

**COMPUTER SCIENCE****Computer Science**

**COMPSCI 162 COMPUTER APPLICATIONS (GM) ... A thorough introduction to using computers covering word processing, spreadsheets, data storage and retrieval, computer graphics and applications, uses of computers, e-mail and the Internet, hardware, history, and problems arising from the use of computers.**

**COREQ: MATH 141 OR MATH 140 OR WAIVER**

#2092	Section 01	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: This a hybrid course which meets both online and in the classroom.
	09/07-12/23	M	08:00 AM - 09:15 AM	MG0115 Jiehui Ma
	09/07-12/23	W	Arranged	WEB BASED Jiehui Ma
#2093	Section 02	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: This a hybrid course which meets both online and in the classroom.
	09/07-12/23	T	03:30 PM - 04:45 PM	HY0210 Jiehui Ma
	09/07-12/23	R	Arranged	WEB BASED Jiehui Ma
#2099	Section 03	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: This a hybrid course which meets both online and in the classroom.
	09/07-12/23	R	03:30 PM - 04:45 PM	HY0210 Jiehui Ma
	09/07-12/23	T	Arranged	WEB BASED Jiehui Ma
#2142	Section 04	[units: 3]	Gen Ed Math/Natural Sciences (GM)	
	09/07-12/23	W	06:30 PM - 09:00 PM	HH3202 Tina Y Cao
#2101	Section 05	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: This a hybrid course which meets both online and in the classroom.
	09/07-12/23	T	08:00 AM - 09:15 AM	HY0210 Tina Y Cao
	09/07-12/23	R	Arranged	WEB BASED Tina Y Cao
#2102	Section 06	[units: 3]	Gen Ed Math/Natural Sciences (GM)	
	09/07-12/23	T	06:30 PM - 09:00 PM	HH3202 Tina Y Cao
#2103	Section 07	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: This is a web-based class. Required additional course fee is \$150.00. This class uses Office 2013; students will need to have access to this software to successfully complete this class.
	09/07-12/23	Arranged	Arranged	WEB BASED Lopamudra Mukherjee
#4733	Section 08	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: Restricted to students in the Darlington High School PIE cohort.
	09/07-12/23	Arranged	Arranged	OFF CAMPUS Mello Dee Burmeister PIE PROGRAM
	09/07-12/23	Arranged	Arranged	OFF CAMPUS Robert L Horton PIE PROGRAM

**COMPSCI 170 INTRODUCTION TO PYTHON PROGRAMMING (GM) ... An introduction to computational thinking and computer programming using the Python language, with applications in science, business, education, and other areas. Students will develop structured programs based on simple algorithms that involve input, output, mathematical operations, decisions, and loops. No previous programming experience is needed.**

**PREREQ: MATH 141 OR WAIVER OF MATH 141**

#2144	Section 01	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: This a hybrid course which meets both online and in the classroom.
	09/07-12/23	R	09:30 AM - 10:45 AM	HY0210 Robert K Kuzoff
	09/07-12/23	T	Arranged	WEB BASED Robert K Kuzoff

**COMPSCI 171 INTRODUCTION TO PROGRAMMING (GM) ... An introduction to computer programming and its applications to science, business and education. Opportunity for extensive experience in designing and writing structured programs in the Visual Basic language.**

**PREREQ: MATH 141 OR WAIVER OF MATH 141**

#2094	Section 01	[units: 3]	Gen Ed Math/Natural Sciences (GM)	
	09/07-12/23	MW	03:30 PM - 04:45 PM	HY0210 Jiehui Ma
#2140	Section 02	[units: 3]	Gen Ed Math/Natural Sciences (GM)	NOTE: This a hybrid course which meets both online and in the classroom.
	09/07-12/23	T	09:30 AM - 10:45 AM	HY0210 Lopamudra Mukherjee
	09/07-12/23	R	Arranged	WEB BASED Lopamudra Mukherjee

**COMPSCI 172 INTRODUCTION TO JAVA (GM) ... This course will give students the essentials of object-oriented programming in Java. Students will learn to formulate algorithms, to solve problems and to implement those solutions with a Java program that employs objects and classes. The student will be introduced to object-oriented design, applications and applets, class construction, methods and message passing arrays, string processing, file processing, and some event-handling and Graphical Use Interface programming. This course is designed for students with some prior programming experience.**

**PREREQ: MATH 152 WITH A GRADE OF C OR BETTER, OR MATH 143 WITH A GRADE OF C OR BETTER, OR CALCULUS PLACEMENT, OR CONSENT OF INSTRUCTOR**

#2096	Section 01	[units: 3]	Gen Ed Math/Natural Sciences (GM)	
	09/07-12/23	TR	03:30 PM - 04:45 PM	MG0115 Cheng Thao
#2108	Section 02	[units: 3]	Gen Ed Math/Natural Sciences (GM)	
	09/07-12/23	MW	02:00 PM - 03:15 PM	HY0210 Jiehui Ma

**COMPSCI 174 INTRODUCTION TO C++ (GM) ... This course teaches basic programming skills using the structured high-level language C++. Topics include basic input and output, declaration and use of variables, use of control statements, implementation of functions using value and reference parameters, arrays, and structures. Students will write moderately complex applications using C++.**

**PREREQ: MATH 152 WITH A GRADE OF C OR BETTER, OR MATH 143 WITH A GRADE OF C OR BETTER, OR CALCULUS PLACEMENT, OR CONSENT OF INSTRUCTOR**

#2104	Section 01	[units: 3]	Gen Ed Math/Natural Sciences (GM)	
	09/07-12/23	MW	09:30 AM - 10:45 AM	MG0115 Jiazhen Zhou

Start/End Dates	Meeting Days	Meeting Times	Location	Instructor	Course Topic (if applicable)
#2109	Section 02	[units: 3]	Gen Ed Math/Natural Sciences (GM)		
09/07-12/23	TR	02:00 PM - 03:15 PM	HY0210	Sobitha W Samaranayake	

**COMPSCI 181 INTRODUCTION TO DATABASE AND THE WEB (GM) ...** This course provides the student with a comprehensive working knowledge of a modern database package including the creation of a database, construction of a wide range of queries, use of forms, and report writing features. The course also gives an introduction to the creation of World Wide Web pages using the Extended Hypertext Markup Language (XHTML).

**PREREQ: MATH 141 OR WAIVER OF MATH 141**

#2098	Section 01	[units: 3]	Gen Ed Math/Natural Sciences (GM)		
09/07-12/23	TR	12:30 PM - 01:45 PM	MG0117	Robert P Siemann	

**COMPSCI 215 DISCRETE STRUCTURES ...** The course offers a formal approach to the logic of Computer Science, including set theory, methods of proof, discrete probability, sequences, recurrence relations, introduction to graphs, and algorithmic analysis. It also introduces finite state machines, Turing machines, and formal languages and grammars.

**PREREQ: MATH 152 OR MATH 243 OR MATH 250**

#2118	Section 01	[units: 3]			
09/07-12/23	TR	11:00 AM - 12:15 PM	MG0117	Lopamudra Mukherjee	

**COMPSCI 220 INTERMEDIATE JAVA ...** This course teaches more advanced topics in object-oriented program design and the Java programming language. Coverage includes multi-dimensional arrays, methods, error handling, strings, regular expressions, encapsulation, inheritance, polymorphism, generic types, program debugging and testing, database and file processing, event-handling, and graphical user interfaces. Unreq: MCS 220 and COMPSCI 222

**PREREQ: COMPSCI 172 OR (COMPSCI 174 AND CONSENT OF INSTRUCTOR)**

#2112	Section 01	[units: 3]			
09/07-12/23	MW	03:30 PM - 04:45 PM	MG0115	Cheng Thao	
#2151	Section 02	[units: 3]			
09/07-12/23	TR	02:00 PM - 03:15 PM	MG0115	Cheng Thao	
#4734	Section 03	[units: 3]	NOTE: Restricted to students in the Janesville Parker High School PIE cohort.		
09/07-12/23	Arranged	Arranged	OFF CAMPUS	Robert Getka	PIE PROGRAM
09/07-12/23	Arranged	Arranged	OFF CAMPUS	Jiazhen Zhou	PIE PROGRAM

**COMPSCI 222 INTERMEDIATE C++ ...** This course will cover more advanced issues of C++, including memory management, pointers and user-defined data types. Topics will include reading and writing files, dynamic arrays, implementation of the principles of object oriented design including encapsulation, and inheritance, planning and testing. Students will write complex applications using C++.

**PREREQ: COMPSCI 174 OR (COMPSCI 172 AND CONSENT OF INSTRUCTOR)**

#2105	Section 01	[units: 3]			
09/07-12/23	MW	11:00 AM - 12:15 PM	MG0115	Jiazhen Zhou	

**COMPSCI 223 DATA STRUCTURES ...** This course covers issues of data structures, professional software development methodologies including software patterns and advanced object oriented techniques. Topics include lists, queues, stacks and trees. Complex data structure and object-oriented design technique, including inheritance and polymorphism, are applied to develop and large projects.

**UNREQ: MCS 231, COMPSCI 231, COMPSCI 223**

**PREREQ: COMPSCI 222 OR MCS 220**

#2141	Section 01	[units: 3]	NOTE: This course is taught in the C++ Programming Language.		
09/07-12/23	TR	09:30 AM - 10:45 AM	MG0115	Athula D. A. Gunawardena	C++
#2111	Section 02	[units: 3]	NOTE: This course is taught in the Java Programming Language.		
09/07-12/23	TR	12:30 PM - 01:45 PM	HY0210	Hien M Nguyen	JAVA
#4645	Section 03	[units: 3]	NOTE: This course will be taught in the JAVA programming language.		
09/07-12/23	TR	11:00 AM - 12:15 PM	MG0115	Jiazhen Zhou	JAVA

**COMPSCI 271 ASSEMBLY PROGRAMMING ...** This course covers the use of an assembly language based on the RISC processor architecture including writing, linking, and executing a program. Also covered are number systems, instructions for arithmetic and logical operations, memory access, loops, declaring variables, interrupts, machine language, segments, stacks, procedure writing, and file handling.

**PREREQ: COMPSCI 172 OR COMPSCI 174**

#2095	Section 01	[units: 3]			
09/07-12/23	MW	02:00 PM - 03:15 PM	MG0115	Zachary J Oster	
#2119	Section 02	[units: 3]			
09/07-12/23	TR	12:30 PM - 01:45 PM	MG0115	Zachary J Oster	

**COMPSCI 320 CONCEPTS OF PROGRAMMING LANGUAGES ...** An exploration of the core concepts upon which all programming languages are built. Students will apply these concepts to write programs in several specialized programming languages, including functional and logic programming languages. Emphasis is placed upon evaluating the strengths and weaknesses of particular languages for various tasks.

**PREREQ: COMPSCI 223 AND (COMPSCI 215 OR MATH 280)**

#2143	Section 01	[units: 3]			
09/07-12/23	MW	09:30 AM - 10:45 AM	MG0117	Zachary J Oster	

*Start/End Dates Meeting Days Meeting Times Location Instructor Course Topic (if applicable)*

**COMPSCI 332 INTRODUCTION TO ARTIFICIAL INTELLIGENCE ...** This course introduces basic artificial intelligence principles including simple representation schemes, problem solving paradigms, constraint propagation, search strategies and learning approaches. Knowledge representation, natural language processing, gaming, machine learning and user modeling will be explored. Students should have written moderately complex computer programs in a high level language.

**PREREQ: COMPSCI 222 OR MCS 220**

#2106 Section 01 [units: 3]  
09/07-12/23 TR 11:00 AM - 12:15 PM HY0210 Hien M Nguyen

**COMPSCI 366 DATABASE MANAGEMENT SYSTEMS ...** This course offers an introduction to the design and programming of databases and the implementation of database management systems from a computer science perspective. Contents include the relational model; SQL; database application development; and concepts and algorithms for building database management systems.

**PREREQ: COMPSCI 223 OR CONSENT OF INSTRUCTOR**

#2120 Section 01 [units: 3]  
09/07-12/23 MW 11:00 AM - 12:15 PM HY0210 Hien M Nguyen

**COMPSCI 381 JAVASCRIPT AND DHTML ...** JavaScript is a computer language for adding flexibility and functionality to web pages. A powerful language in its own right, it also has the capability to interact with HTML forms, browsers, Java applets, and other objects found on a web page. Students in this course will gain a thorough understanding of JavaScript, and learn to harness its abilities to manage windows, forms, events, cookies, etc.

**PREREQ: COMPSCI 172 OR COMPSCI 174 OR EQUIVALENT PREPARATION AND CONSENT OF INSTRUCTOR**

#2138 Section 01 [units: 3] NOTE: This a hybrid course which meets both online and in the classroom.  
09/07-12/23 M 09:30 AM - 10:45 AM HY0210 Tina Y Cao  
09/07-12/23 W Arranged WEB BASED Tina Y Cao

#3439 Section 02 [units: 3]  
09/07-12/23 TR 05:00 PM - 06:15 PM HY0210 Sobitha W Samaranayake

**COMPSCI 382 SERVER-SIDE SCRIPTING ...** Server-side scripting is key to processing web forms, as well as for automating a wide range of server tasks. This course will provide a thorough introduction to the Server-side scripting languages. Students will learn to create a data-driven web application that uses Structured Query Language (SQL) to access and update the information in a database.

**PREREQ: COMPSCI 172 OR COMPSCI 174 OR EQUIVALENT PREPARATION AND CONSENT OF INSTRUCTOR**

#2097 Section 01 [units: 3]  
09/07-12/23 MW 05:00 PM - 06:15 PM HY0210 Sobitha W Samaranayake

**COMPSCI 412 COMPUTER ORGANIZATION AND SYSTEM PROGRAMMING ...** Introduction to organization of modern digital computers - understanding the various components of a computer and their interrelationships. Study of systems programming in C/Linux.

**PREREQ: COMPSCI 271 OR CONSENT**

#2100 Section 01 [units: 3]  
09/07-12/23 M 05:00 PM - 07:30 PM MG0115 Athula D. A. Gunawardena

**COMPSCI 433 THEORY OF ALGORITHMS ...** This course is a survey of algorithms needed for searching, sorting, pattern matching, analyzing graphs, and a variety of other problems of discrete mathematics. Analysis of algorithm efficiency and space/time tradeoffs are discussed.

**PREREQ: COMPSCI 223 AND (COMPSCI 215 OR MATH 280)**

#2107 Section 01 [units: 3]  
09/07-12/23 MW 11:00 AM - 12:15 PM MG0117 Lopamudra Mukherjee

**COMPSCI 462 NETWORK SECURITY ...** This course covers the basic and fundamental cryptographic algorithms and security protocols for computer networks. Network vulnerabilities, attacks on Internet, network monitoring, security at the link, network and transport layers are also covered in the course.

**PREREQ: COMPSCI 223 AND COMPSCI 271 OR CONSENT OF INSTRUCTOR**

#2113 Section 01 [units: 3]  
09/07-12/23 TR 09:30 AM - 10:45 AM MG0117 Jiazhen Zhou

**COMPSCI 476 SOFTWARE ENGINEERING ...** This course introduces concepts and techniques relevant to the production of large software systems. Students are taught a programming method based on the recognition and description of useful abstractions. Topics include: modularity; specification; data abstraction; object modeling; design patterns; and testing.

**PREREQ: MCS 231 OR COMPSCI 223 OR CONSENT OF INSTRUCTOR**

#2110 Section 01 [units: 3]  
09/07-12/23 MW 06:30 PM - 07:45 PM HY0210 Cheng Thao

**COMPSCI 481 WEB SERVER AND UNIX ADMINISTRATION ...** This course is intended to introduce students to Web Server software and UNIX and UNIX-like operating systems from the perspective of the System Administrator. Linux, the fastest growing operating system, will be studied in detail, together with the Apache web server. Web server configuration will be studied, including optimization, security issues and virtual server administration. Additional topics will include shell programming, system monitoring, file systems and the X Windows GUI. This course will focus on common system administration duties on the Linux platform. Students will acquire competency in using shell programming skills to automate the maintenance of server activity. Emphasis will be placed on using Linux as an Internet server.

**PREREQ: COMPSCI 172 OR COMPSCI 174 OR EQUIVALENT PREPARATION AND CONSENT OF INSTRUCTOR**

#2125 Section 01 [units: 3]  
09/07-12/23 TR 05:00 PM - 06:15 PM MG0115 Zachary J Oster

**COMPSCI 493 INTERNSHIP IN COMPUTER SCIENCE ... S/NC grade basis only.**

#2115 Section 01 [units: 1-12]  
09/07-12/23 Arranged Arranged Cheng Thao  
S/NC Grading Basis Only

<i>Start/End Dates</i>	<i>Meeting Days</i>	<i>Meeting Times</i>	<i>Location</i>	<i>Instructor</i>	<i>Course Topic (if applicable)</i>
#4577	Section 02	[units: 3]			
09/07-12/23	Arranged	Arranged		Zachary J Oster	
S/NC Grading Basis Only					

**COMPSCI 498 INDEPENDENT STUDY IN COMPUTER SCIENCE ... Study of a selected topic or topics under the direction of a faculty member.****Repeatable. Department Consent required.**

#2146	Section 01	[units: 2]				Dept. Consent
09/07-12/23	Arranged	Arranged		Hien M Nguyen		

**COMPSCI 498R INDEPENDENT STUDY - UNDERGRADUATE RESEARCH ... Study of a selected topic or topics under the direction of a faculty member.****Repeatable. Department Consent required.**

#2116	Section 01	[units: 1-3]				Dept. Consent
09/07-12/23	Arranged	Arranged		Jiazhen Zhou		