1. Catalog Description – (3 credits) This course introduces beginning graduate students to key concepts and techniques underlying the design and engineering of management techniques and tools for management of advanced computer and information systems (CIS). Examples of these systems include datacenters, computational clouds, large storage systems, data analytics engines and information search and retrieval systems. Course content includes an introduction to the defining characteristics of large-scale IT systems, their management challenges, foundational management principles based on control theory, artificial intelligence, self-organizing principles and systems concepts. Also covered are case studies and technologies used to implement CIS and their management components. Recent papers will be used to discuss research topics in CIS management.

2. Pre-requisites - Undergraduate classes on operating systems and networking. Students who have taken the graduate course in Autonomic Computing cannot register for this class.

3. Course Objectives - To prepare students for graduate work on models, design techniques and technologies for CIS management systems.

4. Contribution of course to meeting the professional component (ABET only – undergraduate courses) - NA

5. Relationship of course to program outcomes: Skills student will develop in this course (ABET only undergraduate courses) - NA

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

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

8. Meeting Times - TBD

9. Class/laboratory schedule - 3 class periods consisting of 50 minutes each

10. Meeting Location - TBD
11. Material and Supply Fees - None

12. Textbooks and Software Required -
   a. Title: Feedback Control of Computing Systems
   b. Author: Joseph L. Hellerstein, Yixin Diao, Sujay Parekh, Dawn M. Tilbury
   c. Publication date and edition: 2004 John Wiley & Sons, Inc
   d. ISBN number: Print 9780471266372; Online 9780471668800

13. Recommended Reading - None
   a. Title:
   b. Author:
   c. Publication date and edition:
   d. ISBN number:

14. Course Outline –
   • Introduction to CIS management, 2 lectures
   • IT systems: layers, complexity and distribution, 4 lectures
   • Modeling and control theory, 4 lectures
   • Emergent behavior in bio-inspired systems, 3 lectures
   • Architectures and technologies for CIS management, 4 lectures
   • Machine learning in CIS management systems, 3 lectures
   • Agent-based systems, 3 lectures
   • Algorithms and optimization methods for CIS management, 3 lectures
   • Autonomic networking and communications, 3 lectures
   • Advanced topics, 6 topics
   • Exam and project presentations and discussions, 6 lectures

15. Attendance and Expectations - Cell phones and other electronic devices are to be silenced. 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 – homework, midterm exam, final exam, and project

17. Grading Scale –

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<tr>
<th>Grade</th>
<th>Percentage</th>
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<tr>
<td>A</td>
<td>93-100</td>
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<tr>
<td>A-</td>
<td>90-92</td>
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<tr>
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<td>0-59</td>
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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:
18. Make-Up Exam Policy - 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

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)

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.