Lectures: TR 2:00 - 2:50 pm
Labs: TR 2:50 - 4:05 pm
Instructor: Behzad Parviz
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Office Hours: Tuesdays and Thursdays: 10:45 am - 12:15 pm
Appointments: Wednesdays: 12:00 - 2:00 pm
Course Description: Introduction to algorithms; designing, coding, debugging, and documenting programs; implementation of algorithms as structured programs in a high level language; laboratory activities on problem analysis and software development.
Course Goals: Divide a problem into its logical set of components.
Have a good understanding of the basic programming concepts.
Create simple classes with a few methods.
Divide a problem into its logical set of components.
Have a good understanding of how a good program design reduces coding and debugging time.
Design and code mid-level problems.
Prerequisites: Math 1040
Textbook(s): Introduction to JAVA Programming, by: Daniel Liang, 11th Edition
Reference(s): JAVA How to program, by Deitel, 11th Edition
Topics:
• Introduction to Computers, Programs, and Java
  What is a Computer
  Computer Organization
  History of Java
  The Internet and the World Wide Web
  Basics of a typical Java Environment
• Elementary Programming
  Studying a Simple Program in Java
  Displaying Text in a Dialog Box
  Memory Concepts
  Arithmetic
  Decision Making: Equality and Relational Operators
Programming Design

- Control Statements
  Algorithms
  Pseudocode
  if…else Selection Statement
  while Repetition Statement
  Formulating Algorithms
  Compound Assignment Operators
  Primitive Types
  for Repetition Statement
  do…while Repetition Statement
  switch Multiple-Selection Statement
  break and continue Statements
  Logical Operators

- Methods
  Program Modules in Java
  static Methods, static Fields
  Declaring and using Methods with Multiple Parameters
  Argument Promotion and Casting
  Java API Packages
  Scope of Declarations
  Method Overloading

- Arrays
  Declaring and Creating Arrays
  Examples Using Arrays
  Passing Arrays to Methods
  Multidimensional Arrays
  Variable-Length Argument Lists

- Strings and Text I/O
  The String Class
  The Character Class
  The StringBuilder/StringBuffer Class

Weekly schedule and lab Projects:
Each week you are to complete a 3-hour lab projects on selected topics, except exam weeks:

Week 1 and 2:
Introduction to computers and basic programming concepts and constructs

Week 3 and 4
Introduction to programming applications in Java and program design. Introduction to textpad and JDK tools.

Week 5, 6, and 7
Simple control statements for decision making and repetition: if…else and while statements. MIDTERM 1
Week 8 and 9: Continuation of discussions about control statements.

Week 10 and 11: More control statements: for, do...while, switch, break, and continue statements. MIDTERM 2.

Week 12: A deeper look inside objects. Class-library methods and user defined methods.

Week 13: More discussion about methods. Program modularity.

Week 14: Structuring data using array of items of the same types.

Week 15: Review the material covered in Chapter 1 to Chapter 7. Final Project is due.

Non-lab projects: There are 3 - 5 large individual projects that you are developing during the quarter. For these projects you are required to produce a design document(pseudocode, UML, etc.) and a user's manual.

Grading Policy: Lab Projects 15%, large projects 25%, Midterm1 15%, Midterm2 15%, Final 30%
A 90 - 100
B 80 - 90
C 60 - 80
NC below 60

Final Exam: TBA

Academic Integrity: Cheating will not be tolerated. Cheating on any assignment or exam will be taken seriously. All parties involved will receive a grade of F for the course and are reported to the proper authorities.

ADA Statement: Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation.

NO MAKE-UP EXAMS, NO LATE PROJECTS, AND NO INCOMPLETES!!!