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 529. NETWORK COMPUTING (3)
    Three hours of lecture in the lab per week.
    Prerequisites: Prerequisite: Admission to the Computer Science or Mathematics Graduate Program
     And Consent of the Instructor
    Design and programming in Java of distributed systems that use telecommunication networks as their computing platform.

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.
    Over the last few years, telecommunication networks have been gradually becoming new computing platforms. This trend is very strongly supported by all major players in the telecommunication and software industry. There is an evident shortfall of specialists in the area that is currently critical to virtually every company including many local firms. There is a spectrum of programming courses that teach basic and advanced programming techniques, but none of them takes a unified approach to the issues that are important to effectively use networks as computing platforms. Various learning institutes offer plenty of expensive courses that usually have very narrow scope, assume lots of prior knowledge and are blurred with excess of details. The objective of the Network Computing course is to produce specialists that are capable of solving problems in innovative ways using a network as a computing medium. The process will utilize the skills acquired in other basic and advanced programming courses.

    Through this course, students will be able to

    - Understand a network as a computing vehicle
    - Understand the nature of distributed computing
    - Learn Java libraries that facilitate network computing
    - Explore standards that govern network-based computing

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. Fundamentals of networking: protocols, OSI model, IP, TCP, UDP, HTTP.
2. Java facilities for networking and code mobility
3. Introduction to open distributed processing: RPC, CORBA, RMI.
4. Componentware: JavaBeans and Enterprise JavaBeans
5. Web Services: XML, SOAP, UDDI, WSML
6. Security issues; Java security model
7. Mobile code (agents).
8. Application servers: Servlets, JSPs and Database Connectors

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

- Reilly and Reilly, *Java™ Network Programming and Distributed Computing*, Addison Wesley, 2002, ISBN 0-201-71037-4
- Kurose, Ross, *Computer Networking: A Top-Down Approach Featuring the Internet*, Addison Wesley, 2003 ISBN 0-201-97699-4

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 ___X__

9. New Resources Required.

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

Use of existing computer lab.

b. Library needs

c. Facility/space needs

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.

AJ Bieszczad, P. Smith   October 31, 2003

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Proposer of Course   Date