MISSOURI WESTERN STATE UNIVERSITY

SCHOOL OF LIBERAL ARTS AND SCIENCES

DEPARTMENT OF COMPUTER SCIENCE, MATHEMATICS, AND PHYSICS
Undergraduate Program

COURSE NUMBER: CSC406
COURSE NAME: OBJECT ORIENTED APPLICATION AND PROGRAM DEV.

COURSE DESCRIPTION:
This course emphasizes the application of Object Oriented Programming (OOP) concepts in the java programming language to large-scale programming problems. The course includes application of techniques such as the Unified Modeling Language (UML). LAS Writing. Prerequisite(s):

PREREQUISITES:
A grade of C or higher in CSC 285 and credit or concurrent enrollment in CSC 305.

REQUIRED TEXTS:

UML Beginner's Guide, Roff, Edition 03, McGraw, ISBN 9780072224603

REQUIRED SOFTWARE:

Students will be required to have the UMLet soft on their laptops and turn in all design work using this tool. This free software can be found at www.umlet.com. Please bring your laptops to our FOURTH WEEK CLASS with this software installed.

OBJECTIVES:

- Be able to design and implement object-oriented programs in Java, using a large sub-set of the language effectively.
- Have knowledge of key object-oriented principles and design strategies.
- Understand how core data structures are implemented.
- Be able to use programming tools such as an integrated development environment (IDE), debugger, and code repository.
- Be able to design, document and implement the software for a real-world client application, which could be a mobile app, cloud app or web services.
- Be able to design and implement graphical user interfaces suitable for scaling on multiple devices and resolutions.
- Have experience of effective team work methods and project organization skills.
- Have experience of interacting with a real client..

COURSE OUTLINE:

Course Introduction
Java Review – Multithreading
Developing classes.
Inheritance and dynamic binding.

Exceptions.

Object-Oriented Programming
Class Development
Identifying and implementing class relationships.
Using abstract classes, interfaces and inheritance.
UML class diagrams.

User interfaces
Principles of graphical user interface design and implementation.

Event driven programming.
User interface design and implementation.

Project Management
Working as an effective software development team
Preparing project timelines and document templates.
Reporting effectively and meeting requirements.

Project work
This course develops a full software application system; applications begin with design and documentation and finally implementation. The final project is 20% of the semester grade.