CGS COMPUTER SCIENCE (CGS CPS)

CGS CPS 103 Computer Fundamentals
1 cr.
An overview of computers, what they are and how they work. Typical topics include history, hardware, programming languages and operating systems, application software, communications, career opportunities and ethical issues. Also included is an introduction to the campus computing network.

Prerequisites: none.
Course Rules: Students may not receive credit for both CPS 103 and CPS 110.
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 105 Computer Applications
1-3 cr.
Principles and use of computer applications including word processors, spreadsheets, and data bases. May also cover other applications such as telecommunications, graphics, statistics, simulations, or CAI. Does not include teaching of programming.

Prerequisites: none.
Course Rules: Students may not receive credit for both CPS 105 and any of CPS 106, CPS 107, CPS 108. Course may not be taken more than once for degree credit.

General Education Requirements: AP
Last Taught: Spring 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 106 Word Processing and Presentation Concepts
1 cr.
Text entry, editing, manipulation, and presentation. Covers typical as well as many advanced procedures of word processing and presentation software. This course involves extensive hands-on experience. Students may not receive credit for both CPS 106 and CPS 105.

Prerequisites: none.

General Education Requirements: AP
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 107 Spreadsheet Concepts
1 cr.
Typical features and application of electronic spreadsheets. This course involves extensive hands-on experience. Students may not receive credit for both CPS 107 and CPS 105.

Prerequisites: none.

General Education Requirements: AP
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 108 Database Concepts
1 cr.
Creation of data files and data manipulation editing, sorting, deleting, etc. Report definition and generation. Accessing and searching of remote data bases. Includes extensive hands-on experience.

Prerequisites: none.
Course Rules: Students may not receive credit for both CPS 108 and CPS 105.

General Education Requirements: AP
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 110 Introduction to Computer Science BASIC
3 cr.
How computers work, communicating with computers, areas of application and significance, simple Algebraic Language programming, elementary data processing and problem solving. Instruction and significant experience in BASIC.

Prerequisites: MAT 105 or cons. instr.
Course Rules: Students may not receive credit for both CPS 110 and either of CPS 103 or CPS 130.
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 130 Introduction to Programming BASIC
1-2 cr.
The basics of programming in BASIC for beginners. Introductory information on editing, program structure, data types, input, output, calculating, looping and selection. Short programs will be written and tested on a computer.

Prerequisites: CPS MAT 105 or cons. instr.
Course Rules: Students may not receive credit for both CPS CPS 130 and CPS 110.
Last Taught: Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 139 Web Page Development
2 cr.
Development of web pages using HTML and Cascading Style Sheets. Introduction to XML documents and XHTML standards. This course involves extensive hands-on experience.

Prerequisites: none.

General Education Requirements: AP
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 139X Web Page Development
2 cr.
Development of web pages using HTML and Cascading Style Sheets. Introduction to XML documents and XHTML standards. This course involves extensive hands-on experience.

Prerequisites: none.

General Education Requirements: AP
Last Taught: Fall 2021.
Current Offerings: https://catalog.uwm.edu/course-search/

CGS CPS 202 Introductory Programming Using Python
3 cr.
Introduction to Python programming language. Decision structures, loop structures, functions, libraries and basic graphics. Computing with numbers, strings and files; regular expressions and problem solving with objects.

Prerequisites: Math Placement Level 30, which is achieved by one of the following: (a) grade of C or better in CPS MAT 105, CPS MAT 108, or CPS MAT 116; (b) score of 5 or higher on the IB Mathematical Studies - SL; (c) score of 3 or higher on the AP statistics exam; or (d) score of 63 or higher on the CLEP College Algebra Exam.
Last Taught: Fall 2021.
Current Offerings: https://catalog.uwm.edu/course-search/
CGS CPS 245 Computer Science I: Object-Oriented Programming
4 cr.
Introduces the fundamental concepts of programming from an object-oriented perspective. Emphasizes developing fundamental programming skills in the context of a language that supports the object-oriented paradigm.

**Prerequisites:** Math Placement Level 30, which is earned by any of the following: (a) Level 30, 35, or 36 on Math Placement Test; (b) grade of C or better in CGS MAT 105, 108, or 116; (c) score of 5 or higher on the IB Mathematical Studies - SL; (d) score of 3 or higher on the AP statistics exam; or (e) score of 63 or higher on the CLEP College Algebra Exam.

**General Education Requirements:** MS

**Last Taught:** Spring 2022, Fall 2021.

**Current Offerings:** https://catalog.uwm.edu/course-search/

CGS CPS 255 Computer Science II: Objects and Data Abstraction
3 cr.
Continuation of CPS 245. Methodology of programming from an object-oriented perspective. Introduces the basics of human-computer interfaces, graphics, and the implementation of fundamental data structures including lists, stacks, and queues.

**Prerequisites:** a grade of C or better in CGS CPS 245(P).

**Course Rules:** Includes a significant software development project, with an emphasis on software engineering principles and debugging techniques.

**General Education Requirements:** AP

**Last Taught:** Spring 2022, Spring 2021.

**Current Offerings:** https://catalog.uwm.edu/course-search/

CGS CPS 260 Programming in Assembly Language
3 cr.
An introduction to microcomputer assembly language programming and architecture for students with previous exposure to a high level language. Topics typically include machine instruction sets, interrupts, Boolean logic, binary coding of numeric and alphanumeric data, arrays and input/output. Optional topics may include file access, macros, graphics and mixed language programming.

**Prerequisites:** CPS 110, CPS 130, CPS 216, or CPS 245, or cons. instr.

**General Education Requirements:** MS

**Current Offerings:** https://catalog.uwm.edu/course-search/

CGS CPS 294 Internship in Computer Science
1-3 cr.
Internship or service learning project partnering students with organizations in the community or on campus. Practical experience appropriate to the student's educational goals by applying knowledge and skills learned in previous CPS courses in our institution. Student and instructor should meet regularly to prepare for and evaluate experiences. This course should not be used to employ students as campus workers by substituting credit for wages.

**Prerequisites:** at least four credits of prior CGS CPS coursework and consent of instructor.

**Course Rules:** Repeatable for a maximum of six credits.

**General Education Requirements:** AP

**Current Offerings:** https://catalog.uwm.edu/course-search/