

# 01RKYQW / 01RKYOV – Estimation, Filtering, and System Identification

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## LAIB examination rules

### Practical rules for attending the LAIB examination

The exam consists of a written test (3 hours long) to be performed using the Matlab software tools running under Matlab R2014a. The examination is typically made of: a model building practice of an unknown dynamic system starting from given data; a second exercise on Kalman predictor and/or filter design and simulation for a given linear dynamic system; a closed-book theory question on any topic of the course (proofs included), lasting about 20 minutes and worth 4 points of the 32 total.

- During the exam, no sheets of paper are allowed. The student can take notes either directly within the required Word report and Matlab scripts, or within a new file written with any text editor. During the exam, the table must always remain completely free of objects (paper documents, notes, books, mobile phones, backpacks, other tablets or notebooks, etc., are prohibited), with the exception of: the exam text distributed by the teacher, the writing set (pen, pencil, eraser), the identity card.
- During the exam, the student is not allowed to use textbooks or notes, except the official formulary of this course (available as pdf file directly within the test environment, as well as these exam rules and the data files), which in any case cannot be used to answer the closed-book theory question. No other material is allowed, i.e., no personal notes, exercises, Matlab code or solutions of specific exercises, in complete or partial form, coded in any way.
- The student must solve the proposed problems and report any result and answer only in the Word file **Report\_ExamVersion.doc**, following the instructions contained therein.
- BEFORE the exam is closed, the student must upload the Word file Report\_ExamVersion.doc. The upload of the Matlab scripts written to solve the exam problems (typically named **es1.m** and **es2.m**) is required too. Files sent after the end of the test will not be accepted.
- The evaluation of the exam will be based on the results and the report written in the Word file Report\_ExamVersion.doc; the teacher will consider the support Matlab scripts only if necessary, like in the case there are discrepancies with the expected results. For this reason, an empty field or answer in the Word file means that the corresponding problem has not been addressed or solved at all.
- To withdraw from the exam, it is necessary to send an e-mail to the teacher within 48 hours from the closing of the test. If the student withdraws, the examination rating is recorded as “withdrawn”, otherwise the examination rating is recorded.

### Steps to perform the LAIB Examination

- Create on your PC the folder D:\Esame
- Click on the “Matlab R2014a” icon on the desktop to launch Matlab, then select the folder D:\Esame as Current Folder inside Matlab
- Click on the “Esame” icon on the desktop: a Google Chrome “Portale della Didattica” window will be opened, that has to be preserved during all the exam to download/upload your exam files (if this window is inadvertently closed, you have to click on the “Esame” icon and to login again)
- Login with your credentials and access the corresponding daily “Exam dd/mm/yyyy”
- Download in the folder D:\Esame all the files (data files, formulary, Word report file, exam rules) by right-clicking on them (use the “Save link as” option) and moving them into the folder D:\Esame
- To edit and modify the file Report\_ExamVersion.doc inside Word, click on “View / Visualizza” and then on “Edit document / Modifica documento”, because Word opens the file in read-only mode
- During the exam and in any case before the end of the exam, upload all the three required files (es1.m, es2.m, Report\_ExamVersion.doc) by clicking on “Modifica consegna”/“Aggiungi consegna”, then on the “Aggiungi” small icon to choose the file, and finally on “Salva modifiche”
- To update a previously uploaded file, first delete the older version, then upload the newer version and finally click on “Salva modifiche”

- Since Matlab may stop during the exam, write m-file scripts as solution to the proposed problems, instead of using the “ident” Graphical User Interface or typing into the Matlab Command Window, in order to close Matlab and restart again by loading your previous work
- To close a blocked running application, type <Ctrl><Alt><Canc>, click on “Avvia Gestione attività”, select the blocked application and click on “Termina attività”
- To manage the resolution of Matlab windows with high definition screens, right-click on the “Matlab R2014a” icon on the desktop, click on “Properties”, then “Compatibility”, then “Change high DPI settings”, check both boxes and, under the second box, select “System”

### **Recommendations and advices for carrying out LAIB exams (directly from our systems engineers)**

1. Wait for the login operations to finish before launching Matlab (wait for the background with the Politecnico logo to appear on the desktop and for the page with the NOTICES to open).
2. After clicking on the Matlab R2014a icon, wait for its loading (since Matlab does not start immediately, many students continue to click, thus launching it several times and running out of the available memory).
3. Save the work on the folder: “D:\Esame” as in case the student has to disconnect and reconnect for any reason, he/she can recover what he/she did until the last save. It also allows LAIB systems engineers to recover (upon request from teachers) any missing documents after the end of the exam.