

METU - MATHEMATICS DEPARTMENT
2017 – 2018 Fall semester
Math 111 – Fundamentals of Mathematics

Objectives: The main goal of this course is to enable the student to comprehend and construct mathematical arguments, as well as to develop the student's mathematical maturity by providing basic definitions, facts and necessary tools. It is to your advantage to learn how to write mathematics as early as possible. If you do well in this course, then it is very likely that you will have no trouble in the rest of your education in the mathematics courses.

Sections and Instructors:

1. **Mahmut Kuzucuoğlu** (Mon 10:40-11:30, Wed 08:40-10:30, **M103**)
2. **Sergey Finashin** (Mon 11:40-12:30, Wed 13:40-15:30, **M104**)
3. **Ferruh Özbudak** (Tue 08:40-10:30, Thu 12:40-13:30, **M104**)
4. **Ömer Küçüksakallı** (Mon 15:40-16:30, Wed 08:40-10:30, **M104**)
5. **Gülin Ercan** (Tue 08:40-10:30, Thu 12:40-13:30, **M103**)

Exams:

- Midterm 1 : November 14 (30%).
- Midterm 2 : December 19 (30%).
- Final : To be announced (40%).

Course policy: If you attend less than the %70 percent of the classes and if your two midterm scores add up to less than the %50 percent of the total midterm score then you will not be able to take the final exam and receive the NA grade. If you are not a first year student and if you have a conflicting class, then you may attend the classes in a suitable section.

Textbook: *Proofs and Fundamentals*, Ethan D. Bloch, Second Edition.

Course web page: To be announced.

Office hours: To be announced.

Make-up policy: Only one make-up examination will be offered. The excuse for not attending an examination must be proved with documents. The make-up examination will take place shortly after the final exam.

Tentative outline:

- i) Informal Logic: §1.1, §1.2, §1.3, §1.4, §1.5 (2 weeks).
- ii) Strategies for Proofs: §2.1, §2.2, §2.3, §2.4, §2.5 (2 weeks).
- iii) Sets: §3.1, §3.2, §3.3, §3.4 (1.5 weeks).
- iv) Functions: §4.1, §4.2, §4.3, §4.4, §4.5 (2.5 weeks).
- v) Relations: §5.1, §5.2, §5.3, §7.4 (3 weeks).
- vi) Finite Sets and Infinite Sets: §6.3, §6.4, §6.5, §6.6, §6.7 (3 weeks)

Advice for success in the course: You should study regularly starting from the first day. If you do this you will not need to study for the exams. It is a very bad strategy to skip classes to study for the nearest exam! If you come to the class a little prepared you will learn much more, and if you do a little after study you will know what you have learned and what remains unclear. Then you can go to your instructor with a clear question. Therefore we suggest everyone who is planning to be successful in this course to **STUDY REGULARLY**. For example, read the relevant part of the book before coming to class, especially the new definitions.