CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

Courses must be submitted by October 15, 2013, and finalized by the end of the fall semester to make the next catalog (2014-15) production

DATE (CHANGE DATE EACH TIME REVISED): 2/23/2014

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.

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1. Indicate Changes and Justification for Each. *[Mark an X by all change areas that apply then please follow-up your X's with justification(s) for each marked item. Be as brief as possible but, use as much space as necessary.]*

- x Course title
- Prefix/suffix
- Course number
- Units
- Staffing formula and enrollment limits
- Prerequisites/Corequisites
- x Catalog description
- x Mode of Instruction
- Course Content
- Course Learning Outcomes
- x References
- GE
- x Other Add lab components to the course
- Reactivate Course

Justification:

1. The course needs a refresh in this very fast evolving field.
2. Over the last 20 years, neural networks has become one of the many equally important areas of Artificial Intelligence such as Rule-based Systems, Swarm Intelligence, Genetics Algorithms, Fuzzy Systems, etc. Therefore, the need for distinguishing it in the title of the course has ceased.
3. Due to the increasingly complex issues involved in writing programs for artificial intelligence, students need to have more hands on experience in a supervised lab environment to master the material.

2. Course Information.

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

OLD

Prefix COMP Course# 469
Title Artificial Intelligence and Neural Networks Units (3)
3 hours lecture per week
hours blank per week

x Prerequisites: COMP 350 and COMP 362
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 backpro iterations. Stacks, decision trees and other modern mining tools and computational models for knowledge representation will be covered. Other topics may include natural language and imagining.

General Education Categories:
Grading Scheme (Select one below):
x A – F
Credit/No Credit
Optional (Student's Choice)
Repeatable for up to units
Total Completions
Multiple Enrollment in Same Semester Y/N
Course Level:
x Undergraduate

NEW

Prefix COMP Course# 469
Title Introduction to Artificial Intelligence Units (2 + 1)
2 hours lecture per week
3 hours laboratory per week (1 unit)

x Prerequisites: COMP 350 and COMP 362
Consent of Instructor Required for Enrollment
Corequisites:

Catalog Description (Do not use any symbols)**:**

A hands-on exploration of the use of computers to perform computations normally associated with intelligence, pattern formation and recognition using a variety of symbolic and sub-symbolic methods. Knowledge acquisition, representation, and maintenance will be covered.

General Education Categories:
Grading Scheme (Select one below):
x A – F
Credit/No Credit
Optional (Student's Choice)
Repeatable for up to units
Total Completions
Multiple Enrollment in Same Semester Y/N
Course Level:
x Undergraduate

Post-Baccalaureate
Graduate

Post-Baccalaureate
Graduate

3. Mode of Instruction (Hours per Unit are defaulted) **Hegis Code(s)**_____
(Provided by the Provost Office)

	Existing					**Proposed**				
	Units	**Hours Per Unit**	**Default Section Size**	Graded		**Units**	**Hours Per Unit**	**Default Section Size**	Graded	**CS No. (filled out by Provost Office)**
Lecture	3	1		x	Lecture	2	1		x	
Seminar		1			Seminar		1			
Lab		3			Lab	1	3		x	
Activity		2			Activity		2			
Field Studies					Field Studies					
Indep Study					Indep Study					
Other blank					Other blank					
Online					Online					

4. 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 (Graduation Writing Assessment Requirement)

Meets University Language Requirement

American Institutions, Title V Section 40404: Government US Constitution US History
Regarding 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).

Online Course (Answer YES if the course is ALWAYS delivered online).

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

OLD

Requirement for the Major/Minor
Elective for the Major/Minor
Free Elective

NEW

Requirement for the Major/Minor
Elective for the Major/Minor
Free Elective

Submit Program Modification if this course changes your program.

6. Student Learning Outcomes. (List in numerical order. Please refer to the Curriculum Committee's "Learning Outcomes" guideline for measurable outcomes that reflect elements of Bloom's Taxonomy: *http://senate.csuci.edu/comm/curriculum/resources.htm*. The committee recommends 4 to 8 student learning outcomes, unless governed by an external agency (e.g., Nursing).

Upon completion of the course, the student will be able to:

OLD

1. Be able to identify the basic components of human intelligence.
2. Be able to write computer programs that simulate basic board games and strategies.
3. Be able to analyze the components of a natural language interface.
4. Be able to analyze the components of a computer vision system.
5. Be able to analyze the logical structure of basic reasoning.
6. Be able to build, in software, a rule based system.
7. Be able to identify the components of a neural network.
8. Be able to apply a neural network to a simple classification problem.
9. Be able to organize and express ideas clearly and convincingly in oral and written forms.

Upon completion of the course, the student will be able to:

NEW

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7. Be able to identify the components of a neural network.
8. Be able to apply a neural network to a simple classification problem.
9. Be able to organize and express ideas clearly and convincingly in oral and written forms.

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

OLD

1. Human Intelligence.
2. Logical Reasoning.
3. Formal Logic.
4. Natural Language Processing.
5. Computer Vision.
6. Speech Recognition.
7. Neural Networks.

NEW

1. Human Intelligence.
2. Logical Reasoning.
3. Formal Logic.
4. Natural Language Processing.
5. Computer Vision.
6. Speech Recognition.
7. Neural Networks.

Does this course content overlap with a course offered in your academic program? Yes **No** x
If YES, what course(s) and provide a justification of the overlap.

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.

8. Cross-listed Courses (Please note each prefix in item No. 1) *Beyond three disciplines consult with the Curriculum Committee.*

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:

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

OLD

1. *Artificial Intelligence*, Rich and Knight McGraw Hill 1991

NEW

1. *Artificial Intelligence: A Modern Approach (3rd Edition)* by Stuart Russell and Peter Norvig, Prentice Hall, 2009
2. *Introduction to Artificial Intelligence* by Wolfgang Ertel, Nathanael T. Black, Springer, 2011
3. *Artificial Intelligence in the 21st Century* by Stephen Lucci, Danny Kopec, Mercury Learning & Information, 2013
4. *Artificial Intelligence: The Basics* by Kevin Warwick, Routledge, 2012

10. Tenure Track Faculty qualified to teach this course.
Any CS faculty

11. Requested Effective Date or First Semester offered: Fall 2015

12. New Resource Requested: Yes **No** x
If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)
Use of existing Computer Science labs

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

C. Facility/Space/Transportation Needs:
N/A

D. Lab Fee Requested: Yes **No** x **(Lab fee requests should be directed to the Student Fee Committee)**

E. Other. N/A

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 1, 2013 of preceding year.
Priority deadline for Course Proposals and Modifications: October 15, 2013.
Last day to submit forms to be considered during the current academic year: April 15th.

AJ Bieszczad — 2/24/2014

Proposer(s) of Course Modification — Date
Type in name. Signatures will be collected after Curriculum approval.

Approval Sheet

Course: COMP 469 Introduction to Artificial Intelligence

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.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

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
AVP		
	Signature	Date