COMPUTATIONAL SCIENCE (CPS)

CPS 500 Selected Topics (1-6 Credits)
Engineering & Comp Sci
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

CPS 501 Selected Topics (0 Credits)
Engineering & Comp Sci

CPS 504 Introduction to C++ (3 Credits)
Engineering & Comp Sci
Object oriented programming in C++: classes, derived classes, data abstraction, inheritance, and access control. Substantial programming assignments. For students not majoring in computer science.
Prereq: CPS 196

CPS 506 Introduction to C (3 Credits)
Engineering & Comp Sci
Programming in C: data types, control structures; the preprocessor; arrays and pointers. Substantial programming assignments. For students in computer science.

CPS 551 Computer Organization & Operating System Design (3 Credits)
Engineering & Comp Sci
Fundamentals of computer organization and operating systems design. Computer organization topics: CPU & pipeline architecture, data representation and memory hierarchies, assembly language and instruction sets. Operating system concepts: system calls, processes, threads, synchronization, memory management, input-output, traps, and file systems.

CPS 600 Selected Topics (1-6 Credits)
Engineering & Comp Sci
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

CPS 621 Introduction to Probability and Statistics (4 Credits)
Engineering & Comp Sci
Double-numbered with CIS 321
Programming-oriented introduction to fundamentals in statistics and probability; elementary statistics, graphical and numerical representation; probability distributions; tests and confidence intervals; regression, and correlation. CPS 621 adds Journalism applications of statistical methods.
Shared Competencies: Critical and Creative Thinking (https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/); Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/)

CPS 640 Tpcs:Ntwkng&Multimed Appl (3 Credits)
Engineering & Comp Sci
Current topics in networking and multimedia applications. Topics may include advanced networking solutions, performance issues and design of multimedia delivery systems, and integration of distributed multi-media software.
Repeatable

CPS 681 Explorations in Computing and Programming (3 Credits)
Engineering & Comp Sci
A project-focused study in core computing concepts. Implementation and synthesis of the concepts via scripting, programming, and IDEs, focusing on large distributed data. Utilize computing as an "amplifier" for journalism. Basic programming experience recommended.

CPS 688 Algorithms for Computational Journalism and Linguistics (3 Credits)
Engineering & Comp Sci
A hands-on approach to algorithms for practical applications. Collaborative filtering, graphical algorithms, visualization of information, searching and document ranking, and optimizations. Focus on Internet-based programming and database-oriented client-server model.

CPS 690 Independent Study (1-6 Credits)
Engineering & Comp Sci
In-depth exploration of a problem or problems. Individual independent study upon a plan submitted by the student. Admission by consent of supervising instructor or instructors and the department.
Repeatable

CPS 700 Selected Topics (1-6 Credits)
Engineering & Comp Sci
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

CPS 782 Capstone Project Course for Computational Journalism (3 Credits)
Engineering & Comp Sci
Jointly taught by computer science and journalism instructors. Students are asked to submit a major project proposal in computational journalism.
Advisory recommendation Coreq: CIS 668 or IST 664