CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREAS _____BIOLOGICAL AND PHYSICAL SCIENCES, MATH AND COMPUTER SCIENCE

1. **Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

   COMP 575. MULTI-AGENT SYSTEMS (3)
   Three hours of lecture in the lab per week.
   Prerequisite: Admission to the Computer Science or Mathematics Graduate Program

   Fundamentals of Object-Oriented Design and Analysis. Designing systems with Unified Modeling Language (UML) and patterns. Applications in various situations and fields.

2. **Mode of Instruction.**

	Units	**Hours per Unit**	**Benchmark Enrollment**
Lecture	___3_____	___1_____	__24_____
Seminar	_____	_____	_____
Laboratory	_____	_____	_____
Activity	_____	_____	_____

3. **Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

   This course is an elective for graduate students in MS in Mathematics and MS in Computer Science programs.
   Certain problems are hard or impossible to solve by a single computing entity. Additionally, the presence of ever growing networks and the increasing speed of data communication result in natural distribution of both information and processing resources. Software engineers need kills and tools that allow them to design systems that integrate solutions from geographically dispersed providers addressing various aspects of the problem.

   Through this course, students will be able to

   - Understand nature of software agents.
   - Understand collaborative aspects of agent-based systems.
   - Build software agents using artificial intelligence techniques.
   - Build multi-agent systems using agent communication languages.
   - Understand, design and apply ontologies.

4. **Is this a General Education Course** **YES** **NO**
   If Yes, indicate GE category:

A (English Language, Communication, Critical Thinking)	
B (Mathematics & Sciences)	
C (Fine Arts, Literature, Languages & Cultures)	
D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

5. **Course Content in Outline Form.** *[Be as brief as possible, but use as much space as necessary]*

   1. Agent intelligence.

2. Deductive Reasoning Agents.
3. Practical Reasoning Agents.
4. Reactive and Hybrid Agents.
5. Multi-agent Interactions.
6. Reaching Agreements.
7. Communication.
8. Collaboration.
9. Methodologies.
10. Applications.
11. Logics for Multi-Agents Systems.

6. References. *[Provide 3 - 5 references on which this course is based and/or support it.]*

1. Woolbridge , *Introduction to Multi-Agent Systems*, John Wiley & Sons, 2002, ISBN 047149691X.
2. Bigus et al., *Constructing Intelligent Agents Using Java: Professional Developer's Guide, 2nd Edition*, John Wiley & Sons, 2001, ISBN 047139601X
3. Weiss, *Multiagent Systems*, MIT Press, 2000, ISBN 0-262-23203-0

7. List Faculty Qualified to Teach This Course.

All Computer Science faculty.

8. Frequency.

a. Projected semesters to be offered: Fall ___X__ Spring _X____ Summer ____

9. New Resources Required.

a. Computer (data processing), audio visual, broadcasting needs, other equipment

Use of existing computer lab.

b. Library needs

none

c. Facility/space needs

none

10. Consultation.

Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

_____P. Smith, AJ Bieszczad _____10/31/03_____
Proposer of Course Date

Approvals

_____

Program Coordinator Date

_____

GE Committee Chair Date
(If applicable)

_____

Curriculum Committee Chair Date

_____

Dean Date

Effective Semester: _____

California State University Channel Islands
New Course Proposal Consultation Sheet

Course prefix, number, title, and units: _____ COMP 575. MULTI-AGENT SYSTEMS (3)

2. Program Areas: _____COMPUTER SCIENCE

Recommend Approval

Program Area/Unit	Program/Unit Coordinator	YES	NO (attach objections)	Date
Art				
Business & Economics				
Education				
ESRM				
Humanities				
Liberal Studies				
Mathematics & CS				
Sciences				
Library*				
Information Technology*				

* If needed