EEL 6841 Machine Intelligence & Synthesis

1. Catalog Description – (3 credits) Theory of machine intelligence applied to general problem of engineering intelligent computer systems and architecture. Applications emphasized.

2. Pre-requisites – EEL 5840

3. Course Objectives - To study the engineering applications of Machine Intelligence, its impact on EE research and some of its most important tools and paradigms.

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. Antonio Arroyo
   a. Office location: 338 MAE-B
   b. Telephone: 392-2639
   c. E-mail address: arroyo@mil.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 – T 4th, R 4th-5th

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

10. Meeting Location – 328 Benton

11. Material and Supply Fees - None

12. Textbooks and Software Required -
   a. Title: Programming in Prolog
   b. Author: Clocksin & Mellish
   c. Publication date and edition: 5th edition
   d. ISBN number:

   a. Title: Artificial Intelligence: A Modern Approach
   b. Author: Russell & Norvig
c. Publication date and edition: Prentice Hall, 3rd edition
d. ISBN number:

13. Recommended Reading -
   a. Title: Natural Language Understanding.
   b. Author: Allen
   c. Publication date and edition: Benjamin Cummins, 1995
   d. ISBN number:
      a. Title: Expert Systems: Principles and Programming
      b. Author: Giarratano & Riley
      c. Publication date and edition: Brooks Cole, 3rd edition
      d. ISBN number:

14. Course Outline (provide topics covered by week or by class period) –
   • First Order Predicate Logic review
   • Deduction, Logic Programming & Prolog
   • Communicating, Perceiving and Acting
   • Classical Machine Learning Principles
   • Uncertainty & Reasoning
   • Artificial Life
   • Rule-Based Paradigm & Shells
   • Schema-based Representations
   • Smalltalk & Object-Oriented Paradigms

15. Attendance and Expectations - Cell phones are to be silenced. No text messaging during class or exams.

   The students using Prolog and other systems will program two or three medium-sized projects. Instructor will choose the topics to be covered after Spring Break and will supplement textbook material with papers and/or other material to keep the course topics current. Students will also read and make an oral and/or written presentation on a current journal paper

   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 34%, Midterm 33%, Paper presentation 33%

17. Grading Scale –
   A:  93-100
   A-:  90-92
   B+:  87-89
   B:   83-86
   B-:  80-82
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 - 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.