ADVANCED COMMUNICATIONS

►Web Application Development ROP

YouTube, eBay, MySpace, Amazon, Google—these are some of the 21st century spaces we have created to connect friends, community, business, and information around the world. Go beyond being a user of technology and learn how to design, develop, and deploy rich internet applications using Web 2.0 developer tools such as Java, SQL, PHP, CGI, Flash, and more. Learn the foundational skills of object oriented programming, scripting, and database design, and the design principles of building a graphical user interface that end users will enjoy. Students may elect to take the AP Computer Science A exam. Recommended prerequisite: Geometry. Students take:

- English 11 (P) or 12 (P)
- Database Design
- AP Computer Science A (P)
- CART Technology Applications

►Interactive Game Design ROP

sponsored by DeVry University

Game Design requires skills in a number of areas including graphic design, programming, audio, animation, and modeling. All students have the opportunity to learn about each of these areas while working in teams to create original games and characters rendered in both two and three dimensions. Students are introduced to industry standard software such as Macromedia Flash, GameMaker, 3D Game Studio, and Autodesk 3D Studio Max. Recommended prerequisite(s): database, programming, graphics, or web design. Students take:

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

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.

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 focus lab that will offer integrated curriculum that is project based and 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.

Is CART a college prep program?
Classes at CART are college prep classes and most are UC approved. Over 95% of CART students go on to college.

When can I visit CART?
Each high school brings a bus of students to visit CART during the recruiting season. Listen for the sign up announcements.

How many credits will I earn at CART?
CART provides an opportunity to earn 20 credits per semester. Each first year student takes four classes at CART. Second year students take either 15 or 20 credits.

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 pre-requisites.

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 SCCCD allow CART students to earn college credits in some labs. See chart below for details.

Credits and Certifications

CART Course	*Graduation Requirement*	*Graduation Credits*	*UC Approved College Prep*	*College Credit*	*Certification*
Adv Network Management	elective	20		FCC / CSUF	Yes
Adv Science Topics	elective	10	Yes--Science		
Advanced Topics in Medicine	elective	10	Yes--Science elective		
Anatomy and Physiology	Life science	10	Yes--Science		
AP Computer Science A	elective	10	Yes--Elective		Yes
Architectural Design I	Art	20	Yes--Arts	FCC / CSUF	
Bioengineering I	elective	10	Yes--Science elective		
CART Technology Applications	elective	10			
Chemistry	Physical Sci	10	Yes--Science		
Database Design	elective	10 or 20			Yes
Digital Media and Graphic Design	elective	10	Yes--Arts	Willow/Internat'l	
Digital Video Production and Broadcasting	elective	10	Yes--Arts		
Modern American Economy	elective	10	Yes--Soc Sci elective		
Engineering I	elective	10	Yes--Science elective		
English 11 and 12	English	10	Yes--English		
Environmental Research and Technology	Life/Phy Sci	10	Yes--Science elective	CSUF	
Forensic Research and Biotechnology	elective	10	Yes--Science elective		
Money and Banking	elective	10	Yes--Soc Sci elective	CSUF	
Government and Economics	Soc Science	10	Yes--Social Science		
Interactive Game Design	elective	20			
Law and Order and Public Policy	elective	10	Yes--Soc Sci elective		
Sociology of Media	elective	10	Yes--Soc Sci Elective		
Multimedia Communication Design	Art	10	Yes--Arts		
Neuroscience	Life science	10	Yes--Science elective		
Physics	Physical Sci	10	Yes--Science		
Physics and Technology	Physical Sci	10	Yes--Science elective		
Psychology and Human Behavior	elective	10	Yes--Science elective		
Robotics and Electronics	elective	10	Yes--Elective		
US History	Soc Science	10	Yes--Social Science		
Zoology	Life science	10	Yes--Science		

CART

A School for Your Future

COURSE OFFERINGS

2009-2010

Center for Advanced Research and Technology

2555 Clovis Avenue
Clovis, CA 93612

559-248-7400
FAX 559-248-7423

www.cart.org

PROFESSIONAL SCIENCES

►Forensic Research and Biotechnology

Students use investigative science techniques to solve intriguing problems involving the law. Scientific evidence, DNA, fingerprinting, physical evidence, scene reconstruction, and biotechnology are used to create a picture of what happened in the past. 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

►Biomedicine

sponsored by Community Medical Centers

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 will 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.

Students take:

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

►Environmental Research and Technology ROP

sponsored by P G & E

Students take part in exciting field trips and engaging field experiences as they learn about the San Joaquin Valley and its rivers, the Monterey Bay and Pacific Coast and the Sierra Nevada Mountains. Students will carry out hands on projects relating to careers in marine biology, wildlife rehabilitation, air and water quality monitoring, alternative energy, and river restoration. Students will have the opportunity to work with professionals while they work on a variety of projects experimenting with and growing native plants, restoring native wildlife habitat in and along the San Joaquin River, rehabilitating injured and orphaned wildlife species, and conducting long term studies of rocky inter-tidal and sandy beach ecosystems. Students take:

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

ENGINEERING DESIGN

►Biomedical Engineering

sponsored by Kaiser Permanente

Get the inside track on one of the fastest growing industries. Using state-of-the-art technology, students will develop potential pharmaceutical drugs and test them, genetically engineer bacteria, perform DNA fingerprinting, manufacture DNA, explore questions related to genetic, infectious and other types of disease, look closely at environmental health issues, and wrestle with difficult ethical considerations related to cloning, stem cells, gene therapy, and genetically modified foods. 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

►Engineering and Product Development—(AM only) ROP

sponsored by Grundfos

Knowledge, imagination, and creativity are used to develop solutions to engineering design problems. Working in small teams, students create working prototypes of their design solutions using a variety of tools and materials. Laptop computers are used to make engineering drawings and create team presentations. Students take:

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

►Robotics and Electronics—(PM only) ROP

sponsored by Grundfos

Students explore the fascinating and fun world of robotics, covering 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. They will learn to understand electronics, pneumatics, and computer systems. Students take:

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

►Architectural Design ROP

Students gain instruction in planning, documentation and design as it relates to residential and commercial building. Students will follow the stages of the design process by completing projects from site analysis to finished building design. AutoCad software used.
Students take:

- English 11 (P) or 12 (P)
- Architectural Design (P) 2 periods
- CART Technology Applications

GLOBAL DYNAMICS

►Economics and Finance ROP

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

►Marketing and Advertising ROP

Students explore the dynamics of how and why people spend their money and time as well as ways to influence those decisions. They work with business professionals to produce effective marketing plans and develop strategies for local businesses. Students take:

- English 11 (P) or 12 (P)
- Government and Economics (P) or US History (P)
- Modern American Economy (P)
- 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 and 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)
- 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)
- Chemistry (P) or Neuroscience (P)
- Psychology of Human Behavior (P)
- CART Technology Applications

ADVANCED COMMUNICATIONS

► Multimedia—Digital Video Production and Broadcast ROP

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

Students take:

- English 11 (P) or 12 (P)
- Sociology of Media (P)
- Digital Video Production and Broadcasting (P)
- CART Technology Applications

►Multimedia—Graphic Arts and Web Design ROP

Students explore and develop skills in communication and message design including color, typography, and design principles. They will 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 Design Premium Suite) to create original products such as posters, websites, newspapers, brochures, and two-dimensional animation. All multimedia students develop skills in the content and presentation of message design, the psychological and sociological impacts of media, and the stages of the production cycle.

Students take:

- English 11 (P) or 12 (P)
- Sociology of Media (P)
- Digital Media and Graphic Design (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 (Vista and Windows XP), and networking (topology, router and LAN switching theory). Students are exposed to current trends (Web 2.0 technologies) 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