CSCE 3193: Programming Paradigms

Syllabus *Fall 2017*

Meeting times: Tues & Thurs 3:30 – 4:45	Location: JBHT 0144
Web site: Blackboard	

Instructor: Dr. Qinghua Li	
Office: JBHT 529	Email: qinghual@uark.edu
Web site: http://csce.uark.edu/~qinghual/	Office hours: Tues & Wed & Thurs 2:30-3:30, and by appointment

TA: Tarana Bipasha	Email: ttbipash@email.uark.edu
Office: JBHT 434	Office hours: Wed 11:00-12:00, Thu 11:30-12:30, Fri 11:00-12:00
TA: Zheng Hu	Email: zhenghu@email.uark.edu
Office: JBHT 434	Office hours: Mon & Tue & Wed 10:00-11:00

Catalog Description: Programming in different paradigms with emphasis on object-oriented programming, network programming, and concurrency.

Prerequisites: CSCE 2014.

Textbook/required material:
Java: Paul Deitel & Harvey Deitel, Java: How to Program, 10e, ISBN: 0133807800, 2015. (Later editions are fine.)
eText ($34.99): https://www.vitalsource.com/products/java-how-to-program-early-objects-paul-j-deitel-v9780133807011

JavaScript: http://www.w3schools.com/js/
PHP: http://www.w3schools.com/php/
Python: https://docs.python.org/3/tutorial/

Grading: Final course grades will be determined as a weighted average of exams, assignments, and in-class activities as follows:

Assignments:	50%
Class Participation:	10%
Midterm:	20%
Final exam:	20%

For students in the Honors section, 10% of the course grade will be based on a programming project given toward the end of the semester (and the assignments will count for only 40% of the total grade).

This is a very large class and thus many of the grading tasks must be automated in order for assignments to be graded in a timely manner. Therefore, the submission instructions will be strictly enforced, meaning that all submitted files must be correctly named, exactly the required set of files must be submitted (no extras and none missing), and programs must correctly compile as submitted. Since these conditions will be necessary to keep the amount of time necessary to grade each assignment manageable, any deviations from them will be harshly penalized, i.e., by 10% (absolute, not relative).

Any student who does not pass at least one exam will not pass the course, regardless of his or her total course average.

For the class participation grade, any student who misses four or more classes without any valid reason will get ZERO.

A scale similar to the following will be used to determine final course grades. However, it is approximate and subject to change.

A: over 90%
B: 80-89%
C: 70-79%
D: 60-69%
F: below 60%

Late work: An assignment is considered one day late if it is submitted after the deadline, but less than 24 hours after the deadline. Such submissions will be penalized by 20% (absolute, not relative). Weekends and holidays are counted in the same way as weekdays. Submissions more than 24 hours late will not be accepted and will receive a grade of ZERO. Per university policy, no work will be accepted after the last day of class, even if it is submitted before the final exam.

Topics covered:

- Overview of Programming Languages – Survey of programming languages
- Object-Oriented Programming – OO design, Encapsulation and information-hiding, Classes and subclasses, Inheritance, Polymorphism, Class hierarchies, Generic Programming
- Using APIs – API Programming
- Event Driven Programming – Event Handling Methods, Exception Handling
- Client-server computing – Web technologies (scripts, applets, client-side and server-side programming), Client-Server relationship, Web Protocols, and network programming
- Concurrency – Overview and motivation, threads, synchronization. (optional)
- Software Tools and Environments – Programming Environments

Relationship of course to Computer Engineering Program Student Outcomes:

- (a) An ability to apply knowledge of mathematics, science, and engineering.
- (b) An ability to design and conduct experiments, as well as to analyze and interpret data.
- (c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- (e) An ability to identify, formulate, and solve engineering problems.

- (i) A recognition of the need for, and an ability to engage in life-long learning.
- (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Relationship of course to Computer Science Program Student Outcomes:

- (a) An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- (b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
- (c) An ability to design, implement and evaluate a computer-based system, process, component or program to meet desired needs.
- (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 practices.
- (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.

Academic Honesty Statement:

As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail.

Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' that may be found at honesty.uark.edu/policy. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

In addition to the university's academic integrity policies, the following policies will apply to this class.

Exams:

- Students are expected to submit their own work on all exams.
- Students are NOT allowed to copy anything from another student, or get any outside assistance of any type during the exam (e.g. from other students, the internet, etc.).
- Students ARE allowed to bring an 8.5 x 11 sheet of paper with any notes they want into the exam. Otherwise, exams are closed book and closed notes and no use of cell phones, calculators, or any electronic devices is permitted.

Homework and Programming Projects:

- Students are expected to submit their own work on all homework and programming projects, unless group projects have been explicitly assigned.
- Students are NOT allowed to distribute code to each other, or copy code from another individual or website. Code found online may be used as an example, but all code submitted by a student (i.e. every line) must be completely written by that student.
- Students ARE allowed to use any materials on the class website or in the textbook, or ask the instructor and/or TAs for assistance.

Submitted code for assignments will be checked by automatic plagiarism detection software by comparing it against other submitted code from this and past semesters. Violations of the policies

above will be reported to the Provost's office via an Academic Integrity Allegation Evidence Form (see http://honesty.uark.edu) and may result in a ZERO on the exam or programming project, an F in the class, or suspension from the university, depending on the severity of the violation. All violations will be reported to the Provost's office, without exception. **This includes any individual whose code was copied by another. Do not plagiarize or allow it to happen!!!**

Academic Support:

University of Arkansas Academic Policy Series 1520.10 requires that students with disabilities are provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact me privately at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through the Center for Educational Access (contact 479–575–3104 or visit http://cea.uark.edu for more information on registration procedures).

Inclement Weather:

If the university is officially closed, class will not be held. When the university is open, you are expected to make a reasonable effort to attend class, but not if you do not feel that you can get to campus safely. Any changes to due dates or the class schedule will be communicated via email to your uark email address.

Emergency Preparedness:

Many types of emergencies can occur on campus; instructions for specific emergencies such as severe weather, active shooter, or fire can be found at emergency.uark.edu. The University of Arkansas has a campus-wide alert system for any hazardous conditions that may arise on campus. To learn more and to sign up: http://safety.uark.edu/emergency-preparedness/emergency-notification-system/