EXAM RULES
AUTOMATIC CONTROL – 06LSLLM, 06LSLOA, 05LSLLP
a.y. 2018/19

Exam modality

Written test in the lab (**use of MatLab version 2014 is requested**) duration 3 hours divided into three parts:

- Part I: 2 multiple choice problems: (maximum score: 6/30), exact answer: 3 points, wrong answer: −1 point, missing answer: 0 points. Comments on the solution must be provided too → in the absence of correct comments a null score is given even in the presence of the correct answer.
- Part II: 1 "open" question on conceptual and/or practical topics (maximum score: 10/30).
- Part III: 1 control design problem (maximum score: 17/30).

The final grade is the arithmetic sum of the three parts. A grade of 30L/30 is got when the final sum is greater or equal than 32/30.

It is allowed

- to use the printed formulary and the printed design graphics without hand notes (anyway, pdf files are provided);
- to use an empty double sided graph paper (foglio protocollo a quadretti), and **not a blank A4 paper**, to be signed by the instructor to make short "hand computations". Such a paper is not provided and must be delivered together with the exam form.

It is not allowed

- to keep cell-phones switched on (time can be read on the PC);
- to use programmable calculators;
- to keep any other material out of what described above;
- to copy and/or take away the text of the exam form;
- to leave the lab during the exam.

All the results and the comments must be provided according to the indications reported on the exam form.

For the control design problem, MatLab functions `t_grid` and `s_grid` are available in the folder Automatic_Control_Design in the exam portal. Then copy them into the folder `D:\`

The MatLab Current Folder has to be set by typing
`cd D:\` at MatLab prompt `>>`

At the end of the exam, student must deliver

- the exam form as well as all the signed papers employed for hand computations
- MatLab and Simulink files developed for the design problem only must be provided in the design folder `D:\` according to the following naming
  `Design_AC_s123456.m` (`s123456` should be replaced by the student own id number)
  `Simulation_AC_s123456.slx`
- At the end of the design, save in `.mat` format
  - (ECE) the plant tf G(s) and the controller tf C(s) using the statement: `save Results_AC_s123456 G C` at MatLab prompt `>>`
  - (INF) the plant tf G(s), the analog controller tf $C_0(s)$, the sampling time T_s, the digital controller tf $C_d(z)$ and the anti-aliasing filter F(s) (if designed), using the statement: `save Results_AC_s123456 G C0 Ts Cd F` at MatLab prompt `>>`

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All the needed comments on the design procedure must be provided in the exam form and not in the design script file.

During the exam, in principle, it is not possible to go to the toilette. Specific situations of need should be presented before the exam.

During the exam no assistance will be provided for PC log-in procedures (please be sure of the log-in password), MatLab installation procedure and/or folder settings. In this regard, students are kindly invited to practice the needed procedures before the exam.

Exam repetition, in the presence of a positive evaluation (i.e. ≥ 18/30), is allowed once only during the career and leads to the cancellation of the previously achieved grade. Students are kindly invited to avoid asking for either further examination repetitions or sitting for an oral integration or extra work.

Exam admittance

Exam booking through Portale della Didattica is **compulsory to be admitted at the exam**.