

# Cryptography Level II Certificate

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## Cryptography Level II Certificate Requirements

### 12 credits

Code	Title	Hours
Required Courses		
MATH 2270	Linear Algebra (Prerequisite: MATH 1010 and MATH 1050 and MATH 1060 or MATH 1080 and MATH 1210)	3
MATH 3900	Number Theory (Prerequisites: MATH 1210; and MATH 2200 or CS 2100)	3
MATH 3905	Cryptography and Codes (Prerequisites: CS 1400; and MATH 2200 or CS 2100)	3
MATH 4005	Quantum Computing and Cryptography	3

### Total Hours

**12**

## Completion Requirements

1. Complete 12 hours of specified coursework.
2. Complete all coursework with a C or higher.
3. Cumulative GPA of 2.0 or higher.

## Cryptography II Certificate Program Learning Outcomes

At the successful conclusion of this program, students will be able to:

1. Explain the differences, challenges, and roles of private-key versus public-key cryptography.
2. Employ advanced mathematics in applications of cryptography and error-correcting codes.
3. Assess modern cryptosystems and learn to expose their weaknesses with the goal of improved information security.
4. Simulate classical, modern, and post-quantum cryptosystems and codes.
5. Understand and apply the current and emerging methods of attack on cryptosystems.