

Course Information

B0B17MTB – Matlab

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Winter semester 2019/20



- ▶ 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/b191/courses/b0b17mtb/start>

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

Categories of Slides



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

Introduction

Matrix operations

Data Types

Program Flows

User Scripts and Functions

Relational and Logical Operators

Visualization

Code Execution

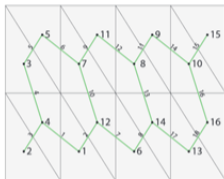
Numerical Methods

Symbolic Math

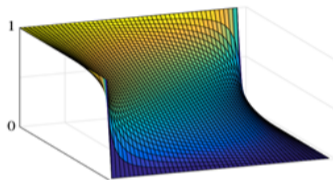
Introduction



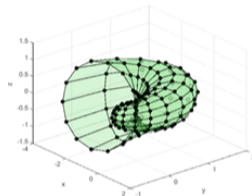
- ▶ Selected assignments from previous semesters:



Graph analysis



Jacobi method



Effective plotting

- ▶ see <https://cw.fel.cvut.cz/b191/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.



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- 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)**
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- 7 Visualization, **project choice**
 - 8 Static GUI
 - 9 Dynamic GUI, **homework (5 points)**
 - 10 Timer, sorting operations, profiler
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- 11 Set operators, error treatment
 - 12 Bonuses – Symbolic math
 - 13 **Final test (20 points), presentation of projects (50 points)**
 - 14 (Reserve)
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Schedule I.



Week	Date	Teachers	Lecture	Notes
1	23. 9.	VA	1 (intro)	MČ, MM, VL out
	25. 9.	VA / VL	1 (intro)	MČ, MM out
2	30. 9.	VL / VA	2 (vectors and matrices)	MČ, MM out
	2. 10.	VL / VA	2 (vectors and matrices)	MČ, MM out
3	7. 10.	VL / VA	3 (indexing)	MČ, MM out
	9. 10.	VL / MČ	3 (indexing)	MM out
4	14. 10.	MM / MČ	4 (loops, branching)	
	16. 10.	MČ / VL	4 (loops, branching)	
5	21. 10.	MČ / MM	5 (functions)	
	23. 10.	MČ / VL	5 (functions)	
6	28. 10.	—	— holidays	
	30. 10.	VL / MČ	6 (strings)	
7	4. 11.	MM / MČ	6 (strings)	
	6. 11.	VA / VL	7 (visualization)	

Schedule II.



Week	Date	Teachers	Lecture	Notes
8	11. 11.	VA / MM	7 (visualization)	
	13. 11.	VA / VL	8 (static GUI)	
9	18. 11.	VA / MM	8 (static GUI)	
	20. 11.	VA / VL	9 (dynamic GUI)	
10	25. 11.	VA / MM	9 (dynamic GUI)	
	27. 11.	MČ / VL	10 (timer, sorting operations)	
11	2. 12.	MM / MČ	10 (timer, sorting operations)	
	4. 12.	MČ / VL	11 (set operators)	
12	9. 12.	MČ / MM	11 (set operators)	
	11. 12.	MČ / VL	12 (bonuses)	
13	16. 12.	MČ / MM	12 (bonuses)	
	18. 12.	<i>all</i>	14 (reserve)	
23. 12. 2019 – 5. 1. 2020: Christmas holidays				
14	6. 1.	<i>all</i>	13 (test, projects)	
	8. 1.	<i>all</i>	13 (test, projects)	



- ▶ The aim of the course is to teach you something – if the presentation is too 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.



- ▶ 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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