Prerequisite: CS201

Description and objectives
This course aims to provide programming experience and to give advanced programming techniques. In this way, students would be more prepared to data structures and several other junior and senior level CS courses. CS204 is a prerequisite course for several CS courses including data structures. Thus, it is a must course for CS students and students who will take advanced CS courses.

The programming language that will be used in this course is C++; we will use Visual C++ 2012 as the development environment. CS204 heavily depends on CS201. Thus a good CS201 background is needed.

Topics planned to be covered
- Introduction (overview of basic concepts, Visual C++ environment, preprocessor directives, compiler, compiler options, linker, libraries, debugging)
- Pointers and dynamic memory allocation
- Linked lists
- Stacks and queues
- Templates, templated classes and functions
- Advanced issues on classes and object oriented programming
- Data representation, bitwise operations
- Inheritance, polymorphism and advanced object oriented design
- Exception handling
- Programming with threads
- Visual programming and graphical user interfaces

Instructor
Dr. Kamer Kaya, FENS G012, ext. 9566, kaya@sabanciuniv.edu


Detailed information (offices, office hours, etc.) will be available on the course website (http://people.sabanciuniv.edu/kaya/fall15cs204.html).

Textbook(s)
Main texts are
"A Computer Science Tapestry" (CS201 book)

Reference books are
"Starting out with C++ Early Objects", 7th edition, by T. Gaddis, J. Walters and G. Muganda
"Objects, Abstraction, Data Structures and Design using C++" by Koffman and Wolfgang.

We may not stick to the textbooks; you are responsible for material covered in class too. Thus it is very important to attend to classes.

Schedule
Lectures: Monday 13:40-15:30 (FENS G032), Tuesday 09:40-10:30 (FENS G032)

Homework
There will be 9 (plus/minus 1) programming homework assignments. Late penalty is 10% of full grade for each day (only one late day is allowed). You have to submit your own work!

Grading
Midterm 1 (20%) – will be scheduled by student resources
Midterm 2 (25%) – will be scheduled by student resources
Final (30%) – will be scheduled by student resources

Homework assignments (25%) – The homework assignments are not of equal weight. Homework grading will mostly be based on correctness of the execution. No debugging will be done during grading. See website for detailed homework grading criteria.

Other Rules and Remarks
- We are not planning to give any quizzes, but depending on your attendance, we may start quizzes with prior notice.
- Weighted average is not the only criterion in letter grading; exam average may also be taken into consideration.
- We have a strict make-up policy. If you plan to take a makeup exam, please first read the makeup policy at the website in order to understand the rules and to see whether you are eligible or not.

Plagiarism, Homework Trading and Cheating will not be tolerated