New Core Component Proposal

Date Submitted: 01/25/19 4:06 pm

Viewing: ECEN 404-C : Electrical Design Laboratory II

Last edit: 01/25/19 4:06 pm
Changes proposed by: w-lala

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stavros Kalafatis</td>
<td><a href="mailto:skalafatis-tamu@tamu.edu">skalafatis-tamu@tamu.edu</a></td>
<td>979-458-8429</td>
</tr>
</tbody>
</table>

Course Prefix ECEN
Course Number 404

Academic Level UG

Complete Course Title Electrical Design Laboratory II

Abbreviated Course Title ELECTRICAL DESIGN LAB II

Crosslisted With

Semester Credit 3 Hour(s)

Proposal for: Communication Designation

Communication Designation

Number of Sections per Academic Year 6
Enrollment per Section (Avg.) 60

Are the graded writing and presentations evaluated by any assistants (i.e., GATs or undergraduates)? Yes

In Workflow
1. ECEN Department Head
2. EN College Dean UG
3. W & C Preparer
4. W & C Advisory Committee Chair
5. Faculty Senate Preparer
6. Faculty Senate
7. Provost II
8. President
9. Curricular Services

Approval Path
1. 08/01/18 2:50 pm Windy Lala (w-lala): Approved for ECEN Department Head
2. 08/16/18 8:13 am Prasad Enjeti (enjeti): Approved for EN College Dean UG
3. 08/31/18 3:06 pm Valerie Balester (v-balester): Rollback to Initiator
4. 10/22/18 12:01 pm Windy Lala (w-lala): Approved for ECEN Department Head
5. 10/23/18 10:17 am Prasad Enjeti (enjeti): Approved for EN College Dean UG
6. 10/26/18 1:26 pm Valerie Balester (v-balester): Rollback to Initiator
7. 11/09/18 2:47 pm  
   Aydin Karsilayan (karsilay):  
   Approved for ECEN Department Head
8. 11/16/18 1:28 pm  
   Prasad Enjeti (enjeti): Approved for EN College Dean UG
9. 12/04/18 11:27 am  
   Donna Pantel (dpantel): Rollback to Initiator
10. 12/04/18 12:02 pm  
    Windy Lala (w-lala): Approved for ECEN Department Head
11. 01/16/19 3:36 pm  
    Prasad Enjeti (enjeti): Approved for EN College Dean UG
12. 01/25/19 2:33 pm  
    Donna Pantel (dpantel): Rollback to Initiator
13. 01/28/19 10:41 am  
    Aydin Karsilayan (karsilay):  
    Approved for ECEN Department Head
14. 02/25/19 2:24 pm  
    Prasad Enjeti (enjeti): Approved for EN College Dean UG
15. 04/03/19 2:35 pm  
    Donna Pantel (dpantel):  
    Approved for W & C Preparer
16. 04/03/19 2:44 pm  
    Donna Pantel (dpantel):  
    Approved for W &
Who will evaluate them?

The course coordinator creates grading rubrics to ensure all instructors and GATs are following the same grading scheme. Routine meetings (weekly) take place to discuss grading issues, questions, and/or concerns.

If you are working with assistants (graduate or undergraduate included), briefly explain how you will monitor and supervise their work and what roles they will play in the teaching of communication.

There are 8 TA’s and 2 instructors working with me. We meet weekly and I ensure that all of them meet at least once a week with each team to provide feedback on their presentations and projects. There is a common grading rubric created by the course coordinator and used by all instructors and GATs.

All syllabi should contain one of the following statements. Select the statement that applies to your course.

To pass this course you must pass the C component.

List all graded writing and speaking assignments along with the approximate word count or length of time speaking of each. (Note that for most 12-point fonts there are about 250 words on a page if double-spaced and 500 if single-spaced.) In addition, list the percentage of the final grade each assignment represents.

<table>
<thead>
<tr>
<th>Writing/Speaking Assignment</th>
<th>Word count</th>
<th>Length of Speaking Assignment</th>
<th>% of final grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation 1</td>
<td>500</td>
<td>5</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Presentation 2</td>
<td>500</td>
<td>5</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Presentation 3</td>
<td>500</td>
<td>5</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Presentation 4</td>
<td>500</td>
<td>5</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Presentation 5</td>
<td>500</td>
<td>5</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Final presentation</td>
<td>500</td>
<td>5</td>
<td>10</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Add word count of each graded writing assignment and put total word count here. 3000

Add length of each graded speaking assignment and put total presentation time here. 30

Add the percentage of final grade based on writing/speaking and put the total percentage here. Any combination is allowed, as long as the total meets the requirement. 35

Explain how collaboration is monitored to ensure equal participation.

Students work in groups to prepare group presentations. But each student is responsible for specific sections of the presentation, which is communicated to the instructors for grading purposes, and each individual student must have a minimum amount of speaking time during the presentation as dictated by the table above.
Describe the formative feedback provided on student writing and speaking, especially on major assignments.

Formative feedback is provided during and after the presentation and at a minimum of weekly interval. Students have the opportunity to integrate feedback in follow-on presentations as the semester the goes on.

Describe how you provide writing and speaking instruction.

Speaking instruction is provided both on the form of examples of good speaking engagements as well as pointers into what aspects of the presentation did not make the desired impact. Also, the students are provided with powerpoint slides describing effective means of communication and presentation preparation. Templates that exhibit good presentation formats and layouts are provided to the students. Finally, videos of prior semester presentations are available to the students to observe the spectrum of presentation skill and style.

Additional Comments

Each presentation (there are 6 total) requires each student (in a team) to prepare 500 words of the presentation, and to speak for at least 5 minutes. So, in total, each individual student prepares 3000 words of presentation material, and delivers 30 minutes of spoken presentation.

The written portion is in the presentations themselves (like a Powerpoint presentation, for example; i.e., the text written in the powerpoint). The students then deliver a presentation of the same written content.

A poster is also made by the team of students as part of the final presentation; the word count contributed by each individual student is included in the word count listed above (500 words) for the final presentation.

Please ensure that the attached course syllabus sufficiently and specifically details the appropriate core objectives.
number of words is 1500; (3) the total minutes of performance is 120; (4) the instructor to student ratio is 1:16; and (5) the assigned writing and speaking are appropriate to the major. Eight teaching assistants and two instructors help with this course. Students present six times, five of them as bi-weekly updates and as a way to practice for the final presentation. Each student contributes at least 5 minutes and 500 words in slides to the presentations. For the final presentation, each student also contributes 500 words toward a research poster. Feedback is given after each presentation at a minimum of weekly intervals and can be used to prepare the next presentation. Instruction is given on presentation style and preparing slides, including the analysis of presentations done in prior semesters.
Course title and number: ECEN 404: Electrical Design Laboratory
Term: Spring 2019
Meeting times and location: TBA

Course Description and Prerequisites
Continuation of ECEN 403; application of the design process and project engineering as practiced in industry; team approach to the design process; completion of project based on proposal from ECEN 403; includes testing, evaluation and report writing.
Prerequisites: Grade of C or better in ECEN 403; senior classification.

Learning Outcomes or Course Objectives
At the end of the course, the student should be able to demonstrate skills in the categories below.

1. Design Methodology
   a. Apply scientific methods and engineering principles learned in other courses to design, analyze and demonstrate a non-trivial engineering system or process to meet a desired need.
   b. Describe the activities that occur during each stage of a design process.
   c. Analyze project needs in order to produce quantitative design requirements.
   d. Develop technical skills including PCB design and soldering.

2. Societal Impact
   a. Recognize the ever-present role of design in human activity
   b. Analyze and address risks associated with concept.

3. Project management
   a. Demonstrate the ability to work in a team environment.
   b. Assess risk in a project and assign appropriate contingency.
   c. Develop project development and validation plan, and execute to it.
   d. Communicate and justify design choices through written and oral assignments.

Instructor Information
Name: Professors Stavros Kalafatis, John Lusher & Kevin Nowka
Telephone number: 979/458-8429
Email address: skalafatis@tamu.edu; john.lusher@tamu.edu; kjnowka@tamu.edu
Office hours/location: Kalafatis: M/W 4-5pm in 205E WEB; Nowka: M/W 4-5pm in 205E WEB; Lusher: T 9:30-12pm & 2-4pm in EIC; and/or by email-arranged appointment

Teaching Assistants: Pranav Dhulipala<pranav.d1993@tamu.edu>; Jordan Wenske jwenske@tamu.edu; Andrew Miller <andrew.miller@tamu.edu>; Mutaz Melhem <yar111@tamu.edu>; Abhishalini Sivaraman <siva558@tamu.edu>; Ping Wang pingping1986@gmail.com; Saurav Tapanlal Sarkar sauravsarkar12@tamu.edu

Textbook and/or Resource Material
(for reference; not required):
1) Wiley Series in System Engineering and Management by Alexander Kossiakoff, Samuel Seymour
2) Systems Design and Engineering: Facilitating Multidisciplinary Development Projects by Bonnema G. Maarten, Veenvliet T.
3) Embedded System Design by Peter Marwedel
4) Systems engineering Design Principles and models by Dahai Lu
### Grading Policies

<table>
<thead>
<tr>
<th>Bi-weekly presentation updates</th>
<th>25% (average for all updates)</th>
<th>Progress, presentation skills, validation, preparation, tracking to execution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Presentation + poster completion and Video submission</td>
<td>10% (Poster, video and exhibit will remove 5% of final grade if inadequate)</td>
<td>Presentation skills, complexity, validation, clarity, creativity, execution plan</td>
</tr>
<tr>
<td>Demo</td>
<td>40%</td>
<td>Operation, validation completeness, complexity</td>
</tr>
<tr>
<td>Final report</td>
<td>25%</td>
<td>Communication skills, data completeness, clarity of information dissemination, validation and execution plan completeness</td>
</tr>
</tbody>
</table>

**Notes:**
- Individual contribution will be weighed in determining the final course grade.
- Submit all writing assignments in pdf format on eCampus.
- Attendance is mandatory for all lectures and labs. University rules related to excused and unexcused absences are located on-line at [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07)
- To pass this course you must pass the C component
- Oral presentations will be ~500 unique words per student per presentation (in slides) and evaluation/feedback will be taking place bi-weekly/weekly by a team of 3 professors, 8 TA’s and 30-40 of their peers. The feedback will be oral in the lab and during the presentations and written with every presentation submission (which is a total of 6 times for the entire course)

### Grading Scale

- **A** = 90-100
- **B** = 80-89
- **C** = 70-79
- **D** = 60-69
- **F** = <60

### Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/16</td>
<td>Re-validate subsystems, prepare for first bi-weekly update</td>
<td>Lab Re-Introduction</td>
</tr>
<tr>
<td>2</td>
<td>01/23</td>
<td>Bi-Weekly Status Updates (a)</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>3</td>
<td>01/30</td>
<td>Bi-Weekly Status Updates (b)</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>4</td>
<td>02/06</td>
<td>Bi-Weekly Status Updates</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>5</td>
<td>02/13</td>
<td>Bi-Weekly Status Updates</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>6†</td>
<td>02/20</td>
<td>Bi-Weekly Status Updates</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>7</td>
<td>02/27</td>
<td>Bi-Weekly Status Updates</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>8</td>
<td>03/06</td>
<td>Bi-Weekly Status Updates</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>9</td>
<td>03/20</td>
<td>Work on project</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>10</td>
<td>03/27</td>
<td>Bi-Weekly Status Updates</td>
<td>Mini Demo progress (1hr)</td>
</tr>
<tr>
<td>11</td>
<td>04/03</td>
<td>Bi-Weekly Status Updates</td>
<td>PCB Submission Deadline</td>
</tr>
<tr>
<td>12</td>
<td>04/10</td>
<td><strong>Final Design Presentation (10%)</strong></td>
<td>Final Design Presentations</td>
</tr>
<tr>
<td>13</td>
<td>04/17</td>
<td><strong>Final Design Presentation</strong></td>
<td>Final Design Presentations (Cont)</td>
</tr>
<tr>
<td>14</td>
<td>04/24</td>
<td><strong>Final Demo System Integration (40%)</strong></td>
<td>Demo System Integration</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04/29</td>
<td>Final Report (25%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05/02, 05/03</td>
<td>Exhibit, Invitational</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05/09</td>
<td>Grades due – graduating seniors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. ECE Capstone Design Blitz (Feb 23-25)
2. Demo Day – 3A Default Demo Day (8AM to Noon; Last Day of Classes & Re-defined Day)
   3B Invitational Demo Day (8AM to 4PM; Reading Day)

**Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

**Academic Integrity**

For additional information please visit: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

**Online Advising**

Current students should also visit the advising course on eLearning to find out about scholarship, internship and research opportunities. Login through: [http://elearning.tamu.edu/](http://elearning.tamu.edu/) and navigate to:
- Advising for Electrical Engineering Majors
- Advising for Computer Engineering Majors (EE – Track)
Core Curriculum Management

New Core Component Proposal

Date Submitted: 03/08/19 5:37 am

Viewing: **ESET 419-C : Engineering Technology Capstone I**

Last edit: 03/18/19 10:34 am

Changes proposed by: goulart

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ana Goulart</td>
<td><a href="mailto:goulart@tamu.edu">goulart@tamu.edu</a></td>
<td>979-412-6805</td>
</tr>
<tr>
<td>Chadi Geha</td>
<td><a href="mailto:geha_chadi@tamu.edu">geha_chadi@tamu.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

Course Prefix: ESET  
Course Number: 419  
Academic Level: UG

Complete Course Title: Engineering Technology Capstone I

Abbreviated Course Title: ENGR TECH CAPSTONE I

Crosslisted With: 

Semester Credit: 3  
Hour(s): 

Proposal for: Communication Designation

Communication Designation

<table>
<thead>
<tr>
<th>Number of Sections per Academic Year</th>
<th>Enrollment per Section (Avg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>

Are the graded writing and presentations evaluated by any assistants (i.e., GATs or undergraduates)?  

Yes

In Workflow

1. ETID Department Head
2. EN College Dean UG
3. W & C Preparer
4. W & C Advisory Committee Chair
5. Faculty Senate Preparer
6. Faculty Senate
7. Provost II
8. President
9. Curricular Services

Approval Path

1. 02/08/19 12:36 pm  
   Michael Johnson (mdjohnson): Approved for ETID Department Head

2. 02/25/19 2:24 pm  
   Prasad Enjeti (enjeti): Approved for EN College Dean UG

3. 03/01/19 4:20 pm  
   Valerie Balester (v-balester): Rollback to Initiator

4. 03/08/19 5:40 am  
   Michael Johnson (mdjohnson): Approved for ETID Department Head

5. 03/08/19 4:40 pm  
   Prasad Enjeti (enjeti): Approved for EN College Dean UG

6. 04/03/19 2:29 pm  
   Donna Pantel (dpantel): Approved for W & C Preparer
Who will evaluate them?

The course instructor and one graduate assistant will evaluate and grade students' assignments. Also, all Capstone teams have a faculty advisor assigned as their "technical" advisor, who also provides feedback to students on their written and speaking assignments.

If you are working with assistants (graduate or undergraduate included), briefly explain how you will monitor and supervise their work and what roles they will play in the teaching of communication.

We have a graduate assistant research (GAR student), who is a graduate student at the MIS program in the Mays Business School. The graduate assistant is assisting Prof. Chadi Geha with the editing and grading of written reports. She has weekly meetings with Prof. Geha. She will assist him in grading the White Paper, Concept of Operation (COP), Functional System Requirements (FSR), Interface Control Documentation (ICD), in addition to Midterm and Final Reports.

All syllabi should contain one of the following statements. Select the statement that applies to your course.

To receive C credit for this course, you must pass the C component.

List all graded writing and speaking assignments along with the approximate word count or length of time speaking of each. (Note that for most 12-point fonts there are about 250 words on a page if double-spaced and 500 if single-spaced.) In addition, list the percentage of the final grade each assignment represents.

<table>
<thead>
<tr>
<th>Writing/Speaking Assignment</th>
<th>Word count</th>
<th>Length of Speaking Assignment</th>
<th>% of final grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Paper (Speaking Assignment)</td>
<td>0</td>
<td>10</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Concept of Operation - COP (Written)</td>
<td>6000</td>
<td>0</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Functional System Requirements - FSR (Written)</td>
<td>6000</td>
<td>0</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Interface Control Documentation - ICD (Written)</td>
<td>5000</td>
<td>0</td>
<td>5</td>
<td>Yes</td>
</tr>
<tr>
<td>Midterm Preliminary Design Review (Speaking Assignment)</td>
<td>0</td>
<td>20</td>
<td>10</td>
<td>Yes</td>
</tr>
<tr>
<td>Midterm Preliminary Design Report (Written)</td>
<td>15000</td>
<td>0</td>
<td>10</td>
<td>Yes</td>
</tr>
<tr>
<td>Final Report Presentation (Written)</td>
<td>0</td>
<td>20</td>
<td>10</td>
<td>Yes</td>
</tr>
<tr>
<td>Final Report (Written)</td>
<td>20000</td>
<td>0</td>
<td>15</td>
<td>Yes</td>
</tr>
<tr>
<td>Test Plan and Simulations - Each student assigned to a sub-system (Written)</td>
<td>3000</td>
<td>0</td>
<td>10</td>
<td>No</td>
</tr>
<tr>
<td>Final Project Demonstration - Each student assigned to a sub-system (Speaking)</td>
<td>0</td>
<td>15</td>
<td>10</td>
<td>No</td>
</tr>
<tr>
<td>Execution Plan and Milestones (Written)</td>
<td>5000</td>
<td>0</td>
<td>10</td>
<td>Yes</td>
</tr>
<tr>
<td>Lab Participation including summaries of 4 guest lectures</td>
<td>2000</td>
<td>0</td>
<td>5</td>
<td>No</td>
</tr>
</tbody>
</table>
Add word count of each graded writing assignment and put total word count here. 62000

Add length of each graded speaking assignment and put total presentation time here. 65

Add the percentage of final grade based on writing/speaking and put the total percentage here. Any combination is allowed, as long as the total meets the requirement. 100

Explain how collaboration is monitored to ensure equal participation.

All team members need to participate in the written and speaking assignments and each member is responsible for a subsystem design where during the powerpoint presentation that individual needs to discuss/explain how this sub-system is working and show all progress. For example in a team of usually 4 members, we divide the project into 4 sub-systems: (i) hardware design, (ii) software design, (iii) communications/sensors, (iv) system integration/testing. Additionally, the same individual will be in charge of the technical writing of that project sub-system part in the technical reports (such as mid-term, test plan & simulations, and final report) and will be graded accordingly. The writing or speaking is approximately equally divided among the students in a team.

Describe the formative feedback provided on student writing and speaking, especially on major assignments.

For the speaking assignments, students will submit a draft of their powerpoint slides to the instructor and technical advisor a few days before their presentation and feedback will be given to the students about their slides. Students will be required to address the changes recommended by the instructor and technical advisor. Additionally, feedback from the speaking assignments is given immediately after the presentations. It will be given by the course instructor, other faculty members invited to the presentation, and student peers. Students and faculty will be given a rubric for grading the oral presentations.

For the writing assignments, the graduate assistant and course instructor will grade each written assignment with comments regarding style, grammar, punctuation, and sentence structures. Teams submit reports on ecampus and comments are left as a side note for the teams to revise the writing style for the next assignment. For instance, initially students prepare a White paper, Concept of Operation, Function System Requirements and Interface Control Documentation reports. After receiving feedback from instructor and graduate assistant, the students edit and combine all this information in the Midterm Preliminary Design Review. In the Midterm documentation, students will add new components, such as project management details, deliverables and milestones, schedule, bill of materials, and Gantt chart explanation. The midterm reports and presentation will be graded, students will continue working on their project, and update the midterm report based on the instructor’s feedback and technical updates on the project. These will lead to the project's final report and presentation.

Describe how you provide writing and speaking instruction.

We have a series of lectures/workshops for students/Teams to prepare them up for the Written and Speaking assignments. During lecture time, the instructor will host a workshop sponsored by UWC about technical writing for the students (Feb 13).

Additionally, the instructor has given the students presentations on the technical writing content required for their project to build a proposal. The students will also be lectured on how to present (technical content of powerpoint slides, and how to address audiences). Furthermore, ESET 419 has a laboratory section. The course instructor also uses the lab time to provide a more individualized instruction on writing and speaking to a subset of the teams.

Finally, the current instructor is providing templates and guidelines for the paper and oral assignments.

Additional Comments

Each student will write about one page (500 words) to describe each guest presentation, and we're planning 4 guests per semester (2000 words per student). For the test plan each student writes 3000 words. Each student will speak 15 minutes for the final project presentation. For other assignments, divide by 4. for individual contributions.

https://nextcatalog.tamu.edu/courseleaf/approve/?role=Faculty Senate
Individual work
Concept of Operation: 1,500 words
FSR: 1,500 words
ICD: 1,250 words
Midterm: 3,750 words and 5 mins
Final report: 4,000 words and 5 mins
Test Plan: 3,000 words
Final project demo: 15 mins
Execution plan: 1,250 words
Lab: 2,000 words

Total words: 18,250
Total minutes: 25 mins

Please ensure that the attached course syllabus sufficiently and specifically details the appropriate core objectives.

Attach Course Syllabus
Reviewer Comments
Valerie Balester (v-balester) (03/01/19 4:20 pm): Rollback: Clarification needed on exactly what students produce and what is graded individually. How many total words and what percentage of the grade is produced by an individual student--and which parts of each assignment. How many students for example, contribute to the white paper, and how exactly do you determine which student wrote each part? (Self-report is not an option.) Formative feedback must also be given BEFORE a grade--that is BEFORE at least one presentation, not after. It can be formative feedback on an outline, slides or delivery. The same for writing--for at least one assignment it must be done BEFORE the final grade is determined so that every student has a chance to use the suggestions to revise.

Donna Pantel (dpantel) (04/03/19 2:29 pm): REPORT ON RECERTIFICATION OF C COURSE: ESET 419 We recommend that ESET 419 Engineering Technology Capstone I be certified as a Communication (C) course for four academic years (9/19 to 9/23). We have reviewed a representative syllabus and have determined that the course meets or exceeds the following criteria: (1) 90% of the final grade is based on writing quality; (2) the total number of words is 9000; (3) the total minutes of performance is 25; (4) the instructor to student ratio is 1:8; and (5) the assigned writing and speaking are appropriate to the major. ESET 419 is grandfathered for collaborative writing. A teaching assistant assists with this course. Collaboratively, students present a white paper, a preliminary design review, a final report, and a final project demo; for each of these they divide their time equally. Individually, they present for 15 minutes on a sub-section of the final project demonstration. They write a concept of operation paper, a functional system requirements paper, and an interface control documentation paper, a preliminary design report, all leading to a 4000-word final design report. Individually, they write four reports on speakers and a test plan and simulations report (totaling 5,000 words). Formative feedback occurs through submission of slide drafts for preliminary feedback and feedback on individual assignments that lead up to the final assignment. Instruction includes lecture and workshops on topics such as technical writing, writing a proposal, and slides.
ESET 419: Electronic System ENGR  
TECH Design Laboratory – Capstone  
(Senior) Design I, Fall 2019

**Lecture Times and Location:**  
M, W  4:10PM - 5:25PM (FERM 110)

**Lab Time and Location:**  
M  9:00AM – 11:30AM (THOM 101)  
M  1:30PM – 4:00PM (THOM 101)

**Textbooks (for reference; not required):**
1) Wiley Series in System Engineering and Management by Alexander Kossiakoff, Samuel Seymour
2) Systems Design and Engineering: Facilitating Multidisciplinary Development Projects by Bonnema G. Maarten, Veenvliet T.
3) Embedded System Design by Peter Marwedel
4) Systems engineering Design Principles and models by Dahai Lu

**Course Goals and Objectives:**
At the end of the course, the student should be able to demonstrate skills in the categories below.

1. **Design Methodology**
   a. Apply scientific methods and engineering principles learned in other courses to design, analyze and demonstrate a non-trivial engineering system or process to meet a desired need.
   b. Describe the activities that occur during each stage of a design process.
   c. Analyze project needs in order to produce quantitative design requirements.
   d. Develop technical skills including PCB design and soldering.

2. **Societal Impact**
   a. Recognize the ever-present role of design in human activity
   b. Analyze and address risks associated with concept.

3. **Project management**
   a. Develop a project execution and validation plan and execute to it.
   b. Demonstrate the ability to work in a team environment.
   c. Assess risk in a project and assign appropriate contingency.
   d. Communicate and justify design choices through written and oral assignments.

4. **Written and Oral Communication**
   a. To receive C credit for this course, you must pass the W and C components.

**Institutional Staff & Office Hours:**
Course Instructors: Dr. Chadi Geha (geha_chadi@tamu.edu) FERM 304B  
Tuesday & Thursday, 3:00PM-4:00PM, and by email-arranged appointment

**Class Grades:**
A > 90%, B > 80%, C > 70%, D > 60%, F < 60%

**Notes:**
* Individual contribution will be weighed in determining the final course grade.
* Submit all writing assignments in pdf format on ecampus.
* Attendance is mandatory for all lectures and labs. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07
<table>
<thead>
<tr>
<th>Assignments</th>
<th>Grades %</th>
<th>Group(G)/ Individual (I)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Paper</td>
<td>5%</td>
<td>G</td>
<td>Oral Presentation discussing project Conceptual Idea</td>
</tr>
<tr>
<td>ConOps</td>
<td>5%</td>
<td>G</td>
<td>Written Assignment of project Concept of Operation</td>
</tr>
<tr>
<td>ICD</td>
<td>5%</td>
<td>G</td>
<td>Written Assignment discussing Interface Control Document.</td>
</tr>
<tr>
<td>FSR</td>
<td>5%</td>
<td>G</td>
<td>Written Assignment of Functional System Design Requirements</td>
</tr>
<tr>
<td>Mid Term Proposal</td>
<td>10%</td>
<td>G/I</td>
<td>Status update and final presentation of functioning sub-blocks</td>
</tr>
<tr>
<td>Mid Term Presentation</td>
<td>10%</td>
<td>G/I</td>
<td>Oral Presentation</td>
</tr>
<tr>
<td>Test Plan &amp; Simulations</td>
<td>10%</td>
<td>I</td>
<td>Written test-bench assignment for sub-functioning blocks</td>
</tr>
<tr>
<td>Execution Plan &amp; Milestones</td>
<td>10%</td>
<td>G</td>
<td>Execution to validation plan and operation) (First milestone missed -50%; second -75%; third -100%)</td>
</tr>
<tr>
<td>Final Project Demo</td>
<td>10%</td>
<td>I</td>
<td>Lab demo showing progress subsystem update</td>
</tr>
<tr>
<td>Final Presentation</td>
<td>10%</td>
<td>G</td>
<td>Oral Presentation</td>
</tr>
<tr>
<td>Final Progress Report</td>
<td>15%</td>
<td>G/I</td>
<td>Written Assignment (10% individual, 5% Collaborative).</td>
</tr>
<tr>
<td>Lab/Attendance</td>
<td>5%</td>
<td>I</td>
<td>Including one page summaries of guest presentations (about 4 each semester) and pop-quizzes.</td>
</tr>
</tbody>
</table>

**Americans with Disabilities Act (ADA) Policy Statement:**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room 126 of the Koldus Building or call 845-1637.

**Academic Integrity Statement:**
“An Aggie does not lie, cheat, or steal or tolerate those who do.”
The Honor Council Rules and Procedures are located at: [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor). All instances of academic misconduct (e.g., plagiarism, copying, etc) will be severely penalized, with the offending group referred to the Aggie Honor Office.

**Online Advising**
Current students should also visit the advising course on eLearning to find out about scholarship, internship and research opportunities. Login through: [http://elearning.tamu.edu/](http://elearning.tamu.edu/) and navigate to:

**Advising for Electrical Engineering Majors** or  
**Advising for Computer Engineering Majors**
(EE – Track)

Class Schedule: (dates are approximate and subject to change)

<table>
<thead>
<tr>
<th>Wk</th>
<th>Starting Date</th>
<th>Lecture</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/14</td>
<td>Intro, Team formation</td>
<td>Lab Introduction</td>
</tr>
<tr>
<td>2</td>
<td>01/21</td>
<td>Project Ideas/approval</td>
<td>Team alignment on tasks</td>
</tr>
<tr>
<td>3</td>
<td>01/28</td>
<td>Systems design overview, validation</td>
<td>Project definition</td>
</tr>
<tr>
<td>4</td>
<td>02/04</td>
<td>White Paper presentation</td>
<td>Project Specification creation</td>
</tr>
<tr>
<td>5</td>
<td>02/11</td>
<td>Lecture on Analog/RF design</td>
<td>Project plan development</td>
</tr>
<tr>
<td>6</td>
<td>02/18</td>
<td>Sample project plan review</td>
<td>Project plan development</td>
</tr>
<tr>
<td>7</td>
<td>02/25</td>
<td>Project plan &amp; Execution</td>
<td>Work on project</td>
</tr>
<tr>
<td>8</td>
<td>03/04</td>
<td><strong>Mid Term presentation</strong></td>
<td><strong>Mid Term report</strong></td>
</tr>
<tr>
<td>9</td>
<td>03/11</td>
<td>Spring Break</td>
<td>Spring Break</td>
</tr>
<tr>
<td>10</td>
<td>03/18</td>
<td>Work on Project</td>
<td>Work on Project</td>
</tr>
<tr>
<td>11</td>
<td>03/25</td>
<td>Work on Project</td>
<td>Work on Project</td>
</tr>
<tr>
<td>12</td>
<td>04/01</td>
<td>Work on Project</td>
<td>Work on Project</td>
</tr>
<tr>
<td>13</td>
<td>04/08</td>
<td>Work on Project</td>
<td>Work on Project</td>
</tr>
<tr>
<td>14</td>
<td>04/15</td>
<td><strong>Final presentation</strong></td>
<td><strong>Get ready for final report</strong></td>
</tr>
<tr>
<td>15</td>
<td>04/22</td>
<td><strong>Final Subsystem Project Demonstration</strong></td>
<td>Project Demo</td>
</tr>
<tr>
<td>16</td>
<td>04/29</td>
<td><strong>Final Report</strong></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>05/06</td>
<td>Grades due</td>
<td></td>
</tr>
</tbody>
</table>