Want to learn how to protect personal, financial and sensitive public sector information? This program helps prepare you for a career in national security, communication systems, electronic banking, internet commerce and just about any field that requires secure data. Cryptology is necessary everywhere in today's technological world.

**Description**

The certificate program in cryptology is designed to provide a strong foundation in the mathematical topics that are most applicable to modern cryptosystems. It also provides specialized knowledge required for understanding and working in the field of mathematical cryptology.

**At a Glance**

- **College/School:** [The College of Liberal Arts and Sciences](#)
- **Location:** Tempe campus

**Program Requirements**

- **Certificate Map (Archives)**
- **2021 - 2022 Certificate Map**

This certificate requires 18 credit hours. A grade of "C" (2.00 on a 4.00 scale) or better is required for all courses.

**Required Courses -- 12 credit hours**

- MAT 440: Group Theory or MAT 444: Intermediate Abstract Algebra (3)
MAT 445: Theory of Numbers (3)
MAT 447: Cryptography I (3)
MAT 448: Cryptography II (3)

Elective Courses (select two) -- 6 credit hours

MAT 415: Introduction to Combinatorics (3)
MAT 416: Graph Theory (3)
MAT 441: Ring Theory (3)
STP 421: Probability (3)
STP 427: Mathematical Statistics (3)

Students may substitute an approved cryptography-related internship for 3 credit hours of elective coursework.

Depending on a student's undergraduate program of study, prerequisite courses may be needed in order to complete the requirements of this certificate.

Enrollment Requirements

This program has additional admission requirements; students should see a college advisor for details. Applicants should be in good academic standing with a "B" or better (scale is 4.00 = "A") in MAT 300 Mathematical Structures (3) or the equivalent.

A student pursuing an undergraduate certificate must be enrolled as a degree-seeking student at ASU. Undergraduate certificates are not awarded prior to the award of an undergraduate degree. A student already holding an undergraduate degree may pursue an undergraduate certificate as a nondegree-seeking graduate student.

Career Opportunities

A certificate in cryptology offers a wide variety of career possibilities. This program assists in preparing students with skills related to information security. Some students pursuing this certificate are interested in areas such government, financial, medical and educational institutions. All of these institutions require skill sets involved in securing data, and this program assists students in developing these skills.

Contact Information

Schedule an advisor appointment
School of Mathematical and Statistical Sciences | WXLR A211
math@asu.edu | 480-965-7195