



The digital age is well underway and the demand for skilled computing professionals is high; the industry expects to grow 13% by 2026. Students interested in a career in computer science and technology can choose from a variety of areas of study, including robotics engineering, game development, software programming, and more.



## **Career Pathway: Information Security Analyst**



Information security analysts plan and carry out security measures to protect an organization's computer networks and systems. Their responsibilities are continually expanding as the number of cyber attacks increases. The U.S. government, health care organizations, financial systems, and other companies are increasingly dependent on the skills of information security analysts to protect their computer networks and software against hackers and cyber attacks.



#### **Colleges & Universities to Consider**

California Institute of Technology | Carnegie Mellon University | George Washington University Purdue University | Rice University | Stevens Institute of Technology | University of Maryland University of Minnesota | University of Toronto | Virginia Polytechnic and State University

\$95,510 MEDIAN ANNUAL SALARY

**\$118,000** AVERAGE STARTING SALARY WITH MASTER'S DEGREE +28% GROWTH BY 2026

Salary & Industry Growth Sources: U.S. Bureau of Labor Statistics 2017 | Payscale.com College & University Sources: Niche.com | BestValueSchools.com



### **Career Pathway: Game Designer**



Game designers develop and create video games that can be played on computers and video game consoles. They may be involved in imagining the concept of the game as well as participating in its execution. Depending on what type of job they hold or their experience level, game designers might contribute to a game's story writing and character development, coding and programming, audio (score and sound effects), visual special effects, and production design.



### **Colleges & Universities to Consider**

Becker College | Columbia College Chicago | DigiPen Institute of Technology | George Mason University Otis College of Art and Design | Rensselaer Polytechnic Institute | The Art Center College of Design The New School (Parsons School of Design) | University of California - Santa Cruz

\$60,000 AVERAGE STARTING SALARY WITH BACHELOR'S DEGREE **\$91,000** AVERAGE STARTING SALARY WITH MASTER'S DEGREE

+24% GROWTH BY 2026

Salary & Industry Growth Sources: U.S. Bureau of Labor Statistics 2017 | Payscale.com College & University Sources: Blog.PrepScholar.com | GameDesigning.org



### **Career Pathway: Software Developer**



Software developers are the creative minds behind computer programs. Some software developers create the applications that allow people to do specific tasks on a computer, smartphone, tablet, or another digital device. Other software developers build the underlying systems that run digital devices or control computer networks. Developers are often natural problem solvers who possess strong analytical skills and the ability to think outside the box.



#### **Colleges & Universities to Consider**

California Polytechnic State University | College of Charleston | Drexel University Florida Institute of Technology | McGill University | Princeton University Rochester Institute of Technology | Rose-Hulman Institute of Technology | University of Texas at Dallas

\$101,790 MEDIAN ANNUAL SALARY \$80,000 AVERAGE STARTING SALARY WITH MASTER'S DEGREE

+24% GROWTH BY 2026

Salary & Industry Growth Sources: U.S. Bureau of Labor Statistics 2017 | Payscale.com College & University Sources: Niche.com | BusinessInsider.com



## Laurel Springs Course Offerings

#### \*Laurel Springs School Core Course

#### **3D Modeling**

Gain a deeper understanding of graphic design and illustration as you use 3D animation software to create virtual three-dimensional design projects. Hone drawing, photography, and 3D construction skills while developing the abilities needed to navigate a 3D digital modeling workspace. This course is an excellent introduction to careers in virtual reality, video game design, television and motion pictures, and more!

#### **AP Calculus AB\***

AP Calculus AB is a comprehensive introduction to calculus that is comparable to one semester of college-level, introductory calculus. The material is challenging and helps students understand the concepts of calculus and applications to the study of science, business, and engineering. The course emphasizes problems that are expressed graphically, numerically, and algebraically. Students build foundational calculus knowledge by analyzing graphs and calculating limits of functions, determining rates of change, and finding derivatives using the sum rule, product rule, quotient rule, chain rule, and implicit differentiation. Students are introduced to the derivatives of all functions including power functions, exponential functions, logarithmic functions, trigonometric functions, and inverse trigonometric functions. Students then apply derivatives to solve realworld problems. The course continues with techniques of integration, indefinite integrals, definite integrals, the fundamental theorem of calculus, and various applications of integration.

#### **AP Calculus BC\***

AP Calculus BC is a comprehensive introduction to calculus that is comparable to two semesters of college-level, introductory calculus. The material is challenging and the course moves at a faster pace as compared to AP Calculus AB. This course helps students understand the concepts of calculus and applications to the study of science, engineering, and advanced mathematics. Through the study of functions, limits, derivatives, integrals, and infinite series, students learn to evaluate the soundness of proposed solutions, apply mathematical reasoning to real-world models, and understand change geometrically, visually, analytically, numerically, and verbally.

#### **AP Computer Science**

The equivalent to the first semester of a college-level introductory computer science course, develop the ability to write programs to correctly solve specific problems. The course also emphasizes design issues that make programs understandable, adaptable, and reusable.

#### **AP Computer Science Principles**

Discover the foundational concepts of computer science and explore the impact computing and technology has on society. With a unique focus on creative problem solving and real-world applications, you'll explore important topics of computing using your own ideas and creativity, use the power of computing to create artifacts of personal value, and develop an interest in computer science that will foster further endeavors in the field.

#### Coding 1A & 1B

Want to create your own webpage or simply curious how your favorite sites were built? Explore the role technology plays in our lives, study the fundamentals of computer science, review hardware and software, and learn how the internet functions. You will also discover how to create and build your own website, and learn basic and complex commands and sequences as you become familiar with programming languages.

#### Cybersecurity 1A & 1B

Can anything be kept "secret" online? Learn the tools, technologies, and methods needed to protect online information, and how these issues are impacting safety and rights on a global and personal level. Learn what exciting career possibilities await you in the new and highdemand field of cybersecurity.

#### Game Design 1A & 1B

Tap into your creative and technical skills as you explore the many aspects involved with designing video games. Learn about software and hardware, various gaming platforms, necessary technical skills, troubleshooting and internet safety techniques, and history of gaming. You'll even have the opportunity to create your very own plan for a 2D video game! The second part of this course allows you to conceptualize, design, and fully create your own game.

#### **Contact Your College Counselor to Learn More**



### Laurel Springs Course Offerings

#### **Renewable Technologies**

Learn about the cutting-edge field of renewable energy and the exciting technologies that make it possible. Explore new ways of generating energy and storing that energy, from biofuels to high-capacity batteries and smart electrical grids. Discover the environmental and social effects of renewable technologies and examine how people's energy decisions impact policies.

#### Social Media: Our Connected World

Learning how to interact on social media platforms is crucial to thriving in this age of digital communication. Explore the ins and outs of social media platforms like Facebook, Twitter, and Pinterest, as well as how to use them to benefit personally, academically, and, professionally. This course will show you how to use these resources in powerful ways.

#### **Creative Computing**

**CLUB** | Robotics engineers design robots, maintain them, develop new applications for them, and do research to expand the potential of robotics. These engineers design and test how robots move, use sensors, and store data in order to carry out tasks. Robotics engineers work in a wide range of industries, including manufacturing, medicine, military, agriculture, aerospace, and energy.

#### **Contact Your College Counselor to Learn More**