CS 204 – Advanced Programming – Spring 2019
3 credits

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. We will NOT make a review of CS201 topics.

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
- Move constructors (if time permits)

Instructor
Prof. Albert Levi. FENS 1091, ext. 9563. LEVI@SABANCIUNIV.EDU
Office Hours: whenever I am in my office (generally I am in my office : ) )
Assistants: Detailed assistant information (offices, office hours, etc.) will be available on the course website.

Textbook(s)
"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 material covered in class too. Thus it is very important to attend to classes.

Schedule
Lectures: Monday 11:40-13:30 (FASS G062), Tuesday 15:40-16:30 (FASS G062)
Labs:  Sections A1, A2: Thursday 12:40 – 14:30,  B1, B2: Thursday 14:40 – 16:30,  see schedule for the places
Sections C1, C2: Thursday 16:40 – 18:30,  D1, D2: Friday 12:40 – 14:30,  see schedule for the places

Homework
There will be 8 (plus/minus 1) programming homework assignments. Late penalty is 10% of full grade (only one late day is allowed). You must submit your own work! No group works! Collaboration will not be considered as an excuse for plagiarism!

Tentative Grading (subject to change)
Midterm 1 (23%) – April 1, 2019, Monday, 11.40 – 13:30 (class time).
Midterm 2 (23 %) – May 4, 2019, Saturday, 14:00 - 16:00
Final (34%) – will be scheduled by student resources
Homework assignments (20%) – 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.

See Class Website at  http://people.sabanciuniv.edu/levi/cs204 for other, but important, details

Plagiarism, Homework Trading, Illegal Local and Remote Help and Cheating will not be tolerated