

CAREER AND TECHNICAL EDUCATION

For high-achieving school students
Grades 8 - 12

THE
BIG RED
GROUP



Career & Technical Education

3D Modeling 1a: Introduction

Heart valves, cars, cartoons, and buildings may not seem to have much in common, but they all share one spectacular attribute: all originated as a 3D model. 3D modelling has changed the way the world makes things, and in this course, you'll learn the basics to begin creating in 3D! You'll learn how different 3D models are built and how to practice using a variety of modelling methods. By the end of the course, you'll walk away with a portfolio of your ingenious modelling ideas. 3D modelling is an essential part of the modern world and soon, you'll be able to contribute yourself!

Note: This course has 8 units and is recommended to be taught over a single semester

3D Modeling 1b: Set the Scene

Many buildings that are rendered in the real world first are constructed in a digital 3D world that depicts the aesthetics, environment, and conditions of what will come to be. In this course, you will be introduced to the tools and techniques needed to create works of 3D art. You will bring your objects to life with colour, textures, lighting, and shadow all while simulating the movement of world around you. Are you ready to bring beautiful objects to life in a 3D world? Let's get started today! Note: This course has 8 units and is recommended to be taught over a single semester

Advertising and Sales Promotion

What comes to mind when you think of 'marketing'? Perhaps a familiar television jingle plays in your head? Or maybe you think of those irritating sales phone calls? There's no denying the sheer magnitude and power of the marketing industry. Every year companies spend approximately \$200 billion promoting their products and services—and that's just in the United States alone! You may be familiar with being on the receiving end of marketing, but what's it like on the other side? In Advertising and Sales Promotions, you'll see how these marketing campaigns, ads, and commercials are brought to life and meet some of the creative folks who produce them. You'll learn about different marketing career opportunities and discover ways to be part of this exciting, fast-paced industry Note: This course has 8 units and is recommended to be taught over a single semester

Agriscience 1: Introduction

The word “agriculture” often evokes images of farms, fields, and livestock, and while all of these representations are correct and essential, the field of Agriculture is so much more! In Agriscience I: Introduction, you’ll explore how agriscientists play key roles in improving agriculture, food production, and the conservation of natural resources along with the technologies used to keep the field thriving. Are you ready to explore the diverse careers in agriscience and how you can prepare to positively impact the planet? Let’s get growing!
Note: This course has 8 units and is recommended to be taught over a single semester.

Agriscience 2: Sustaining Human Life

Have you ever strolled past a bright green cauliflower at the market and paused to ponder its unusual colour? Ever wonder why “broccolini” is suddenly a thing? Well, if you find yourself curiously questioning these, and other, peculiar vegetables and wondering about the role of agriculture in the modern world, Agriscience II is for you. Learn how science and technology are revolutionizing our food supply and promoting innovative ways to produce healthy plant-based foods, such as developing better hybrids and growing edible plants in challenging places. Food is our most essential resource; see how plant science will change the face of eating in the 21st century and give us the knowledge to continually improve our green thumbs!

Animation 1a: Introduction

Have you ever watched a cartoon or played a video game where the animation of characters captivated you so much you wanted to create your own? If so, it’s time to immerse yourself in the world of animation. Meet the industry players such as directors, animators, and 3D modellers. Develop your story by exploring design, the 12 principles of animation, creating a storyboard, and leveraging the tools of the trade. Let’s bring your story to life with animation!

Animation 1b: Animating Your Creativity!

It’s time to start animating like the pros! In this hands-on course, you’ll immediately start exploring the software Blender, your gateway to 3D modelling, computer animation, and postproduction procedures used in the film industry. Discover 3D modelling and animation of characters. Explore the basics of human anatomy and form to apply rigging, joints, and texture. Examine rendering and lighting effects and how to apply sound. And discover careers so you can start using your new skills right away.

Astronomy 1a: Introduction

Ever wondered how the Earth developed and exists in the vastness of space? How do the scientific laws of motion and gravity play a role in its existence? Discover answers to these questions and explore the origin of the universe, the Milky Way, and other galaxies and stars, including the concepts of modern astronomy and the methods used by astronomers to learn more about the universe. Note: This course has 8 units and is recommended to be taught over a single semester.

Astronomy 1b: Exploring the Universe

Building upon the prior prerequisite course, dive deeper into the universe and develop a lifelong passion for space exploration and investigation. Become familiar with the inner and outer planets of the solar system as well as the sun, comets, asteroids, and meteors. Additional topics include space travel and settlements as well as the formation of planets.

Biotechnology 1a: Introduction

Biotechnology is a cutting-edge, high-demand field that encompasses everything from plant and animal breeding to genetics. Discover how biotechnology has changed the world around us, from food to genetics. Explore historical applications with modern discoveries. Understand how regulations and ethics govern the course of biotechnology and learn of its importance to the field of medicine.

Biotechnology 1b: Unlocking Nature's Secrets

Building on the prior prerequisite course, expand your knowledge in the field of biotechnology. Explore the discovery of antibiotics and the concerns of antibiotic resistance while also examining the agricultural, pharmaceutical, and genetic applications of biotechnology. Finally, learn about the future of biotechnology to understand the depth and breadth of this field. Note: This course has 8 units and is recommended to be taught over a single semester

Careers in Criminal Justice 1a: Introduction

Most of us have watched a sensationalized crime show at one time or another, but do we really know how things work behind those dreaded prison bars? Do we really understand all the many factors in our justice proceedings? The criminal justice system is a very complex field that requires many seriously dedicated people who are willing to pursue equal justice for all. The Careers in Criminal Justice course illuminates what those different career choices are and how the juvenile justice system, the correctional system, and the trial process all work together to maintain social order.

Careers in Criminal Justice 1b: Finding Your Specialty

Have you ever thought about a career as a police officer, an FBI or DEA agent, or any occupation that seeks to pursue justice for all? Careers in criminal justice can be found at local, county, state, and federal levels, and even in the private sector. Explore some of the various occupations in this field, while simultaneously learning how they interact with each other and other first responders. Discover various interviewing techniques to uncover the truth. Understand the importance of making ethical decisions, and how you need to keep your sense of right and wrong in check to be successful in this field. Note: This course has 8 units and is recommended to be taught over a single semester.

Certified Nurse Aide A/B

The course is designed to enable students to learn the key skills and information that they need to work as certified nurse aides. The course will help students develop an understanding of the human body, physical and nutritional needs, mental health needs and teach them to provide culturally competent and quality care to clients in a safe and healthy environment. The course is based on the NNAAP Exam syllabus and is designed to prepare students to take the exam and become certified nurse aides. The course has animations and videos that demonstrate key skills that students must acquire to work as nurse aides. The practice test at the end of the course gives students practice on the written exam that they'll need to give to become certified nurse aides..

Coding 1a: Introduction to Programming

Have you ever wanted to create your own web page or wondered how your favorite websites were built? Maybe you want to know more about how computers and technology are affecting the world around us. In Coding 1a: Introduction to Programming, you will explore the role technology plays in our lives as well as 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 using HTML and CSS and learn basic and complex commands and sequences as you become familiar with programming languages like JavaScript and Python Programming.

Coding 1b: Programming

Cultivate your understanding of programming languages and expand on your knowledge of website development. Learn the difference between web development and web application development as well as further explore Advanced Python, HTML, and JavaScript. You will also examine software engineering concepts, learn more about security, privacy, and ethics in technology, and explore the wide variety of careers in computing Note: This course has 8 units and is recommended to be taught over a single semester.

CompTIA A+ 220-1001

This course is focused on the exam objectives of CompTIA A+ 220-1001. Students will learn about computer hardware and networking, including concepts related to virtualization and cloud computing. Students will learn about mobile devices and their features. Students will learn how to identify and troubleshoot problems related to hardware, networking, printers, storage devices, and mobile devices. Unit activities in the course help students to develop and apply critical thinking skills. Animations and screenshot-based slideshows included in the lesson keep students engaged. Students can understand technical concepts easily. Simulations provide students a real computer environment to practice various procedural steps. These simulations emulate the CompTIA A+ performance-based questions. Practice test at the end of the course help students to practice questions that are parallel to the CompTIA A+ 220-1001 certification exam.

CompTIA A+ 220-1002

This course is focused on the exam objectives of CompTIA A+ 220-1002. Students will learn about the features and tools in Windows, Mac/Linux, and mobile operating systems. Students will learn about security, cloud computing, and operational procedures. Students will also learn how to use remote access tools and identify and troubleshoot problems related to operating systems, security, and mobile applications. Unit activities in the course help students to develop and apply critical thinking skills. Animations and screenshot-based slideshows included in the lesson keep students engaged. Students can understand technical concepts very easily. Simulations provide students a real computer environment to practice various procedural steps. These simulations emulate the CompTIA A+ performance-based questions. Practice test at the end of the course help students to practice questions that are parallel to the CompTIA A+ 220-1002 certification exam.

CompTIA Network+ Certification (N10-007) A/B

This course is a two-semester course focused on the exam objectives of CompTIA Network+ certification N10-007. Students will learn about the types of networks, network topologies, the Open Systems Interconnection (OSI) model, Internet protocol addresses, routing, and switching. Students will learn about wireless technologies, virtualization, cloud concepts, and network services. Students will learn about network cables, connectors, network devices, network storage technologies, and wide-area networks. Students will learn about network documentation, network monitoring, and remote access methods. Students will learn about business continuity, disaster recovery methods, and physical and logical security methods. Students will learn how to secure a wireless network. Students will also learn about network attacks, and various device hardening and mitigation techniques. Finally, students will learn how to troubleshoot issues related to wired connectivity, wireless connectivity, and network services. Unit activities in the course help students to develop and apply critical thinking skills. Animations included in the lesson keep students engaged. Students can understand technical concepts very easily. Simulations provide students a real computer environment to practice various procedural steps. These simulations emulate the CompTIA Network+ performance-based questions. Practice Test at the end of the course helps students to attempt questions that are similar to the CompTIA Network+ certification N10-007 exam.

Computing for College and Careers 1a: Introduction

Technology has made an impact on nearly all facets of our lives, and it will continue to make an impact on yours as you make your way into college and your career! In this course, you are going to pull back the veil on what goes into some of the technology we use every day. You will investigate computer hardware and software and learn what goes into building a computer while exploring programs and applications, you'll study the history of the internet and how to use its capabilities even more effectively, and you'll also dive deep into an email and some of today's most powerful processing tools. Get ready to really know the technology you have at your fingertips so you can continue to make it work for you!

Concepts of Engineering and Technology

What if you could do the impossible? Engineers understand a lot of things, but the word impossible definitely isn't one of them. Through Concepts of Engineering and Technology, you'll learn how the momentum of science is continually propelling engineers in new directions towards a future full of insight and opportunity. This course explores the different branches of engineering and how problem-solving, sketching, collaboration, and experimentation can change the very fibre of our human lives. This ever-increasing knowledge can also lead to serious ethical dilemmas and the need to discuss where the boundaries of science lie (or even if there should be boundaries). By examining astounding engineering feats and complex ongoing issues, you, too, will begin to question whether the word impossible really exists.

Cosmetology 1: Cutting-Edge Styles

We all want to look our best, but did you know there is actually a science behind cutting your hair and painting your nails? In Cosmetology: Cutting-Edge Styles, you will learn all about this often entertaining field and how specialized equipment and technology are propelling our grooming into the next century. Just like all careers, cosmetology requires certain skills and characteristics, all of which are thoroughly explored in this course. You will learn about various beauty regimes related to hair, nails, skin, and spa treatments, and discover how to create your own business model quickly and efficiently while still looking fabulous, of course! Note: This course has 10 units and is recommended to be taught over 2 semesters, but can be accelerated to be completed within a single semester if desired.

Cosmetology 2: The Business of Skin and Nail Care

Helping people put their best face forward is a growing, vibrant industry which needs skilled and personable professionals well-versed in the latest trends and technological advances. In Cosmetology 2: The Business of Skin and Nails, experience what the day-to-day life of a cosmetologist is like. You will discover that cosmetology is much more than knowing and applying techniques. Additionally, you will explore skin care and facials, learn how to give manicures and pedicures and how to apply artificial nails, and gain an understanding of different hair removal techniques. Discover the next steps towards launching a rewarding and creative career in cosmetology. Note: This course has 8 units and is recommended to be taught over a single semester

Cosmetology 3a: Introduction to Hair Skills

Cosmetology is a specialized field with a high skill set. Students taking this course will be exposed to the complexities of cosmetology by learning to perform a hair, scalp, and skin analysis. Students will also learn about hair types, face shapes, and colour theory. Finally, to effectively prepare students for a career in cosmetology, colour techniques with an emphasis on salon and chemical safety are examined. Note: This course has 4 units and is recommended to be taught over a single semester

Cosmetology 3b: Waving, Coloring, and Advancing Hair Skills

Building on the prior prerequisite course, students will delve into the realm of hairstyling and cutting techniques. Students will explore varieties of wigs, extensions, and hairpieces, while also developing knowledge about shampooing and conditioning. Manual curling and the use of chemicals to curl and straighten the hair are highlighted in this course as well as safety when working with chemicals. Students can expect to be well-versed in a plethora of hair skills upon completion. Note: This course has 8 units and is recommended to be taught over a single semester.

Criminology: Inside the Criminal Mind

Understanding the criminal mind is not easy. Why do certain people commit horrible acts? Can we ever begin to understand their reasoning and motivation? Perhaps. In *Criminology: Inside the Criminal Mind*, you will be given the rare opportunity to climb inside the mind of a criminal and examine the ideas and motivations at work. The mental state of a criminal can be affected by many different aspects of life—psychological, biological, and sociological—all of which have differing perspectives and influences. You will investigate not only how these variables affect the criminal mind but also how the criminal justice system remains committed to upholding the law through diligence and an uncompromising process. Note: This course has 8 units and is recommended to be taught over a single semester.

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