

## COE 485: Senior Design Project

### Catalog Description:

This course is designed to give students the experience of tackling a realistic engineering problem. The intent is to show how to put theoretical knowledge gained into practical use by starting from a word description of a problem and proceeding through various design phases to end up with a practical engineering solution. The project advisor guides the student in conducting feasibility study, preparation of specifications, and the methodology for the design. Detailed design and implementation of the project are carried out followed by testing, debugging, and documentation. An oral presentation and a final report are given at the end of the semester.

**Prerequisite:** Senior standing plus whatever prerequisites stated by the faculty members in their project proposals.

**Instructor/Coordinator:** Dr. Uthman baroudi, Office: 22/144, Tel: 4283,  
Email: [ubaroudi@ccse.kfupm.edu.sa](mailto:ubaroudi@ccse.kfupm.edu.sa)

**Course URL:** [http://webcourses.kfupm.edu.sa/SCRIPT/COE485/scripts/serve\\_home](http://webcourses.kfupm.edu.sa/SCRIPT/COE485/scripts/serve_home)

### Proposed Projects:

- Design and implementation of Embedded Sensor Networks for
  - a. Medical applications
  - b. Environmental applications
  - c. Security and rescue applications
  - d. Structural health applications
  - e. ....

### Procedures and Schedule:

Please note the following important issues:

1. Keep in mind that the grade does not come only from me. So the project has to be of enough merit to get good grades from all examiners.
2. Each project should have a design part that incorporates some computer programming activity.
3. The project description must contain enough details to differentiate the task of each student. Also the action plan should clearly define distinct tasks for each member of the team.
4. All Project presentations must be done by using Power point. Presentations are usually 20-minutes.
5. After that the students are required to submit a project proposal detailing, in their own words, their project description, deliverables and the action plan.
5. By the midterm, a progress report detailing the work progress is to be submitted.
6. At the end of the term, a final report should be submitted and a final presentation is give.

The table below shows the deadlines for the above-mentioned items. All deadlines refer to the day time at 4:00 pm. No Late submission is accepted (i.e. an item not submitted on time gets a zero grade).

Item	Deadline
Action Plan	11/09/1428 (Sun. 23/9/2007)
Progress Reports	23/10/1428 (Tue. 4/11/2007)
Final Reports	04/01/1429 (Sun. 13/1/2007)
Final Presentations	06/01/1426 (Tue. 15/1/2006)

#### Grading Policies:

The grades are divided among the project supervisor and the final examining committee. The break up of the grades is shown below:

Item	Grader		Grade
Quality of project proposal and Action plan	Supervisor		10%
Attendance	Supervisor		≤ 0%
Progress	Supervisor		≤ 0%
<b><u>Project Implementation</u></b>			70%
• Engineering approach: System design, critical examination of different approaches and justification for the selected approach(s) and the utilization of basic engineering science in the design.	Supervisor /Examiner	20%	
• Completion of the design.	Supervisor /Examiner	20%	
• Design verification and testing: Simulations, modeling, emulation, prototyping (when appropriate) and testing.	Supervisor /Examiner	20%	
• Work habits: Motivation, organization, self-reliance, planning, critical thinking	Supervisor /Peer	10%	
<b><u>Project Documentation (Final Report)</u></b>	Supervisor /Examiner		<b>10%</b>
1. Compliance with the report writing guidelines		2.5%	
2. Clarity of the problem description and proposed solution		2.5%	
3. System design, approach selection and design segmentation		2.5%	
4. Implementation/Testing report and any 'product manuals' if the project requires such a thing.		2.5%	

<b><u>Final Presentation</u></b>	Supervisor/Examiner		<b>10%</b>
1. Clarity of stated problem and solution 2. Quality of presentation (organization, body language ...etc) 3. Discussion (how the student answers the committee questions which demonstrate his understanding of the project and its socio-economical aspects).		2.5% 2.5% 5%	

Explanation of items above that has a grade of  $\leq 0\%$ : These items when done in full carries no grade (i.e. 0%). However, if they are not done or done poorly they receive negative marks and can lower the over all grade. They are similar to a traffic light or a stop sign; if you abide by these signs there are no rewards, but if you do not abide by these signs you get a hefty fine!

Important notes:

- Students that are not regularly meeting with their project advisor will receive Warnings and a ``DN" will be given to them if this situation persists. Students should meet weekly with their supervisors to discuss the work progress and determine future directions.
- In connection with the progress and final reports, it is prohibited to copy or past text, figures, diagrams, or plots from other sources (books, articles, etc.) without referencing the original source. If you absolutely need to refer to figures, diagrams, or plots that appear in other sources, then you should include clear reference to their authors in the caption. An ``F" grade will be given to the student if this rule is not observed.

IC Grade Policy:

Students with two-term projects (as indicated by the supervisor on the proposal) will receive an IC grade only if they show proof of 30% project completion. Other wise they will receive an F grade. Students with one-term projects can receive an IC grade only if they show proof of 60% completion of the project. In any case, an IC grade will only be granted with the supervisor's consent. Students who do not submit a final report or an IC request (with appropriate justification and supervisor approval) shall receive an F grade. Students who obtain an IC grade in the current term will be required to submit their final report at least two weeks before the end of the next term or they will receive an F grade. Also, these students should be ready to deliver a presentation on their senior project one week before the end of next term.