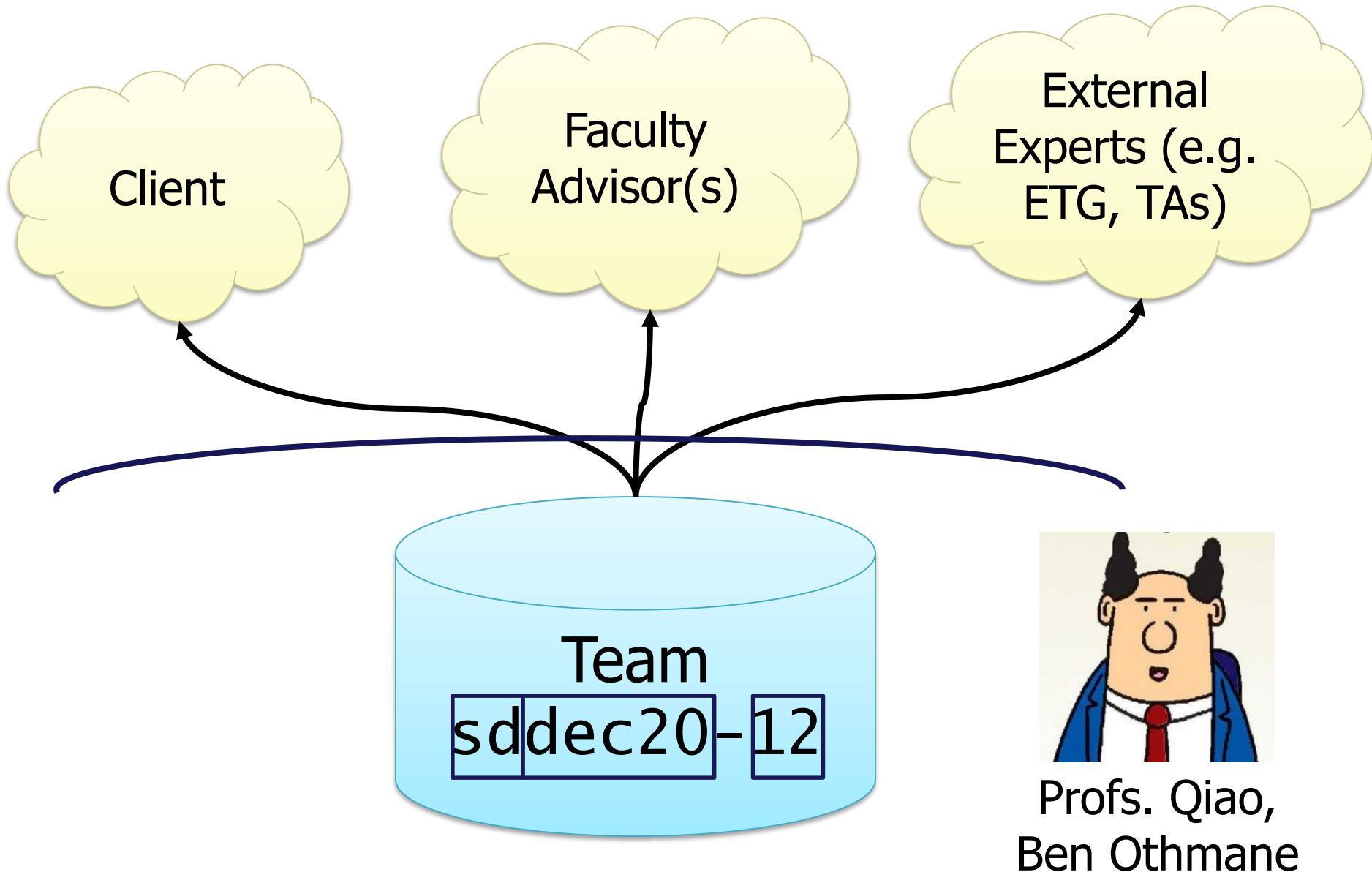Preparing for entry to the workplace. Selected professional topics. Use of technical writing skills in developing project plan and design report; design review presentation. First of two-semester team-oriented, project design and implementation experience.

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

Client

Faculty Advisor(s)

External Experts (e.g. ETG, TAs)

Team
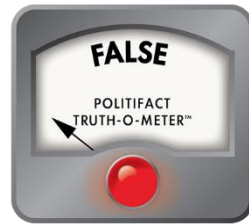sddec20-12

Profs. Qiao, Ben Othmane

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 ☹

- "Attendance in class isn't really necessary (or, I can double-book my Tues or Thur at 2"

  – The truth: it has been the case in the past, but we are working to make each week as relevant as we can. Let us know what type of content you might like to see.
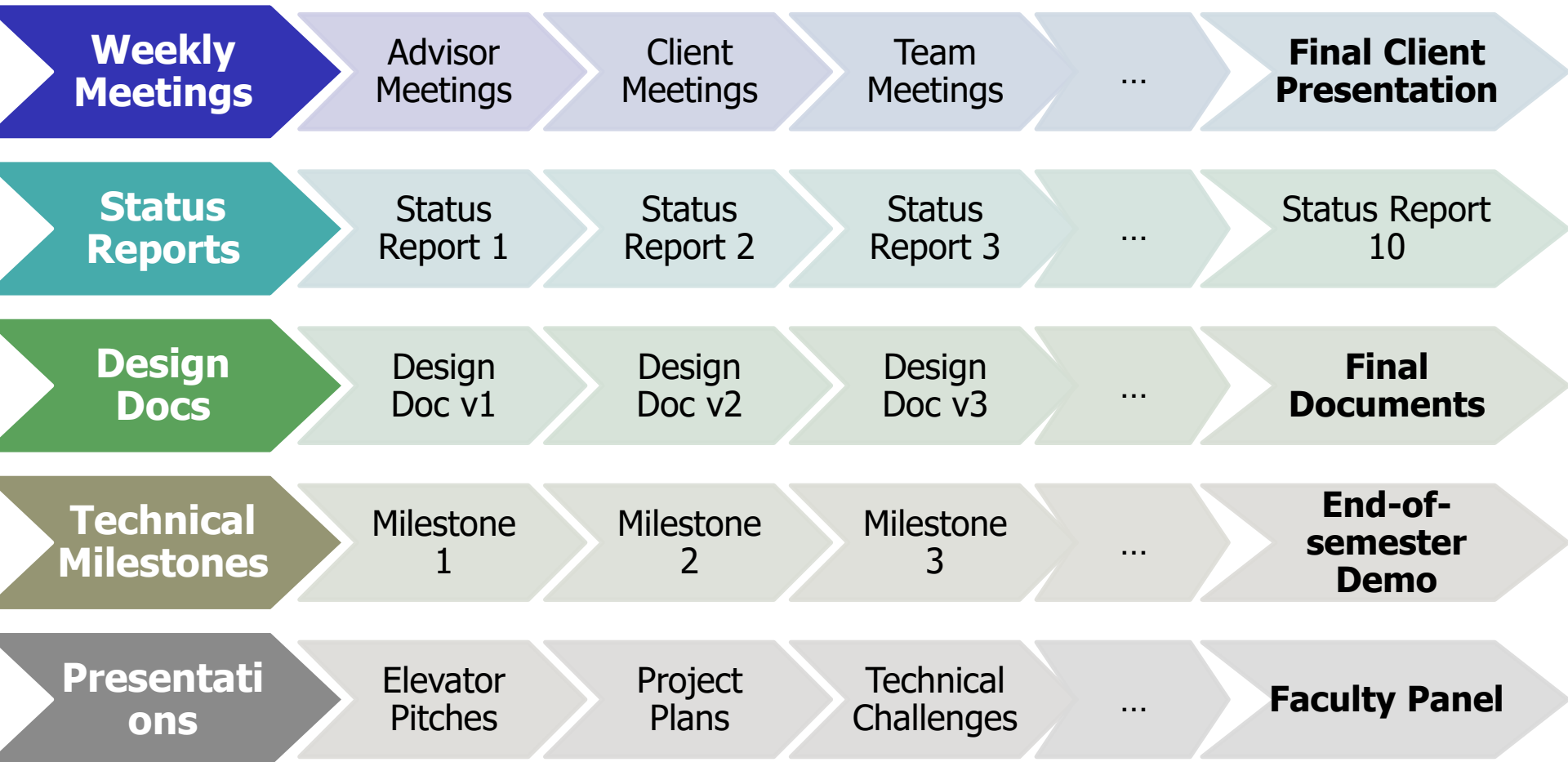
- "The instructor/clients/advisors don't really care about senior design."

  – The truth: We've worked hard to put these projects together, we're constantly making claims that ECpE/SE students are awesome, and we want to see every team do an outstanding job.

A Typical 491 Schedule

Weekly Meetings	Advisor Meetings	Client Meetings	Team Meetings	…	**Final Client Presentation**
Status Reports	Status Report 1	Status Report 2	Status Report 3	…	Status Report 10
Design Docs	Design Doc v1	Design Doc v2	Design Doc v3	…	**Final Documents**
Technical Milestones	Milestone 1	Milestone 2	Milestone 3	…	**End-of-semester Demo**
Presentations	Elevator Pitches	Project Plans	Technical Challenges	…	**Faculty Panel**

- 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

Filling out the Project Preferences Form

Fully connected graph (so I know you all want to be on the same team)
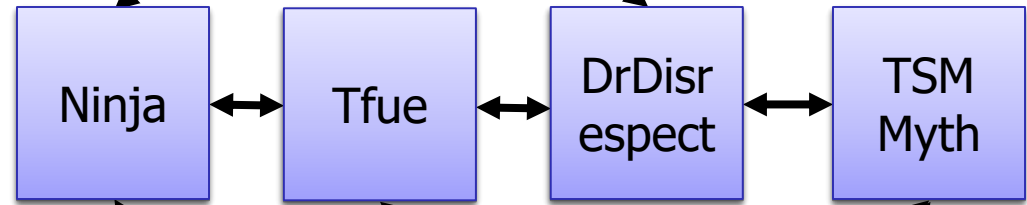
Senior Design Project Preference Form

* Required

4-6 students per team

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.

| Ninja | Tfue | DrDisrespect | TSM Myth |

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

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

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

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

Other Considerations

- Select projects so that you have a major design experience relevant to your major!

  - "I know absolutely nothing about this but would like to learn" is an excellent life philosophy, but a risky capstone selection

  - Not all projects have enough relevant SE content for SE students

  - CybE students need either a security-focused project, or a project that has a potential security component