



FLORIDA ATLANTIC UNIVERSITY

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College of Engineering  
and Computer Science

## Professional Program 2025–2026 Course Offering

### Summer 2025

**COT 6930 Internet of Things (3 credits)**

**May 10th -June 6th**

**On-campus lecture days: Saturday, May 10th and May 24th**

This research-oriented course covers technical and operational aspects of the Internet of Things (IoT) and includes a discussion on the most recent advances and innovative applications.

### Fall 2025

**CAP 6673 Data Mining & Machine Learning (3 credits)**

**August 16<sup>th</sup> – September 12<sup>th</sup>**

**On-campus lecture days: Saturday, August 16<sup>th</sup> & September 06<sup>th</sup>**

This course deals with the principles of data mining. Topics covered include machine learning methods, knowledge discovery and representation, classification and prediction models.

**CIS 6370 Computer Data Security (3 credits)**

**September 13<sup>th</sup> – October 10<sup>th</sup>**

**On-campus lecture days: Saturday, September 13<sup>th</sup> & October 4<sup>th</sup>**

Overview of technical aspects of data security with emphasis on the Internet and the design of secure systems. This course exposes the required concepts and points the directions for further specialization. Emphasis on a holistic approach to security, as opposed to details of security mechanisms.

**CEN 5035 Software Engineering (3 credits)****October 11<sup>th</sup> – November 7<sup>th</sup>****On-campus lecture days: Saturday, October 11<sup>th</sup> & November 1<sup>st</sup>**

An introduction to the basic principles and practices of software engineering.

Emphasis is placed on modeling to describe complex systems and in programming language support for software engineering principles, especially techniques for data abstraction, code reusability, and programming-in-the-large

**COT 6405 Analysis of Algorithms (3 credits)****November 8<sup>th</sup> – December 05<sup>th</sup>****On-campus lecture days: Saturday, November 8<sup>th</sup> & November 22<sup>nd</sup>**

Design and analysis of algorithms from several areas of computer science. Topics include divide and conquer, maximum flow, dynamic programming, greedy algorithms, NP-completeness and approximation algorithms.

## Spring 2026

**CAP 6619 Deep Learning (3 credits)****January 10<sup>th</sup> – February 6<sup>th</sup>****On-campus lecture days: Saturday, Jan 10<sup>th</sup> & Jan 24<sup>th</sup>**

This course teaches students basic concepts of deep learning, with an application in engineering, business and other areas. The class will cover three major topics including neural network and deep learning theory, implementation of deep learning algorithms, and applications of deep learning. Topics include math preliminaries, machine learning basics, deep feedforward networks, convolution networks, auto-encoders, representation learning networks, and their implementations and applications.

**CAP 6315 Social Networks and Big Data Analytics (3 credits)****Feb 07<sup>th</sup> - March 6<sup>th</sup>****On-campus lecture days: Saturday, Feb 07<sup>th</sup> & Feb 28<sup>th</sup>**

This course teaches students basic concepts of big data analytics, with an application in social network analysis. The class will cover three major topics including big data analytics platform, MapReduce (hadoop) programming, and social network analytics. Detailed topics include MapReduce based computing framework, general algorithms for data analytics, trend and outbreak detection from social network streams. The lectures will include practical sessions dedicated to the implementation of big data analytics with selected programming language and tools

**CAP 5625 Computational Foundations of AI (3 credits)****March 07<sup>th</sup> - April 3<sup>rd</sup>****On-campus lecture days: Saturday, March 07<sup>th</sup> & March 28<sup>th</sup>**

This course covers the mathematical and programming foundations of artificial intelligence (AI) and machine learning (ML) using contemporary programming languages and tools. As a result, students develop familiarity with mathematical methods (and associated notation, software packages and libraries) that are widely used in AI and ML projects and literature.

**COP 6731 Theory and Implementation of Database Systems (3 credits)**

**April 4<sup>th</sup> – May 1<sup>st</sup>**

**On-campus lecture days: Saturday, April 4<sup>th</sup> & April 24<sup>th</sup>**

The investigation of the fundamental principles and practices of relational database processing and design. Topics include SQL, embedded SQL, integrity constraints, triggers, transaction processing, normalization of tables, query optimization, and the relational algebra. Oracle 12c and, to a lesser extent, Microsoft SQL Server are used as vehicles in these investigations.

**Summer 2026**

**Neurosymbolic AI (3 credits)**

**May 02<sup>nd</sup> - May 30<sup>th</sup>**

**On-campus lecture days: Saturday, May 02<sup>nd</sup> & May 16<sup>th</sup>**

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