California State University San Marcos • **COURSE CHANGE(S)** • **FORM C-2** CS 571

ORIGINATOR'S SECTION:		
1. College: ☐ CHABSS ☐ CoBA ☐ CoEHHS ☒ CSM	**Desired Term and Year of Implementation (e.g., Fall 2008):** Spring 2017	
2. Current Course abbreviation and Number: **CS 571 (3) Artificial Intelligence**		

TYPE OF CHANGE(S). Check √ all that apply.

Course Number Change	☐	**Delete Prerequisite**	☐	**Other Prerequisite Change**	☐
Course Title Change	☐	**Add Corequisite**	☐	**Grading Method Change**	☐
Unit Value Change	☐	**Delete Corequisite**	☐	**Mode of Instruction Change (C/S Number)**	☐
Description Change	☐	**Add Consent for Enrollment**	☐	**Consider for G.E.** If yes, also fill out appropriate GE form.	☐
Add Prerequisite	☒	**Delete Consent for Enrollment**	☐	**Cross-list**	☐

Information in this section– both current and new – is required only for items checked (√) above.

CURRENT INFORMATION:	**NEW INFORMATION:**
	Course abbreviation and Number:
3. Title:	**Title:** ***(Titles using jargon, slang, copyrighted names, trade names, or any non-essential punctuation may not be used.)***
4. Abbreviated Title for Banner ***(no more than 25 characters):***	**Abbreviated Title for PeopleSoft:** ***(no more than 25 characters, including spaces)***
5. Number of Units:	**Number of Units:**
6. Catalog Description:	**Catalog Description:** ***(Not to exceed 80 words; language should conform to catalog copy. Please consult the catalog for models of style and format; include all necessary information regarding consent for enrollment, pre- and/or corequisites, repeated enrollment, crosslisting, as detailed below. Such information does not count toward the 80-word limit.)***

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7. Mode of Instruction* ***(See pages 17-23 at http://www.calstate.edu/cim/data-elem-dic/APDB-Transaction-DED-SectionV.pdf for definitions of the Course Classification Numbers)***

Type of Instruction	Number of CrediUnits	Instructional Mode (Course Classification Number)
Lecture		
Activity		
Lab		

Type of Instruction	Number of Credit Units	Instructional Mode (Course Classification Number)
Lecture		
Activity		
Lab		

8. Grading Method:*	**Grading Method:***
☐ Normal (N) *(Allows Letter Grade +/-, and Credit/No Credit)*	☐ Normal (N) *(Allows Letter Grade +/-, and Credit/No Credit)*
☐ Normal Plus Report-in-Progress (NP) *(Allows Letter Grade +/-, Credit/No Credit, and Report-in-Progress)*	☐ Normal Plus Report-in-Progress (NP) *(Allows Letter Grade +/-, Credit/No Credit, and Report-in-Progress)*
☐ Credit/No Credit Only (C)	☐ Credit/No Credit Only (C)
☐ Credit/No Credit or Report-in-Progress Only (CP))	☐ Credit/No Credit or Report-in-Progress Only (CP))

9. If the NP or CP grading system was selected, please explain the need for this grade option.

*If Originator is uncertain of this entry, please consult with Program Director/Chair.

CURRENT INFORMATION:	NEW INFORMATION:
10. Course Requires Consent for Enrollment? ☐ Yes ☐ No ☐ Faculty ☐ Credential Analyst ☐ Dean ☐ Program/Department/Director/Chair	**Course Requires Consent for Enrollment?** ☐ Yes ☐ No ☐ Faculty ☐ Credential Analyst ☐ Dean ☐ Program/Department/Director/Chair
11. Course Can be Taken for Credit More than Once? ☐ Yes ☐ No If yes, how many times (including first offering)	**Course Can be Taken for Credit More than Once?** ☐ Yes ☐ No If yes, how many times (including first offering)
12. Is Course Cross Listed: ☐ Yes ☐ No If yes, indicate which course	**Is Course Cross-listed?** ☐ Yes ☐ No If yes, indicate which course and check "yes" in item #17 below.
13. Prerequisite(s): none (Enrollment is restricted to graduate students and to undergraduates who have obtained consent of instructor.)	**Prerequisite(s):** cs421 For undergraduates and enrollment requirement for graduate students. (Enrollment is restricted to graduate students and to undergraduates who have obtained consent of instructor.)
14. Corequisite(s):	**Corequisite(s):**
15. Documentation attached: ☐ Syllabus ☒ Detailed Course Outline	

PROGRAM DIRECTOR/CHAIR - COLLEGE CURRICULUM COMMITTEE SECTION:
(Mandatory information – all items in this section must be completed.)

16. Does this course fulfill a requirement for any major (i.e. core course or elective for a major, majors in other departments, minors in other departments? ☒ **Yes** ☐ **No**
If yes, please specify:
Master of Computer Science (this is a core course).

17. Does this course change impact other discipline(s)? ***(If there is any uncertainty as to whether a particular discipline is affected, check "yes" and obtain signature.)*** Check "yes" if the course is cross-listed. ☐ **Yes** ☒ **No**
If yes, obtain signature(s). Any objections should be stated in writing and attached to this form.

_____ Discipline _____ Signature _____ Date _____Support _____Oppose

_____ Discipline _____ Signature _____ Date _____Support _____Oppose

18. Reason(s) for changing this course:
Currently there is no pre-requisite or enrollment requirement for this course which does require knowledge of language syntax analysis, non-determinism, and finite state machines. Therefore we are adding CS421 that covers these topics as the pre-requisite. CS421 is a required course for both undergraduates and graduate students. Here is the catalog course description of CS421:

CS 421 (3)
Theory of Computing
Regular and context-free languages, and other formal languages, push down and finite-state automata, and other finite machines. Turning machine computability, halting problems. *May not be taken for credit by students who have received credit for CS 521. Prerequisite: CS 351.*

SIGNATURES : (COLLEGE LEVEL) :

Rika Yoshii and Rocio Guillen 11-23-16
1. Originator (Please Print) Date

2. Program Director/Chair 12/7/16 Date

3. College Curriculum Committee 12/14/16 Date

4. College Dean (or Designee) 12/14/16 Date

(UNIVERSITY LEVEL)

5. UCC Committee Chair Date

6. Vice President for Academic Affairs (or Designee) Date

7. President (or Designee) Date

CS571 ARTIFICIAL INTELLIGENCE

A core course in the Computer Science M.S. program.

Catalog Course Description: A comprehensive study of basic concepts, techniques and a number of detailed algorithms used by researchers and practitioners of artificial intelligence. Subjects covered include problem-solving, knowledge representation and reasoning, planning, uncertainty reasoning and decision-making, machine learning, and natural language processing. *Enrollment is restricted to graduate students and to undergraduates who have obtained consent of instructor.*

Textbook Required: Russell and Norvig. Artificial Intelligence: A Modern Approach. Third Edition. Pearson/Prentice-Hall, 2010.

Learning Outcomes: Upon completion of the course students should be able to:

1. Explain and trace various search algorithms.
2. Explain appropriate uses of knowledge representation techniques.
3. Explain and trace constraint-satisfaction algorithms.
4. Explain and trace machine learning techniques.
5. Explain approaches to natural language processing.
6. Write programs that implement artificial intelligence algorithms.
7. Apply the techniques they have learned to a variety of situations.

Topics and the Order:

	Topic	Readings in Book
	Introduction	Chap. 1
	Intelligent agents	Chap. 2
	Environments	Chap. 2
	Problem Solving Agents	Chap. 3: 3.1-3.3
	Uninformed Search Strategies	Chap. 3: 3.4
	Informed Search Strategies	Chap. 3: 3.5-3.6
	Non-classical Search	Chap. 4:1, 4:3-4.5
	Informed Search Strategies	Chap. 3: 3.6
	Adversarial Search	Chap. 5
	Constraint Satisfaction Problems	Chap. 6
	Knowledge-Based Agents & Knowledge	Chap. 7: 7.1-7.2
	Classical Planning	Chap. 10:10.1-10.3
	Planning and Acting in Real World	Chap. 11:11.1-11:.2
	Machine Learning	Chap. 18:18.1-18.3
		Chap. 18:18.9, 18.11
	Natural Language Processing	Chap. 22
	Natural Language Communication	Chap. 23
	Application of AI	
	Project Presentations	