



**Career Technical Education**  
Clovis Unified School District

# CTE PATHWAYS AND COURSE DESCRIPTIONS 2020-2021





## CAREER TECHNICAL EDUCATION

### Vision

*To strive to be America's leader in exemplary Career Technical Education.*

### Mission

*Clovis Unified School District will provide innovative Career Technical Education through high quality, rigorous educational pathways developed in partnership with business and industry allowing students to pursue their passions while becoming college and career ready.*

**Career Technical Education provides students of all ages with the academic and technical skills; knowledge and training necessary to succeed in future careers and to become lifelong learners. A program of study which involves a multiyear sequence of courses that integrates core academic knowledge with technical and occupational knowledge to provide students with a pathway to postsecondary education and careers.**



# BUCHANAN HIGH SCHOOL

## Pathways

DESIGN, VISUAL and MEDIA ARTS		
Year in School	Pathway Course	Description
10	Introduction to Digital Photography (P)	This is an introduction course to digital photography. Topics include digital camera operations, lighting technique, aesthetics, Photoshop, Light-room, and portfolio development. Students will explore exposure systems using aperture, shutter speed, and ISO combinations. <b>Prerequisite:</b> None.
11-12	Digital Photo II	This course has an emphasis in Adobe Photoshop in association with Digital Photography. The focus of this course is in using Photoshop and developing relationships with clients. <b>Prerequisite:</b> Introduction to Digital Photography with a C grade or better.
11-12	*ROP Digital Photography (P)	Students will develop a portfolio of artistic endeavors along with creating work in cooperation with an individual to produce commercial photography. Students will learn about digital photography, post production editing software, and client relationships. <b>Prerequisite:</b> None.
11-12	*ROP Publishing Management w/English 12 (P)	Through this course, students will demonstrate advanced skills in writing and managing a publication. Newspaper, magazine, and anthology styles of journalistic writing and graphic design are integrated to produce student publications. <b>Prerequisite:</b> 10 <sup>th</sup> grade English and permission of instructor.
11-12	*ROP Journalism & Publishing w/English 11 or 12 (P)	Through this course, students demonstrate their skills in the art of writing and production. All forms of journalistic writing and layout design are covered to produce student publications. A major project for the students is to design, publish, and market the Buchanan High School yearbook. <b>Prerequisite:</b> Teacher approval – <b>This class is for BHS students only.</b>
CHILD DEVELOPMENT		
Year in School	Pathway Course	Description
10	Exploration of Child and Adolescent Literature (HP)	Exploration of Child and Adolescent Literature is a grade 10 English Language Arts college preparatory course integrated with the Education Pathway standards. This course allows students to utilize Language Arts skills to investigate and evaluate the value and purpose of world literature for children and adolescents. Students synthesize knowledge of the developmental stages of physical, intellectual, social, and emotional development with an understanding of appropriate teaching materials and readings for each of the stages. <b>Prerequisite:</b> A 2.50 grade point average or higher, <u>AND</u> at least one of the following:  Member of Educators Rising, completion of writing workshop, participant in summer enrichment activities offered to Education Pathway students, or recommendation by Education Pathway instructor.
11-12	*ROP Careers in Child Development <b>Dual Enrollment Child Dev I</b>	Studies include the preparation to work in fields dealing with young children and developmental stages of children before birth to age 12. Students gain firsthand experience through classroom and worksite learning, job shadowing, and tours that enable them to determine the benefits of an education-related career. <b>Prerequisite:</b> Excellent attendance and citizenship. <i>(Students travel to Clovis North for this class)</i>
EDUCATION		
11	Contemporary Issues in Education (HP)	Contemporary Issues in Education is a college preparatory grade 11 English course integrated with the Education Pathway standards of the Education, Child Development, and Family Services sector which allows students to see where the skills of English intersect with the elements of education. Students conduct research, closely read and analyze complex texts, evaluate instructional methodology and philosophy, and create a portfolio of reflections, activities, and compositions that, when synthesized, serve as the foundation for three capstone projects. <b>Prerequisite:</b> A 2.50 grade point average or higher.

11-12	*ROP Careers in Education w/ English 11 or 12 (P) <b>Dual Enrollment Education 10</b>	Studies include the nature and scope of the school system, the duties and opportunities of the professional teacher, factors relative to success in teaching, and credentialing requirements. <b>Prerequisite:</b> Grade of "C" or better in English 10, and English 11. Excellent attendance and behavior records in previous grade levels required.
<b>ENGINEERING DESIGN</b>		
Year in School	Pathway Course	Description
9-12	Introduction to Design 1,2 (P) (PLTW)	Introduction to Design (ID) is a high school level foundational course in the Project Lead The Way, (PLTW,) Engineering Program. In ID, students are introduced to the engineering profession and engineering design process. <b>Prerequisite:</b> Concurrent enrollment in Math 1.
10-12	Honors Principles of Engineering (HP)	Principles of Engineering (POE) is a foundation course of the high school engineering pathway. This survey course exposes students to some of the major concepts that they will encounter in a postsecondary engineering course of study. Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of materials and structures, automation, and kinematics.  <b>Prerequisite:</b> Concurrent enrollment in Math 3. Grade of B or higher in Math 2.
11-12	Honors Engineering Design & Development (PLTW) (HP)	Engineering Design and Development (EDD) is the capstone course in the PLTW high school engineering program. It is an open-ended engineering research course in which students work in teams to design and develop an original solution to a well-defined and justified open-ended problem by applying an engineering design process. <b>Prerequisite:</b> Concurrent enrollment in AM (Required); Computer Integrated Manufacturing (Recommended).
<b>ENVIRONMENTAL RESOURCES</b>		
Year in School	Pathway Course	Description
9-11	Chemistry/ Environmental Engineering – Water (P)	Studies include the resolution to environmental engineering problems related to water and its interactions with the environment. Students will use a systems-based approach to understand that all environmental systems consist of matter and will apply this knowledge to solving current and future global water issues. <b>Prerequisite:</b> Math 1.
10-12	Honors Environmental Sustainability (HP)	Honors Environmental Sustainability (ES) is a high school-level specialization course in PLTW Engineering. In Honors ES, students investigate and design solutions to solve real-world challenges related to clean drinking water, a stable food supply, and renewable energy. Students are introduced to environmental issues and use the engineering design process to research and design potential solutions. <b>Prerequisite:</b> Biology or Biological Links to Energy & Environment, and Math 1.
10-12	AP Environmental Science	This class prepares students to pass the national exam for AP Environmental Science for college placement and/or credit. Topics include energy flow, cycling of matter, geological activities, atmosphere chemistry, and other relevant topics. This is a rigorous science course that stresses scientific principles, concepts, and theories required to understand the interrelationships of the natural world. <b>Prerequisite:</b> Biology, or AP Biology, Chemistry, AP Chemistry, Math 1 and Math 2.
<b>FOOD SERVICE and HOSPITALITY</b>		
Year in School	Pathway Course	Description
9-12	Food Science and Nutrition (P)	Studies include an introduction to basic terms, safety, recipes, measurement and nutrition. Areas of emphasis include fruits and vegetables, milk and dairy products, breads, desserts and meat preparation. <b>Prerequisite:</b> None.
11-12	*ROP Culinary Arts and Hospitality Management (P)	In this course, students will expand their study of Culinary Arts and explore Hospitality Management. Students will learn and apply knowledge through standards and project-based curriculum, both in the lab/class setting and in a working food service kitchen. <b>Prerequisite:</b> Food Science and Nutrition (P), ROP Culinary Arts.

11-12	*ROP Culinary Arts (P)	Studies include the exploration of the food industry that employs over 20 million people. Recipe development, meal planning and preparation, culinary fundamentals, ingredients, nutrition, and presentation are explored. <b>Prerequisite:</b> Recommended Hospitality Management I.
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### PATIENT CARE

Year in School	Pathway Course	Description
10-12	Medical Health Careers (P)	This course is designed to allow students to explore careers in the medical health career arena with a focus on knowledge and skills required for entry-level employment. Students are introduced to health care with an emphasis on core skills and knowledge applicable to a variety of the health professions. <b>Prerequisite:</b> Completion of Biology with a “C” grade or higher or concurrent enrollment in Biology.
11-12	*ROP Sports Medicine/Fitness (P)	This course will allow students to gain practical experience learning to work in physical therapy, fitness and athletic training settings. The course empowers the student with the healing and conditioning process resulting from methods used in physical therapy and physical conditioning of the human body. <b>Prerequisite:</b> Completion of Biology with a grade of “C” or higher.

### PERFORMING ARTS

Year in School	Pathway Course	Description
10-11	Drama 2 Technical Theater (P)	The student will study and apply the principles of group dynamics and collaboration during the pre-production through post production process of Theatrical Production. This course provides instruction in the implementation of theatrical designs for sets, lights, sound, properties, costumes, and makeup. <b>Prerequisite:</b> Drama 1 with “B” or higher, or permission of instructor.
11-12	Advanced Technical Theater	This advanced technical theater arts course is designed to build upon skills learned in Drama 2 Technical Theater for students interested in becoming designers and leaders in the Technical Theater Arts world. <b>Prerequisite:</b> Drama 2 Technical Theater.

### PRODUCTION and MANAGERIAL ARTS

Year in School	Pathway Course	Description
9-12	Videography 1(P)	Videography 1 is an introduction course that emphasizes and develops critical thinking skills by exploring the influence of design principles, historically significant art forms from various genres, and the production process of films and television programming. <b>Prerequisite:</b> Good citizenship and attendance.
10-12	Digital Film Making (P)	Studies include the artistry and technical elements of filmmaking. Students will be introduced to the theory of films and filmmaking and be expected, in writing, to analyze, describe and breakdown the elements of shot, a scene, and sequence. <b>Prerequisite:</b> Recommended Videography 1.
11-12	*ROP Multimedia Communication (P) <b>Unitrack MCJ 15</b>	Students learn to use innovative technology and software, incorporate principles of design, and blend computer graphics into all elements of production. <b>Prerequisite:</b> None.

## CLOVIS EAST HIGH SCHOOL

### Pathways

AGRICULTURAL MECHANICS		
Year in School	Pathway Course	Description
9	Ag Engineering I <b>Dual Enrollment Mechanized AG 40</b>	Studies include the introduction of the Ag Mechanics and engineering industry in the areas of welding, woodworking, electrical wiring, plumbing, and other related fields. <b>Prerequisite:</b> None.
10	Ag Engineering II (P) <b>Dual Enrollment Mechanized AG 41</b>	Studies include a continuation of Ag Mechanics I, computer aided drafting, plasma arc cutting, fabrication techniques, and project design. <b>Prerequisite:</b> Ag Mechanics and Engineering I with a "C" grade or higher.
11	Ag Engineering III	Studies include advanced welding procedures, electrical wiring principles, budgets, and building projects. <b>Prerequisite:</b> Ag Mechanics and Engineering II with a "C" grade or higher.
11-12	*ROP Welding Fabrication and Application	Welding Fabrication and Application is a capstone course designed to train students for entry-level positions in welding/metal fabrication. This course prepares students for post-secondary agricultural mechanics, welding technology, and industrial technology educational programs. This full year course emphasizes welding and fabrication skills in the advanced phases of Oxyacetylene, SMAW (Arc Welding), GMAW (MIG Welding), and TIG welding. This course applies the practical knowledge and skills learned during the previous years of instruction.  <b>Prerequisite:</b> Ag Engineering III or Welding Processes and Fabrication recommended, or Teacher Recommendation.
11-12	*ROP Welding Processes and Fabrication	Welding Processes and Fabrication is a skill building course which emphasizes welding and fabrication skills, including non-ferrous metals, in the advanced phases of Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW). The primary emphasis is on using equipment in all positions of welding with the application of welding skills learned through project fabrication, repair and industry procedure.  <b>Prerequisite:</b> Ag Engineering III is recommended, or Teacher Recommendation.
AGRICULTURAL SCIENCE		
Year in School	Pathway Course	Description
9-10	Agricultural Science 1	This course is designed for students interested in the field of agriculture. Topics covered include animal science, plant science, ornamental horticulture, public speaking, record keeping, parliamentary procedures, agricultural organization, and judging competitions. This course fulfills the CUSD graduation requirement for life science.  <b>Prerequisite:</b> None.
9-12	Biology & Sustainable Ag (P)	Studies include plant and animal life, their relationship to one another, and to humans in their environment. Using agriculture as the model this class takes biology to the applied level. <b>Prerequisite:</b> None.
10-11	Chemistry and Agriscience (P) <b>Dual Enrollment PLS2/Soil Science</b>	Studies include the exploration of the physical and chemical nature of soil as well as the relationships between soil, plants, animals, and agricultural practices. <b>Prerequisite:</b> Agricultural Biology, Biology or Honors Biology.
11	Food Science (P)	Studies include the application of the fundamental scientific principles to the research, development, manufacturing, packaging, storage, and marketing of food products. <b>Prerequisite:</b> Math 1, Ag Biology or Biology.

11-12	Adv.Inter-disciplinary Science for Sustainable Agriculture (HP)	Studies include the design systems and experiments to solve agricultural management issues currently facing the industry. <b>Prerequisite:</b> Successful completion of life science and physical science.
<b>ANIMAL SCIENCE</b>		
Year in School	Pathway Course	Description
9-12	Biology & Sustainable Ag (P)	Studies include plant and animal life, their relationship to one another, and to humans in their environment. Using agriculture as the model for this class takes biology to the applied level. <b>Prerequisite:</b> None.
9-10	Agricultural Science 1	This course is designed for the student interested in the field of agriculture. Topics covered include animal science, plant science, ornamental horticulture, public speaking, record keeping, parliamentary procedures, agricultural organization, and judging competitions. This course fulfills the CUSD graduation for life science.  <b>Prerequisite:</b> None.
11-12	CDE Animal Science (P) <b>Dual Enrollment Animal Science 1</b>	Studies include the principles of animal science focusing on areas of livestock production, anatomy, physiology, reproduction, nutrition, respiration, and genetics. <b>Prerequisite:</b> Successful completion of Algebra 1, Biology 1AB or Ag Biology.
11-12	*ROP Veterinary Science (P)	Studies include entry-level skills to work in animal care facilities. Students will receive instruction in the identification of animal breeds, proper health, and safety procedures. <b>Prerequisite:</b> Biology (P).
<b>PLANT and SOIL SCIENCE</b>		
Year in School	Pathway Course	Description
9-10	The Art and History of Floral Design (P) <b>Dual Enrollment Environmental Horticulture 37</b>	Studies include the application and artistic approach to floral design. This class involves the fundamentals of floral design theory, techniques, and skills currently practiced in the floral design industry. <b>Prerequisite:</b> None.
9-12	Biology & Sustainable Ag (P)	Studies include plant and animal life, their relationship to one another, and to humans in their environment. Using agriculture as the model for this class takes biology to the applied level. <b>Prerequisite:</b> None
11-12	Ornamental Horticulture	This project-based course teaches students to design, install, and maintain landscaped areas from small gardens to large parks. During the design phase, students learn drafting skills for layout and design of landscapes as well as proper plant usage when working with grass, shrubs, flowers, and trees. <b>Prerequisite:</b> Biology (P).
11-12	Plant Production Management (P)	This course encompasses learning the farming practices of row crops, orchard production, vineyard production, safe transport methods, quality control and fresh fruit grading/evaluations. At the conclusion of the year, students will have an opportunity to market and sell the produce/ projects at the McFarlane-Coffman Agriculture Center.  <b>Prerequisite:</b> Sustainable Agriculture Biology, Agriculture Soil and Chemistry, and Botany.
11-12	Advanced Floral Design	This course will build upon the prerequisite course, The Art and History of Floral Design. Advanced Floral Design will increase the focus on the art design, handling of cut flowers, the mechanics of floral design, and the effects of retail in the floral industry. Students will learn about building and designing displays, advertising, marketing, pricing and sales. Students will also develop floral design skills for use in industries such as wedding, sympathy, and event floral work.  <b>Prerequisite:</b> The Art and History of Floral Design.

**CHILD DEVELOPMENT**

Year in School	Pathway Course	Description
10	Exploration of Child and Adolescent Literature (HP)	Exploration of Child and Adolescent Literature is a grade 10 English Language Arts college preparatory course integrated with the Education Pathway standards. This course allows students to utilize Language Arts skills to investigate and evaluate the value and purpose of world literature for children and adolescents. Students synthesize knowledge of the developmental stages of physical, intellectual, social, and emotional development with an understanding of appropriate teaching materials and readings for each of the stages. <b>Prerequisite:</b> A 2.50 grade point average or higher.
11-12	*ROP Careers in Child Development <b>Dual Enrollment Child Dev 1</b>	Studies include the preparation to work in fields dealing with young children and developmental stages of children before birth to age 12. Students gain firsthand experience through classroom and worksite learning, job shadowing, and tours that enable them to determine the benefits of an education-related career. <b>Prerequisite:</b> Excellent attendance and citizenship.

**EDUCATION**

11	Contemporary Issues in Education (HP)	Contemporary Issues in Education is a college preparatory grade 11 English course integrated with the Education Pathway standards of the Education, Child Development, and Family Services sector which allows students to see where the skills of English intersect with the elements of education. Students conduct research, closely read and analyze complex texts, evaluate instructional methodology and philosophy, and create a portfolio of reflections, activities, and compositions that, when synthesized, serve as the foundation for three capstone projects. <b>Prerequisite:</b> A 2.50 grade point average or higher.
11-12	*ROP Careers in Education w/ English 11 or 12 (P) <b>Dual Enrollment Education 10</b>	Studies include the nature and scope of the school system, the duties and opportunities of the professional teacher, factors relative to success in teaching, and credentialing requirements. <b>Prerequisite:</b> Grade of "C" or better in English 10, and English 11. Excellent attendance and behavior records in previous grade levels required.

**EMERGENCY RESPONSE**

Year in School	Pathway Course	Description
11-12	*ROP Fire Fighting Technology I <b>Dual Enrollment Seniors Only Fire Tech 1</b>	Studies include preparing students for firefighting and related tasks. Students learn about firefighting organizations, use and handling of equipment, protection and safety, fire behavior and extinguishing methods. <b>Prerequisite:</b> Emergency Medical Responders recommended.
12	*ROP Fire Fighting Technology II <b>Dual Enrollment Seniors Only Fire Tech 1</b>	Studies include the reinforcement of concepts from Fire Fighting Technology I and an increasing emphasis on leadership. <b>Prerequisite:</b> Fire Fighting Technology I.

**PATIENT CARE**

Year in School	Pathway Course	Description
11	*ROP Medical Careers (P)	Studies include learning of transferable skills related to entry-level health occupations, exploration of career options in the health industry, and becoming knowledgeable of post-secondary educational requirements. <b>Prerequisite:</b> Completion of Biology (P) with a grade of "C" or higher.
12	*ROP Health and Medical Wellness (P) <b>Dual Enrollment Medical Terminology</b>	This course will explore the many facets of public and medical health. Content will relate to individuals, community, careers, and institutions directly involved with health and wellness issues. Students will explore the domains of health including psychosocial, physical, environmental elements and the impact on a person's wellness. <b>Prerequisite:</b> Maintain an overall GPA of 2.5 or higher.

## PUBLIC SAFETY

Year in School	Pathway Course	Description
11-12	*ROP Criminal Investigation	Studies include an awareness of the various components of criminal investigation, with emphasis placed on the development of attitudes, skills and competencies related to criminal investigation. <b>Prerequisite:</b> Grade of "C" or higher in English 10, and English 11.
11-12	*ROP Criminal Justice	Studies include the awareness of career options (attorney, police officer, probation officer) and information in the area of law enforcement and private security for interested students. <b>Prerequisite:</b> Grade of "C" or higher in English 10, and English 11.

## CLOVIS HIGH SCHOOL

### Pathways

CHILD DEVELOPMENT		
Year in School	Pathway Course	Description
10	Exploration of Child and Adolescent Literature (HP)	Exploration of Child and Adolescent Literature is a grade 10 English Language Arts college preparatory course integrated with the Education Pathway standards. This course allows students to utilize Language Arts skills to investigate and evaluate the value and purpose of world literature for children and adolescents. Students synthesize knowledge of the developmental stages of physical, intellectual, social, and emotional development with an understanding of appropriate teaching materials and readings for each of the stages. <b>Prerequisite:</b> A 2.50 grade point average or higher.
11-12	*ROP Careers in Child Development <b>Dual Enrollment Child Dev 1</b>	Studies include the preparation to work in fields dealing with young children and developmental stages of children before birth to age 12. Students gain firsthand experience through classroom and worksite learning, job shadowing, and tours that enable them to determine the benefits of an education-related career. <b>Prerequisite:</b> Excellent attendance and citizenship.
DESIGN, VISUAL, AND MEDIA ARTS		
Year in School	Pathway Course	Description
10	Introduction to Digital Photography (P)	This is an introduction course to digital photography. Topics include digital camera operations, lighting technique, aesthetics, Photoshop, Light-room, and portfolio development. Students will explore exposure systems using aperture, shutter speed, and ISO combinations. <b>Prerequisite:</b> None
11-12	Digital Photo II	This course has an emphasis in Adobe Photoshop in association with Digital Photography. The focus of this course is in using Photoshop and developing relationships with clients. <b>Prerequisite:</b> Introduction to Digital Photography with a C grade or better.
EDUCATION		
11	Contemporary Issues in Education (HP)	Contemporary Issues in Education is a college preparatory grade 11 English course integrated with the Education Pathway standards of the Education, Child Development, and Family Services sector which allows students to see where the skills of English intersect with the elements of education. Students evaluate instructional methodology and philosophy, and create a portfolio of reflections, activities, and compositions that, when synthesized, serve as the foundation for three capstone projects. <b>Prerequisite:</b> A 2.50 grade point average or higher, <u>AND</u> at least one of the following:  Exploration of Child and Adolescent Literature with a “C” grade or higher, member of Educators Rising, participant in summer enrichment activities offered to Education Pathway students, or recommendation by Education Pathway instructor.
11-12	*ROP Careers in Education w/ English 11 or 12 (P) <b>Dual Enrollment Education 10</b>	Studies include the nature and scope of the school system, the duties and opportunities of the professional teacher, factors relative to success in teaching, and credentialing requirements. <b>Prerequisite:</b> Grade of “C” or better in English 10, and English 11. Excellent attendance and behavior records in previous grade levels required.
RESIDENTIAL and COMMERCIAL CONSTRUCTION		
Year in School	Pathway Course	Description
9-10	Fundamentals of Carpentry	This is an introductory course which students will learn safe, efficient use of hand and power tools in woodworking/construction. This course is open to 9 <sup>th</sup> grade students. <b>Prerequisites:</b> None
10-12	Basic Metal Manufacturing	Studies include the basic principles of metal welding and forming to finish construction projects. <b>Prerequisite:</b> None.

9-12	Construction Technology 1 – Introduction	This course involves students in projects and problem-based learning experiences that introduce the world of construction. <b>Prerequisite:</b> Completion of Math 1 or concurrent enrollment.
11-12	*Building Trades Internship	This course is an introduction to construction. It begins with Fundamentals of Construction and progresses to twelve spin-off specialty building trades areas. Each specialty area covers basic skills necessary for entry-level employment. Through hands-on, competency-based program, and internships students will have the opportunity to learn the basic skills required, as well as an understanding of the common terminology. <b>Prerequisite: None</b>
11-12	Building Information Modeling (P)	Building Information Modeling is designed as a single period art course for secondary students focusing on the drafting, design and building information modeling aspects of construction. The emphasis is on expressing creativity in a visual form by: (1) reviewing and applying the elements and principles of design and by (2) gaining a deeper insight into inspirations, theoretical elements and principles behind creative design. Additional emphasis will be placed on logical reasoning, visualization, and practical application using 1, 2, and 3-point perspective, color applications, Computer Aided Drafting and 3-D modeling. <b>Prerequisites:</b> Sophomore, Junior or Senior standing; one year of math.
11-12	*Building Scaled Structures (HP)	This course has been developed to integrate skills and concepts from the Building and Construction trades with applied mathematics and English. As a natural progression, students will apply the craft skills required to design and build a variety of scaled structures that meet current code requirements. In addition, students will make real-world connections between construction, math, and English using written projects, construction documents that include creating blueprints, project packets, and student-centered construction projects. <b>Prerequisite:</b> 1 year Construction Technology; concurrent enrollment in Math 2.
11-12	*ROP Electrical Systems – Sound and Communication	Studies include the exploration of computers and computer networks, video security surveillance, burglar alarms, fire alarms, and an assortment of electronic systems. <b>Prerequisite:</b> None.

### SYSTEMS DIAGNOSTICS, SERVICE, and REPAIR

Year in School	Pathway Course	Description
9-12	Basic Auto	This course provides students with information and activities that will stimulate understanding of the automobile and the automotive industry. It covers information regarding components of the automobile and how they work together as well as general principles and basic service. <b>Prerequisite:</b> None.
10-12	Auto 2	Studies include the principles of engines, chassis, electrical systems, brake, and suspension systems. <b>Prerequisite:</b> Basic Auto 1 with grade of “C” or higher.
10-12	Auto 3	This course covers two related areas of the automobile electrical systems and engine performance. Electrical systems involve the detailed study of electrical fundamentals: starting, charging, ignition, lighting, and auxiliary systems. Engine performance deals with the principles of engine compression, ignition, and carburetion. Students will learn to work with electrical test equipment commonly used in the industry. <b>Prerequisite:</b> Auto 2 with grade of “C” or higher.
11-12	*ROP Auto Systems Technology <b>Dual Enrolled Auto Tech 9</b>	This auto systems course provides students practical hands-on experience in diagnosing, troubleshooting and service procedures in the automotive field. The course also covers shop practice of maintenance and repair in the automotive specialty areas. Along with classroom work, this class will consist of a series of projects to be completed on automobiles. All repair jobs will be approved and assigned by the instructor with some students specializing in certain interest areas. <b>Prerequisite:</b> Auto 3 with grade “C” or higher recommended.

## CLOVIS NORTH HIGH SCHOOL

### Pathways

CHILD DEVELOPMENT		
Year in School	Pathway Course	Description
10	Exploration of Child and Adolescent Literature (HP)	Exploration of Child and Adolescent Literature is a grade 10 English Language Arts college preparatory course integrated with the Education Pathway standards. This course allows students to utilize Language Arts skills to investigate and evaluate the value and purpose of world literature for children and adolescents. Students synthesize knowledge of the developmental stages of physical, intellectual, social, and emotional development with an understanding of appropriate teaching materials and readings for each of the stages. <b>Prerequisite:</b> A 2.50 grade point average or higher, <u>AND</u> at least one of the following.
11-12	*ROP Careers in Child Development <b>Dual Enrollment Child Dev 1</b>	Studies include the preparation to work in fields dealing with young children and developmental stages of children before birth to age 12. Students gain firsthand experience through classroom and worksite learning, job shadowing, and tours that enable them to determine the benefits of an education-related career. <b>Prerequisite:</b> Excellent attendance and citizenship.
EDUCATION		
11	Contemporary Issues in Education (HP)	Contemporary Issues in Education is a college preparatory grade 11 English course integrated with the Education Pathway standards of the Education, Child Development, and Family Services sector which allows students to see where the skills of English intersect with the elements of education. Students conduct research, closely read and analyze complex texts, evaluate instructional methodology and philosophy, and create a portfolio of reflections, activities, and compositions that, when synthesized, serve as the foundation for three capstone projects. <b>Prerequisite:</b> A 2.50 grade point average or higher.
11-12	*ROP Careers in Education w/ English 11 or 12 (P) <b>Dual Enrollment Education 10</b>	Studies include the nature and scope of the school system, the duties and opportunities of the professional teacher, factors relative to success in teaching, and credentialing requirements. <b>Prerequisite:</b> Grade of "C" or better in English 10, and English 11. Excellent attendance and behavior records in previous grade levels required.
PATIENT CARE		
Year in School	Pathway Course	Description
11	*ROP Medical Careers (P)	Studies include learning of transferable skills related to entry-level health occupations, the exploration of career options in the health industry, and becoming knowledgeable of post-secondary educational requirements. <b>Prerequisite:</b> Completion of Biology AB with a grade of "C" or higher.
12	*ROP Health and Medical Wellness (P) <b>Dual Enrollment Medical Terminology</b>	This course will explore the many facets of public and medical health. Content will relate to individuals, community, careers, and institutions directly involved with health and wellness issues. Students will explore the domains of health including psychosocial, physical, environmental elements and the impact on a person's wellness. <b>Prerequisite:</b> Maintain an overall GPA of 2.5 or higher.
11-12	*ROP Rehabilitation Therapy Careers (P) <b>Dual Enrollment Kinesiology 22</b>	This course is designed to provide the student with opportunities to learn transferable skills related to entry-level occupational and physical therapy occupations, explore career options, and become knowledgeable with post-secondary educational requirements as related to such career options. The course introduces the student to therapy careers including occupational therapy, physical therapy, and other prominent therapy careers, placing an emphasis on a set of core skills and knowledge applicable to many health care disciplines; desirable employment attributes and job-seeking skills are addressed. <b>Prerequisite:</b> Biology, and Anatomy & Physiology are required.

<b>PRODUCT INNOVATION and DESIGN</b>		
Year in School	Pathway Course	Description
9-12	Computer Aided Design and Engineering (P)	This is a 3D modeling course utilizing <i>SolidWorks</i> ® that focuses on precision in design and engineering combined with programming to create tangible products using the Axiom 3D printers and the Velox CNC routers. Although not part of the pathway, this course compliments the technology and engineering concepts taught in the progression of courses. <b>Prerequisite:</b> Grade of B or better in Math 1 (or B or A in higher level math course)
11-12	*ROP Manufacturing and Product Design	This course teaches safe use of machinery, machining processes, essential elements of mechanical systems basic hand and power tools, and the fundamentals of the engineering design process. <b>Prerequisite:</b> Grade B or better in Math 1 (or B or A in a higher-level math course) and CAD and Engineering (or proof of competency by exam).
<b>SOFTWARE and SYSTEMS DEVELOPMENT</b>		
Year in School	Pathway Course	Description
9-10	Exploring Computer Science (P)	Exploring Computer Science is a yearlong course consisting of six units, approximately six weeks each. The course was developed around a framework of both computer science content and computations. <b>Prerequisite:</b> Advanced Math 8/Math 1, grade “B” or higher.
10-12	AP Computer Science Principles	AP Computer Science Principles is a course that delves into five specific aspects of computer science including: Internet - how the multi-layered systems work; Digital Information – use of a variety of tools; Big Data and Privacy - how to research current events; and Building Apps - how to create a series of applications. <b>Prerequisite:</b> Grade B or higher in Math 1, or a Grade B or A in a higher-level math course.
11-12	AP Computer Science A (HP)	This course is an introduction to computer science using Java programming language. Successful completion of this course will prepare students for the AP College Board exam in May. <b>Prerequisite:</b> Math 2 with grade “B” or higher.

## CLOVIS WEST HIGH SCHOOL

### Pathways

CHILD DEVELOPMENT		
Year in School	Pathway Course	Description
10	Exploration of Child and Adolescent Literature (HP)	Exploration of Child and Adolescent Literature is a grade 10 English Language Arts college preparatory course integrated with the Education Pathway standards. This course allows students to utilize Language Arts skills to investigate and evaluate the value and purpose of world literature for children and adolescents. Students synthesize knowledge of the developmental stages of physical, intellectual, social, and emotional development with an understanding of appropriate teaching materials and readings for each of the stages. <b>Prerequisite:</b> A 2.50 grade point average or higher.
11-12	*ROP Careers in Child Development <b>Dual Enrollment Child Dev 1</b>	Studies include the preparation to work in fields dealing with young children and developmental stages of children before birth to age 12. Students gain firsthand experience through classroom and worksite learning, job shadowing, and tours that enable them to determine the benefits of an education-related career. <b>Prerequisite:</b> Excellent attendance and citizenship. (Students travel to Clovis North for this class)
EDUCATION		
11	Contemporary Issues in Education (HP)	Contemporary Issues in Education is a college preparatory grade 11 English course integrated with the Education Pathway standards of the Education, Child Development, and Family Services sector which allows students to see where the skills of English intersect with the elements of education. Students conduct research, closely read and analyze complex texts, evaluate instructional methodology and philosophy, and create a portfolio of reflections, activities, and compositions that, when synthesized, serve as the foundation for three capstone projects. <b>Prerequisite:</b> A 2.50 grade point average or higher.
11-12	*ROP Careers in Education w/ English 11 or 12 (P) <b>Dual Enrollment Education 10</b>	Studies include the nature and scope of the school system, the duties and opportunities of the professional teacher, factors relative to success in teaching, and credentialing requirements. <b>Prerequisite:</b> Grade of "C" or better in English 10, and English 11. Excellent attendance and behavior records in previous grade levels required.
FINANCIAL SERVICES		
Year in School	Pathway Course	Description
9-12	Computer Applications	This course is for students who desire keyboarding skills for college and personal use. Students will learn keyboard and word processing applications, databases, spreadsheets, graphics, and basic desktop publishing skills. <b>Prerequisite:</b> None
10-12	Financial Literacy (P)	This course provides background and knowledge of essential, necessary financial skills for all students. It is designed to inform, alert, and educate students in the concepts of personal finance and money management. Core concepts enable students to implement decision-making skills necessary to become wise, knowledgeable consumers, savers, investors, users of credit, money managers, citizens, and members of a global workforce and society. <b>Prerequisite:</b> Computer Applications or demonstration of readiness.
11-12	Intro to Finance	This course provides students with the foundational knowledge and skills to make effective financial decisions, use career information, and manage career plans. Within this course, students practice the essential knowledge and skills common to all pathways in the Business and Finance Industry Sector, including cash management technique, the role of managerial accounting and use of planning and control principles to evaluate an organization. Communication skills and basic mathematical concepts are reinforced in this course. <b>Prerequisite:</b> Financial Literacy
11-12	Business & Financial Services Internship (P)	This course outlines concepts pertaining to a variety of business, related financial services. Students learn processes for loans, credit, and payment services to business and individuals. In addition, money and banking, lending fundamentals, and federal regulations are explored. <b>Prerequisite:</b> Financial Literacy

11-12	*ROP Small Business Management	Studies include the development of both business and marketing plans essential to the operation of a successful business. <b>Prerequisite:</b> Keyboarding and computer experience is helpful.
<b>PERFORMING ARTS</b>		
Year in School	Pathway Course	Description
10-11	Drama 2 Technical Theater (P)	The student will study and apply the principles of group dynamics and collaboration during the pre-production through post production process of Theatrical Production. This course provides instruction in the implementation of theatrical designs for sets, lights, sound, properties, costumes, and makeup.  <b>Prerequisite:</b> Drama 1 with “B” or higher, or permission of instructor
11-12	Advanced Technical Theater	This advanced technical theater arts course is designed to build upon skills learned in Drama 2 Technical Theater for students interested in becoming designers and leaders in the Technical Theater Arts world.  <b>Prerequisite:</b> Drama 2 Technical Theater.
11-12	*ROP Performing Arts (w/English 11 or 12 (P))	This class is a marriage of drama, music, and technology. It will prepare students for a possible career in the entertainment industry through all aspects of the production of a Broadway musical from preliminary choice of show, construction, lighting, and marketing to final accounting at the close of the run.  <b>Prerequisite:</b> Recommended Drama 2 Technical Theater with “B” or higher, or permission of instructor.
<b>SYSTEMS DIAGNOSTICS, SERVICE and REPAIR</b>		
Year in School	Pathway Course	Description
9-12	Basic Auto	This course provides students with the information and activities which will stimulate understanding of the automobile and the automotive industry. It covers information regarding components of the automobile and how they work together, as well as general principles, and basic service. <b>Prerequisite:</b> None
10-12	Auto 2	Studies include the principles of engines, chassis, electrical systems, brake, and suspension systems. <b>Prerequisite:</b> Basic Auto 1 with grade of “C” or higher.
10-12	Auto 3	This is a year-long course covering two related areas of the automobile electrical systems and engine performance. One part of the course deals with electrical needs of the automobile and related components. It involves detailed study of electrical fundamentals: starting, charging, ignition, lighting and auxiliary systems. Engine performance deals with the principles of engine compression, ignition, and carburetion. Students will learn to work with electrical test equipment commonly used in the industry.  <b>Prerequisite:</b> Auto 2 with grade of “C” or higher.
11-12	*ROP Engine Technology	Students gain practical, hands-on experience in diagnosing, troubleshooting, and servicing procedures with particular emphasis on engine service and repair. The course also covers the shop practice of maintenance and repair in the following areas: drive trains, axles, suspension, steering, brakes, and air conditioning. Students develop their skills through classroom instruction and a series of assigned projects.  <b>Prerequisite:</b> Basic Auto or Auto 2 recommended.
11-12	*ROP Diesel Engine Technology	This course is designed to train students for employment opportunities available within the agricultural/industrial industry. This course emphasizes skills necessary in the field of diesel equipment mechanics where students learn how to perform major overhaul and tune-up of diesel engines.  <b>Prerequisite:</b> Site requirements, or instructor permission.



# Center for Advanced Research & Technology

## *PROGRAMS*

BIOMEDICINE		
Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	<b>Year One:</b> Clinical Anatomy & Physiology (P) Adv. Topics in Medicine (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students explore issues in medical science and human anatomy/physiology through dissections, medical caser studies and research projects. Students investigate healthy body functions and its reaction to diseases and collaborate with medical professionals.  <b>Prerequisite(s):</b> “C” or better in Biology, Chemistry, Algebra/ Math 1 and English.
12 <sup>th</sup>	<b>Year Two:</b> Adv. Topics in Medical Research (P) Biochemistry (P) English 12 Honors (HP) Technology Applications 2	
BIOTECHNOLOGY		
Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	Biotechnology Accelerated & Research (P) Chemistry (P) OR AST Science (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students apply DNA technology to genetically engineer bacteria, solve medical mysteries, clone tissues, and diagnose genetic diseases. Students explore science fields in medicine, biology, chemistry, agriculture, and environmental science.
ENVIRONMENTAL SCIENCE		
Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	Zoology (P) Environmental Research & Technology (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications <b>Uni-Track CSUF concurrent college credits available</b>	Students participate in hands-on projects relating to careers in marine biology, wildlife rehabilitation, air quality, river ecology, alternative energy, and forests. Students work with environmental professionals and government agencies to complete scientific projects.
BUSINESS AND FINANCE		
Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	Economics and Finance (P) OR Money and Banking (P) U.S. History or Gov. and Econ (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students research and learn about business and finance on a global and local level. They gain real-world experience from industry leaders, guest speakers and internships. Students develop leadership skills and learn about careers in entrepreneurship and in various areas of the business and finance sector.

## INTERACTIVE GAME DESIGN

Year in School	Pathway Course	Description
12th	Interactive Game Design (2 periods) (P) Exp English 12 Honors (HP) Technology Applications <b>Clovis Community concurrent college credits available</b>	Students learn about graphic design, animation, modeling, games-play and story design and use industry software to create original games rendered in 2D and 3D.  <b>Prerequisite(s):</b> Database, Graphics, Programming, or Web Design.

## MARKETING, ADVERTISING, AND ENTREPRENEURSHIP

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12th	Economics of Marketing (P) Gov. and Economics or US History (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students learn how to develop a brand through product development and pricing strategies, promotional campaigns and global product placements. Online advertising is a focus and industry-standard technology is used to conduct market research, create advertising products and manage social media campaigns.

## CYBERSECURITY

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12th	Cybersecurity 1 (P) (2 periods) English 11 (P) & Exp 12 Honors (HP) Technology Applications <b>Fresno City concurrent college credits available</b>	Students learn to design, build, secure, and analyze computer networks, media centers, and security systems. This lab offers certifications in CIW, WSA, Comptia's A+ and security.

## DIGITAL MEDIA AND GRAPHIC DESIGN

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12th	<b>Year One:</b>  Digital Media and Graphic Design (2 periods) (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students develop skills in message design including color, typography and design principles. Students investigate graphic and web techniques in cooperative teams like corporate settings. Industry-standard software is used to create original products.
12th	<b>Year Two:</b>  Adv. Studies in Media Communication & Design (P) (2 periods) Exp 12 Honors (HP) Technology Applications 2	

## DIGITAL VIDEO PRODUCTION AND BROADCAST

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12th	<b>Year One:</b>  Digital Video (P) (2 periods) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students develop skills in television and film production using industry-standard software packages while engaging in hands-on and integrated curriculum. Students work on all stages of production while creative products such as short films, advertisements, journalism broadcasts and documentaries.
	<b>Year Two:</b>  Adv. Studies in Media Communication & Design (P) (2 periods) English 11 (P) & Exp 12 Honors (HP) Technology Applications	

## ENGINEERING, MANUFACTURING AND ROBOTICS

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	<b>Year One:</b> Engineering I (P) Physics Technology (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Creativity, knowledge, and skill are used to develop solutions to real world mechanical engineering problems. Working as individuals and in small teams, students design, test and evaluate working prototypes of their solutions. Students will learn how to bring engineering designs into the physical world using a variety of engineering tools, skills, and practices including cutting edge CAD and CAM solutions. CNC machines, 3D printers, and laser cutters are just a few of the technologies that will be used to manufacture student-engineered design solutions. Students will be introduced to basic electronics, microcontrollers and computer programming while learning to design, build, and program robotic and automation devices.  <b>Recommended Prerequisites:</b> “C” or better in English and Math 2
12 <sup>th</sup>	<b>Year Two:</b> currently not offering a Y2	

## WEB APPLICATIONS AND DEVELOPMENT

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	Programming (P) (2 periods) Advanced Programming English 11 (P) & Exp 12 Honors (HP) Technology Applications <b>Clovis Community concurrent college credits available</b>	From smartphones and video games to music, medicine, and more, computer science touches everything we do. Students will discover how the Internet works, dig into cryptography, and build their own apps. They will be introduced to the broader field of Computer Science while becoming certified to design, develop, and deploy web apps using developer tools such as CSS, HTML, JavaScript and SQL. Students apply the concepts of object-oriented programming, scripting, and user-interface design to ensure that end-users have a positive experience and keep returning to their applications.

## LAW AND POLICY

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	Law and Public Policy (P) Government & Economics (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students explore major aspects of constitutional, criminal, and civil law. Projects teach students about individual rights, criminal procedure, how laws are made, and how to make a legal argument. Students research and discuss current and historical controversial issues relating to the law and participate in mock trials and an advocacy project with mentor attorneys.

## FORENSIC RESEARCH AND BIOTECHNOLOGY

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	Forensic Research and Biotechnology (P) Physical Forensic Science (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications	Students investigate science techniques to solve intriguing problems connected to crime and the law. Interactive physical evidence simulations include topics such as: DNA/biotechnology, fingerprinting ballistics, and scene reconstruction.  <b>Recommended prerequisites:</b> “C” or better in Biology, Algebra I/Math 1 and English.

## PSYCHOLOGY AND HUMAN BEHAVIOR

Year in School	Pathway Course	Description
11 <sup>th</sup> – 12 <sup>th</sup>	Psychology of Human Behavior (P) Neuroscience (P) English 11 (P) & Exp 12 Honors (HP) Technology Applications <b>Clovis Community concurrent college credits available</b>	Students investigate the inner workings of the human mind on both physiological and chemical levels through the study of the brain and its components. Projects provide an interactive experience and experimental research using human test subjects. Students examine topics of learning, psychological perspectives, behavior theories, drug abuse, and mental disorders.