

UNIVERSITY OF FLORIDA

Department of Industrial and Systems Engineering

EIN 4335

Spring 2015

### **Senior Design**

Instructor Roque Perez-Velez, PE  
Office: 3126 UF Health Shands 1329 Building  
Telephone: 352-265-8048  
E-mail: [perero@shands.ufl.edu](mailto:perero@shands.ufl.edu) or [perezrv@ufl.edu](mailto:perezrv@ufl.edu)  
Homepage: Canvas ([lss.at.ufl.edu](https://lss.at.ufl.edu) or <https://ufl.instructure.com/>)  
Class Hours: MWF 4:05-4:55 p.m. in MAE (Building B), Room 0211  
Office Hours: By appointment

### Faculty Coaches

A faculty member will serve as your faculty coach.

### Catalog Description

The Integration of industrial and systems engineering methodologies with emphasis on methods of successful implementation on a real-world problem. A project and case-study oriented course.

### Objective

The purpose of this course is to give students skills in carrying out a project for a designated client, just as practicing engineers. This course brings together many of the tools presented in previous courses to solve the problems defined in the project. Students also acquire additional experience in giving presentations and technical writing.

### Pre-requisites

EIN 3314C, EIN 4365, ESI 4221C and ESI 4523; Coreq: EIN 4333.

Course Objectives: Students will:

- Solve a client-driven problem and present their answer for review.
- Gain exposure to ISE as a profession.
- Illustrate the use of ISE in practice.
- Acquire background in professionalism, including business etiquette, ethics, and teamwork.
- Integrate a variety of ISE tools and use those tools in problem-solving.
- Hone writing and presentation skills.

Contribution of course to meeting the professional component

The course will help students function on multidisciplinary teams; identify, formulate and solve engineering problems; understand professional and ethical responsibilities; communicate effectively; understand the impact of engineering solutions in a global and societal context; and understand contemporary engineering issues.

Relationship of course to program outcomes

The course will help students prepare for professional careers in ISE. After completing the course, students should understand their professional and ethical responsibilities, be aware of contemporary engineering issues, and recognize the need for life-long learning.

Grading

Weekly update memos.....	5%
Proposal report.....	5%
Proposal presentation.....	5%
Midterm project report.....	10%
Midterm project presentation.....	5%
Final project report.....	20%
Final project presentation.....	15%
Course improvement report.....	5%
Individual evaluation (coach).....	10%
Individual evaluation (team).....	5%
Sponsor evaluation.....	5%
Creative Ideation & Storytelling Lab.....	10%

Creative Ideation and Storytelling (CIaS) Lab will be lead by Prof. Akcali, during which the students will be introduced to a host of tools for harnessing the collective creativity of the groups to (1) develop solutions to complex problems and (2) constructing engaging narratives in the form of drawings/illustrations and graphic stories. The CIS grade component will be calculated according to the following criteria.

Attendance.....40%  
Creative ideation assignment.....30%  
Storytelling assignment.....30%

### Scale

Grading is based on a straight scale: A: 92 – 100; A-: 90 – 91.9; B+: 88 – 89.9;

B: 82 – 87.9; B-: 80 – 81.9; C+: 78 – 79.9; C: 72 – 77.9; C-: 70 – 71.9; etc.

After final grades are computed (on a basis of 100), 1 points will be deducted for each unexcused absence from a lecture. Excused absences must be requested (via email) at least 24 hours in advance.

A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement.

For more information on grades and grading policies, please visit:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### Evaluation

Grading in this course requires analysis of reports and presentations. The following gives further guidance on grading:

- A: outstanding grade: must demonstrate initiative, be self-motivated and go beyond what is asked for in the program
- B: above-average grade: requires that all required assignments are completed on time, done with care and are correct
- C: average grade: awarded for complete and punctual work, but demonstrates a lack of initiative
- D: below-average grade: awarded for work that is late, only partly fulfills the requirements and demonstrates no initiative
- F: failing grade--given for work that does not fulfill the assignment requirements

### Format

Student teams will meet weekly with their faculty coach to move the project forward. Class lectures will be held on scheduled days (see attached schedule). Teams will travel to client at least twice (prior-proposal and for mid term review), although multiple visits may be necessary.

### Essentials

Students are expected to spend at least 12 hours per week on the project. Student teams must meet with their faculty coach at least once a week. During the course of your project, team members may be privy to sensitive company information. Maintain confidentiality as required.

*Remember that when you are working on-site at the company, you are representatives of the University of Florida. Dress and act appropriately.*

### Lecture Topics

Project Management

Dealing with Clients

Technical Writing: Memos, Summaries, Reports

Presentation Skills

Teamwork

Ethics

Storytelling

### Deliverables

**Weekly Memos:** Due every Monday by 4pm on Canvas, starting January 26<sup>th</sup> and finishing on April 6<sup>th</sup>. The memo should detail what the team accomplished during the last week, what the team plans to accomplish during the next week, and describe any issues or problems that the team is experiencing. (Document your process as if you were billing!) You may want to share these with the client. **All off campus travel must be documented before departure.**

**Proposal:** Due February 2<sup>nd</sup> by 4pm on Canvas and hard copy in class. A project proposal broadly describing the problem and probable method of approach should be submitted. Indicate in the proposal the company background, problem statement, probable method of analysis, and project deliverable. To supplement the report, include a work breakdown structure (WBS) detailing all work packages, a project network diagram, a Gantt chart detailing all major steps in the project, and a linear responsibility chart (LRC) showing who is responsible for what.

**Mid-term Report:** Due March 16<sup>th</sup> by 4 pm on Canvas and hard copy in class. Format lies between that of the final report and the proposal, as it reviews what has been completed and what remains to be completed. An assessment of where the project stands in relation to the proposed schedule is required with necessary discussion of any deviation.

**Creative Ideation Assignment:** Due January 30<sup>th</sup> by 4pm on Canvas. Requirements for the report will be announced on January 23<sup>rd</sup>.

**Creative Storytelling Assignment:** Due April 8<sup>th</sup> by 4pm on Canvas. Requirements for the report will be announced on April 1<sup>st</sup>.

**Draft Final Report:** Due April 13<sup>th</sup> by 4pm on Canvas and hard copy in class. See final report below for contents.

**Improvement Report:** Due April 15<sup>st</sup> by 4pm on Canvas and hard copy in class. Report must contain a review of the course, including client-student team relations and any suggestions for improvement. More importantly, three future projects identified during the current project are to be proposed and described in detail.

**Final Report:** Due April 24<sup>th</sup> by 12pm on Canvas and hard copy in my office. Report must contain an executive summary, introduction, assumptions, synopsis of analyses, additional factors, conclusions, recommendations, references, and appendix (if necessary).

### Honesty:

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

### Disabilities:

Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

### Counseling

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
- Career Resource Center, Reitz Union, 392-1601, career and job search services.

### Software

All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## Course Calendar

### As of January 5<sup>th</sup>, 2015

- Jan 7            Lecture topic: Introductions & Tips to a Successful Experience
- Jan 9            Lecture topic: Dr. Elif Akcali: CIaS Lab Introduction
- Jan 12           Lecture topic:
- Jan 14           Lecture topic: Opportunities in the IE field
- Jan 16           Lecture topic: CIaS Lab: Creative Ideation I
- Jan 19           No class: MLK Day
- Jan 21           Lecture topic: Dealing with Clients
- Jan 23           Lecture topic: CIaS Lab: Creative Ideation II
- Jan 26           Lecture topic: Project Management
- Jan 28           Lecture topic: Teamwork
- Jan 30           Team meetings - *Creative Ideation Assignment due*
- Feb 2            **Proposal presentation delivered in class. Written proposal due.**
- Feb 4            **Proposal presentations continued in class.**

Feb 6           YAAB Visit - Presentation

Feb 9           Lecture topic: Other IE field-related topics

Feb 11          Lecture topic: TBD

Feb 13          Team meetings

Feb 16          Lecture topic: Ethics

Feb 18          Lecture topic: TBD

Feb 20          Team meetings

Feb 23          Lecture topic: TBD

Feb 25          Lecture topic: TBD

Feb 27          Team meetings

**Mar 2 –6        No classes – *Spring Break***

Mar 9           Lecture topic: Presentations

Mar 11          Lecture topic: TBD

Mar 13          Team meetings

Mar 16          **Project update delivered in class. Mid-term report due.**

Mar 18          **Project updates continued in class.**

Mar 20          Team meetings

Mar 23      Lecture topic: Writing technical reports.

Mar 25      Lecture topic: CIaS Lab: Creative Storytelling I

Mar 27      No class: Travel to sponsor for update meeting.

  

Mar 30      Lecture topic: Visiting Professionals talking about their IE experiences.

Apr 1        Lecture topic: CIaS Lab: Creative Storytelling II

Apr 3        Team meetings

  

Apr 6        Lecture topic: Visiting Professionals talking about their IE experiences.

Apr 8        CSC Lab - *Creative Storytelling Assignment due*

Apr 10      Team meetings

  

Apr 13      Lecture topic: Final issues. **Draft final report due.**

Apr 15      Final review, evaluations and wrap-up. **Course improvement report due.**

Apr 17      Team meetings

  

Apr 20      **Final presentations with sponsors at UF**

Apr 22      **Final presentations with sponsors at UF.**

  

Apr 24      Final report due.