

0205303 DİSCRETE MATHEMATİCS

Normal Education:

Evening Education:

Fall 2018-2019

**Course Format:** face-to-face

**INSTRUCTOR INFORMATION**

**Instructor:**

**Title:**

**Office:**

**Phone:**

**Office Hours:**

**E-mail:**

**COURSE DESCRIPTION**

**Credit hours:** *3 credit (3+0)*

**ECTS**: *6*

**Required or elective:** *Required*

***Catalog Description****: The purpose of this course is to understand and use (abstract) discrete structures that are backbones of computer science. In particular, this class is meant to introduce logic, proofs, sets, relations, functions, counting, and probability, with an emphasis on applications in computer science.*

**Prerequisites:** *None*

**Textbook(s) and/or required materials:**

*Kenneth Rosen. Discrete Mathematics and Its Applications, 7th Edition, McGraw Hill Publishing Co., 2012.*

**Course Objectives**

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| --- |
| ***The objectives of this course are to:*** |
| *1* | *To have knowledge about discrete structures (clusters, permutations, relatives, graphs, trees)* |
| *2* | *To gain the ability of thinking Algorithmic thinking* |
|  | *To see how discrete mathematics applications and models are adapted to Computer Engineering problems.* |

**Course Topics**

|  |  |
| --- | --- |
| *No* |  |
| *1* | *Combinational problems and techniques* |
| *2* | *Logic, Sets and Functions* |
| *3* | *Algebraic Structures* |
| *4* | *Integer and Algorithms* |
| *5* | *Mathematical Reasoning* |
| *6* | *Counting* |
| *7* | *Advanced Counting Techniques* |
| *8* | *Midterm Exam* |
| *9* | *Relation* |
| *10* | *Graf theory* |
| *11* | *Graf theory* |
| *12* | *Graf theory* |
| *13* |  *Trees* |
| *14* |  *Trees* |

**Course Learning Outcomes**

*At the end of this course, students will be able to;*

*• Students can solve problems related to counting.*

*• Student learns how to apply discrete mathematical applications and models to computer engineering problems.*

*• Students can apply graphs.*

**Evaluation methods**

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| --- | --- |
| *1. Midterm Exam* | 40% |
| *2. Final Exam* | 60% |

***Professional component***

|  |  |
| --- | --- |
| *Engineering topics* | *10%* |
| *General education* | *0%* |
| *Mathematics and basic sciences* | *90%* |

**Person(s) who prepared this description and date of preparation**

*Fatih Varçın, Mayıs 2018*

**Date of last revision**

*May 2018*