

## EXPECTED COURSE OFFERINGS COMPUTER SCIENCE PROGRAM

The schedule below is based on historical patterns and expected scheduling. The semester and location in which a course may be offered *is subject to change* due to instructor availability, student demand, and the need to provide an appropriate balance of subjects and course levels in all semesters. Courses may be offered at the Applied Physics Laboratory (A), Online (O), Virtual Live (VL), or as an Independent Study (IS), as indicated. Courses may also be offered in odd years (odd) or even years (even).

Course Number	Course Name	Summer	Fall	Spring
605.101	Introduction to Python	O	O	O
605.201	Introduction to Programming Using Java	O	A/O	A/O
605.202	Data Structures	A/O	A/O	A/O
605.203	Discrete Mathematics		A	O
605.204	Computer Organization	A/O	O	A/O
605.205	Molecular Biology for Computer Scientists			
605.601	Foundations of Software Engineering	A/O	A/O	A/O
605.602	Software Analysis and Design			O
605.603	Object-Oriented and Functional Programming in Kotlin			A
605.604	Object-Oriented Programming with C++	A	O	A/O
605.606	Programming with Domain-Specific Languages	A		
605.607	Agile Software Development Methods		O	O
605.608	Software Project Management	O	O	O
605.609	DevOps Software Development	O	O	O
605.611	Foundations of Computer Architecture	O	A/O	A/O
605.612	Operating Systems		O	O
605.613	Introduction to Robotics		VL	
605.614	System Development in the Unix Environment		A	O
605.615	Compiler Design			A
605.616	Multiprocessor Architecture and Programming			O
605.617	Introduction to GPU Programming		O	O
605.620	Algorithms for Bioinformatics		O	O
605.621	Foundations of Algorithms	A/O	A/O	A/O
605.622	Computational Signal Processing			
605.623	Introduction to Enumerative Combinatorics			O
605.624	Logic: Systems, Semantics, and Models		A	
605.625	Probabilistic Graph Models			O (even)
605.626	Image Processing		O	
605.628	Applied Topology			A (odd)

Course Number	Course Name	Summer	Fall	Spring
605.629	Programming Languages		A	
605.631	Statistical Methods for Computer Science		O	
605.632	Graph Analytics			O
605.633	Social Media Analytics		O	O
605.635	Cloud Computing		O	O
605.636	Autonomic Computing			A
605.641	Principles of Database Systems	O	O	O
605.643	Linked Data and the Semantic Web	O		
605.644	XML: Technology and Applications	O	O	
605.645	Artificial Intelligence	O	O	O
605.646	Natural Language Processing		A	
605.647	Neural Networks		A	O
605.649	Introduction to Machine Learning	O	A/O	O
605.651	Principles of Computational Biology		O	
605.652	Biological Databases and Database Tools		O	
605.653	Computational Genomics		O	
605.656	Computational Drug Discovery and Development			
605.657	Statistics for Bioinformatics			
605.662	Data Visualization		O	O
605.667	Computer Graphics		O	
605.671	Principles of Data Communications Networks	O	O	A
605.672	Computer Network Architectures and Protocols			
605.674	Network Programming		O	
605.675	Protocol Design		O	
605.677	Internetworking with TCP/IP I	O	O	O
605.678	Next Generation Mobile Networks with 5G		O	
605.681	Principles of Enterprise Web Development	O	A/O	A/O
605.682	Web Application with Java	O	O	O
605.683	Java Enterprise Development: Processes, Tools and Infrastructure		O	
605.684	Agile Development with Ruby on Rails	O	O	O
605.686	Mobile Application Development for the Android Platform	A	O	O
605.687	Mobile Application Development for the iOS Platform		O	A
605.701	Software Systems Engineering		A	
605.702	Service-Oriented Architecture			
605.704	Object-Oriented Analysis and Design	O	O	O
605.705	Software Safety		A	
605.707	Software Patterns		O	A

Course Number	Course Name	Summer	Fall	Spring
605.708	Tools and Techniques of Software Project Management			A
605.709	Seminar in Software Engineering		A	
605.715	Software Development for Real-Time Embedded Systems		O	O
605.716	Modeling and Simulation of Complex Systems			A
605.721	Design and Analysis of Algorithms			A (even)
605.724	Applied Game Theory			O
605.725	Queueing Theory with Applications to Computer Science			A
605.726	Game Theory		A (even)	
605.727	Computational Geometry			
605.728	Quantum Computation		O	
605.729	Formal Methods			A
605.731	Survey of Cloud Computing Security	O		
605.741	Large Scale Database Systems	O	O	O
605.742	Deep Neural Networks			O
605.744	Informational Retrieval		O	A (odd)
605.745	Reasoning Under Uncertainty		O	
605.746	Advanced Machine Learning			O
605.747	Evolutionary Computation		O	
605.751	Algorithms for Structural Bioinformatics			O
605.754	Analysis of Gene Expression and High-Content Biological Data			
605.755	Systems Biology		O	
605.759	Independent Project in Bioinformatics	IS	IS	IS
605.767	Applied Computer Graphics			A (even)
605.771	Wired and Wireless Local and Metropolitan Area Networks		O	
605.772	Network Management			O
605.776	Fourth Generation Wireless Communications: WiMAX and LTE			A
605.777	Internetworking with TCP/IP II			O
605.779	Network Design and Performance Analysis		A (odd)	
605.784	Enterprise Computing with Java	O	A	O
605.785	Web Services with SOAP and REST: Frameworks, Processes, and Applications		O	
605.786	Enterprise System Design and Implementation			O
605.787	Front End Web App Development		O	O
605.788	Big Data Processing Using Hadoop		O	A
605.795	Capstone Project in Computer Science			IS
625.690	Computational Complexity and Approximation			O (odd)
605.801	Independent Study in Computer Science I	IS	IS	IS
605.802	Independent Study in Computer Science II	IS	IS	IS

695.xxx see the Cybersecurity Program; 525.xxx see the Electrical and Computer Engineering Program; 685.xxx see the Data Science Program;

<i>705.xxx see the Artificial Intelligence Program; 635.xxx see the Information Systems Engineering Program;</i>
<i>625.xxx see the Applied and Computational Mathematics Program</i>