# COT-6936  Topics in Algorithms

**Catalog Description**
Advanced data structures, pattern matching algorithms, file compression, cryptography, computational geometry, numerical algorithms, combinational optimization algorithms and additional topics. (3 credits)

**Prerequisites**
COP 3530.

**Type**
Elective for MSCS, MSIT, MSTN, and Ph.D. students.
Primarily targeted toward CS PhD students

**Course Objectives**
Students will be exposed to advanced topics in algorithms design, analysis and complexity

**Topics**
- computational biology & bioinformatics
- computational geometry
- randomized algorithms and analysis
- on-line algorithms
- approximation algorithms
- advanced graph algorithms
- experimental algorithms and algorithms visualization
- combinatorial optimization
- linear programming and duality
- metric embeddings
- spectral partitioning
- power-aware computing
- algorithmic game theory
- parallel algorithms
- Burrows-Wheeler transforms, compressed full text indexes

**Textbook**
No text

**Last Update**
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