


Computer Science at TJHSST for 2016-2017

One credit in Computer Science (a full year) is required to graduate.

Ninth	Students with little or no programming experience.	Foundations of Computer Science <i>Java: classes & objects, loops, if, arrays, files, graphics</i>
	Students with one year, or more, of programming.	Foundations of Computer Science (Accelerated) <i>Python: classes & objects, algorithmic thinking, data processing, modeling and simulation</i>

Tenth	Prerequisite is Foundations of Computer Science, or the TJ CS Placement Test. <i>Apply by June 1, 2016; test will be administered in August 2016.</i>	AP Computer Science plus Data Structures <i>Java: recursion, linked lists, stacks, queues, trees, maps, sets, graphs, heaps</i>
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Semester Electives - Eleventh & Twelfth	Prerequisite is APCS+DS. Students take AI 1 in fall and then may take AI 2 in spring.	Artificial Intelligence 1 <i>Python: graphs, heuristics, constraint solvers, game trees</i>	→	Artificial Intelligence 2 <i>Python: genetic algorithms, learning, natural language, agents</i>
	Prerequisite is APCS+DS. Students may take Computer Vision in fall or in spring.	Computer Vision <i>C++: image filtering, detection, segmentation, recognition, motion</i>		
	Prerequisite is APCS+DS. Students take Parallel 1 in fall and then may take Parallel 2 in spring.	Parallel Computing 1 <i>C: pointers, distributed memory, MPI, Manager-Worker</i>	→	Parallel Computing 2 <i>C: threads, shared memory, OpenMP, XMT, CUDA</i>
	Prerequisite is APCS+DS. Students take either course, or both in any order, in fall or in spring.	Mobile App Development <i>Android: Java based, phone, tablet, embedded</i>	↔	Web App Development <i>PHP, JavaScript, SQL, CSS, HTML, the DOM</i>

Senior Research Labs	Prerequisite is APCS+DS. Recommend one or more of AI 1 or 2, Parallel 1 or 2, or Computer Vision.	Computer Systems Lab <i>Senior Research Project or Mentorship</i>
	Prerequisite is APCS+DS. Recommend one or more of Mobile App Development or Web App Development.	Mobile and Web Application Development Lab <i>Senior Research Project or Mentorship</i>
	One of three possible tracks is the computational track. Track prerequisites are both: AP Calculus BC and AI 1&2	Neuroscience Lab <i>Senior Research Project or Mentorship</i>

*Any exception to a prerequisite should be directed to the Science and Technology Division Manager who (if supportive) will request the final approval of the TJ administration.