CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

Courses must be submitted by October 15, 2010, to make the next catalog (2011-12) production

DATE (CHANGE DATE EACH TIME REVISED): 8/9/10, REV 10.11.10; REV 12.15.10

PROGRAM AREA(S) : COMPUTER SCIENCE

Directions: All of sections of this form must be completed for course modifications. Use YELLOWED areas to enter data. All documents are stand alone sources of course information.

1. Course Information.

[Follow accepted catalog format.] ***(Add additional prefixes i f cross-listed)***

OLD

Prefix IT Course# 469 Title
ARTIFICIAL INTELLIGENCE/NEURAL NETWORKS FOR IT
Units (3)

3 hours lecture per week
hours blank per week

X Prerequisites: IT151 and MATH 300

Consent of Instructor Required for Enrollment
Corequisites:

Catalog Description (Do not use any symbols):
An exploration of the use of computers to perform computations normally associated with intelligence, pattern formation and recognition using various computer algorithms and data structures. Including distributed processing models found in massively parallel systems such as the brain. Stacks, decision trees and other modern mining tools and computational models for knowledge representation will be covered. Other topics may include natural language and imaging.

General Education Categories
Lab Fee Requested

Graded
CR/NC
X A - F

Repeatable for up to units
Total Completions
Multiple Enrollment in same semester
Optional (Student's choice)

Course Level:
X Undergraduate
Post-bac/Credential
Graduate

NEW

Prefix IT Course# 469 Title
ARTIFICIAL INTELLIGENCE/NEURAL NETWORKS FOR IT

Units (3)
3 hours lecture per week
hours blank per week

X Prerequisites: COMP 151 and either Math 300 or MATH 301

Consent of Instructor Required for Enrollment
Corequisites:

Catalog Description (Do not use any symbols)**:**
An exploration of the use of computers to perform computations normally associated with intelligence, pattern formation and recognition using various computer algorithms and data structures. Including distributed processing models found in massively parallel systems such as the brain. Stacks, decision trees and other modern mining tools and computational models for knowledge representation will be covered. Other topics may include natural language and imaging.

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2. Mode of Instruction (Hours per Unit are defaulted)

Hegis Code(s)_____
(Provided by the Dean)

Existing

	Units	Hours Per Unit	Benchmark Enrollment	Graded
Lecture	3	1	30	y
Seminar		1		
Lab		3		
Activity		2		
Field Studies				

Proposed

	Units	Hours Per Unit	Benchmark Enrollment	Graded	CS No. (filled out by Dean)
Lecture	3	1	24	y	
Seminar		1			
Lab		3			
Activity		2			
Field Studies					

Indep Study				Indep Study					
Other blank				Other blank					

3. Course Attributes:

General Education Categories: All courses with GE category notations (including deletions) must be submitted to the GE website: http://summit.csuci.edu/geapproval. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

A (English Language, Communication, Critical Thinking)
- A-1 Oral Communication
- A-2 English Writing
- A-3 Critical Thinking

B (Mathematics, Sciences & Technology)
- B-1 Physical Sciences
- B-2 Life Sciences – Biology
- B-3 Mathematics – Mathematics and Applications
- B-4 Computers and Information Technology

C (Fine Arts, Literature, Languages & Cultures)
- C-1 Art
- C-2 Literature Courses
- C-3a Language
- C-3b Multicultural

D (Social Perspectives)

E (Human Psychological and Physiological Perspectives)

UDIGE/INTD Interdisciplinary

Meets University Writing Requirement

Meets University Language Requirement

American Institutions, Title V Section 40404: Government US Constitution US History
Refer to website, Exec Order 405, for more information: http://senate.csuci.edu/comm/curriculum/resources.htm

Service Learning Course (Approval from the Center for Community Engagement must be received before you can request this course attribute).

4. Justification and Requirements for the Course. *[Make a brief statement to justify the need for the course]*

OLD	**NEW**
This course is an elective for the BSIT	This course is an elective for the BSIT
Requirement for the Major/Minor	Requirement for the Major/Minor
X Elective for the Major/Minor	X Elective for the Major/Minor
Free Elective	Free Elective

Submit Program Modification if this course changes your program.

5. Student Learning Outocmes. (List in numerical order. You may wish to visit resource information at the following website: http://senate.csuci.edu/comm/curriculum/resources.htm)

Upon completion of the course, the student will be able to:	Upon completion of the course, the student will be able to:
OLD	**NEW**
Students who successfully complete this course will:	Students who successfully complete this course will:
1. Be able to identify the components of a computer vision system.	1. Identify the components of a computer vision system.
2. Be able to identify and explain the components of a speech recognition system.	2. Identify and explain the components of a speech recognition system.
3. Be able to explain the components and functionality of a robotic system.	3. Explain the components and functionality of a robotic system.
4. Be able to explain the key difficulties in a Natural Language Processing System.	4. Explain the key difficulties in a Natural Language Processing System.
5. Be able to explain a simple model of a neuron.	5. Explain a simple model of a neuron.
	6. Build a simple simulation of a interactive neural system.

6. Be able to build a simple simulation of a interactive neural system.
7. Be able to design an AI experiment and analyze the data.
8. Be able to program the backpropagation learning algorithm.

7. Design an AI experiment and analyze the data.
8. Program the backpropagation learning algorithm.

6. Course Content in Outline Form. (Be as brief as possible, but use as much space as necessary)

OLD

1. Natural Language Processing.
2. Computer Vision.
3. Speech Recognition.
4. Robotics.
5. Neurons and Brains.
6. Massively Distributed Processing.
7. Algorithms for Learning.
8. Automated Problem Solving.

NEW

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6. Massively Distributed Processing.
7. Algorithms for Learning.
8. Automated Problem Solving.

Does this course content overlap with a course offered in your academic program? Yes X **No**
If YES, what course(s) and provide a justification of the overlap. COMP 469 Artificial Intelligence is a course for CS majors with some of the same topics as the IT course. Students cannot get credit for both.

Does this course content overlap a course offered in another academic area? Yes **No** X
If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

7. Cross-listed Courses (Please note each prefix in item No. 1)

A. List cross-listed courses (Signature of Academic Chair(s) of the other academic area(s) is required).
B. List each cross-listed prefix for the course:
C. Program responsible for staffing:

8. References. *[Provide 3-5 references]*

OLD

1. Artificial Intelligence, Rich and Knight , McGraw Hill, 1991 0071008942
2. An Introduction to AI Robotics (Intelligent Robotics and Autonomous Agents) Robin R. Murphy MIT Press 2000 0262133830
3. Constructing Intelligent Agents Using Java: Professional Developer's Guide, 2nd Edition Joseph Bigus John Wiley & Sons 2001 047139601X
4. Artificial Intelligence: A Modern Approach Russel, Norvig Prentice Hall 2002 0137903952

NEW

1. Artificial Intelligence, Rich and Knight , McGraw Hill, 1991 0071008942
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9. Tenure Track Faculty qualified to teach this course.
Computer Science Faculty

10. Requested Effective Date or First Semester offered: Fall 2011

11. New Resource Requested: Yes **No** X
If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)

C. Facility/Space/Transportation Needs:

D. Lab Fee Requested: Yes **No** **(Refer to the Dean's Office for additional processing)**

E. Other.

12. Indicate Changes and Justification for Each. *[Check all that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]*

- Course title
- Prefix/suffix
- Course number
- Units
- Staffing formula and enrollment limits
- X Prerequisites/Corequisites
- Catalog description
- Mode of Instruction
- Course Content
- Course Learning Objectives
- References
- GE
- Other
- Reactivate Course

Justification: Updated prerequisites to reflect correct options

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes **No** X

If, YES attach a program update or program modification form for all programs affected.
Priority deadline for New Minors and Programs: October 4, 2010 of preceding year.
Priority deadline for Course Proposals and Modifications: October 15, 2010.
Last day to submit forms to be considered during the current academic year: April 15th.

Peter Smith — 8/9/10

Proposer(s) of Course Modification — Date

Type in name. Signatures will be collected after Curriculum approval.

Approval Sheet

Course: IT469

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
General Education Chair		
	Signature	Date
Center for Intl Affairs Director		
	Signature	Date
Center for Integrative Studies Director		
	Signature	Date
Center for Multicultural Engagement Director		
	Signature	Date
Center for Civic Engagement and Service Learning Director		
	Signature	Date
Curriculum Chair		
	Signature	Date
Dean of Faculty		
	Signature	Date