



www.cart.org

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Frequently Asked Questions

How is the CART program different from my high school?

CART offers a half-day program for juniors and seniors. Students choose a career-focused lab that offers integrated curriculum that is project-based, features community involvement and use of technology. Students work in groups and interact with mentors from the community. CART offers two sessions. The morning session is from 7:30-10:30 am and the afternoon session is from 12:30-3:30 pm.

What are the prerequisites for applying to CART?

CART looks for students who have good attendance and are on track for graduation. In addition, students must have successfully completed Biology, Algebra 1 and two years of English. Some programs require additional prerequisites.

What about transportation and food?

Each district provides bus transportation to and from all the high schools. There is a snack bar and vending machines that provide food for students.

Can I earn college credit at CART?

Agreements with CSUF and SCCC allow CART students to earn college credits in some labs. Classes at CART are college prep classes and most are UC approved. See chart below for details.

How many credits will I earn at CART?

CART provides an opportunity to earn 20 credits per semester. Each student takes four classes at CART.

Credits and Certifications

CART COURSE	GRADUATION REQUIREMENT	COLLEGE CREDIT	GRADUATION CREDITS	UC Approved College Prep	CERTIFICATION
Advanced Network Management	Elective	FCC/CSUF	20		Yes
Advanced Science Topics	Elective		10	Yes-Science	
Advanced Topics in Medicine	Elective		10	Yes-Science Elective	
Anatomy and Physiology	Life Science		10	Yes-Science	
Biochemistry	Physical Science		10	Yes-Science	
Bioengineering I	Elective		10	Yes-Science Elective	
CART Technology Applications	Elective		10		
Chemistry	Physical Science		10	Yes-Science	
Computer Science Foundations	Elective		20		Yes
Digital Media and Graphic Design	Fine Art		20	Yes-Fine Art	
Digital Video Production and Broadcasting	Fine Art		20	Yes-Fine Art	
Economics of Marketing and Advertising	Elective		10	Yes-Social Science Elective	
English 11 and 12	English		10	Yes-English	
Engineering	Elective		10	Yes-Interdisciplinary	
Environmental Research and Technology	Elective	CSUF	10	Yes-Science Elective	
Forensic Research and Biotechnology	Elective		10	Yes-Science Elective	
Global Economics and Finance	Elective	CSUF	10	Yes-Social Science Elective	
Government and Economics	Social Science		10	Yes-Social Science	
Interactive Game Design	Elective		20		
Law and Order and Public Policy	Elective		10	Yes-Social Science Elective	
Modern American Economy	Elective		10	Yes-Social Science Elective	
Neuroscience	Elective		10	Yes-Science Elective	
Physics	Physical Science		10	Yes-Science	
Physics and Technology	Physical Science		10	Yes-Science Elective	
Product Development	Elective		10	Yes-Other	
Psychology and Human Behavior	Elective		10	Yes-Science Elective	
Robotics and Electronics	Elective		10	Yes-Elective	
Topics Of Money and Banking	Elective		10	Yes-Social Science Elective	
US History	Social Science		10	Yes-Social Science	
Zoology	Life Science		10	Yes-Science	



THE CENTER FOR
ADVANCED
RESEARCH AND
TECHNOLOGY

Put your Passion into Action



CART is a Joint Powers Authority established by Clovis Unified and Fresno Unified in 1997 to provide a project-based, interdisciplinary, career-focused curriculum that features community involvement and infuses technological skills. The program has achieved national recognition. It was named a Microsoft School of Excellence and received a Golden Bell Award from the California School Boards Association for curriculum innovation. CART was named one of 20 successful innovative programs in a USC study. CART is a California Certified Linked Learning Pathway to College and Career Success.

An Affirmative Action/Equal Opportunity Employer
Notice of Nondiscrimination Fresno Unified and Clovis Unified School Districts do not discriminate on the basis of race, color, sex, disability or national origin in admission or in access to and treatment of employment in its programs and activities as required by Title VII.

COURSE OFFERINGS
2015-2016

Environmental Science and Field Research ROP

Supported by Grundfos

Students take part in several field trips in order to experience the San Joaquin Valley, San Joaquin River, Pacific Coast, and the Sierra Nevada Mountains. Students will carry out hands-on projects relating to careers in marine biology, wildlife rehabilitation, air quality, river ecology, alternative energy, and forests. Students will have the opportunity to work with environmental professionals and government agencies to complete scientific projects. Some examples are growing native plants, restoring native wildlife habitats, rehabilitating injured and orphaned wildlife species, monitoring forests, experimenting in wetlands and conducting studies of tide pools and beaches.

Students take:

- English 11 (P) or 12 (P)
- Chemistry (P) or Zoology (P)
- Environmental Research and Technology (P)
- CART Technology Applications



Business and Finance ROP

(AM only)

In addition to learning how to manage and invest money, students also investigate what it takes to create and own a business. Students study human behaviors of producing, distributing, and consuming materials, goods, and services in a world of limited resources. They learn how the financial services industry works as they strengthen the analytical, technical and communication skills needed to succeed in any economy.

Students take:

- English 11 (P) or 12 (P)
- US History (P) or Government and Economics (P)
- Money and Banking (P)
- CART Technology Applications



Hospitality and Event Management ROP

(PM only)

Students learn the skills needed to succeed in the world of event management and customer service. Through hands-on projects, students gain knowledge needed to begin careers in restaurant management, special event planning, and recreation and tourism.

Students take:

- English 11 (P) or 12 (P)
- US History (P) or Government and Economics (P)
- Money and Banking (P)
- CART Technology Applications



Network Management and Computer Maintenance ROP

Students gain solid foundational skills to be successful in the fast-paced world of Information Technology. Focus is placed on hardware (motherboards, memory, hard drives, etc.), OS (Windows 7, server technologies), and networking (topology, router, LAN and WAN switching theory). Students are exposed to current trends (Web apps, virtual drives) and IT business contacts. Students may take the industry recognized Cisco Certified Network Associate (CCNA) exam.

Students take:

- English 11 (P) or 12 (P)
- Adv Network Management and Certification (2 Periods)
- CART Technology Applications



Marketing and Advertising ROP

Students explore how companies, such as Apple, Starbucks, Roxy, Nike and Dole develop their branding through product development, pricing strategies, promotional campaigns and global product placement. Students enjoy hands-on learning as they develop their own product brands and promotional campaigns, including online advertising and social media, television, radio, mobile and print advertising. Students learn industry-standard technology for conducting market research and creating advertising products. Students experience real-world learning through internships with non-profit organizations, such as I Bike Fresno, media companies and advertising agencies.

Students take:

- English 11 (P) or 12 (P)
- Government and Economics (P)
- Topics in Modern American Economy (P)
- CART Technology Applications



Web Application Development ROP

Students go beyond being a user of technology and become certified to design, develop, and deploy Rich Internet Applications, websites, and games using Web 2.0 developer tools such as Java, SQL, HTML5, CSS3, and JavaScript. They will learn the foundational skills of object-oriented programming, web design, database design, scripting, and graphical user-interface design to ensure that end-users have a positive experience and return again and again to the applications. Certifications through Microsoft, Adobe, and CIW are available.

Students take:

- English 11 (P) or 12 (P)
- Computer Science Foundations (2 Periods)
- CART Technology Applications



Psychology and Human Behavior

Students investigate the inner workings of the human mind on both physiological and chemical levels. Students explore the workings of their own minds while learning why people behave the way they do. Students consider what influences behavior, and how behavior is controlled, changed, and modified.

Students take:

- English 11 (P) or 12 (P)
- Neuroscience (P)
- Psychology of Human Behavior (P)
- CART Technology Applications



Biotechnology

Students explore biotechnology, an exploding science field that leads to high-paying jobs in medicine, biology, chemistry, agriculture, and environmental science. Students apply DNA technology to genetically engineer bacteria, solve medical mysteries, clone tissues, diagnose genetic disease, and explore drug development and testing. Students wrestle with difficult ethical issues that arise as a result of using biotechnology to solve problems. **Recommended prerequisites: "C" or better in English, Algebra 1 and Biology.**

Students take:

- English 11 (P) or 12 (P)
- Chemistry (P) or Adv Science Topics (HP)
- Bioengineering (P)
- CART Technology Applications



Multimedia—Digital Video Production and Broadcast ROP

Students develop skills in television and film production. Using industry-standard software packages (i.e. Adobe CC), students will engage in hands-on, integrated curriculum. They work on all stages of production while creating products such as short films, advertisements, journalism broadcasts, and documentaries. All multimedia students develop skills in the content and presentation of message design, the sociological impacts of media, and the stages of the production cycle.

Students take:

- English 11 (P) or 12 (P)
- Digital Video Production and Broadcasting (P) (2 Periods)
- CART Technology Applications



Interactive Game Design ROP

*Primarily for returning CART seniors or by special permission of the instructor

Students learn about graphic design, animation, modeling, gameplay and story design while working in teams to create original games and characters rendered in 2D and 3D. Students are introduced to industry standard software such as 3D Studio Max, Unity 3D, Construct 2, and have the opportunity to learn HTML5/CSS3/JavaScript programming skills. **Prerequisite(s): Database, Graphics, Programming, or Web Design.**

Students take:

- English 11 (P) or 12 (P)
- Interactive Game Design (2 Periods)
- CART Technology Applications



Law and Order and Policy

Students study the major aspects of constitutional, criminal, and civil law. Projects teach students about their individual rights, criminal procedure, how laws are made, and how to make a legal argument. Students learn how to research and discuss current and historical controversial issues relating to the law. All students have the opportunity to participate in mock trials and field trips to local and federal courthouses and law firms.

Students take:

- English 11 (P) or 12 (P)
- Government and Economics (P)
- Law and Order and Public Policy (P)
- CRTE Technology Applications



Biomedicine

Students explore issues in medical science and human anatomy/physiology through their involvement in dissections, medical case studies and research projects. Students investigate how a healthy body functions and how it reacts to disease. Students collaborate with medical professionals at various hospitals and clinics in the Fresno/Clovis area as they research a variety of medical topics. **Recommended prerequisites: "C" or better in Biology, Algebra 1 and English. *Prior or concurrent enrollment in Chemistry**

Students take:

- English 11 (P) or 12 (P)
- Anatomy/Physiology (P)
- Adv Topics in Medicine (P)
- CART Technology Applications



Multimedia—Digital Media and Graphic Design ROP

Students develop skills in communication and message design including color, typography and design principles. They investigate graphic and web techniques in cooperative teams similar to corporate settings. Design students will work on all stages of production using industry-standard software (i.e. Adobe CC) to create original products such as logos, posters, newspapers, advertisements, websites and two-dimensional animation.

Students take:

- English 11 (P) or 12 (P)
- Digital Media and Graphic Design (P) (2 Periods)
- CART Technology Applications



Engineering and Product Development ROP

(AM only) Sponsored by Grundfos

Knowledge, imagination, and creativity are used to develop solutions to real-world engineering design problems. Working in small teams, students create working prototypes of their design solutions using a variety of materials and tools, including 3D printers and CNC machines. Scientific research methods are introduced to provide design justifications and analysis. Students are introduced to industry-standard software such as SolidWorks and CAMWorks. **Recommended prerequisites: "C" or better in Algebra 1 and English.**

Students take:

- English 11 (P) or 12 (P)
- Physics and Technology (P)
- Engineering and Product Development
- CART Technology Applications



Robotics and Electronics ROP

(PM only) Sponsored by Grundfos

Students explore the fascinating and fun world of robotics, simple toys to the complex logic and articulation of environmental sensing, recording and actuating devices, and automated design. They will learn to design, build, and program a device that responds to external information. Scientific research methods are introduced to provide design justifications and analysis. They will learn to understand electronics and computer systems and basic computer programming. Students are introduced to industry-standard software such as SolidWorks and CAMWorks. **Recommended prerequisites: "C" or better in Algebra 1 and English.**

Students take:

- English 11 (P) or 12 (P)
- Physics and Technology (P)
- Robotics/Electronics (P)
- CART Technology Applications



Forensic Research and Biotechnology

Students use hands-on, investigative 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. **Recommended prerequisites: "C" or better in Biology, Algebra I and English.**

Students take:

- English 11 (P) or 12 (P)
- Chemistry (P) or Physics (P)
- Forensic Research and Biotechnology (P)
- CART Technology Applications

