Updates for the B.S. in Computer and Cybersecurity Engineering Curriculum

February 2025

This curriculum revision aims to increase student options with more electives, strengthen the math fundamentals and provide more breadth & depth in cybersecurity topics as outlined in the ABET program criteria.

Changes:

- A new required course is added in the sophomore year:
  - *ITMS 478 - Cybersecurity Management.*
    - https://www.itm.iit.edu/data/DepartmentalSyllabus/ITMS478ITMDepartmentalSyllabus.pdf
  - Replaces the Career Elective I in the curriculum.

- Math Elective is updated with more options.
  - New list: MATH 333, MATH 350, **MATH 410** or **MATH 454.**
  - *MATH 410 Number Theory* and *MATH 454 Graph Theory* are new additions.

- A new Cybersecurity Technical Elective is introduced in the Senior Year.
  - Replaces the required course ECE 497 with an elective option.
  - Course options are: **ECE 497** *Special Problems in Cybersecurity*, **ECE 586** *Hardware Security* and Advanced Computer Architectures**, ITMS 428** *Data Security* or **ITMS 446** *Active Cyber Defense*.

- Additional curriculum updates:
  - ECE 222 Introduction to Cybersecurity Engineering is now moved to Semester 2 (from Semester 4).
  - MATH 374 Probability and Statistics is now moved to Semester 6 (from Semester 7).
  - Cybersecurity Software Engineering elective is now moved to Semester 7 (from Semester 8).
  - Updated the Cybersecurity Software Engineering Elective:
    - New list: **ECE 448** *- Application Software Design*, **ECE 449** *- Object-Oriented Programming and Machine Learning* and **ECE 473** *- Cloud Computing and Cloud Native Systems*, **ECE 474** *Data Science for Engineers.*
    - **ECE 474** is a new course introduced to the list. ECE 442 is removed from the list since it is not offered anymore.

- No change in total credit hours.

- See the revised curriculum sheet for changes highlighted in yellow and green.