EEL 6686 - Embedded Systems Seminar

1. **Catalog Description** - (3 credit hours) An embedded system is any computing system other than traditional computer systems. Examples include set-top boxes, digital cameras, alarm systems, automotive systems, aerospace systems, and cell phones. This course is structured as a seminar course and will review cutting-edge publications with student presentations.

2. **Pre-requisites and Co-requisites**
   - Digital logic design
   - Basic UNIX/LINUX OS and compiler knowledge
   - Programming experience with C and/or C++
   - Assembly language
   - Computer Architecture

3. **Course Objectives** - This course will cover a wide variety of design issues for embedded systems. The course will be taught as a seminar course, where students will read several state of the art conference/journal papers per week and lectures will consist of student presentations covering these papers. Semesters with large enrollment may require students to pre-record and submit some presentations.

4. **Instructor** – Dr. Ann Gordon-Ross
   - Office location – Benton Hall 319
   - Telephone – 352-392-5356
   - E-mail address – ann@ece.ufl.edu
   - Web site – http://www.ann.ece.ufl.edu
   - Office hours – TBA

5. **Teaching Assistant**
   - Office location – TBA
   - Telephone – TBA
   - E-mail address – TBA
   - Office hours – TBA

6. **Meeting Times** - Tuesday 1:55-2:45, Thursday 1:55-3:50

7. **Class/laboratory schedule** - Class will meet for 3 50-minute periods each week. There is no lab

8. **Meeting Location** - MAEA 327

9. **Material and Supply Fees** - None

10. **Textbooks and Software Required**
The course has no official textbook. Research papers are assigned during the semester with a reading load of approximately 6-8 per week.

11. **Recommended Reading** - Assigned research papers.

12. **Course Outline (Tentative)**
   - Week 1 – Introduction to Embedded Systems
   - Week 2 – Introduction to Embedded Systems
   - Week 3 – Sensor Networks
   - Week 4 - Sensor Networks
   - Week 5 - Communications
   - Week 6-7 - Aerospace Applications
   - Week 8 - Real-time Systems
   - Week 9-10 - Reconfigurable Computing
   - Week 11 - Hardware-Software Partitioning and Co-Design Principles
   - Week 12-13 - Memory/Cache Optimization Techniques
   - Week 14-15 - General Low Power/Energy Optimization Techniques
   - Week 16-18 - Architectural Optimizations

13. **Attendance and Expectations**

   **Attendance**
   Attendance is compulsory, and class participation is a portion of our grade. You are expected to attend class and provide constructive feedback on your peers’ presentations, as they will be giving you constructive feedback. Another portion of your grade includes your presentation skills, knowledge transfer, and development, and these skills can only be refined by attended class and participating in the discussions.

   **Cell phones**
   Please remember to turn your phones off during lecture. Absolutely no phone conversations can take place during lecture. It is distracting to both the students and to me.

   **Communication with the instructor and/or TAs**
   When sending email to the instructors and/or TAs, please remember that many students have the same name, and instructors/TAs may be involved in more than one course. So please use your full name, preferably including your student ID number, and be as specific as you can (list the course, section, etc. -- whatever is relevant to your communication). Please try to be professional and use reasonable grammar and formatting. Also, please include the course number in brackets in your subject (i.e. [EEL6935]) so that I can sort my email.

14. **Grading**
   - 45% - Tests (not cumulative):
     - 15% - Midterm 1
- 15% - Midterm 2
- 15% - Midterm 3
- 15% - Class Participation
- 40% - Class Presentations (distributed across long and short presentations, number of which is determined by enrollment)

15. **Grading Scale**

A: 93-100
A-: 90-92
B+: 87-89
B: 83-86
B-: 80-82
C+: 77-79
C: 73-76
C-: 70-72
D+: 67-69
D: 63-66
D-: 60-62
E: 0-59

Students are not competing against one another, but rather against this scale -- all students can get good grades if all do well.

In order to graduate, graduate students must have an overall GPA and an upper-division GPA of 3.0 or better (B or better). Note: a B- average is equivalent to a GPA of 2.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit:

[http://gradschool.ufl.edu/catalog/current-catalog/catalog-general-regulations.html#grades](http://gradschool.ufl.edu/catalog/current-catalog/catalog-general-regulations.html#grades)

16. **Make-up Exam Policy** - Missed exams cannot be made up except in the case of a documented medical emergency. Absolutely no late work is accepted. Regrades must be submitted within one week of returned materials.

17. **Honesty Policy** – 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.

18. **Accommodation for Students with 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.
19. **UF Counseling Services** – 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.

20. **Software Use** – 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.