Eastern Illinois University
Revised Course Proposal
MIS 4330, Advanced Java Programming

1. Catalog description
   a) course number: MIS 4330
   b) title: Advanced Java Programming
   c) meeting times and credit: 3-0-3
   d) term(s) to be offered: S
   e) short title – Adv Java
   f) course description – A study of the object paradigm with emphasis on graphics development, gaming theory and design, threads, database retrieval and update, applets, packages, and security in the java language and admission to the School of Business or to a minor offered by the School of Business or permission of the Chair, School of Business.
   g) prerequisite(s): MIS 3330, or permission of the Associate Chair, School of Business.
   h) initial term of course offering: Spring 2008

2. Student Learning Objectives and Evaluation

   a) Upon successful completion of this course, students will be able to:
      1.   apply object-oriented analysis and design to demonstrate key concepts and language structure of java.
      2.   extend classes and apply the concept of inheritance.
      3.   describe garbage collection, security and the Java Virtual Machine (JVM)
      4.   develop graphical user interfaces, taking advantage of the layout managers supported by java technology.
      5.   create threads that promote performing multiple activities in parallel
      6.   design and develop a java application or applet utilizing gaming theory and graphics.
      7.   design and develop a java application or applet that retrieves and updates information in a database.
   b) The students' achievement of the stated objectives will be assessed and grades will be earned on the basis of examinations, programming projects, in-lab exercises, homework assignments and quizzes.

	Exams	Programming assignments	Final Exam
apply object-oriented analysis and design to demonstrate key concepts and language structure of java.	X	X	X
extend classes and apply the concept of inheritance.	X	X	X
describe garbage collection, security and the Java Virtual Machine (JVM)	X		X
develop graphical user interfaces, taking advantage of the layout managers supported by java technology.	X	X	X
create threads that promote performing multiple activities in parallel	X	X	X
design and develop a java application or applet utilizing gaming theory and graphics.	X	X	X
design and develop a java application or applet that retrieves and updates information in a database	X	X	X

   c) This is not a technology delivered class.
   d) This class is not numbered 4750-4999
   e) This class is not writing active.

3. Outline of the Course

Number of Weeks of Class	Topic
0.5	Introduction to Course; Review of the java language; Software Downloads; Compiling and Executing
1.5	Review of control statements: conditional and iterative. input/output statements, array processing and file processing
1.0	Review of objects, classes and inheritance, encapsulation and polymorphism. Inner/outer classes. Garbage collection.
1.5	Introduction to graphics, graphics objects, two-dimensional objects. Application of inheritance. Applets versus Applications.
2.0	Gaming theory and design. Threads. Packaging the game.
2.0	Graphical user interface, including Gridbag Layout, and GUI menus.
2.0	Discussion/design/development of a graphics application/game utilizing java
0.5	Connecting to an ACCESS database in java. Security issues.
1.0	Basic SQL for retrieving/updating ACCESS database
2.0	Discussion/design/development of a database project utilizing java.
1.0	Tests

4. Rationale

a) Purpose and need: The revision of the information systems curriculum effectively is combining three classes (CIS 3320 Business Programming with C, CIS 3900 Java Programming, and CIS 4330 Advanced Java Programming) into two classes (MIS 3330 Java Programming and this class, MIS 4330 Advanced Java Programming. This consolidation is possible because study of C language has been eliminated as a prerequisite for both of the Java programming classes.

b) Justification of the level of the course and of course prerequisites: The fundamentals of Java Programming are covered in MIS 3330 and are necessary for the understanding of material covered in this class.

c) Similarity to existing courses: This course replaces CIS 3900 and CIS 4330. Both courses will be deleted upon approval of this course.

d) Impact on Program(s): This class will be a required course in one concentration of the MIS major and an elective for other MIS majors and for other students who meet the prerequisite requirements.

5. Implementation

a) Faculty member(s) to whom the course may be assigned. Garrett, Willems, Hampton

b) Specification of any additional costs to students: computer media..

c) Core Java 2 (volume 2 – Advanced Features) by C.S. Horstmann and G. Cornell (Sun Microsystems, Inc., 2005). & Java: Practical Guide for Programmers by Z. M. Sikora (Morgan Kaufmann Publishers, 2003)

6. Community College Transfer

A community college course will not be judged as equivalent to this course.

7. Date approved by the department or school ___**February 15, 2006**_____

8. Date approved by the college curriculum committee _**April 5, 2006**___

9. Date approved by CAA **April 20, 2006**