University of Detroit Mercy
College of Engineering and Science
Department of Mathematics and Computer Science

CSC-452 (R1/RG): Advanced Java
Winter 2003/2004

Description of Course:
This course presents advanced topics in Java, such as Swing, Networking, Java IO, Threading, Java Database Connectivity, RMI, Servlets & JSP, Enterprise Java Beans & Distributed Transactions, JMS and so on, it will also touch other Java topics such as J2MW, Java XML and Web Service via student projects or case study.

Course Prerequisite:
Students should have already taken either CSC-441 Object-Oriented Programming or CSC-413 Java Programming.

Prerequisite by Topics:
Proficient Java programming skills. Some networking knowledge would be beneficial but not required.

Required Text:
H.M. Deitel, P.J. Deitel, S.E. Santry: *Advanced Java 2 Platform How to Program*,
Prentice Hall, 2002.
H.M. Deitel, P.J. Deitell: Java *How to Program (Fifth Edition)*, Prentice Hall, 2003.

Optional Text:
Any books with advanced Java topics can be used as personal reference.

Instructor: T.J. Li E-mail: lit_udm@yahoo.com

Office Hours: 6:00P.M. – 6:40P.M., Thursday, Rm. 246 or by appointments.

Lecture: 6:40P.M. – 9:10P.M., Thursday, Rm. 223

General Objectives:
To develop in students the ability to analyze, design, and implement Java applications at different complexity levels by using advanced Java tools and design patterns. Students completing this course will have a working knowledge of how Java is used to meet a variety of real application needs.

Course Outcomes:
Upon completion of the course, students will be able to:
1. Understand and identify key Java design patterns.
2. Learn and understand such advanced Java topics as Networking, Threading, Java IO, RMI, JDBC, EJB, JMS, Web Service and many others.
3. Be able to identify key design and implementation factors while design an enterprise level Java application.

Computer Usage:
Students should be familiar with Java. Java 1.4.0 SDK or above will be used in this class. Command line compilation and runtime using scripts are expected. The use of IDE is allowed but not encouraged.

Topics:
- Swing: JEditorPane, JToolBar, JSplitPane, JTabbedPane, JList, JTree, JTable.
- Java Design Patterns: Observer & Observable, Command, Factory, Decorator, Façade, MVC and Singleton.
- Java 2D
- Threading
- Java I/O
- Networking: TCP/IP & UDP
- Java Database Connectivity (JDBC)
- Remote Method Invocation (RMI)
- Servlets & Java Server Pages (JSP)
- Enterprise Java Beans (EJB) & Distributed Transactions
- Application Servers
- Survey Topics: J2ME, Jini, Java Card, Java XML, Web Services…

*Details based on time allowance

Instruction Methods and Techniques:
1. There will be one lecture of a total 150 minutes every week including some lab exercise time.
2. Program examples will be demonstrated in class using overhead projector. Handouts will also be provided.
3. Students will have 2 exams and 1 individual final project.
4. Students will be involved in the classroom by questioning to stimulate thoughts, interest, and reinforce previous points.
5. Whenever possible students will discuss case study with each other and suggest ways for improvement.

Important Course Schedule (Tentative):

Exam	Date	Time	Chapters
Exam 1	2.5.2004	6:40-9:10 p.m.	Week 1 – 4
Exam 2	3.25.2004	6:40-9:10 p.m.	Week 6 – 11
Final Exam/Project	4.22.2004	6:40-9:10 p.m.	

Attendance/Participation:
Students are expected to attend class on a regular basis and participate in the discussions. They are responsible for all the material presented therein. Formal attendance records will not be maintained; however, attendance is highly correlated with performance on the projects and the exams.

The instructor will attempt to make reasonable accommodations for students who miss a class due to illness, death in the family, or other legitimate reasons. However, students who are forced to miss several classes will have difficulty completing the course in a satisfactory manner.

Make Up Policy:
Make up exams will only be given to students who miss an exam for a legitimate reason (as defined above under "Attendance") and who notify the instructor in advance.
*Final Exam may be replaced by an advanced topic term paper.

Grading:

Project/Exam	**Percentage**
Quiz	10%
Exam 1	30%
Exam 2	30%
Final Elam/Project	30%

Grading Scale:

Grade	**Quality Point**
A	4.0 (95 – 100)
A -	3.7 (90 – 94)
B +	3.3 (85 – 89)
B	3.0 (80 – 84)
B -	2.7 (75 – 79)
C +	2.3 (70 – 74)
C	2.0 (65 – 69)
C -	1.7 (60 – 64)
D +	1.3 (55 – 59)
D	1.0 (50 – 54)
D -	0.7 (45 – 49)
F	0.0

Policies:
Students are expected to receive and to turn in their assignments according to the schedule. Although it is an ugly situation and occurs infrequently, if you copy another's work, you will receive (as a Minimum) a zero on the assignment or project.

Programs will be graded for scope, correctness, style, documentation, and timeliness. A program that "works" will not receive full credit unless it is well written, properly documented, and efficient in terms of memory space used and execution speed.

Late projects will not receive full credit. Unless otherwise specified, projects turned in late may lose as much as 20% and projects may not be accepted at all after that week.

Important Dates:

January 13	Last Day for 100% Refund
January 30	Last Day to Drop a Course without a "W"
February 6	Deadline for "I" Grades from Term I Fall 2003 – 2004
March 1 – 6	Mid-Winter/Spring Break
March 26	Last Day to withdraw from Class
April 19 – 24	Final Exam Week

Academic Integrity:

Students are expected to conform to a high standard of honesty and integrity in this course. Copying the work of someone else and other forms of cheating are strictly prohibited. Permitting or tolerating such behavior is also prohibited. The minimum penalty for any offense is a 0 on that assignment. The culprits may be subject to additional sanctions, up to and including expulsion from school for serious offenses, as prescribed by the University Catalog and the Engineering and Science Student Handbook.