

ATILIM UNIVERSITY
MATHEMATICS DEPARTMENT
CRYPTOGRAPHY CERTIFICATE PROGRAM

AIM OF THE PROGRAM

Electronic information security is becoming increasingly important today and plays a greater role in our lives. Cryptography, which we can call the science of information security, is based on mathematics, although it has an interdisciplinary feature related to computer science and electronic engineering. For example, individuals equipped with a strong background in areas such as algebra, number theory, and finite fields take part in research in this field.

The cryptography certificate program includes mathematics courses such as Number Theory and Finite Fields, as well as practical mathematics courses such as Introduction to Cryptography, Coding Theory, and Algorithms. Students who complete this certificate program gain knowledge in the fields of number theory, algebra, finite fields, coding theory, algorithms, and computer applications as well as cryptography. The theoretical knowledge gained in the program will be useful if students choose a field related to cryptography in their master's and doctoral programs. In this way, the foundations required for the training of qualified scientists will be laid in the certificate program. TÜBİTAK, ASELSAN, private institutions that issue electronic signatures employ people who know cryptography. Students who graduate from this program are also more likely to find a job in this sector.

STRUCTURE OF THE PROGRAM

Cryptography Certificate Program consists of 6 courses.

CONDITIONS TO START IN THE PROGRAM

A student can apply to the program from the beginning of the third semester. The following are required to start the program:

1. Having a cumulative grade point average of at least 2.00,
2. To apply in writing to the head of the Department of Mathematics,

COURSES AND CERTIFICATION REQUIREMENTS

Students who successfully complete the courses in the table below and have an average of at least 2.00 in all certificate courses are entitled to receive a "Cryptography Certificate".

1. MATH325 Elementary Number Theory
2. MATH326 Coding Theory
3. MATH332 Finite Fields
4. MATH331 Abstract Algebra
5. MATH427 Introduction to Cryptography
6. MATH448 Algorithms (*)

(*) The MATH448 course is equivalent to the CMPE 323 course.

Suggested Course Order

3. Year

FALL	SPRING
MATH325 Elementary Number Theory	MATH332 Finite Fields

4. Year

FALL	SPRING
MATH427 Introduction to Cryptography	MATH448 Algorithms
MATH326 Coding Theory	