

CAREER TECHNICAL EDUCATION



2020-21 CATALOG



Newport-Mesa
Unified School District

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COLLEGE & CAREER EDUCATION



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<https://web.nmusd.us/cte>

The Career Technical Education (CTE) program in the Newport-Mesa Unified School District offers elective courses in a sequential CTE pathway, within an industry sector that incorporates science, math, ELA, and CTE common core standards.

These courses provide students with hands-on learning experiences that build teamwork, leadership, creativity and problem solving skills.

Students will also gain industry specific expertise and develop professional skills that will help them succeed in the workplace, and/or in a college setting.

CTE PATHWAYS



BUSINESS
MANAGEMENT



DESIGN, VISUAL
& MEDIA ARTS



ENGINEERING
DESIGN



FOOD SERVICE
& HOSPITALITY



NETWORKING



PATIENT CARE



PRODUCTION
& MANAGERIAL
ARTS

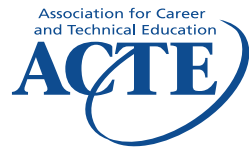


RESIDENTIAL
& COMMERCIAL
CONSTRUCTION



SOFTWARE
& SYSTEMS
DEVELOPMENT

College and Career Ready through CTE






When **APPLIED TECHNICAL LEARNING** is integrated with **RIGOROUS ACADEMICS**, students develop the **SKILLS NEEDED FOR SUCCESS.**

The technical, academic and employability skills that students gain in CTE programs, through CTE courses, work-based learning, career and technical student organizations and dual/concurrent enrollment, are essential for college and career success.

CTE programs prepare students for college and careers:¹

The top 3 **SKILLS** and experiences that students report gaining in their CTE classes are:

-  **SKILLS** to help them get jobs in the future
-  **REAL-WORLD EXAMPLES** to help them understand academic classes
-  The chance to work as **PART OF A TEAM**

More than **88** percent of CTE students are planning to continue on to postsecondary education.

6 in 10 students are planning to pursue a career related to the CTE area they are exploring in high school.

Almost **1/3** of CTE students have the opportunity to earn college credit and/or an industry certification through CTE.

Source: My College Options™/ACTE research study (2016). National sample includes 40,192 high school CTE students.

CTE students demonstrate the academic, technical and employability skills needed for postsecondary and workplace success:



80 percent of students taking a college prep academic curriculum with rigorous CTE meet college and career readiness goals, compared to only 63 percent of students taking the same academic core who did not experience rigorous CTE.²



Students attending CTE high schools demonstrate higher rates of on-time graduation and credit accumulation and a greater likelihood of successfully finishing a college prep math sequence.³



CTE students are significantly more likely to report developing problem-solving, project completion, research, work-related, communication, time management and critical-thinking skills during high school.⁴



Postsecondary CTE concentrators earn significantly more than those who majored in academic fields, particularly when employed in an industry related to their program of study.⁵

² Southern Regional Education Board, High Schools That Work 2012 Assessment

³ Noid et al., The Academic Impacts of Career and Technical Schools: A Case Study of a Large Urban School District, 2013

⁴ Leikos et al., CTE Pathway Programs, Academic Performance and the Transition to College and Career, National Research Center for CTE, 2007

⁵ Jacobson and Moller, Florida Study of Career and Technical Education, 2014, as cited in the 2014 National Assessment of CTE Final Report

For more information about CTE, visit www.acteonline.org.

FREQUENTLY ASKED QUESTIONS (FAQs)

What is Career Technical Education (CTE)?

Career Technical Education is a program developed around industry sectors that integrate core academic and technical knowledge to provide students with a pathway to post-secondary education and careers. With California's investment in career pathways, it is a great time to build a bridge to the future through CTE. Students can explore careers in a variety of industries and begin to build technical and professional "soft skills" that prepare them to be both college and career ready. In these hands-on, project based learning programs, students build skills that are transferable to any career. Students in CTE courses have opportunities to interact with industry through guest speakers, field trips, mentorships, job shadowing experiences, internships, competition and showcase events.

What is a CTE pathway?

A CTE pathway is a sequence of 2 or more courses in the same industry sector. Students completing the pathway are equipped with technical and professional skills for career entry or for continued education in college/university after high school. Some CTE courses that are not part of a pathway are also offered.

Why should a student complete a CTE pathway?

CTE is project-based learning with more opportunities for real-world experiences. Participants in high school enter college and careers with the ability to be innovative, critical thinkers because they have learned to connect their core academic courses with transferable, professional skills. CTE programs infuse industry connections through guest speakers, tours, competition and showcase events where students receive feedback from industry professionals. Additionally, all pathway completers earn a CTE Medallion which can be worn at graduation. For information about medallion requirements, students should speak to their CTE teacher.

Can I change pathways?

Once a student starts a pathway, it is recommended that they continue the sequence, but this is not required. To be a pathway completer, students need to finish all courses in the pathway, including the final capstone course. Students have the freedom to change pathways, and take stand-alone electives for enrichment and further career exploration.

Is CTE for college-bound students?

Yes, CTE is a great way to prepare for college by distinguishing yourself with skills that will transfer to any career. CTE pathway completers are also prepared for life after college because pathways connect academic learning to real-world applications. It's also a great way to explore a career to inform your college major, potentially saving time and money.

Can I get college credit for taking a CTE course?

Many CTE courses have an articulation agreement with a community college that recognizes the high school course as being equivalent to the college course. Graduates who enroll in the community college may receive college credit for the high school articulated CTE course. Ask your counselor which colleges offer credit for articulated courses and how you can get college credit when you enroll in the college. For an up-to-date list of current articulated courses, please visit the Early College Credit page on the Newport-Mesa Unified School District website.

What is UC-CSU “a-g” approved?

Courses taken in high school that are approved by UC/CSU and appear on the institution's “a-g” course list meet the entrance requirements for the University of California (UC) and California State University (CSU) admittance. These courses are project-based, academically challenging, involve substantial reading, writing, problem solving and laboratory work (as appropriate), and show serious attention to analytical thinking, factual content and developing student's oral and listening skills. With the exception of semester-long courses, students must complete both semesters of a year-long course with a grade of 70% or higher to meet the UC entrance requirements.

What is work-based learning (WBL)?

Work-based learning is a continuum of activities that occur, in part or in whole, in the workplace providing a student with hands-on, real-world experiences. “Learning about work” is career awareness and exploration which involves career counseling, industry guest speakers, informational interviews and worksite tours. The next level is “learning through work” which consists of career preparation that supports career readiness and includes extended direct interaction with professionals from industry and the community such as pre-apprenticeships, internships, student-led enterprises and project-based learning. The final stage is “learning at work” which is career training. Experiences might include apprenticeships and on-the-job training.

What is an industry-recognized certification?

Industry-recognized certifications are valued in the labor market and are a validation of knowledge and skill. In a high school CTE program of study, students

can work towards an industry-recognized certification while they earn a high school diploma. This gives those students an opportunity to embark on a career right after high school. In many cases, these certifications can give students an advantage over other applicants in the job market or on a college application.

Is CTE available for middle school students?

Hands-on career exploration courses are offered at the middle school level. Middle school is a good time to explore a career and to build skills that will help you in any career and in college. These skills include critical thinking, problem solving and working in teams to create a product.

What is an ROP course?

Regional Occupation Program (ROP) is a state funded public education program. NMUSD partners with Coastline ROP to offer CTE courses, in-bell, after school and during the summer for students in grades 9-12. Many courses are UC a-g approved and internships are available. The ROP course schedule is on the web at <https://www.coastlinerop.net/>.

How do I register?

Students interested in enrolling in a CTE course should contact their school counselor. Courses offered during the bell schedule are site specific. Courses offered after school by Coastline Regional Occupational Program are available to all high school students in the district.





MIDDLE SCHOOL CAREER EXPLORATION

Learn how **Science, Technology, Engineering, and Mathematics (STEM)** are used to invent, design, and create items used everyday. Explore the range of paths and possibilities that connect to high school and beyond.

AUTOMATION & ROBOTICS

Course Code: KT007

Location: Costa Mesa, Ensign & TeWinkle

Design, build, and program a robot! Students use tools such as the engineering design process, an engineering notebook, and VEX Robotics® programming software to invent and innovate. Students learn how creative thinking and problem solving can change the world! Automation and Robotics (AR) allows students to trace the history, development, and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems. Students use the VEX Robotics® platform to design, build, and program real-world objects such as traffic lights, toll booths, and robotic arms.



DESIGN & MODELING

Course Code: KT008

Location: Costa Mesa, Ensign & TeWinkle

Design and Modeling (DM) provides students opportunities to apply the design process to creatively solve problems. Students are introduced to a problem in the first activity and are asked to make connections to the problem throughout subsequent lessons. Students learn and utilize methods for communicating design ideas through sketches, solid models, and mathematical models. Students will understand how models can be simulated to represent an authentic situation and generate data for further analysis and observations. Students work in teams to identify

design requirements, research the topic, and engage stakeholders. Teams design a toy or game for a child with cerebral palsy, fabricate and test it, and make necessary modifications to optimize the design solution.

FLIGHT & SPACE

Course Code: KT010

Location: Costa Mesa

The exciting world of aerospace comes alive through the Flight and Space (FS) unit. Students explore the science behind aeronautics and use their knowledge to design, prototype, and test model rocket fuel and a glider. Custom-built simulation software allows students to experience space travel.



MEDICAL DETECTIVES

Course Code: KT011

Location: Costa Mesa

In the Medical Detectives (MD) unit, students play the role of real-life medical detectives as they analyze genetic testing results to diagnose disease and study DNA evidence found at a “crime scene.” They solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain mental health.

ROBOTICS & PROGRAMING 8

Course Code: KT012

Location: Ensign

Robotics and Programming 8 is a course that builds on students’ engineering knowledge and abilities through the use of VEX Robotics and introduces the core concepts of programming with the UC Davis C-STEM Center’s Linkbots and Ch programming language. Students will first design, build, and modify robots, then craft programs of increasing levels of complexity and interactivity.



CORONA DEL MAR HIGH SCHOOL

CTE PATHWAYS



Networking



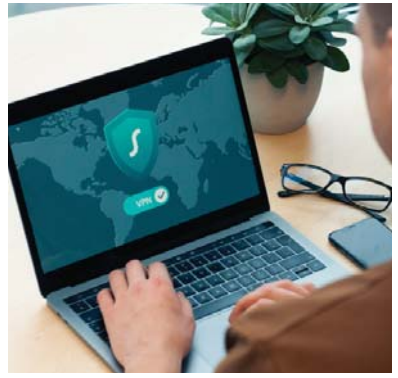
Design, Visual
& Media Arts



Engineering

WHAT CTE COURSES ARE OFFERED AT MY SCHOOL?

- Advanced Media Arts Portfolio
- AP Computer Science A
- AP Computer Science Principles
- Exploring Computer Science
- Intermediate Media Arts & Photography
- Introduction Media Arts & Photography
- Introduction to Design Engineering
- Principles of Engineering
- Robotics & Artificial Intelligence



TO REGISTER FOR CTE COURSES, PLEASE CONTACT YOUR HIGH SCHOOL COUNSELOR

For more career information and online resources, visit <https://web.nmusd.us/cte>





NETWORKING

EXPLORING COMPUTER SCIENCE

Course Code: JT448/449

Year-long, 10 credits

UC/CSU approved "g" or Electives

In Exploring Computer Science (ECS), students will engage with computer science as a medium of creativity, communication, problem-solving, and fun. The course will include: web design, e-textiles, robots, and game design with block programming.



AP COMPUTER SCIENCE PRINCIPLES

Course Code: JT444/445

Year-long, 10 credits

UC/CSU approved "d" or Science

The AP Computer Science Principles course (AP CSP) introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology impact the world. There is a unique focus on creative problem solving and real-world applications, such as using computational tools to analyze and study data and work with large data sets to analyze, visualize, and draw conclusions from trends. 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.

AP COMPUTER SCIENCE A

Course Code: JT500/501
 Year-long, 10 credits
 UC/CSU approved "c" or Math

AP Computer Science A is an introductory college-level course that exposes students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.



DESIGN, VISUAL & MEDIA ARTS

INTRODUCTION MEDIA ARTS & PHOTOGRAPHY

Course Code: CT380/381
 Year-long, 10 credits
 UC/CSU approved "f" or Fine Arts

This introductory course will combine competencies in film, video, computer, and live production, as well as foundational knowledge in design to introduce students to a variety of jobs in the multimedia, communications, and game design workforce. Instruction will focus on the interaction between media sources in live, recorded, and web-based productions. Students will develop skills in computer design, film & video production, lighting, sound projection design, and print media design using industry-recognized software. Students will also explore career options within this rapidly expanding industry sector.

INTERMEDIATE MEDIA ARTS & PHOTOGRAPHY

Course Code: CT382/383
 Year-long, 10 credits
 UC/CSU approved "f" or Fine Arts

This course builds on competencies in film, video, computer and live production, as well as foundational knowledge in design. Instruction will focus on the interaction

between media sources in live, recorded, and web-based productions. Coursework will deepen specific skills in computer design, film and video production, lighting, sound projection design, and print media design in preparation for a content specific capstone course.

Prerequisites: Introduction to Media Arts & Photography

ADVANCED MEDIA ARTS PORTFOLIO

Course Code: CT384/385

Year-long, 10 credits

UC/CSU approved "f" or Fine Arts

This capstone course in the Media Arts sequence applies learning from Introduction and Intermediate Media Arts & Photography courses in a project-based environment. Coursework will focus on creative components in film, video, computer, and live production application in both the educational and work-based setting. Students will apply knowledge of computer and print media, film and video production, digital lighting, and sound projection design in industry environments to create media arts products and a portfolio that demonstrate entry level workforce skills and comprehensive knowledge of industry practices.

Prerequisites: Intermediate Media Arts and Photography

Articulation: Coastline College (DGA C121)



ENGINEERING DESIGN

INTRODUCTION TO DESIGN ENGINEERING

Course Code: KT368/369

Year-long, 10 credits

UC/CSU approved "f" or Fine Art

Introduction to Design Engineering (IDE) is a high school level foundation course where students are introduced to the engineering profession and a common approach to the solution of engineering problems with an emphasis on design aspects of the engineering design process.

Prerequisites: It is recommended students be concurrently enrolled in college preparatory mathematics and science courses.

PRINCIPLES OF ENGINEERING

Course Code: KT355/356

Year-long, 10 credits

UC/CSU approved "d" or Science

In this second course of the four-course pathway, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design. VEX Robotics is heavily featured in this course.

Prerequisites: Introduction to Design Engineering (IDE)

ROBOTICS & ARTIFICIAL INTELLIGENCE

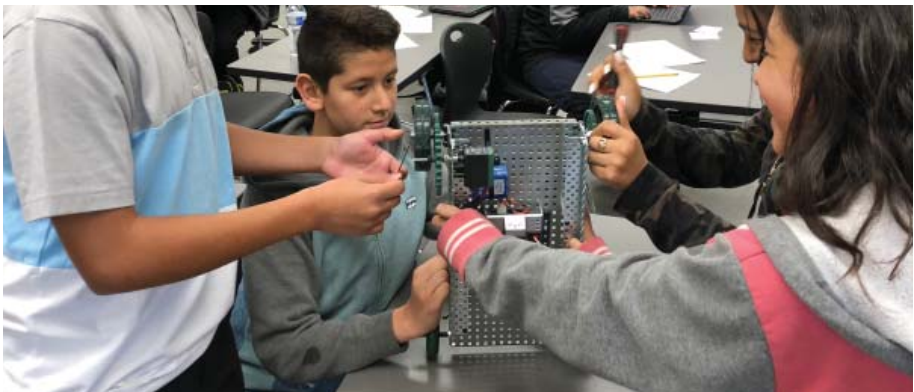
Course Code: KT370/371

Year-long, 10 credits

UC/CSU approved "g" or Electives

Robotics and Artificial Intelligence is a specialized and innovative course where students are introduced to the growing field of mechatronics, advanced robotics systems and machine learning or artificial intelligence. Students research and design "intelligent" robotic systems that solve real world problems by learning and refining their skills in mechanization and control, sensors, machine learning programming and data collection that leads to logic and predictive outcomes. Students complete at least four mechatronic/robotics projects per school year, with their final project culminating in a presentation of how the machines will be used in real world scenarios.

Prerequisites: Principles of Engineering (POE)





COSTA MESA HIGH SCHOOL

CTE PATHWAYS



Design, Visual
& Media Arts



Engineering



Patient Care

WHAT CTE COURSES ARE OFFERED AT MY SCHOOL?

- Aerospace Engineering
- (ROP) Athletic Training & Sports Medicine
- Engineering Design & Development
- (ROP) Entrepreneurship
- Intermediate Media Arts & Photography
- Introduction Media Arts & Photography
- Introduction to Engineering Design
- Advanced Media Arts Portfolio
- (ROP) Medical Careers & Health Systems
- Music Technology
- Principles of Engineering
- (ROP) Sports & Entertainment Marketing
- (ROP) Sports Medicine Advanced



TO REGISTER FOR CTE COURSES, PLEASE CONTACT YOUR HIGH SCHOOL COUNSELOR

For more career information and online resources, visit <https://web.nmusd.us/cte>





DESIGN, VISUAL & MEDIA ARTS

INTRODUCTION MEDIA ARTS & PHOTOGRAPHY

Course Code: CT380/381

Year-long, 10 credits

UC/CSU approved "f" or Fine Arts

This course will combine competencies in film, video, computer, and live production, as well as foundational knowledge in design to introduce students to a variety of jobs in the multimedia, communications, and game design workforce. Instruction will focus on the interaction between media sources in live, recorded, and web-based productions. Students will develop skills in computer design, film & video production, lighting, sound projection design, and print media design using industry-recognized software. Students will also explore career options within this rapidly expanding industry sector.

INTERMEDIATE MEDIA ARTS & PHOTOGRAPHY

Course Code: CT382/383

Year-long, 10 credits

UC/CSU approved "f" or Fine Arts

This course builds on competencies in film, video, computer and live production, as well as foundational knowledge in design. Instruction will focus on the interaction between media sources in live, recorded, and web-based productions. Coursework will deepen specific skills in computer design, film and video production, lighting, sound projection design, and print media design in preparation for a content specific capstone course.

Prerequisites: Introduction to Media Arts & Photography

ADVANCED MEDIA ARTS PORTFOLIO

Course Code: CT384/385

Year-long, 10 credits

UC/CSU approved "f" or Fine Arts

This capstone course in the Media Arts sequence applies learning from Introduction

and Intermediate Media Arts & Photography courses in a project-based environment. Coursework will focus on creative components in film, video, computer, and live production application in both the educational and work-based setting. Instruction will focus on applying student knowledge of computer and print media, film and video production, digital lighting, and sound projection design in industry environments. Students will create media arts products and a portfolio that demonstrate entry level workforce skills and comprehensive knowledge of industry practices.

Prerequisites: Intermediate Media Arts and Photography

Articulation: Coastline College (DGA C121)



ENGINEERING DESIGN

INTRODUCTION TO ENGINEERING DESIGN

Course Code: KT352/353

Year-long, 10 credits

UC/CSU approved "d" or Science

In this foundational course, students dig deep into the engineering design process and apply math, science, and engineering standards to hands-on projects.

Students work both individually and in teams to design solutions to a variety of problems using 3-D modeling software.

Prerequisites: It is recommended students be concurrently enrolled in college preparatory mathematics and science courses.

PRINCIPLES OF ENGINEERING

Course Code: KT355/356

Year-long, 10 credits

UC/CSU approved "d" or Science

In this second course of the four-course pathway, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design. VEX Robotics is heavily featured in this course.

Prerequisites: Introduction to Engineering Design (IED)

AEROSPACE ENGINEERING

Course Code: KT362/363

Year-long, 10 credits

UC/CSU approved "d" or Science

This course propels students' learning in the fundamentals of atmospheric and space flight. As they explore the physics of flight, students bring the concepts to life by designing an airfoil, propulsion system, and rockets. Students learn basic orbital mechanics using industry-standard software. They also explore robot systems through projects such as remotely operated vehicles.

Prerequisites: Principles of Engineering (POE)

ENGINEERING DESIGN & DEVELOPMENT

Course Code: KT364/365

Year-long, 10 credits

UC/CSU approved "d" or Science

This capstone course requires student to identify an issue and then research, design, and test a solution. Students use a variety of industry-standard prototyping technologies, such as 3D printers and laser cutters, to make their solutions come to life. Students will present and defend their original solution to an outside panel in a design review.

Prerequisites: Aerospace Engineering



PATIENT CARE

ROP MEDICAL CAREERS & HEALTH SYSTEMS

Course Code: UT670/671

Year-long, 10 credits

UC/CSU approved "g" or Electives

In this foundational course, students learn the basic principles of medical science, terminology, and vocabulary needed to work in the healthcare field. This course focuses on the ethical and legal responsibilities of the health care worker, safety, medical terminology, human anatomy and physiology, body systems and mechanics, standard precautions, and health & fitness. Students will explore career opportunities in therapeutic, diagnostic, and supportive areas. Students will gain practical hands-on experience in vital signs, emergency medical care, first aid, and CPR.



ROP ATHLETIC TRAINING & SPORTS MEDICINE

Course Code: UT665/666

Year-long, 10 credits

UC/CSU Approved "d" or Science

This course is designed to provide students with an introduction in care, prevention and rehabilitation of athletic injuries. Students will learn the basic skills and funda-

mentals of sports medicine, including how to prevent athletic injury and increase athletic performance. Students will study body mechanics, nutritional guidelines for maximizing performance, protective sports equipment, taping and bracing, psychological aspects of competition, and training and conditioning techniques.

Prerequisites: (ROP) Medical Careers and Health Systems

Articulation: Irvine Valley College (KNES 85), Orange Coast College (KIN A273) & Saddleback College (KNES53)

Certifications: Students will have the opportunity to earn an American Heart Association BLS for Healthcare Providers card.

ROP SPORTS MEDICINE ADVANCED

Course Code: UT600/663

Year-long, 10 credits

UC/CSU approved "g" or Electives

In this course, students learn advanced skills and the fundamentals necessary for careers relating to sports medicine and athletic training through a directed, practice experience in pre-event, on-field, and post-event sports medicine interventions. Students perform hands-on applications in the areas of body mechanics, advanced anatomy and physiology, emergency procedures, advanced taping and bracing, therapeutic modalities, expanded injury evaluation and prevention techniques, injury rehabilitation, strength and conditioning theory, pharmacology, sports psychology, clinic budget considerations, and clinic management.

Prerequisites: (ROP) Athletic Training and Sports Medicine

OTHER CTE COURSES

MUSIC TECHNOLOGY

Course Code: NT330/331

Year-long, 10 credits

UC/CSU approved "f" or Fine Art

This course introduces students to skills from several Arts, Media, and Entertainment pathways. These subjects are introduced primarily through the study of audio production. Audio production is a field that blends a variety of music and enter-

tainment industry related skills. Students complete projects that demonstrate skills in recording technique, song arrangement, music theory, individual musicianship, acoustic theory, live sound production, and record production.



ROP ENTREPRENEURSHIP

Course Code: UT700

Year-long, 10 credits

UC/CSU approved "g" or Elective

In this course, students will learn what it takes to start and maintain a successful business and develop their own business plan. Course topics include marketing strategies, business finance, government regulations, legal issues, business records, promotions, advertising and human resources. Students utilize computer and software applications used in operating a small business.

Articulation: Irvine Valley College (ENTR 160) & Orange Coast College (BUS C222)

ROP SPORTS & ENTERTAINMENT MARKETING

Course Code: UT668

Year-long, 10 credits

Students will discover the world of marketing in the sports and entertainment industries. Students will create a marketing plan to promote a team or event and examine how social media is impacting sports and entertainment marketing. Topics include marketing strategies, product and price decisions, market research, sponsorship, branding and licensing, and promotion.



ESTANCIA HIGH SCHOOL

CTE PATHWAYS



Design, Visual
& Media Arts



Engineering



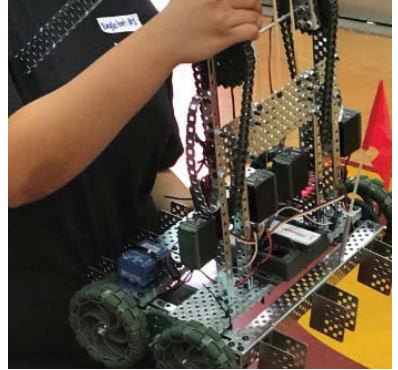
Patient Care



Residential
& Commercial
Construction

WHAT CTE COURSES ARE OFFERED AT MY SCHOOL?

- (ROP) BITA 1
- (ROP) BITA 1
- (ROP) BITA 3
- (ROP) BITA 4
- (ROP) Computer Integrated Manufacturing
- (ROP) Construction Technology Pre-Apprenticeship
- (ROP) CTE Medical Pathways
- (ROP) Emergency Medical Responder
- (ROP) Engineering Design & Development
- (ROP) Intermediate Media Arts & Photography
- (ROP) Introduction Media Arts & Photography
- (ROP) Introduction to Design Engineering
- (ROP) Advanced Media Arts Portfolio
- (ROP) Medical Careers & Health Systems
- (ROP) Multimedia Communications Design
- (ROP) Principles of Engineering



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DESIGN, VISUAL & MEDIA ARTS

ROP MULTIMEDIA COMMUNICATIONS DESIGN

Course Code: UT4573/4614

Year-long, 10 credits

UC/CSU approved "f" or Fine Art

Students will develop a broad range of skills and knowledge in the fundamental elements and principles of art, design, and multimedia communications. Learn and apply basic skills in industry-standard digital media software programs including the Adobe Creative Suite in a variety of projects across different media formats: print, animation, and web design.

Articulation: Coastline College (DGA C120) & Irvine Valley College (DMA 10)

ROP INTRODUCTION MEDIA ARTS & PHOTOGRAPHY

Course Code: UT4380/4381

Year-long, 10 credits

UC/CSU approved "f" or Fine Arts

This course will combine competencies in film, video, computer, and live production, as well as foundational knowledge in design to introduce students to a variety of jobs in the multimedia, communications, and game design workforce. Instruction will focus on the interaction between media sources in live, recorded, and web-based productions. Students will develop skills in computer design, film & video production, lighting, sound projection design, and print media design using industry-recognized software. Students will also explore career options within this rapidly expanding industry sector.

ROP INTERMEDIATE MEDIA ARTS & PHOTOGRAPHY

Course Code: UT4382/4383

Year-long, 10 credits

UC/CSU approved "f" or Fine Arts

This course builds on competencies in film, video, computer and live production, as well as foundational knowledge in design. Instruction will focus on the interaction between media sources in live, recorded, and web-based productions. Coursework

will deepen specific skills in computer design, film and video production, lighting, sound projection design, and print media design in preparation for a content specific capstone course.

Prerequisites: Introduction to Media Arts & Photography



ROP ADVANCED MEDIA ARTS PORTFOLIO

Course Code: UT4384/4385

Year-long, 10 credits

UC/CSU approved "f" or Fine Arts

This capstone course in the Media Arts sequence applies learning from Introduction and Intermediate Media Arts & Photography courses in a project-based environment. Coursework will focus on creative components in film, video, computer, and live production application in both the educational and work-based setting. Instruction will focus on applying student knowledge of computer and print media, film and video production, digital lighting, and sound projection design in industry environments. Students will create media arts products and a portfolio that demonstrate entry level workforce skills and comprehensive knowledge of industry practices.

Prerequisites: Intermediate Media Arts and Photography

Articulation: Coastline College (DGA C121)



ENGINEERING DESIGN

ROP INTRODUCTION TO DESIGN ENGINEERING

Course Code: UT4368/4369

Year-long, 10 credits

UC/CSU approved "f" or Fine Art

Introduction to Design Engineering (IDE) is a high school level foundation course where students are introduced to the engineering profession and a common approach to the solution of engineering problems with an emphasis on design aspects of the engineering design process.

Prerequisites: It is recommended students be concurrently enrolled in college preparatory mathematics and science courses.

ROP PRINCIPLES OF ENGINEERING

Course Code: UT355/356

Year-long, 10 credits

UC/CSU approved "d" or Science

In this second course of the four-course pathway, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design. VEX Robotics is heavily featured in this course.

Prerequisites: Introduction to Design Engineering (IDE)

ROP COMPUTER INTEGRATED MANUFACTURING

Course Code: UT4366/4367

Year-long, 10 credits

UC/CSU approved "D" or Science

Computer Integrated Manufacturing (CIM) deepens the skills and knowledge of an engineering student within the context of efficiently creating the products we all use. Students build upon their Computer Aided Design (CAD) experience through the use of Computer Aided Manufacturing (CAM) software which translates a digital design into a program that a Computer Numerical Controlled (CNC) machine

uses to transform a block of raw material into a product designed by a student. Students learn and apply concepts related to integrating robotic systems such as Automated Guided Vehicles (AGV) and robotic arms into manufacturing systems. This course culminates with a capstone project where students design, build, program, and present a manufacturing system model capable of creating a product.

Prerequisites: Principles of Engineering (POE)



ROP ENGINEERING DESIGN & DEVELOPMENT

Course Code: UT4364/4365

Year-long, 10 credits

UC/CSU approved "d" or Science

This capstone course requires student to identify an issue and then research, design, and test a solution. Students use a variety of industry-standard prototyping technologies, such as 3D printers and laser cutters, to make their solutions come to life. Students will present and defend their original solution to an outside panel in a design review.

Prerequisites: Computer Integrated Manufacturing



PATIENT CARE

ROP MEDICAL CAREERS & HEALTH SYSTEMS

Course Code: UT4670/4671

Year-long, 10 credits

UC/CSU approved "g" or Electives

In this foundational course, students will learn the basic principles of medical science, terminology, and vocabulary needed to work in the healthcare field. This course focuses on the ethical and legal responsibilities of the health care worker, safety, medical terminology, human anatomy and physiology, body systems and mechanics, standard precautions, and health & fitness. Students will explore career opportunities in therapeutic, diagnostic, and supportive areas. Students will gain practical hands-on experience in vital signs, emergency medical care, first aid, and CPR.

ROP EMERGENCY MEDICAL RESPONDER

Course Code: UT4637/4656

Year-long, 10 credits

UC/CSU approved "g" or Electives

In this course, students will learn about careers in fire service, sports medicine, coaching, ski patrol, lifeguarding and emergency medical services. Students will learn CPR principles, first aid skills, patient assessment, triage, and emergency responsibilities.

Prerequisites: (ROP) Medical Careers and Health Systems

Certifications: Students will have the opportunity to earn an American Heart Association BLS for Healthcare Providers card.

ROP CTE MEDICAL PATHWAYS

Course Code: UT4702/4703

Year-long, 10 credits

UC/CSU approved "g" or Electives

The primary purpose of this course is to provide students with the science skills

necessary to be successful in the biotechnology, patient care, and public and allied health pathways. Students will be exposed to the theoretical and practical science skills through an investigative, hands-on approach that incorporates the knowledge of the science essential to each pathway with skills that will help students be successful in a career in the health professions. Students will participate in college and career exploration activities through mentorships and visits to post-secondary institutions and local business and industry.

Prerequisites: (ROP) Emergency Medical Responder



RESIDENTIAL & COMMERCIAL CONSTRUCTION

ROP BITA 1

Course Code: UT4672/4673

Year-long, 10 credits

UC/CSU approved "g" or Electives

Foundation of Residential & Commercial Construction (BITA 1) is designed to teach basic skills for the construction trades through a course rich in connections to construction projects that will generate interest in math and increase students' likelihood of success. The course covers basic construction math, measurement and scale, blueprint reading, safety, procedural use of hand and power tools. Students acquire these skills through the use of technology and real-world problem solving.

ROP BITA 2

Course Code: UT4674/4675

Year-long, 10 credits

UC/CSU approved "g" or Electives

Study of Modern Craftsmanship & Infrastructure (BITA 2) is designed to help students gain an in-depth understanding of the history behind construction, materials, and trades in the industry. Students will use primary sources and become construction historians as they reconstruct the advancement of the trades, materials, and tools that are now being used in residential and commercial construction. The course covers a more advanced knowledge of safety, use of hand and power tools, blueprint reading, geometry, and estimating.

Prerequisites: (ROP) BITA 1

Certifications: OSHA 10-hr Construction Safety

ROP BITA 3

Course Code: UT4676/4677

Year-long, 10 credits

UC/CSU approved "g" or Electives

Students enrolled in Energy Efficiency & Infrastructure of the Future (BITA 3) will identify ways to conserve resources in construction; select alternative tools and tool maintenance for use in green building; and identify alternative practices and methods that take natural resources into account. Students will gain an understanding of what sustainability means and the latest evidence and thinking on climate change, energy, water, pollution, waste, biodiversity and efficient use of materials within the built environment. Students will have an opportunity to apply their knowledge and participate in the annual Design/Build competition to design and build their own structure.

Prerequisites: (ROP) BITA 2

ROP BITA 4

Course Code: UT4678/4679

Year-long, 10 credits

UC/CSU approved "g" or Electives

In this capstone course, students move to a higher level of competency and are tasked to complete a community service project by creating blueprints, planning materials, estimating costs, soliciting donations, and documenting the project at all

stages. While learning a trade, students are making our communities a better place to live. Students develop leadership and teamwork skills through their continued participation in the Design/Build competition. Students also have the opportunity to network with our dedicated industry partners to learn more about education and career options after high school through guest speaking panels, field trips, mentorships, and job shadowing.

Prerequisites: (ROP) BITA 3



ROP CONSTRUCTION TECHNOLOGY PRE-APPRENTICESHIP

Course Code: UT4653/4654

Year-long, 10 credits

In this course, students will acquire the skills to prepare for a career in the construction industry. Participants will learn about blueprint reading, basic plumbing, electrical, masonry, glass, tile, flooring, drywall, carpentry, and roofing repairs. Students will also learn these hands-on skills and exposure to future college and career opportunities within the industry through a partnership with the Southwest Carpenters Union, Local 714.

Articulation: Orange Coast College (CNST A100)



NEWPORT HARBOR HIGH SCHOOL

CTE PATHWAYS



Business
Management



Food Service
& Hospitality



Production
& Managerial
Arts



Software &
Systems
Development

WHAT CTE COURSES ARE OFFERED AT MY SCHOOL?

- Advanced Film & Video Production
- AP Computer Science A
- AP Computer Science Principles
- (ROP) Baking & Pastry
- Business Management 1 IB/HL
- Business Management 2 IB/HL
- (ROP) Culinary Arts
- Culinary Arts Advanced
- Exploring Computer Science
- Foods
- Intermediate Film & Video Production
- Introduction to Computer Science in Python
- Introduction to Film & Video Production
- Multimedia in International Business



TO REGISTER FOR CTE COURSES, PLEASE CONTACT YOUR HIGH SCHOOL COUNSELOR

For more career information and online resources, visit <https://web.nmusd.us/cte>





BUSINESS MANAGEMENT

MULTIMEDIA IN INTERNATIONAL BUSINESS

Course Code: DT336/337

Semester-long, 5 credits

The course will cover general principles of Multimedia in International Business. Students learn about economics - micro and macro - and its relationship to and impact on business operation in the private enterprise system. A simulated business will be set up and run by students to prepare them for working in a real business environment. Students work individually as well as in teams to compete against each other in the simulated world.

Certifications: Students will have the opportunity to earn the Everfi Mass Mutual Financial Literacy certification.



BUSINESS MANAGEMENT 1 IB/HL

Course Code: DT440/441

Year-long, 10 credits

UC/CSU approved "g" or Electives

The course is designed to develop a student's understanding of today's complex and dynamic business environment. Course topics include business organization and environment, human resource management, finance and accounts, marketing and operations management. Students learn to develop a wide-reaching, holistic understanding of business management and its place in the world with the integration of the six IB Business Management Diploma Programme concepts and contexts - change, culture, ethics, globalization, innovation and strategy. Students have an opportunity to develop leadership skills and participate in competitions through the Career Technical Student Organization – DECA.

Prerequisites: None

Certifications: Students will have an opportunity to earn the Everfi Mass Mutual Financial Literacy and Stukent – Mimic Social Media Marketing certifications.

BUSINESS MANAGEMENT 2 IB/HL

Course Code: DT340/342

Year-long, 10 credits

UC/CSU approved "g" or Electives

This is the capstone course in the Business Management pathway sequence. Students will deepen their knowledge and apply the concepts and skills introduced in Business Management 1 IB/HL (see above) through project-based learning and participation in DECA.

Prerequisites: Business Management 1 IB/HL

Certifications: Students will have the opportunity to earn the CEV Multimedia – Southwest Airlines Professional Communications certification and Newport Beach Chamber of Commerce – Professional Networking certification.

Articulation: Saddleback College (BUS 150)





FOOD SERVICE & HOSPITALITY

ROP BAKING & PASTRY

Course Code: UT634/667

Year-long, 10 credits

UC/CSU approved "g" or Electives

Students will learn the skills needed to work in the baking & pastry industry. Students acquire knowledge in proper equipment handling, product identification, terminology, baking and pastry preparation and production techniques. Students will master the basics of making breads, cakes, wedding cake decoration and plate presentation.

Articulation: Saddleback College (FN 244)



FOODS

Course Code: HT302/303

Year-long, 10 credits

This introductory course is designed for students who are interested in understanding the principles of food and nutrition and maintaining a healthy life. Students use small and large equipment, supplies, products and procedures in an interdisciplinary approach. Safety and sanitation is paramount and applied in a classroom laboratory setting. The course will also focus on food purchasing, preparation techniques, meal service, etiquette, cultures and technology.

ROP CULINARY

Course Code: UT359/632

Year-long, 10 credits

UC/CSU approved "g" or Electives

This course will prepare students for an entry-level position in the restaurant/food service industry. Students build upon their knowledge of safety and sanitation, nutrition basics, and food service operations. Instruction includes planning, preparation, cooking and presentation techniques for a wide variety of food. Students have the opportunity to develop leadership skills and participate in competitions through the Career Technical Student Organization – Family, Career and Community Leaders of America (FCCLA).

Prerequisites: Foods

Certifications: Students will have the opportunity to earn the California Food Handlers card.

Articulation: Saddleback College (FN 240)

ADVANCED CULINARY ARTS

Course Code: HT322/323

Year-long, 10 credits

UC/CSU approved "g" or Electives

In this capstone course, students will use existing culinary skills to master the art of preparing worldwide cuisine. Instruction will include lectures, demonstrations and student involvement. Students will participate in competitions, creating and plating dishes with a variety of ingredients.

Prerequisites: (ROP) Culinary





PRODUCTION & MANAGERIAL ARTS

INTRODUCTION FILM & VIDEO PRODUCTION

Course Code: CT386/387

Year-long, 10 credits

UC/CSU approved "f" or Fine Art

The purpose of this course is to provide students with the technical instruction and practical experiences for aspiring video and film makers in the production of film, video, and new media projects for business and entertainment. Students are instructed on the three stages of project creation. In pre-production, students learn the basic principles of story development, screenplay writing, storyboarding, scheduling and budget planning. Instruction in the production stage includes basic visual composition, color theory, set up and operation of industry-standard camera, sound, and lighting equipment. In the final stage, students learn to use cutting-edge software applications for video and audio post-production. The course also includes the basics of job shadowing, internships, and job placement.



INTERMEDIATE FILM & VIDEO PRODUCTION

Course Code: CT388/389

Year-long, 10 credits

UC/CSU approved "f" or Fine Art

The purpose of this course is to develop competency across the breadth of film and video production with a focus on the art of filmmaking. Students will continue to explore the three phases of production: pre-production, production, and post-production through writing, directing, producing, cinematography, lighting design, audio engineering, and editing. They will explore the history of film and video communication, the fundamentals of composition and movement, the aesthetic use of light, color, and sound, along with the art of storytelling and production design. Students will learn how technology drives innovation in this art form and will discuss what changes the future may hold.

Prerequisites: Introduction to Film and Video

ADVANCED FILM & VIDEO PRODUCTION

Course Code: CT390/391

Year-long, 10 credits

UC/CSU approved "f" or Fine Art

In this capstone course, students will explore the artistic impact of visual communication and its application in present culture, the history of film and video communication, the fundamentals of composition and movement, the aesthetic use of light, color, and sound, the art of storytelling, production design and directing. Further instruction will include digital artistry in editing and graphics, creative design in commercial and broadcast productions, career exploration, and portfolio development. Students will apply explore advanced cinematography techniques focusing on composition, depth of field, lighting, and lens choice; along with advanced technical skills in the use of jib crane, Steadicam, dolly track, live event filming, motion graphics, HD film work, and audio engineering. Students will continue to develop the means to critique the medium and express themselves clearly and concisely when speaking or writing about video/film and video/film production. Students achieving competency in this course will be prepared to enter a film or broadcast journalism course of study at the college level or be prepared for entry level employment in those fields.

Prerequisites: Intermediate Film and Video

Articulation: Coastline College (DGA 135)



SOFTWARE & SYSTEMS DEVELOPMENT

EXPLORING COMPUTER SCIENCE

Course Code: JT448/449

Year-long, 10 credits

UC/CSU approved "g" or Elective

In Exploring Computer Science (ECS), students will engage with computer science as a medium of creativity, communication, problem-solving, and fun. The course will include: web design, e-textiles, robots, and game design with block programming.

INTRO TO COMPUTER SCIENCE IN PYTHON

Course Code: JT323/324

Year-long, 10 credits

UC/CSU approved "d" or Science

The Introduction to Computer Science in Python course teaches the fundamentals of computer programming as well as some advanced features of the Python language. Students write and run Python programs using a web-based editor.

AP COMPUTER SCIENCE PRINCIPLES

Course Code: JT446/447

Year-long, 10 credits

UC/CSU approved "d" or Science

The AP Computer Science Principles course (AP CSP) introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology impact the world. There is a unique focus on creative problem solving and real-world applications, such as using computational tools to analyze and study data and work 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.

Prerequisites: Introduction to Computer Science in Python

AP COMPUTER SCIENCE A

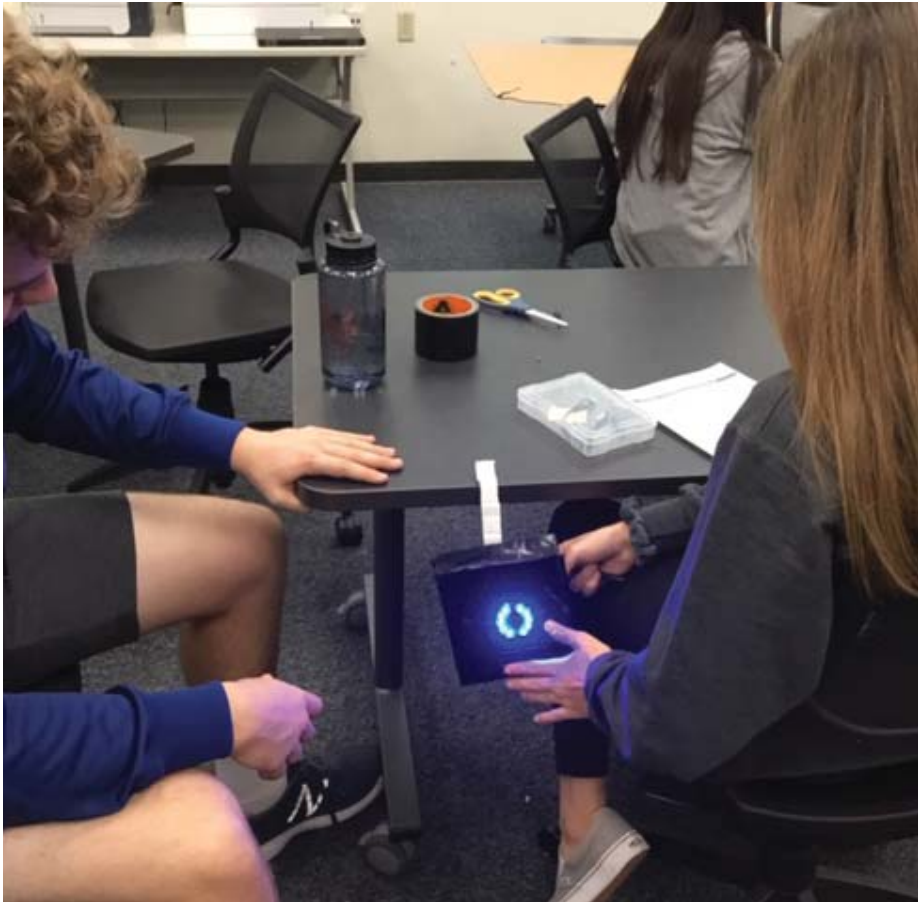
Course Code: JT500/501

Year-long, 10 credits

UC/CSU approved "c" or Math

AP Computer Science A is an introductory college-level course that exposes students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.

Prerequisites: AP Computer Science Principles





AFTER-SCHOOL

Through Newport-Mesa Unified School District’s partnership with Coastline Regional Occupational Program (ROP), after-school CTE courses are open to all high school students. Classes are held in businesses and on high school campuses located within Coastline ROP’s five participating districts: Huntington Beach Union, Irvine, Newport-Mesa, Tustin and Saddleback Valley Unified school districts. Below is a list of ROP’s after-school CTE courses. For more information regarding time, location, course description, and how to register, please visit www.coastlinerop.net or see the ROP career specialist located on each high school campus.

Agriculture and Natural Resources

Animal Health Care
Animal Health Care Internship

Arts, Media, and Entertainment

Art of TV/Video Production

Building and Construction Trades

BITA 1

Education, Child Development, and Family Services

Careers with Children Internship

Health Science, and Medical Technology

CNA (Pre-Certification) Internship
Dental Assistant Back Office
Dental Assistant Back Office Internship
Dental Assistant Front Office
Medical Careers & Health Systems
Medical Nursing Careers Internship

Hospitality, Tourism, and Recreation

Baking and Pastry Fundamentals
Culinary Arts
Culinary Arts Advanced
Culinary Arts Internship
Food Services Cooperative

Marketing, Sales, and Service

Retail Sales & Merchandising Internship

Public Services

Administration of Justice
Crime Scene Investigation
Emergency Medical Responder
Emergency Medical Technician
Fire Science 101

Transportation

Automotive Technology Internship
Automotive Technology Pre-Apprenticeship



**SIGN UP FOR
A ROP COURSE**
<https://rb.gy/ucm1cr>



**VIEW THE ROP
COURSE SCHEDULE**
<https://rb.gy/mgkydh>

MISSION

Coastline ROP is an exemplary, innovative career technical education program that prepares students for college and career success and contributes to the economic development of the communities we serve.

STUDENT LEARNING OUTCOMES

Upon successful completion, Coastline ROP students will:

- Integrate academic and technical skills
- Practice problem solving and critical thinking skills
- Communicate and collaborate with diverse audiences
- Demonstrate creativity and innovation
- Act as responsible, ethical citizens
- Develop personal, educational and career goals



Newport-Mesa
Unified School District

The Newport Mesa Unified School District Board of Education is committed to equal opportunity for all individuals in education. District programs, activities, practices, and employment shall be free from discrimination, harassment, intimidation, and bullying based on race, color, ancestry, national origin, immigration status, ethnic group identification, age, religion, marital or parental status, pregnancy, physical or mental disability, sex, sexual orientation, gender, gender identity or expression or the perception of one or more of such characteristics; or association with a person or a group with one or more of these actual or perceived characteristics. This policy applies to all acts related to school activity or school attendance within a school under the jurisdiction of the Superintendent.