

# Experience Cryptology: Coding and Decoding Secret Messages

## July 14-18, 2025 | \$850



### PROGRAM OVERVIEW

Mission Possible! Drexel's [Mathematics Department](#) will lead students on a fascinating journey into the world of cryptography, the art of secret communication through coding and decoding. This cryptic and highly specialized technique involves the skillful transformation of plain messages into enigmatic text, rendering them comprehensible only to their intended recipients. In an age marked by the widespread use of modern communication technologies, the need for security in transmitting vital messages over the Internet has become a paramount concern. Future James Bonds will have the opportunity to utilize software such as Excel or Python.

### PROGRAM DETAILS

**DATES** ..... July 14–18, 2025

**LOCATION** ..... Drexel University, Philadelphia, PA, 19104

**FORMAT** ..... On-campus, commuter, optional residential stay (additional fee).

**TUITION COST** ..... \$850

**ELIGIBILITY** ..... Rising high school sophomores, juniors and seniors.

**DEADLINE** ..... June 20, 2025

**DISCOUNTS** ..... Early Bird (Pay non-refundable tuition by April 30, 2025): \$800

# Sample Schedule | July 14-18, 2025

*Program content and sequence may change due to weather, staff schedules or other circumstances.*

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## DAY 1

- Overview of Cryptology
- Foundational Mathematical Concepts in Cryptography
- Practical Application of Excel in Cryptography
- Caesar Cipher

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## DAY 2

- Exploring the Multiplicative Cipher
- Understanding Affine Transformations in Cryptography
- Hands-on Practice: Coding and Decoding Exercises

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## DAY 3

- Understanding matrix multiplication and inverses for  $2 \times 2$  Matrices
- Introduction to the Hill Cipher in Cryptography
- Practice Exercises

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## DAY 4

- Exponential Ciphers
- RSA Encryption
- Practice Exercises

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## DAY 5

- Review of the topics
  - Group presentations on assigned topics
  - Wrap-up
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