CSET 3200 Client-Server Computing (3 semester credit hours)   CSET Elective
                                                                 IT Required

Current Catalog Description:
   This course will cover various distributed system topics from fundamental concepts and
   principles to some advanced topics. Majority of the class will be devoted to middleware and
   enabling technology. Contents include distributed objects such as RMI, Corba, Java web
   services. Theory will be applied to implement class projects in building distributed
   environment and client/server applications. At the end of the class, student should be able to
   gain solid knowledge on distributed systems concepts and be able to apply them to simple
   real world projects.

Textbooks:
   Web Services by Gustavo Alonso

References:
   Course web pages: http://cset.sp.utoledo.edu/cset3200/

Related Program Outcomes:
   CSET Program Outcomes are (a and c)
   IT Program Outcomes are (a and c)
   See attached tables

Course Objectives:
After successful completion of this course, students will be able to:
- understand fundamental concepts of Web Services including
    - Client Server systems
    - system models of distributed systems
    - networks that distributed systems run on
    - communication protocols between processes in distributed systems
    - Middleware
    - Enterprise Application integration
    - Web Services Security
- Compile and execute actual programs using sockets, Java RMI, Java Beans, and Web
  Services.

Major Topics Covered in the Course

Topic	Lecture Hours
Client Server Architecture	3
Process Communication	3
XML	3
Netbeans and JDK	3
Middleware	3
Enterprise Application integration	3
Basic Web Technologies	6
Web Services	21
Total	45

Laboratory Projects:
Students will implement a sequence of smaller projects. Students will implement Web services using Sun glassfish. Student will write a report for each project.

Oral and Written Communications
Midterm, Final examinations and Project report are written using essay format.

Social and Ethical Issues
None

Theoretical Content
High level Distributed computing algorithms are discussed in the class. Contents are listed in the class topics table.

Problem Analysis
Student need to analyze the different kind of distributed system design.

Solution Design

Course Coordinator:
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2-24-2011

CSET	Student Outcomes:	Course Outcomes	Assessment Methods
a	An ability to select and apply knowledge of computing and mathematics appropriate to the discipline. More specifically, an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.	Compile and execute actual programs using sockets, Java RMI, Java Beans, and Web Services.	Graded assignments
b	An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.		
c	An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs. More specifically, an ability to apply design and development principles in the construction of software systems of varying complexity.	Compile and execute actual programs using sockets, Java RMI, Java Beans, and Web Services.	Graded assignments
d	An ability to function effectively as a member or leader on technical teams to accomplish a common goal.		
e	An understanding of professional, ethical, legal, security and social issues and responsibilities including a respect for diversity.		
f	An ability to communicate effectively with a range of audiences using a range of modalities including written, oral and graphical.		
g	An ability to analyze the local and global impact of computing on individuals, organizations, and society.		
h	Recognition and understanding of the need for and an ability to engage in self-directed continuing professional development.		
i	An ability to select and apply current techniques, skills, and tools necessary for computing practice.		
j	An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.		
k	A commitment to quality, timeliness, and continuous improvement.		

IT	Student Outcomes	Course Outcomes	Assessment Methods
a	an ability to select and apply knowledge of computing and mathematics appropriate to the discipline. Specifically, an ability to use and apply current technical concepts and practices in the core information technologies. [IT-j]	Compile and execute actual programs using sockets, Java RMI, Java Beans, and Web Services.	Graded assignments
b	an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.		
c	an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs. And, an ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems. [IT-k]	Compile and execute actual programs using sockets, Java RMI, Java Beans, and Web Services.	Graded assignments
d	an ability to function effectively as a member or leader on technical teams to accomplish a common goal.		
e	an understanding of professional, ethical, legal, security and social issues and responsibilities including a respect for diversity.		
f	an ability to communicate effectively with a range of audiences using a range of modalities including written, oral and graphical.		
g	an ability to analyze the local and global impact of computing on individuals, organizations, and society.		
h	recognition and understanding of the need for and an ability to engage in self-directed continuing professional development.		
i	an ability to select and apply current techniques, skills, and tools necessary for computing practice. And an ability to effectively integrate IT-based solutions into the user environment. [IT-l]		
j	an understanding of best practices and their application. [IT-m]		
k	an ability to assist in the creation of an effective project plan. [IT-n]		