

# 2024 - 2025 Certificate Map

## Cryptology

School/College: [The College of Liberal Arts and Sciences](#)

Location: [Tempe](#)

### Program Requirements

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)

#### **Electives (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.

Prerequisite courses may be needed in order to complete the requirements of this certificate.