



CATALOG YEAR 2006-2008
(Please use separate form for each add/change)

COLLEGE: Arts and Sciences

Current Catalog Page(s) Affected p. 300

Course: SENG 4340 Add: Delete: Change: Number Title
(check all that apply) SCH Description Prerequisite

If new, provide Course Prefix, Number, Title, SCH Value, Description, prerequisite, and lecture/lab hours if applicable. If in current catalog, provide change and attach page with changes in red and provide a brief justification.

SENG 4340 *Intelligent Systems*. Three semester hours.

Introduction to methods for the analysis and design of intelligent engineering systems. Topics include reinforcement learning, optimal estimation, Bayesian networks, expert systems, neural networks, and genetic algorithms. Applications emphasize control and decision making in engineering and computer science. Prerequisites: SENG 3340 and SENG 3370.

Justification: New elective course for students wanting to learn about Intelligent Systems for Engineering.

Program: Add: Change: Attach new/changed Program of Study description and 4-year plan. If in current catalog, provide change and attach page with changes in red.

Minor: Add: Delete: Change: Attach new/changed minor. If in current catalog, provide change and attach page with changes in red.

Faculty: Add: Delete: Change: Attach new/changed faculty entry. If in current catalog, provide change and attach page with changes in red.

College Introductory Pages: Add information: Change information: .Attach new/changed information. If in current catalog, provide change and attach page with changes in red.

Approvals:	Signature	Date
Chair Department Curriculum Committee	_____	_____
Chair Department	_____	_____
Chair College Curriculum Committee	_____	_____
Dean	_____	_____

SENG 4340 Intelligent Systems

Description

Introduction to methods for the analysis and design of intelligent engineering systems. Topics include reinforcement learning, optimal estimation, Bayesian networks, expert systems, neural networks, and genetic algorithms. Application emphasizes control and decision making in engineering, finance, and computer science.

Prerequisites: SENG 3340, SENG 3370.

Class schedule

TBA

Office hours

TBA

Students' learning outcomes

Students who successfully complete the course will demonstrate the following outcomes:

- Describe the basic concepts and the components that constitute intelligent systems.
- Explain computational intelligence and hybrid combinations as well as practical applications in engineering.
- Analyze the most important methods and algorithms used in intelligent systems.
- Describe computer-aided intelligent systems and tools.

Textbook

Modelling, Simulation and Control of Non-Linear Dynamical Systems: an intelligent approach using Soft Computing and Fractal Theory, by Patricia Melin and Oscar Castillo, CRC Press, 2001, ISBN: 041527236X.

Grading

Your grade will be comprised of homework sets and quizzes, three in class tests, and one in-class final examination. The grade breakdown is as follows:

- Homework assignments and quizzes: 20%
- Midterm tests: 15% each
- Final exam: 35%

Assignment grading

- A: 90-100
- B: 80-89
- C: 70-79
- D: 60-69
- F: 0-59

General Guidelines

Classroom Behavior

The College of Arts and Sciences encourages classroom discussion and academic debate as an essential intellectual activity. It is essential that students learn to express and defend their beliefs, but it is also essential that they learn to listen and respond respectfully to others whose beliefs they may not share. The College will always tolerate diverse, unorthodox, and unpopular points of view, but it will not tolerate condescending or insulting remarks. When students verbally abuse or ridicule and intimidate others whose views they do not agree with, they subvert the free exchange of ideas that should characterize a university classroom. If their actions are deemed by the professor to be disruptive, they will be subject to appropriate disciplinary action, which may include being involuntarily withdrawn from the class.

Copyright Restrictions

The Copyright Act of 1976 grants to copyright owners the exclusive right to reproduce their works and distribute copies of their work. Works that receive copyright protection include published works such as a textbook. Copying a textbook without permission from the owner of the copyright may constitute copyright infringement. Civil and criminal penalties may be assessed for copyright infringement. Civil penalties include damages up to \$ 100,000; criminal penalties include a fine up to \$ 250,000 and imprisonment.

Copyright laws do allow students and professors to make photocopies of copyrighted materials under strict conditions. You may not copy most, much less all, of a work, but you may copy a limited portion of a work, such an article from a journal or a chapter from a book. These copies must be for your own personal academic use or, in the case of a professor, for personal, limited classroom use. In general, the extent of your copying should not suggest that the purpose or the effect of your copying is to avoid paying for the materials. And, of course, you may not sell these copies for a profit. Thus, students who copy textbooks to avoid buying them or professors who provide photocopies of textbooks to enable students to save money are both violating the law.

Plagiarism and Cheating

Plagiarism is the presentation of someone else's work as one's own. Recently, the Internet has complicated the picture. Getting something from the Internet and presenting it as one's own is still plagiarism. Copying another student's paper or a portion of the paper - is usually called "copying". Neither plagiarism nor copying will be tolerated. Should a faculty member discover that a student has committed plagiarism, the students will receive a grade of "F" in that course and the matter may, if necessary, be referred to the Associate Vice President for Student Affairs for possible disciplinary action.

Students with Disabilities

Texas A& M International University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford

equal education opportunity. It is the student's responsibility to register with the Disabilities Services Coordinator and to contact the faculty member in a timely fashion to arrange for suitable accommodations.

Incomplete Grade Assignments

Incompletes are discouraged and are assigned only under extenuating circumstances. To qualify for an Incomplete, the student must be passing the course and have completed 85-90\% of the requirements at the time the Incomplete is approved. In fairness to those students who complete the course as scheduled, only under extremely exceptional conditions will an Incomplete ("I") be changed to an "A".

Independent Study Courses

Independent Study (IS) courses are offered only under exceptional circumstances. The chair of the department is to determine whether the IS will be offered on the basis of the student's and the University's needs, as certified by the University Registrar. No student will take more than one IS course per semester. Moreover, IS courses are limited to seniors and graduate students. Summer IS course must continue through both summer sessions.

Student Responsibility for Dropping a Course

It is the responsibility of the STUDENT to drop the course before the drop date. Faculty are not responsible for dropping students who suspend class attendance".

Final Examination

Final Examinations must be comprehensive and must be given on the day specified.

Student E-mail Address

All students must obtain a TAMIU e-mail address.