Kazakh British Technical University
Faculty of Information Technology
Theory of Computation Syllabus (Fall 2020)

Course instructor: Prof. Damir Yeliussizov
email: d.eliusizov@kbtu.kz (use proper polite salutation and give your full name & student ID)
Class time: see in wsp
Office hours: TBA

Course description and goals: The Theory of Computation is one of the fundamental classes in Computer Science. The main goal of the course is to study basic computation models and to understand what computation actually is. The course also covers basics of complexity theory.

Textbook:

Michael Sipser, Introduction to the theory of computation (3rd edition, 2014).

Tentative schedule:

Weeks	Topics	Chapter
1	Introduction. Finite automata	1
2	Nondeterminism and closure operations.	1
3	Regular expressions.	1
4	Nonregular languages. The pumping lemma.	1
5	Context free grammars	2
6	Pushdown automata	2
7	Non-context free languages	2
8	Deterministic context free languages	2
9-10	Turing machines	3
11-12	Decidability	4
13-15	Complexity theory. P and NP. Reductions.	7

Homeworks: There will be homeworks assigned for each chapter covered. Practice problems can be found in corresponding sections containing end of chapter exercises.

Grading scheme: 2 midterms 60% + Final exam 40%

Exams schedule:

	Assessment criteria	Weeks															Total scores
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16-17	
1.	**Midterm exams***							*							*			60%
2.	**Final exam**																*	40%
	Total																	100%

*Exams schedule can be changed.

Academic Policy

KBTU standard academic policy is used.

- Cheating, duplication, falsification of data, plagiarism, and crib are not permitted under any circumstances! Any incidents will be reported.
- Attendance is mandatory.

  Attention. Missing 20% attendance to lessons, student will be taken from discipline with filling in F (Fail) grade.

  Students should participate fully in class. Participation means reading the assigned materials, coming to class prepared to ask questions and engage in discussion.
- No late homework will be accepted
- Students are responsible for making up any work missed.
- There will be no makeup tests.
- Mobile phones must not disturb in class.

Grade descriptions

Letters	Range	Percentage	Descriptors
A	4.0	95–100	Excellent
A−	3.67	90–94	Excellent
B+	3.33	85–89	Good
B	3.0	80–84	Good
B−	2.67	75–79	Good
C+	2.33	70–74	Satisfactory
C	2.0	65–69	Satisfactory
C−	1.67	60–64	Satisfactory
D+	1.33	55–59	Satisfactory
D	1.0	50–54	Satisfactory
F	0	0–49	Unsatisfactory

Course instructor: *D. Yeliussizov*