

## SIS Final Exam Guidelines

Here are some guidelines for the final exam of SIS. Please read them carefully and make sure all points are clear.

Logistics and organization:

1. In view of the postponed exam period, we will offer one additional Q&A session, to be held in August. The Q&A session will last four hours, and each hour will be dedicated to a different group of topics. Students will be able to send questions beforehand as well as ask questions live. The session will be held on Zoom. Details will be communicated at a later stage.
2. The exam take place on **Wednesday August 26**, from **16h15 to 19h15**, in the room **CO1**.
3. You must bring your student ID in order to take the exam.
4. We will give you an assignment booklet and a separate answer booklet.
5. You must write your SCIPER number in the front of the assignment booklet and **on every sheet** of the answer booklet.
6. All answers must be written on the provided answer sheet, do not use the assignment sheets (answers on the assignment sheets will not be taken into account). The answer sheets will provide enough space for your solution; in case you will need additional blank sheets, we can provide them to you during the exam. Do not forget to add your SCIPER number on each additional blank sheet you may use.
7. You should not write your name anywhere.
8. You will have to return both the assignment and the answer booklets at the end of the exam.

The exam:

1. The general breakdown of the exam will be 4 equal parts:
  - (a) C Programming (C programming, pointers, memory allocation)
  - (b) Signal processing (digital vs analog, discrete vs continuous, sampling, time and frequency domains, Fourier transform, Bode diagrams, filters, aliasing, transfer function)
  - (c) Embedded systems and robot control (embedded system design and applications, sensors and sensing, localization, control, communication channel dimensioning and properties, power consumption and generation)
  - (d) Comprehensive exercise/case study (case study/combination of all topics)
2. Each part is worth 30 points. The maximum score you can get is 120 points; you will be awarded the maximum grade if you obtain 100 or more points; your potential bonus of points above 100 will be integrated into the overall weighted sum for the course grade.
3. The assignment will be available in English only and must be answered in English. Note that we do not grade on grammar as long as the meaning is clear.
4. You will need a calculator, but it has to be non-programmable and non-graphing. If you have any doubts about whether your calculator is allowed, please write us an e-mail mentioning the exact model number.
5. The exam is open book, i.e. all printed/written material is allowed (e.g., books, lecture notes, exercises, solutions, personal notes). Electronic devices are NOT allowed, except for a simple calculator, as explained above.
6. Sample questions for this pen-and-paper exam are represented by the “Q” type questions used in lab verification tests of previous course editions, as well as those contained in the lab

assignments of the year (note that the last five editions of the course are available on the teaching pages of the DISAL website). As in the previous years, we will not distribute previous exam assignments as this will allow us to maintain the exam difficulty reasonable and fair over the years for all the students having attended this course.

If you have further questions or concerns, please send us an email at [sis-ta@groupes.epfl.ch](mailto:sis-ta@groupes.epfl.ch).