

CS 161 INTRODUCTION TO COMPUTER SCIENCE II, Spring 2008

1. Course Description

Continuing CS 160 this course widens and deepens the problem solving and programming techniques provided by Java. Keeping the emphasis on the object-oriented approach, students get experience with more control structures, additional library classes, enhance their skill in application of inheritance, interfaces, graphical user interface, arrays and vectors, some data structures, applets.

2. Course Learning Outcomes

The objective of this course is to solidify the object oriented programming technique provided by the Java language. The learning outcomes (course objectives) specific for our course are as follows (the letters in parentheses refer to the ABET Program Learning Outcomes):

- The ability to recognize the need for arrays in the solutions of programming problems, and to manipulate data in one and multidimensional arrays to obtain the required solutions ((b),(c), (i), (j)); practice and testing in labs 1-2, Project 1, Exam 1.
- Constructing basic algorithms for sorting and searching arrays, working with Vector objects; applying recursive programming ((i), (j)); practice and testing in Lab 3, Project 2, Exam 1.
- Utilize fundamental Graphical User Interfaces ((c), (h), (i)); practice and testing in Lab 4, Project 1, Exam 1.
- Designing and implementing multi-class solutions to programming problems, applying inheritance and polymorphism ((b), (c), (i)); practice and testing in Labs 5 - 7, Project 2, Exam 2.
- The ability to handle Java exceptions, and to create exception classes ((b), (c)); practice and testing in Lab 8, Project 3, Exam 2.
- Use interfaces and event driven programming in advanced GUI applications ((b), (c), (i)); practice and testing in Lab 9-10, Project 4, Exam 3.

3. Instructor/TA

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4. Time

Lecture: ET 131	Lab: ET 109
T - R 9:00 –10:15 am	T-R 10:30 – 11:45 am

5. Books

5.1 Textbook

D.S. Malik, *Java Programming: From Problem Analysis to Program Design*, 2nd edition, Thomson Course Technology, ISBN 0-619-21608-5.

5.2 Lab manual (optional)

Blayne Mayfield, *Java Programming: From Problem Analysis to Program Design*, 2nd edition, Thomson Course Technology, ISBN 0-619-21761-8

5. 3 Suggested reading: C. Horstman: *Big Java*, 3rd edition, John Wiley and Sons.

6. Software

We will be using JBuilder 2005 as our Java program development environment in the lab. This software is available in all the open computer labs on campus, as well as in our designated lab for class.

Course Web communication: Blackboard Vista 4

7. Grading

Grades are based on labs, programming projects, and exams weighted as follows:

Labs (10)	20%
Projects (4)	40%
Exams (3)	40%

TOTAL 100%

Some exam material may partially be tested in quizzes.

Grading scale:

A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	0% - 59%

For credit on a given assignment, it must be submitted by the announced due date. Late assignments will not be accepted.

Your final grade will be no more than one letter grade higher than your **exam** average. For example, if your exam average is 72% then you can receive no higher than a B regardless of how well you performed on your labs and projects.

8. What to submit

Normally, your code required to complete a lab or a project assignment will be independently tested by the instructor. You may submit your source code electronically, or you may use any disk whose root directory contains all the required code for the assignment including resources. In case of electronic submission your file must be sent to both the instructor and the TA. Be certain to check that any disk you submit is virus-free. Disks containing viruses will be assigned a grade of 0. You may also be required to submit hard copy of your source code and sample output. Occasional written assignments (a Word file preferred) should be submitted the same ways as described above.

9. Other Policies

1) Attending lectures is mandatory, you must sign the Attendance Sheet every time you are in class. Attending labs is very strongly recommended; if an assignment is worked out at home, the submission deadline still must be observed.

2) Projects must be done individually. When working on a project the following activities are not permitted:

- Seeking assistance in the development of algorithms
- Seeking assistance in the development of code
- Seeking assistance in debugging code

Seeking assistance means asking someone to show or tell you how to complete a task, working together to complete a task, or copying someone's work. The penalty for the first violation of this policy is a score of 0; a subsequent violation will result in a grade of 'F' for the class and the placement of a memo describing the infraction in the CS Department's files. For non-majors the memo will be forwarded to the student's major department.

Note: there will be project help sessions offered in the lab when assistance provided by the instructors will be available.

3) Make-ups and incompletes will be given only in extreme circumstances. To schedule a make-up exam you must contact either the instructor or the Department office prior to the date and time of the exam.

4) Students with disabilities.

If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of Services for Students with Disabilities (Walb Union, Room 113, telephone number 481-6658) as soon as possible to work out the details. Once the Director

has provided you with a letter attesting to your needs for modification, bring the letter to me. For more information, please visit the web site for SSD at <http://www.ipfw.edu/ssd/>

10. How Can We Help You?

1) One of the hallmarks of a professional in any field is to know when she/he does not know some fact, procedure, or principle and realizes that answers must be sought from another source. This is certainly standard practice in the computing field, where assistance is sought on a daily basis from personal relationships such as your cubicle-mate, your boss, your employee, a friend across the room or across the world (via the Internet), or from numerous non-person sources.

In this course, we want you to continue such professional practices. You do not have to feel “alone” when struggling with problems. Here are some of the resources that are available to you:

--classmates in this section

--lab assistant(s) for our section as well as the other sections
professor(s)

--tutors (KT G21: Casa, see below)) have been **exceedingly** helpful to students in this course in the past

--students from the other section (in case you happen to use “their” lab)

--students who have taken a similar course before

--web-sites with relevant information on similar courses

--web-site for Sun Microsystems (Java language developer) <http://www.sun.com>

--web-site for Borland (JBuilder application developer) <http://www.borland.com>

2) Information about CASA and the Writing Center

Center for Academic Support and Advancement, www.ipfw.edu/casa
The place to go for concentrated study time!

The SPOT Course-Specific Tutoring: Make your study time not only more effective, but also more efficient by signing up for free tutoring available in the SPOT in Kettler G21 (next door to the Writing Center). You are entitled to 2 free hours per week of one-to-one, course-specific help in understanding concepts, practicing the application or explanation of material being learned, and developing effective test-taking strategies. Make all appointments online through TutorTrac at www.ipfw.edu/casa. If you don't see a tutor available for your class, contact us in Kettler G21!

Drop-in tutoring is also available for math (schedule on website) and a few other subjects. If you need help with study skills in general, drop by the SPOT to view our self-paced tutorials or make a one-to-one appointment. Information about STEPS (Student Technology Education Programs) classes can be found the CASA website. Also, check with your instructor about whether Supplemental Instruction (group study) is available for this class. Questions? Call 481-5419.

SPOT Hours Spring 2008: Monday-Thursday 8 a.m. to 8 p.m.; Friday 8 a.m. to 4 p.m.

The WRITING CENTER: Save time and write better papers or presentations for any class through free one-to-one or small group consultations in The Writing Center, Kettler G19

(next door to the SPOT). Bring assignments, questions, ideas, and a draft (if you have one). Consultants can help you get started, write more clearly, revise, edit, and cite sources responsibly. Come as you begin and as you revise. Drop-ins are welcome if time is available, but appointments, made online through TutorTrac, receive preference. For TutorTrac, online consulting, and resources to make your writing process easier, go to www.ipfw.edu/casa/writing. Questions? Call 481-5740.

Writing Center hours Spring 2008: M-Th 10 a.m. to 6 p.m.; F 10 a.m. to 2 p.m.; Su 1 to 5 p.m.

3) Material related to your rights and responsibilities may be found in the website for the Dean of Students at www.ipfw.edu/dos.

11. Tentative Calendar

Week Of	Topics		LAB	Projects
-----	Tuesday	Thursday	-----	-----
Jan 14	Course Overview CS 160 Review	Ch 9	NO LAB	
Jan 21	Ch 9	Ch 9	Lab 1	
Jan 28	Ch 9	Ch 10	Lab 2	
Feb 4	Ch 10	Ch 10	Lab 3	
Feb 11	Ch 6	Ch 6	PH Session	Project 1 due
Feb 18	Ch 6	Exam 1	Lab 4	
Feb 25	Ch 11	Ch 11	Lab 5	
Mar 3	Ch 11	Ch 11	NO LAB	Project 2 due
Mar 10	Spring Break			
Mar 17	MVC Architecture	Ch 12	Lab 6	
Mar 24	Ch 12	Ch 12	Lab 7	
Mar 31	Ch 12	Exam 2	PH Session	Project 3 due
Apr 7	Ch 14	Ch 14	Lab 8	
Apr 14	Ch 13	Ch 13	Lab 9	
Apr 11	Ch 13	Ch 13	Lab 10	
Apr 28	Ch 13	Review	PH Session	Project 4 due
May 5	Final Exam: Tuesday, May 6, 8:00 – 10:00 a.m.			

The ABET (Accreditation Board for Engineering and Technology) general guide for learning outcomes relevant to the entire Computer Science undergraduate program runs as follows:

- (a) An ability to apply knowledge of computing and mathematics appropriate to the discipline

- solution
- (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its
 - (c) An ability to design, to implement, and evaluate a computer-based system, process, component, or program to meet desired needs
 - (d) An ability to function effectively on teams to accomplish a common goal
 - (e) An understanding of professional, ethical, legal, security and social issues and responsibilities
 - (f) An ability to communicate effectively with a range of audiences
 - (g) An ability to analyze the local and global impact of computing on individuals, organizations, and society
 - (h) Recognition of the need for and an ability to engage in continuing professional development
 - (i) An ability to use current techniques, skills, and tools necessary for computing practice.
 - (j) 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.
 - (k) An ability to apply design and development principles in the construction of software systems of varying complexity.