EE322C – DATA STRUCTURES
UNIQUE SECTION # 15900
COURSE SYLLABUS - Spring 2008
(Based on Herb Krasner's syllabus)

INSTRUCTOR: Sarfraz Khurshid; EMAIL: khurshid@ece.utexas.edu (the best way to reach me).
OFFICE: ACES 5.120 **PHONE:** 471-8244
OFFICE HOURS: Tuesdays 10am-noon and/or by appointment.

TA: Yehia Zayour

CLASS MEETING SPECIFICS. MW 5-6:30pm in ENS 127

CLASS WEB PAGE. Course materials (e.g. the syllabus, assignments, etc.) and grades will become available via email or postings on the UT Blackboard web page for this course as the semester progresses. These will be the main sources of current class information: (i) the daily class announcements, (ii) the programming assignments, (iii) model solutions to programming assignments and exams, (iv) course reading materials, (v) TA office hours and so on.

COURSE OBJECTIVES: To learn: programming with abstractions (data and procedural); programming in a modern object-oriented language (Java); the operation and application of common data structures; use of generics; algorithm analysis techniques, and software engineering techniques for moderately complex systems. Additionally, to prepare students for future subject areas in ECE; e.g. software engineering, systems software or embedded software.

SUBJECTS COVERED: The topics included in this course are covered roughly in this order: Java vs. C, introduction to Java, elementary data structures, classes and objects, basic object-oriented concepts, Arrays, Vectors, Lists, Stacks, Queues, Trees, Hashing, Priority Queues, Sets, Maps, Graphs, etc.

PREREQUISITES. EE312 with a grade of at least *C*. Incoming students are expected to know the basics of computers and computation; and how to program in C using features of the language, such as: variables and operators, built-in data types, execution control structures, pointers, arrays, screen I/O, structs, linked lists, and recursion. The student should know how to use basic programming tools and techniques, such as: a programming language development toolset and symbolic debugging. The incoming student may or may not have been introduced to subjects such as: abstract data types, analysis of algorithms, program design techniques, object-oriented programming, advanced OO features (e.g. classes, generics, etc.).

TEXT. *Objects, Abstraction, Data Structures and Design Using Java Version 5.0, Koffman and Wolfgang, ISBN 0-471-69264-6.*

SUGGESTED REFERENCES. For those students who wish to become stronger in Java programming, several online tutorials on Java are also available on the web. Some will be posted on the web page.
ATTENDANCE. Attendance is expected. Whether you come to class or not, you are responsible for keeping up with what happens in class. If you miss a class (other than for illness or an emergency), it is not reasonable

for you to expect me to repeat just for you the material that was covered in the class that you missed. This applies both to the content of the class as well as to announcements about class policies, events, deadlines, or whatever.

DROPPING. I will not sign any drop card after the second week of classes unless it is approved beforehand by Dean Meyer's office. The course grade that I assign in these cases will always be my estimate of your current grade. In particular, your grade must be a 'C' or better in order to receive a 'Q' on your drop application.

COURSE GRADES. Course grades will be based on the following components.

Component	Date	Weight
Exam 1	February 27	25%
Exam 2	March 26	25%
Exam 3	April 30	25%
Assignments, pop quizzes and other homework	(Dates are stated in each assignment) From 4-6 assignments are planned.	25%

The grade you are given, either on an individual exam or assignment or as your final grade, is not the starting point of a negotiation. It is your grade unless a concrete error has been made. Do not come to see me or the TA to ask for a better grade because you want one or you "feel you deserve it". Come only if you can document a specific error in grading or in recording your scores. Errors can certainly be made in grading, especially when many students are involved. But keep in mind that the errors can be made either in your favor or not. So it's possible that if you ask to have a piece of work re-graded your grade will go down rather than up.

Remember that the most important characteristic of any grading scheme is that it be fair to everyone in the class. Keep this in mind if you're thinking of asking, for example, for more partial credit points on a problem. The important thing is not the exact number of points that were taken off for each kind of mistake. The important thing is that that number was the same for everyone. So it can't be changed once the grading is done and the exams or assignments have been returned.

If you have questions or concerns about any of your grades, contact me during office hours or via email.

EXAMINATIONS. Exams will cover material from lecture, assignments, and the assigned readings. Exams will be more heavily weighted towards material not yet tested. Programming is a cumulative discipline, so it is important to master earlier topics in order to understand later topics. Exam scores may be curved if the instructor believes it is warranted. Three exams will be given in class. The dates are shown in the table above. If your work or a personal situation forces you to unexpectedly miss exams, you should expect to get a zero on those occasions. If you miss an exam because of illness, you are expected to provide a statement from a doctor

stating that, in his/her opinion, it was impossible for you to attend because of illness. A slip showing you visited the UT Health Center or your personal doctor is not sufficient for this. In any other situation, you should contact me beforehand. Bring your student ID to the exam; it may be requested for proof of identity.

PROGRAMMING ASSIGNMENTS. The assigned class work in this course will consist of programming assignments. Programming is a discipline that you learn by doing, not by listening to a lecturer. Therefore, doing the programming assignments is crucial to performing well in this class. Assignments will be given almost every other week. Each assignment will have a clearly stated due date and time. **NO LATE ASSIGNMENTS WILL BE ACCEPTED**. If you are having considerable difficulty with the early assignments, this is a sign that you may be in over your head - you should come see me immediately. The assignments will require a substantial time commitment over several days (an average of 6 hours per week outside of class should be expected). Be sure to budget sufficient time to complete assignments before the deadline. At the time you submit each assignment for grading, you are **required** to make a backup copy of the source code file on your removable secondary storage device (e.g. a flash drive). This will be necessary in cases where your program gets lost, is corrupted, or if there is some dispute over what was turned in when. If you cannot finish an assignment on time, then submit whatever you have finished before the deadline to receive some partial credit.

SUBMITTING PROGRAMMING ASSIGNMENTS.

Programming assignments will be submitted for grading by using the Blackboard system assignment manager feature. Program assignment submission rules:

1. Submit the completed files (usually the .java or .h text files) that form your program to the assignment manager on the blackboard page for this course
2. Do not email files to the professor or to the TA unless you have been previously given permission to do so (and this will only happen in the case of some emergency)
3. You must submit before the deadline. Any submission received after the submission deadline will be automatically given a 0
4. As part of the required documentation header block, the top three lines of the file that is submitted should be comments with the following information:
   // your name - last name first
   // your student EID
   // EE322C-Assignment *n* - where *n* is the assignment number (1, 2, ...)

PROGRAMMING ASSIGNMENT GRADES. Assignment grading criteria may vary on each assignment. However, in general, programs that do not compile correctly on the Lab configuration will receive no more than 25% of the possible points. Larger point deductions are given for such things as: incorrect results, missing features, bad solution logic, poor style, etc. With regard to programming style, I expect you to follow the Java coding standards that are found on the course web page. These coding standards will be loosely enforced on the early assignments but rigorously enforced on the latter assignments. In addition the following criteria are important: (i) a block structured design should be evident; (ii) comments and/or appropriate variable names should be used to make your program readable; (iii) appropriate prompts and messages for input and output should be given to the user of your program. Unless stated otherwise, more emphasis will be placed on program clarity than on program length, speed or size. For pair or team programming assignments, each member will receive the same grade as the other(s) unless I learn that a particular team member(s) is not

contributing. Appeals for assignment regrades will not be honored unless you have evidence of a grading mistake (see grade disputes below for deadlines).

POP QUIZZES. Pop quizzes may be given in class at any time without prior notification. The total of all pop quizzes given during the semester will be equal to one assignment grade, and will be a part of the assignment component of your semester grade. Make-ups on pop quizzes will not be given unless the student had previously notified the professor that they will be absent due to sickness.

OTHER HOMEWORK ASSIGNMENTS AND IN-CLASS EXERCISES. The purpose of homework and other in-class exercises in this course is to give you practice in solving problems and to amplify concepts introduced in the lecture. Homework is due at the beginning of the class period on the assigned due date. Late homework assignments will not be accepted. Homework should be your own, but general methods of working problems or designing algorithms may be discussed with others.

PROGRAMMING LAB and SOFTWARE. The computers on the third-floor and the fifth-floor labs of ENS have all of the software needed for this course. If you plan to do all of your work at home, you will need a *Java* compiler, Eclipse, a web browser, an email program, and the program *Adobe Acrobat Reader*. All of the programs are free. Programs submitted are expected to run on the version of Eclipse with Java that is currently installed in these labs. If your program doesn't compile and run on the version currently in the labs, you can expect to lose points even if it runs correctly on some other compiler.

GRADE DISPUTES AND CORRECTIONS. If you are dissatisfied with a grade you receive, you must submit your complaint briefly in writing or by email, along with supporting evidence or arguments, to me (or to the TA or grader) within one week of the date that I (or the TA or grader) first attempted to return the exam or assignment results to you. For programming assignments the dispute period starts with the posting of your score on the class Blackboard page. Complaints about grades received after the one-week deadline will be considered only if there are extraordinary circumstances for missing the deadline (e.g. student hospitalization). No new disputes will be accepted after 11:59AM two days before the course grade sheets must be turned in.

USE OF EMAIL. You cannot expect to get last-minute help on assignments by email. More generally, you cannot expect to get detailed answers to technical questions by email. Students are encouraged to discuss important matters with the teaching team in person, typically after class or during lab or office hours. In email, include your name, and the number of the assignment or exam in question. Please include your name in the "From:" line of the email message, not just your email address. Email accounts are available free to students from the university and commercial sources. Some commercial providers filter your email, and so you may not be receiving appended documents unless you set the permissions to do so (this is particularly true of HOTMAIL accounts). Email is a valuable tool for communicating with the teaching team. But be sure to use it properly, and follow the rules of good email etiquette (e.g. no flaming, spamming, etc.). Although it's easy for you to dash off an email question, it takes time to answer it. In general, you should not ask email questions to which you can find the answer somewhere else (e.g. class notes, web page).

OTHER COURSE RELATED POLICIES

ACADEMIC DISHONESTY (cheating): The University and the Department are committed to preserving the reputation of your UT degree. In order to guarantee that every degree means what it says it means, we must enforce a strict policy on academic honesty: Every piece of work that you turn in with your name on it must be yours and yours alone. No co-working is allowed on any test, project, or programming assignment unless explicitly allowed by me (*). As an honest student, you are responsible for enforcing this policy in three ways:

1. You must not turn in work that is not yours, except as expressly permitted by me
2. You must not enable someone else to turn in work that is not his or hers. Do not share your work with anyone else. Make sure that you adequately protect all your files. Even after you have finished a class, do not share your work or published answers with the students who come after you. They need to do their work on their own.
3. You must not allow someone to openly violate this policy because it diminishes your effort as well as that of your honest classmates.

Students who violate University rules on scholastic dishonesty in assignments or exams are subject to disciplinary penalties, including the possibility of a lowered or 0 grade on an assignment or exam, failure in the course, and/or dismissal from the University. Changing your exam answers after they have been graded, copying answers during exams, or plagiarizing the work of others (in programming assignments) will be considered academic dishonesty and will not be tolerated. Plagiarism detection software may be used on the programs submitted in this class. If cheating is discovered, a report will be made to the Dean of Students recommending a course grade of 'F' for all involved in the incident.

(*) In this course when we do pair or team programming, the pair/team is treated as one individual with regard to this policy.

LEARNING DISABILITIES. If you have a learning disability that requires special attention, either during class or during an exam, please give me a letter from the Dean of Students describing what needs to be done. You should do this during the first week of classes. (The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 or the College of Engineering Director of Students with Disabilities at 471-4321.

RELIGIOUS HOLY DAYS. A student who is absent from an examination or cannot meet an assignment deadline due to the observance of a religious holy day may take the examination on an alternate day, submit the assignment up to 24 hours late without penalty, or be excused from the examination or assignment, ONLY if proper notice of the planned absence has been given in advance. Proper notice must be given to the instructor at least fourteen days prior to the classes scheduled on dates the student will be absent. For religious holy days that fall within the first two weeks of the semester, notice should be given on the first day of the semester. The notice must be personally delivered to the instructor and signed and dated by the instructor, or sent by certified mail, return receipt requested. Email notification will be accepted if received, but a student submitting such notification must receive email confirmation from the instructor. A student who fails to complete missed work within the time allowed will be subject to the normal academic penalties.

CLASSROOM BEHAVIOR. You have the right to learn in every class you attend. But you also have the responsibility to help assure that every other student shares that right. Specifically:

1. Come to class on time. Do not leave early. These things are very disruptive. Recognize that the buses and the parking space situation are unpredictable elements and allow for that. If you must come late or leave early (for example because of a doctor's appointment), let the instructor know in advance.
2. Don't be disruptive during class. Don't chat with your neighbors or rustle the newspaper.
3. Don't allow your electronic devices to be disruptive. Turn off your cell phone, beeper, and watch alarm.
4. Don't leave your mess lying on the classroom floor when you leave – pick it up and throw it in a trash can.

ONLINE PRIVACY. Web-based, password-protected class sites are associated with all academic courses taught at The University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging e-mail, engaging in class discussions and chats, and exchanging files. In addition, electronic class rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1. For information on restricting directory information see: http://www.utexas.edu/student/registrar/catalogs/gi06-07/app/appc09.html

EXTERNAL TUTORING. For those students having considerable difficulties with the course material, individual tutoring is provided by certain organizations not directly affiliated with this course. See the following references:

1. Eta Kappa Nu – they will announce their tutoring schedule shortly after the semester begins
2. The Learning Skills Center, located in Jester A332A, 471-3614, has individual tutors for hire. The cost is about $10 per hour; students receiving financial aid can get 2 hours per week free. See the web page http://www.utexas.edu/student/utlc/tap.html for more information.

DISCLAIMER. I occasionally tell jokes and stories during class as a way of breaking up the technical material that we're covering. A story might be a simple observation about campus life, about something that has happened to me as a student or a professor, or it may even be an aggie joke. These stories may reflect a point of view that is different from your own. Hopefully, most will be interesting or funny. Some, almost certainly, will be politically incorrect. None of these are intended to be offensive.

COURSE POLICIES CAVEAT. As departmental, college and UT policies change, I reserve the right to alter the effected course policies stated herein during the course of the semester.