Introduction to the use of MATLAB in research

Responsible person: Jose G Martinez, Sensor and Actuator Systems, Department of Physics, Chemistry and Biology (IFM), jose.gabriel.martinez@liu.se

Credits: 3

Schedule for the planned course with the date for start and duration:

Starting date: first Tuesday of October, during 7 weeks (one session/week).

Session 1: Introduction to programming
Session 2: MATLAB environment and data types available (including vectors and matrices)
Session 3: Scripts and selection statements and loops
Session 4: Input and output of data
Session 5: Use of toolboxes
Session 6: Simulink
Session 7: Presentation of students’ projects

Course description

The course intends to give the basics to the use of MATLAB in research. The course will comprise 6 sessions of 1 h length, 1 session/week, which topics include the most relevant aspects to start using MATLAB for research (see specific topics on the schedule). These sessions will be divided in two parts (approximately half of the time will be dedicated to each part). During the first part, the course responsible will introduce the topic, whereas during the second part short exercises will be done by the students and commented to strengthen the knowledge acquired during the first part.

During the duration of the course, the students will propose and develop a personal project, such a script or Simulink code, that whenever possible will be useful for them to be applied in their own research. Such projects will be presented in a last longer, seminar-like session by each of the students to the rest of the class.

In order to pass the course, the students will need to do the short exercises proposed after each theoretical introduction plus the personal project and its presentation. Besides, the students should actively participate in both, discussion of the short exercises and during the seminar-like session.

TIP: Please, install MATLAB in your laptop before the start of the course and bring it to the class.