Department of Teaching & Learning
Parent/Student Course Information

Advanced Placement Computer Science Principles
(MA 3166)
One credit, One year
Grades 9-12

Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.

COURSE DESCRIPTION
This course is designed to be equivalent to a first semester introductory college computing course. Students will develop computational thinking vital for success across all disciplines, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize and draw conclusions from trends. The course is unique in its focus on fostering student creativity. Students are encouraged to apply creative processes when developing computational artifacts and to think creatively while using computer software and other technology to explore questions that interest them. They will also develop effective communication and collaborative skills, working individually and collaboratively to solve problems.

CO-REQUISITE
Geometry Honors, Algebra, Functions and Data Analysis (AFDA), Algebra II or Algebra II/Trigonometry

REQUIRED TEXTBOOK
None

RECOMMENDED CALCULATOR
TI-84 Plus, TI-84 Plus C or TI-84 Plus CE
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<tr>
<th>VBO#</th>
<th>Objective</th>
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<td>VBO#</td>
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<td>with the Internet and the systems built on it. (P1)</td>
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<tr>
<td>LO 7.1.1</td>
<td>Explain how computing innovations affect communication, interaction and cognition. (P4)</td>
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<td>LO 7.1.2</td>
<td>Explain how people participate in a problem-solving process that scales. (P4)</td>
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<td>LO 7.2.1</td>
<td>Explain how computing has impacted innovations in other fields. (P1)</td>
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<td>LO 7.3.1</td>
<td>Analyze the beneficial and harmful effects of computing. (P4)</td>
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<td>LO 7.4.1</td>
<td>Explain the connections between computing and real-world contexts, including economic, social and cultural contexts. (P1)</td>
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<td>LO 7.5.1</td>
<td>Access, manage and attribute information using effective strategies. (P1)</td>
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<tr>
<td>LO 7.5.2</td>
<td>Evaluate online and print resources for appropriateness and credibility. (P5)</td>
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**P1: Connecting Computing**
Students will learn to draw connections between different computing concepts.

**P2: Creating Computational Artifacts**
Students will engage in the creative aspect of computing by designing and developing interesting computational artifacts as well as by applying computing techniques to creatively solve problems.

**P3: Abstracting**
Students will use abstraction to develop models and simulations of natural and artificial phenomena, use them to make predictions about the world and analyze their efficiency and validity.

**P4: Analyzing Problems and Artifacts**
Students will design and produce solutions, models and artifacts, and they will evaluate and analyze their own computational work as well as the computational work that others have produced.

**P5: Communicating**
Students will describe computation and the impact of technology and computation, explain and justify the design and appropriateness of their computational choices and analyze and describe both computational artifacts and the results or behaviors of those artifacts.

**P6: Collaborating**
Students will collaborate effectively by drawing on diverse perspectives, skills and the background of peers to address complex and open-ended problems. They will collaborate on a number of activities, including the investigations on questions using data sets and the production of computational artifacts.
Notice of Non-Discrimination Policy

Virginia Beach City Public Schools does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation/gender identity, pregnancy, childbirth or related medical condition, disability, marital status, age, genetic information or veteran status in its programs and activities and provides equal access to the Boy Scouts and other designated youth groups. School Board policies and regulations (including, but not limited to, Policies 2-33, 4-4, 4-6, 4-43, 5-7, 5-19, 5-20, 5-44, 6-7, 7-48, 7-49, 7-57 and Regulations 4-4.1, 4-4.2, 4-6.1, 4-43.1, 5-44.1, 7-11.1, 7-17.1 and 7-57.1) provide equal access to courses, programs, counseling services, physical education and athletic, vocational education, instructional materials and extracurricular activities.

To seek resolution of grievances resulting from alleged discrimination or to report violations of these policies, please contact the Title VI/Title IX Coordinator/Director of Student Leadership at (757) 263-2020, 1413 Laskin Road, Virginia Beach, Virginia, 23451 (for student complaints) or the Section 504/ADA Coordinator/Chief Human Resources Officer at (757) 263-1133, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (for employees or other citizens). Concerns about the application of Section 504 of the Rehabilitation Act should be addressed to the Section 504 Coordinator/Executive Director of Student Support Services at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student’s school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Laskin Road Annex, 1413 Laskin Road, Virginia Beach, Virginia, 23451.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write The Department of Teaching and Learning, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email him at Emmanuel.Cenizal@VBSchools.com

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CHARTING THE COURSE

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