

COM 121, Safety Management and Economics for Software Engineering

American University of Central Asia
Software Engineering Department

1 Course Information

Course Codes

COM-121

Course IDs

5291

Credits

6

Professors, TAs, Time, Place

Lab (Dmitriy Shostak): Tuesday 10:50–12:05, Online

Lab (Dmitriy Shostak): Tuesday 12:45–14:00, Online

Lab (Dmitriy Shostak): Tuesday 14:10–15:25, Online

Lab (Dmitrii Toksaitov): Thursday 10:50–12:05, Online

Lab (Dmitrii Toksaitov): Thursday 12:45–14:00, Online

Lab (Dmitrii Toksaitov): Thursday 14:10–15:25, Online

2 Contact Information

Professors

Dmitriy Shostak

shostak_d@auca.kg

Dmitrii Toksaitov

toksaitov_d@auca.kg

Office

AUCA, room 315

Office Hours

By appointment throughout the work week remotely through Zoom

3 Course Overview

Safety Management for SFW is an introductory course covering the most important aspects of Software System Safety from a developer's point of view. The 3-credit course focuses on topics of building secure, safe, and sustainable software. This course takes an in-depth look into low-level programming languages such as C, C++, and assembly, their relationship with the underlying hardware. We try to understand how design decisions of such foundational technologies, used to build core systems around us, and their relationships may influence virtual and real-world sustainability and safety.

4 Assignments and Exams

4.1 GitHub Checkpoints

Students will have to maintain a personal (!) private GitHub repository with all their works shared with their instructor. Students have to periodically commit and push a specific number of lab solutions (or project parts) as told by the instructor. The instructor will periodically check the work and give points for the accomplished work.

Students will have to maintain a private Google Drive directory, where they will keep recordings of the experiments that they will conduct on their computers. Links to recordings will have to be submitted together with lab solutions on GitHub. These recordings will also be graded.

5 Course Materials, Recordings and Screencasts

Students will find all the course materials on GitHub. We hope that by working with GitHub, students will become familiar with the Git version control system and the popular (among developers) GitHub service. Though version control is not the focus of the course, some course tasks may have to be submitted through it on the GitHub Classroom service.

Every class is screencasted online and recorded to YouTube for students' convenience. An ability to watch a class remotely at any time **MUST NOT** be a reason not to attend the online Zoom session. Active class participation is necessary to succeed in this course.

6 Software

Students are recommended to install the following software on their machines.

- Git: <https://git-scm.com>
- Microsoft Visual Studio Code: <https://code.visualstudio.com>

The compilers, assemblers, and debuggers will be available on the remote course server.

7 Reading

- C Programming: A Modern Approach, Second Edition, by K. N. King (AUCA Library Call Number: QA76.73.C15 K49 2008, ISBN: 978-0393979503)
- The C Programming Language, Second Edition, by Brian Kernighan and Dennis Ritchie (AUCA Library Call Number: QA76.73. C15 K47 1988, ISBN: 978-0131103627)

8 Grading

This 3-credit-hour course will not have any exams. Your instructor will announce a periodic review of your work. You will be awarded a certain number of points for such checks. The number of points is to be determined.

8.1 Scale

- 92%–100%: A
- 85%–91%: A-
- 80%–84%: B+
- 75%–79%: B
- 70%–74%: B-
- 65%–69%: C+
- 60%–64%: C
- 55%–59%: C-
- 50%–54%: D+
- 45%–49%: D
- 40%–44%: D-
- Less than 40%: F

9 Rules

Students are required to follow the rules of conduct of the Software Engineering Department and the American University of Central Asia.

9.1 Participation

Active work during the class may be awarded with up to 5 extra points at the instructor's discretion.

Poor student performance during a class can lead to up to 5 points being deducted from the final grade.

Instructors may conduct pop-checks during classes at random without prior notice. Students MUST be ready for every class in order not to lose points.

9.2 Questions

We believe that a question from one student is most likely a question that other students are also interested in. That is why we encourage students to use Piazza to ask questions in public that other students can see and answer and NOT ask them through E-mail. Make your threads private if it is a private matter. We will not be answering any email messages this semester to consolidate all the course correspondence in one place.

Do not post the full source code for any task on this course on Piazza. You will get zero for that work for any public post. Do not ask generic questions about your code that you do not know why your code does not work. Please spend some time thinking about it, debugging it.

9.3 Late Policy

Late submissions and late exams are not allowed. Exceptions may be made at the discretion of the professor only in force-majeure circumstances. If you got ill, got severe personal issues, got problems with your computer or the Internet, you **MUST** notify me at least 24 hours in advance. Otherwise, we will not give you an extension. We will consider that you were procrastinating until the very last day. We will also not be giving more than one extension throughout the course.

Forty-eight hours before the deadline for any work on the course, instructors will go into a silent mode. No questions will be answered about the work that has to be submitted, no requests to have office hours will be considered. Usually, it will be Saturday and Sunday (that are not working days for us anyway). At any other work time before the deadline, we will try our best to answer your questions and help you through Zoom.

9.4 Incomplete

As with late exams, the grade *I* may be awarded only in exceptional circumstances. The student must start a discussion on getting the grade *I* with the instructors in advance and not during the last week before the final exams.

9.5 Academic Honesty

Plagiarism can be defined as “an act or an example of copying or stealing someone else’s words or ideas and appropriating them as one’s own”. The concept of plagiarism applies to all tasks and their components, including program code, abstracts, reports, graphs, statistical tables, etc.

In addition to being unethical, this indicates that the student has not studied the given material. Tasks written from somewhere for 10% or less will be assessed accordingly or will receive a 0 at the discretion of the teacher. If plagiarism is more than 10%, the case will be transferred to the AUCA Disciplinary Committee.

Students are not recommended to memorize before exams, as this is a difficult and inefficient way to learn; and since practice exams consist of open questions

designed to test a student's analytical skills, memorization invariably leads to the fact that the answers are inappropriate and of poor quality.

On this course teamwork is NOT encouraged. The same blocks of code or similar structural pieces in separate submissions will be considered as academic dishonesty, and all parties will get zero for the task.

The following are examples of some common acts of plagiarism:

1. Representing the work of others as their own
2. Using other people's ideas or phrases without specifying the author
3. Copying code snippets, sentences, phrases, paragraphs or ideas from other people's works, published or unpublished, without referring to the author
4. Replacing selected words from a passage and using them as your own
5. Copying from any type of multimedia (graphics, audio, video, Internet streams), computer programs, graphs or diagrams from other people's works without representation of authorship
6. Buying work from a website or from another source and presenting it as your own work