COMPUTER SCIENCE

Computer science focuses on the development and testing of software and software systems. It involves working with programming languages, mathematical models, data analysis and security, algorithms, and computational theory. Computer scientists define the computational principles that are the basis of all software.

Oxnard College offers courses in Computer Science that provide students with the foundational knowledge and practical skills needed to excel in various tech roles, such as software development, data analysis, and cybersecurity. Additionally, the Associate in Science in Computer Science (AS-T) program is designed to facilitate transfer to four-year institutions in Computer Science or similar majors, allowing students to pursue advanced degrees and further enhance their career prospects.

CS R131 Programming Concepts and Methodology I 3 Units
Advisories/Rec Prep: MATH R115, or MATH R116, or MATH R117
This course provides an introduction to fundamental programming concepts using a high-level programming language. Students will learn essential skills including algorithm development, data structures, control structures, and functions. The course emphasizes practical problem-solving and programming techniques, enabling students to write, test, and debug simple programs. Through hands-on lab activities, students will gain proficiency in programming constructs and methodologies, preparing them for advanced studies in computer science.
Grade Modes: Letter Graded, Credit by exam, license etc., Student Option-Letter/Credit, Pass/No Pass Grading
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: None
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: None
IGETC: None

CS R132 Programming Concepts and Methodology II 3 Units
Prerequisites: CS R131
This course introduces fundamental data structures and their applications, focusing on their design, implementation, and analysis. Utilizing Java as the primary programming language, students will explore a variety of data structures, including Lists, Stacks, Queues, Trees, and Graphs. The course also delves into sorting and searching algorithms, providing a comprehensive understanding of algorithm efficiency and performance.
Grade Modes: Letter Graded, Credit by exam, license etc., Student Option-Letter/Credit, Pass/No Pass Grading
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: None
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: None
IGETC: None

CS R142 Computer Architecture and Organization 3 Units
Prerequisites: CS R131
This course explores the organization and behavior of real computer systems at the assembly-language level. Students will study the mapping of high-level language constructs onto sequences of machine instructions, as well as the internal representation of simple data types and structures. Numerical computation is examined, noting various data representation errors and potential procedural errors.
Grade Modes: Letter Graded, Credit by exam, license etc., Student Option-Letter/Credit, Pass/No Pass Grading
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: None
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: None
IGETC: None

CS R152 Discrete Structures 3 Units
Prerequisites: CS R131
This course introduces students to the fundamental discrete structures used in computer science, emphasizing their practical applications. Key topics include logic and proofs, set theory, functions, sequences, summations, algorithm analysis, properties of integers, mathematical induction, recursion, combinatorics, relations, graph theory, tree structures, and discrete probability. Through a combination of theoretical knowledge and practical problem-solving, students will develop a strong foundation in these essential concepts.
Grade Modes: Letter Graded, Credit by exam, license etc., Student Option-Letter/Credit, Pass/No Pass Grading
Field Trips: May be required
Degree Applicability: Applies to Associate Degree
AA/AS GE: None
Transfer Credit: CSU, UC
UC Credit Limitations: None
CSU GE-Breadth: None
IGETC: None

- Computer Science, Associate in Science for Transfer (http://catalog.vcccd.edu/oxnard/programs-courses/computer-science/computer-science-ast/)

For more information contact:

Alex Lynch (805) 678-5061 alynch@vcccd.edu