CS204 SYLLABUS

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 Microsoft Visual C++ as the main 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 and basic trees
- 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 and concurrency in C++
- Visual programming and graphical user interfaces with Qt
- Efficient programming - (if time permits)

Instructor:

- Dr. Kamer Kaya, FENS G012, ext. 9566.
- Office Hour: by appointment
- E-mail: kaya@sabanciuniv.edu

TAs, Emails and Zoom Links (to be used for Labs and Office Hours):

- Vedat Peran,
  - mailto:vperan@sabanciuniv.edu
  - https://zoom.us/j/6116721727?pwd=ZytJMzZRN08yT25oRklnY1NtZFNZUT09
    Passcode: cTi6g3

- Fatih Taşyaran,
  - fatihtasyaran@sabanciuniv.edu
  - https://zoom.us/j/2966524669
    Passcode: 5KXevH
- Arda Şener,
  - ardasener@sabancinuniv.edu

- o https://sabanciuniv.zoom.us/j/9418702334?pwd=WkhuMEcwek56Q0ZwTHprK0thcjNFUT09

- Ferhat Yaman,
    - o ferhatyaman@sabanciuniv.edu
    - o https://sabanciuniv.zoom.us/j/6280018555?pwd=UnUwZzdiSU5tK0Q2eG5STFdKQllodz09
      Passcode: 123456

- Elif Şahin,
    - o sahinelif@sabanciuniv.edu
    - o https://zoom.us/j/99284629223?pwd=VDJLbW12SnJxNHFiRWZXQW84R0pYdz09
      Passcode: Z1vPq4

LAs:

- Emre Vardar,
    - o emrevardar@sabanciuniv.edu
    - o **https://zoom.us/j/6437635136**
      Passcode: JH3dn5
- Efe Öztaban,
    - o efeoztaban@sabanciuniv.edu
    - o https://zoom.us/j/8240169422?pwd=Z0xQMk4vNG44YlluTEs1N0FCbVlZZz09

      Meeting ID: 824 016 9422
      Passcode: n9m2kv

Textbook(s):

- **Main texts**
    - o "Ivor Horton's Beginning Visual C++ 2012", by Ivor Horton, ISBN: 978-1-118-36808-4.
    - o "A Computer Science Tapestry" (CS201 book)
- **Reference books (**We will not stick to the textbooks; you are responsible material covered in class too. Thus it is very important to attend to classes**)**

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

Schedule:

Lectures:

- Monday, 08:40-10:30, https://sabanciuniv.zoom.us/j/5764870791
- Wednesday, 12:40-13:30, https://sabanciuniv.zoom.us/j/5764870791

Labs:

- A1: 10:40 am - 12:30 pm, Thursday, (Vedat Peran)
- A2: 10:40 am - 12:30 pm, Thursday, (Emre Vardar)
- A3/A4: 2:40 pm - 4:30 pm, Thursday, (Ferhat Yaman)
- A5: 10:40 am - 12:30 pm, Friday, (Vedat Peran)
- A6: 10:40 am - 12:30 pm, Friday, (Efe Öztaban)
- A7: 12:40 pm - 14:30 pm, Friday, (Arda Şener)
- A8: 12:40 pm - 14:30 pm, Friday, (Vedat Peran)
- A9: 14:40 pm - 16:30 pm, Friday, (Arda Şener)

Office Hours:

- 13:40 - 14:30, Monday, (Ferhat Yaman)
- 17:40 - 18:30, Monday (Ferhat Yaman)
- 18:40 - 19:30, Monday (Fatih Taşyaran)
- 12:40 - 13:30, Tuesday, (Emre Vardar)
- 13:40 - 14:30, Tuesday, (Emre Vardar)
- 18:00 - 19:00, Tuesday, (Elif Şahin)
- 18:40 - 19:30, Tuesday, (Efe Öztaban)
- 14:40 - 15:30, Wednesday, (Efe Öztaban)
- 15:40 - 16:30, Wednesday, (Efe Öztaban)
- 16:40 - 17:30, Wednesday (Vedat Peran)
- 18:40 - 19:30, Wednesday, (Efe Öztaban)
- 09:40 - 10:30, Thursday, (Emre Vardar)
- 16:40 - 17:30, Thursday, (Arda Şener)
- 17:40 - 18:30, Thursday, (Efe Öztaban)
- 09:40 - 10:30, Friday, (Arda Şener)
- 16:40 - 17:30, Friday, (Arda Şener)
- 17:40 - 18:30, Friday, (Emre Vardar)
- 18:40 - 19:30, Friday, (Emre Vardar)

Exams:

- **1st MT:** November 13, 2020, 19:40-21:30
- **2nd MT:** December 26, 2020, 13:00-16:00
- **Final:** January 19, 2021, 09:00-12:00

We highly recommend SUCourse+ webpage for your questions. The TAs and LAs will respond as soon as possible.

Homeworks: There will be 8 (plus/minus 1) programming homework assignments. Late submissions are not allowed! You have to submit your own work!

Grading:

- Midterm 1 (20%): TBA, will be scheduled by the Scheduling Committee
- Midterm 2 (25 %): TBA, will be scheduled by the Scheduling Committee
- Final (30%) – TBA, will be scheduled by the Scheduling Committee
- 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.

- **IF YOUR HW AVERAGE IS MORE THAN 3X OF YOUR EXAM AVERAGE, YOUR EXAM AVERAGE WILL BE USED AS YOUR HW AVERAGE**
- **Exams will be online – cameras will be open – otherwise, exam will be cancelled.**

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 make-up exam, please first read the make-up policy (http://people.sabanciuniv.edu/kaya/CS204/rules.html) in order to understand the rules and to see whether you are eligible or not.

See SUCourse+ for updated information, but this is important:

Plagiarism, Homework Trading and Cheating will not be tolerated.