CSET 1200 GUI Programming (3 semester credit hours) CSET Required
IT Required

Current Catalog Description:

Introduction to Windows-based programming for engineering technology applications. Topics include Windows Application Program Interface (API), message processing, Windows Procedures, using Windows resources, modal and modeless dialog boxes and the graphics device interface

Textbooks:

"Introduction to Java Programming," Comprehensive Version (8th Edition) by Y. Daniel Liang (ISBN 0136012671)

References:

Course web site
Various web references assigned by instructor

Related Program Outcomes:

CSET Program Outcomes are (b, c, i and j)
IT Program Outcomes are (b, c and i)
See attached table

Course Objectives:

After successful completion of this course, given a problem, students will:

- Understand the OO Programming concept
- be able to build Java OO classes using appropriate design principles
- be able to write Java programs that properly use inheritance polymorphism, abstract classes, exception handling and template classes and functions
- be able to compare and contrast these basic data structures: linked lists, stacks, queues, tree. Be able to write classes implementing these data structures.

Major Topics Covered in the Course

Topic	Lecture Hours
Introduction	3
Decision, looping, function, array	3
Events	3
String class	3
File operations	3
Classes	6
Inheritance, Polymorphism and Virtual	9
Exceptions	3
Template	3
List, stack and queue	6
Binary trees	3
Total:	45

Laboratory Projects/Assignments (specify weeks):

1. several Object oriented design programming assignments (6 weeks)
2. linked list (2 weeks)
3. Stacks and Exceptions (1 week)
4. Queues (1 week)
5. Binary Search Trees (2 weeks)

Oral and Written Communications

Every student is required to submit at least 1 written reports (not including exams, tests, quizzes, or commented programs) of an appropriate length (normally 3 pages) and to make oral presentations (typically 10 minutes duration) as part of design team progress reports. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

Social and Ethical Issues

Not part of the course syllabus

Theoretical Content

OO concepts:

Class

Inheritance (Dynamic binding, constructors/destructors)

Polymorphism

Exceptions

Templates

Basic data structures:

Vector and list
Stack and Queue
Binary Tree, Binary searching tree
Heap
Binary Heap
Insertion Sort
Shell Sort, Heap Sort
Merge Sort, Quick Sort

Problem Analysis

Students need to analyze project/homework problems using the theories learned in class.

Solution Design

Students need to solve project/homework problems using object oriented design. They have to choose appropriate data structures to solve a given problem

Course Coordinator

Hong Wang
2/24/11

Syllabus: CSET 1200

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. [CAC-j]		
b	An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.	Students demonstrate that they understand how to use OOP to implement a design and how to use appropriate data structures to solve a given problem	Graded Programming assignment
c	An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs and to apply design and development principles in the construction of software systems of varying complexity. [CAC-k]	Students demonstrate that they understand how to use OOP to implement a design and how to use appropriate data structures to solve a given problem	Graded Programming assignment
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.	Student will be able to apply OOP skill to other OO languages	Graded Java programming assignment
j	An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.	Students will need to demonstrate that they understand OO concepts, data structures, compare different data structures using OOP and analyze their performance to improve their designs	Graded Exams, homework
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]		
b	an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.	Students demonstrate that they understand how to use OOP to implement a design and how to use appropriate data structures to solve a given problem	Graded Programming assignment
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]	Students will need to demonstrate that they understand OO concepts, data structures, compare different data structures using OOP and analyze their performance to improve their designs	Graded Programming assignment
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]	Student will be able to apply OOP skill to other OO languages	Graded Java programming assignment
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]		