Florida International University
School of Computing and Information Sciences

COP 6611 — Advanced Operating Systems

Course Syllabus

Class schedule:

Wednesday 2-4:50pm, ECS235

Instructor:

Dr. Ming Zhao
Office: ECS 363, Lab: ECS 265
Email: ming@cs.fiu.edu, Web: http://visa.cs.fiu.edu/ming
Office hours: Tuesday/Thursday 2-4:30pm (Office or Lab)

Prerequisite:

COP 4610 or equivalent (Students are required to have a good understanding of the
basic operating systems concepts)

Objective:

Introduce selected important advanced operating systems topics

Major Topics (tentative):

Virtual Machines, Distributed Systems, Cloud computing

Text:

A collection of technical papers provided by the instructor

Course Description:

This course will introduce advanced operating systems topics, including virtual machines,
distributed systems, cloud computing, based on a collection of seminal and recent

technical papers. The specific topics to be covered may be tuned based on students' interests. It shall help students not only master these important topics, but also appreciate the challenges and opportunities in current operating systems research and development.

Paper discussions will be conducted using written reviews, round-table discussions, and debates.

- *Paper reviews*: Students will submit written paper reviews (one page per paper) before class for the papers that will be discussed (one to two papers per week). Review template will be provided.

- *Round-table discussions*: Each student will take turn to lead the discussion of a paper in class, while the other students participate in the discussion of the paper (one to two papers per week).

- *Debate*: After discussing the papers relevant to one particular topic, a debate will be organized based on this topic. Students will be divided into two groups to argue for two different opinions on the topic. Each group will review additional papers in the literature, prepare arguments for their assigned opinion, and defend it in the debate held in class.

This course also includes a term-long research project on topics relevant to operating systems and interesting to the students. It shall help students not only obtain a deep understanding of important operating systems topics, but also learn how to conduct cutting-edge research in this field. Every student needs to propose a project topic, study the relevant materials, develop and implement a research idea, and in the end report and present the results. The instructor will guide students through each step of this entire research process. Selected projects will be supported for conference publications.

- *Proposal*: Students will submit a two-page proposal describing the research problem, background, proposed solution, and schedule for the course project.

- *Phase 1 and 2 reports*: Students will give an in-class presentation (up to 30 minutes) reporting their project progress.

- *Final presentation and report*: Students will give an in-class presentation and submit a six-page report describing the research problem, background, design, implementation, and evaluation of the course project.

Grading (tentative):

Paper discussions: 50% (Reviews: 15%, In-class discussions: 15%, Debates: 20%)
Course project: 50% (Proposal: 5%, Phase 1 report: 5%, Phase 2 report: 5%, Final
                    presentation: 15%, Final report: 20%)

Policies:

Late submission of assignments will not be graded. There will be absolutely *no exception* unless it is due to verifiable cases of illness and emergencies.

All assignments must be done *independently*. Academic dishonesty will be treated *very seriously* according to the Student Academic Misconduct Procedures (http://www2.fiu.edu/~oabp/misconductweb/unitinstructions.htm).

University Policies: Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.