Course Information

B0B17MTB – Matlab

Miloslav Čapek, Viktor Adler, Pavel Valtr, Michal Mašek, and Vít Losenický

Department of Electromagnetic Field
Czech Technical University in Prague
Czech Republic
matlab@elmag.org

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B0B17MTB

- 13 weeks (14th week is a "reserve")
  - 11 blocks with new theory, 1 block of bonuses, 1 block of projects.
- Conditions of credit award:
  - To hand in a project (last week of the semester, 50 points).
    - Competition assignment (see next slide).
  - To pass a test (last week of the semester, 20 points, min. 50%).
  - To gather points from semester (30 points, min. 50%):
    - short test during semester (15 points),
    - homeworks (3 × 5 points).
  - Max. 2 missed classes (more absences only after prior arrangement).
    - There are two courses taught this semester, any lecture can be substituted.
- Could happen that not all of the stuff of the course will be presented, because of time constraint – understanding the basics is a priority.
  - Bonus stuff (slides) available for advanced students.
- https://cw.fel.cvut.cz/b192/courses/b0b17mtb/start

Grade	Points
A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
E	50 – 59
F	0 – 49

B0B17MTB – Teachers and Contact

Miloslav Čapek
Course guarantor

Viktor Adler
Course teacher

Pavel Valtr
Course teacher

Michal Mašek
Course teacher

Vít Losenický
Course teacher

To contact us, always use `matlab@elmag.org`!

Categories of Slides

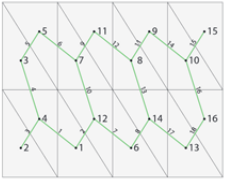
- Each slide is categorized into one of following categories (see strip at the edge of slide):

Introduction	Operators
Matrix operations	Visualization
Data Types	Code Execution
Program Flows	GUI
Scripts and Functions	Symbolic Math

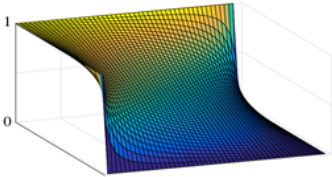
Introduction

Competition Assignment

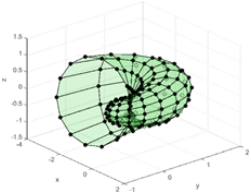
- Selected assignments from previous semesters:



Graph analysis



Jacobi method



Effective plotting

- see https://cw.fel.cvut.cz/b192/courses/b0b17mtb/start/projects/soutez.
- Project can be selected by any number of students.
- Conditions:
  - Project is completed according the assignment → credit award.
  - Project is the best one → winning the competition.
    - Prizes for the first three winners.

Course Syllabus

1	Introduction, information on the course, MATLAB environment, basic math operators
2	Vectors and matrices
3	Vectorization, indexation, relational and logical operators, homework (5 points)
4	Loops and program branching
5	Functions, debugging, homework (5 points)
6	Cells, strings, structures, short test (15 points)
7	Visualization, project choice
8	Static GUI
9	Dynamic GUI, homework (5 points)
10	Timer, sorting operations, profiler
11	Set operators, error treatment
12	Bonuses – Symbolic math
13	Final test (20 points), presentation of projects (50 points)
14	(Reserve)

Schedule I.

Week	Date	Teacher	Lecture
1	17. 2.	MM	1 (intro)
	19. 2. (EN)	VA	1 (intro)
2	24. 2.	MČ	2 (vectors and matrices)
	26. 2. (EN)	VL	2 (vectors and matrices)
3	2. 3.	VL	3 (indexing)
	4. 3. (EN)	VL	3 (indexing)
4	9. 3.	MM	4 (loops, branching)
	11. 3. (EN)	MM	4 (loops, branching)
5	16. 3.	VA	5 (functions)
	18. 3. (EN)	PV	5 (functions)
6	23. 3.	VL	6 (strings)
	25. 3. (EN)	VL	6 (strings)
7	30. 3.	VA	7 (visualization)
	1. 4. (EN)	VA	7 (visualization)

Schedule II.

Week	Date	Teacher	Lecture
8	6. 4.	VA	8 (static GUI)
	8. 4. (EN)	VA	8 (static GUI)
9	13. 4.	—	– Holidays
	15. 4. (EN)	MM	9 (dynamic GUI)
10	20. 4.	MM	9 (dynamic GUI)
	22. 4. (EN)	MC	10 (timer, sorting operations)
11	27. 4.	MC	10 (timer, sorting operations)
	29. 4. (EN)	MC	11 (set operators)
12	4. 5.	MC	11 (set operators)
	6. 5. (EN)	MC	12 (bonuses)
13	11. 5.	MC	12 (bonuses)
	13. 5. (EN)	—	– Rector's day
14	18. 5.	*all*	13 (test, projects)
	20. 5. (EN)	*all*	13 (test, projects)

Principles

- The aim of the course is to teach you something – if the presentation is to fast, be heard.
- If you have an idea / proposal how to solve a problem in a more efficient way, put it forward.
- Can happen that the lecturer is not able to answer your question immediately. In that case the answer will be provided during the next lecture.

Literature

- MATLAB documentation.

  ▶ Also online ▶ Get started (pdf file)

- Attaway, S.: MATLAB – A Practical Introduction to Programming and Problem Solving, 3rd ed.
  - Available at Department's library.
- Hahn, B. H., Valentine, D. T.: Essential Matlab, 5th Ed.
  - Available at Department's library.
- Other literature and sources will be mentioned during the semester...

Questions?

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