EEL 6935    Distributed Computing

1. Catalog Description – (3 credits) This course introduces beginning graduate students and undergraduate senior students to key concepts and techniques underlying the design and engineering of distributed computing systems. Topics covered in this course include interprocess communication, remote invocation, distributed naming, distributed file systems, security, distributed clocks, process coordination, concurrency control, replication and fault-tolerance. Also included is an introduction to grid computing.

2. Pre-requisites - EEL 5934 or EEL6982

3. Course Objectives - To prepare students for graduate work or software development directed at grid computing and distributed information processing

4. Contribution of course to meeting the professional component (ABET only – undergraduate courses) – N/A

5. Relationship of course to program outcomes: Skills student will develop in this course (ABET only undergraduate courses) – N/A

6. Instructor – Dr. Jose Fortes
   a. Office location: 339A Larsen
   b. Telephone: 392-9265
   c. E-mail address: fortes@ufl.edu
   d. Class Web site: http://acis.ufl.edu/fortes
   e. Office hours: TBD

7. Teaching Assistant - None
   a. Office location:
   b. Telephone:
   c. E-mail address:
   d. Office hours:

8. Meeting Times – T 7th, R 7th-8th

9. Class/laboratory schedule, i.e., number of sessions each week and duration of each session - 3 class periods consisting of 50 minutes each

10. Meeting Location – 237 CHE

11. Material and Supply Fees - None

12. Textbooks and Software Required -
   a. Title: Distributed Systems: Principles and Paradigms
   b. Author: Andrew S. Tanenbaum, Maarten van Steen
13. Recommended Reading - subset of journal/conference papers referenced in textbook
   a. Title:
   b. Author:
   c. Publication date and edition:
   d. ISBN number:

14. Course Outline –
   • Architectures (layers, tiers, peers, middleware, management) 3
   • Communication (Layered Protocols. Remote Procedure Call) 4
   • Naming (Naming Entities. Mobile Entities. Removing Entities) 3
   • Synchronization (Logical Clocks. Global State. Distributed Transactions) 4
   • Consistency and Replication (Models, Protocols, Examples) 3
   • Fault Tolerance (Process Resilience. Reliable Communication. Recovery) 3
   • Security (Secure Channels. Access Control. Security Management) 3
   • Distributed File and Web-based Systems (Sun NFS. WWW) 5
   • Introduction to grid computing (Globus, WSRF)

15. Attendance and Expectations - Attendance is expected from students in order to properly follow class progress. There are no explicit penalties for absence. Cell phones must be off or on mute. Additional class policy guidelines are provided in a separate class policies document. No text messaging during class or exams.

   Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

16. Grading – Based on homework, midterm exam, final exam and a project.

17. Grading Scale – Letter grades are assigned based on analysis of the curve of numeric grades of the entire class.

   “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

18. Make-Up Exam Policy - Make-up exams must be arranged with the instructor to be taken prior to the exam that is being made up for. Students are responsible for contacting the instructor as soon as a scheduling conflict with an exam is identified.
Students who do not take an exam and do not make prior arrangements for rescheduling will be assigned a zero grade for the exam.

If you have a University-approved excuse and arrange for it in advance, or in case of documented emergency, a make-up exam will be allowed and arrangements can be made for making up missed work. University attendance policies can be found at: [https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx](https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx)

Otherwise, make-up exams will be considered only in extraordinary cases, and must be taken before the scheduled exam. The student must submit a written petition to the instructor two weeks prior to the scheduled exam and the instructor must approve the petition.

19. 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.

“…failure to comply with this commitment will result in disciplinary action compliant with the UF Student Honor Code Procedures [http://www.dso.ufl.edu/sccr/procedures/honorcode.php](http://www.dso.ufl.edu/sccr/procedures/honorcode.php)

20. 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.

21. 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.

22. 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.