

## 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](mailto:kaya@sabanciuniv.edu)

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

- Berker Demirel ([berkerdemirel@sabanciuniv.edu](mailto:berkerdemirel@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/99016901406>
- Alperen Doğan ([alperend@sabanciuniv.edu](mailto:alperend@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/7290590460?pwd=MmtKeUkwbFpkUG8ySmFsL2ZlSW9ZQT09> (Passcode: 6pFDd0)
- Amro Alabsi Aljundi ([amroa@sabanciuniv.edu](mailto:amroa@sabanciuniv.edu))
- Ahmed Salem ([ahmed.salem@sabanciuniv.edu](mailto:ahmed.salem@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/9368264466>

## LAs and, Emails and Zoom Links (to be used for Office Hours - Labs will be physical):

- Mustafa Yağız Kılıçarslan ([ykilicarслан@sabanciuniv.edu](mailto:ykilicarслан@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/5668228028>
- Ahmet Emre Eser ([emre.eser@sabanciuniv.edu](mailto:emre.eser@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/6134529286>
- Esmâ Günay ([egunay@sabanciuniv.edu](mailto:egunay@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/3586382886?pwd=b2sxbDNMOWFuZk9naUpBR254QkJOdz09> (Password: HqZ8Dh)
- Ahmet Alperen Öznam ([aoznam@sabanciuniv.edu](mailto:aoznam@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/8993533267>
- Kerim Demir ([kerimdemir@sabanciuniv.edu](mailto:kerimdemir@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/9125322609>
- Ataollah Hosseinzadeh Fard ([ataollah@sabanciuniv.edu](mailto:ataollah@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/5386822020>
- Hatice Merve Vural ([haticemerve@sabanciuniv.edu](mailto:haticemerve@sabanciuniv.edu))
  - <https://sabanciuniv.zoom.us/j/6581908394>

## Textbook(s):

- **Main texts**
  - "Ivor Horton's Beginning Visual C++ 2012", by Ivor Horton, ISBN: 978-1-118-36808-4.
  - "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)
  - "Starting out with C++ Early Objects", 7<sup>th</sup> edition, by T. Gaddis, J. Walters and G. Muganda
  - "Objects, Abstraction, Data Structures and Design using C++" by Koffman and Wolfgang.

## Schedule:

### Lectures:

- Monday, 09:40-11:30, FMAN 1099
- Wednesday, 12:40-13:30, FMAN 1099

### Labs:

- A1: Thursday, 12:40 - 14:30, FENS L027, (Esmâ Günay, Berker Demirel)
- A2: Thursday, 12:40 - 14:30, FENS L029, (Merve Vural, Alperen Doğan)
- B1: Thursday, 14:40 - 16:30, FENS L027, (Ahmed Salem, Yağız Kılıçarslan)
- B2: Thursday, 14:40 - 16:30, FENS L029, (Ahmer E. Eser, Berker Demirel)
- C1: Friday, 10:40 - 12:30, FENS L029, (Ahmer E. Eser, Berker Demirel)
- C2: Friday, 10:40 - 12:30, FENS L027, (Ahmed Salem, Alperen Doğan)
- D: Friday, 12:40 - 14:30, FMAN L014, (Ahmet A. Öznam, Alperen Doğan)

**Office Hours (mostly online: see the links above – reds are physical office hours):**

- 01: Monday, 14:40-15:30
  - Esmâ Günay, Ahmet A. Öznam, **Ataollah H. Fard (FMAN G041)**, Yağız Kılıçarslan
- 02: Monday, 15:40-16:30
  - Kerim Demir, Ahmet A. Öznam, Merve Vural, **Ataollah H. Fard (FMAN G041)**
- 03: Monday, 16:40-17:30
  - Esmâ Günay, Kerim Demir, **Ataollah H. Fard (FMAN G041)**
- 04: Tuesday, 09:40-10:30
  - Kerim Demir, Ahmet E. Eser, Ataollah H. Fard, Yağız Kılıçarslan
- 05: Tuesday, 10:40-11:30
  - Kerim Demir, Ahmet E. Eser, Berker Demirel, Ahmet A. Öznam
- 06: Tuesday, 11:40-12:30
  - Esmâ Günay, Berker Demirel
- 07: Wednesday, 13:40-14:30
  - Kerim Demir, Ahmet A. Öznam, Merve Vural, **Ataollah H. Fard (FASS G050)**
- 08: Wednesday, 14:40-15:30
  - Kerim Demir, Merve Vural, **Ataollah H. Fard (FASS G050)**
- 09: Wednesday, 16:40-17:30
  - Ahmed Salem
- 10: Thursday, 11:40-12:30
  - **Ataollah H. Fard (FENS G015)**, Alperen Doğan
- 11: Thursday, 16:40-17:30
  - Kerim Demir, Merve Vural, Yağız Kılıçarslan
- 12: Thursday, 17:30-18:30
  - Kerim Demir, Alperen Doğan
- 13: Friday, 09:40-10:30
  - Berker Demirel, Ataollah H. Fard, Yağız Kılıçarslan
- 14: Friday, 14:40-15:30
  - Ahmed Salem
- 15: Friday, 15:40-16:30
  - Esmâ Günay, Alperen Doğan

**Exams:**

- **1<sup>st</sup> MT:** Nov 26, 11:45 - 13:45
- **2<sup>nd</sup> MT:** Dec 24, 15:30 - 17:30
- **Final:** TBA

**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 OFFLINE**

**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. Check the slides of the first week 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.**