

# Franklin High School

Telephone Number: (916) 714-8150

[www.egusd.net/franklinhs](http://www.egusd.net/franklinhs)

## Green Renewable Energy Engineering Network Academy (GREEN)

Green Renewable Energy Engineering Network (GREEN) is an innovative program that allows students to explore renewable sources of energy through engineering and core academic courses. The GREEN Academy encourages academic achievement and environmental awareness, while developing an understanding of ecological issues. Students will gain knowledge from local engineering and environmental firms through guest speakers, site visits, and community service experiences. All coursework will provide students with opportunities to explore various career opportunities and prepare for post-secondary course work at a college or university or for advanced learning.

Throughout the three-year program students will participate in mentorship and internship programs with local businesses. Post-secondary articulation is being used to develop curriculum and receive approval for credits at local colleges and universities.

*Students enrolled in this academy must complete a sequence of Career Technical Education courses noted below as well as their core academic courses (e.g., English, mathematics, science, social science, etc.) as one cohort.*

### GREEN Academy Programs of Study

Industry Sector: Engineering and Architecture

Pathway: Engineering Design

Grade	Academic 1	Academic 2	Academic 3	CTE	Advocacy
9	N/A	N/A	N/A	Computer Tech General Business	Yes
10	English 10	Biology	World History	CADD	Yes
11	English 11	Chemistry	US History	Engineering A	Yes
12	English 12			Engineering B or Advanced CADD and Marketing	Yes

The CTE courses required for this academy are described below.

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**Green Renewable Energy Engineering Network (GREEN) Academy  
 (continued)**

The CTE courses required for this academy are described below.

Course	Class Restrictions	Credits	Description
<b>GREEN Computer Technology</b>  Course #12111	Freshman	5	This course focuses on computer technologies and their uses as applied to academic success. Students will learn keyboarding skills, word processing, computer operations, spreadsheets, database, library research technologies, and telecommunications. Students will be able to apply the skills learned in this course to complete assignments in other courses throughout their school career, by using the computer to conduct research, prepare papers, solve problems, and manage information. This course meets the Technology graduation requirement.  <b>Adopted curricular materials:</b> <i>Century 21 Computer Applications &amp; Keyboarding</i> , South Western
<b>GREEN Computer Aided Design/Drafting (CADD)</b>  Course #12100	Sophomore	10	This class is the foundation for all other CAD courses. The focus is on developing computer-aided design/drafting skills, for those with little or no CAD experience, using Auto CAD software. Students are introduced to the computer hardware and the latest development of program and components. Lectures and exercises cover all the basic functions such as colors, dimensioning, layers and blocks. Projects such as creating a vise are done to learn and practice the different drawing techniques involved. The class takes in all the fundamentals in making a full-fledged drawing, from scaling to plotting. Meets 10 credits of mathematics. Students must pass 10 credits to meet the Technology Proficiency Graduation Requirement.  <b>Adopted curricular materials:</b> <i>Applying Auto-Cad</i> , Glencoe
<b>GREEN Engineering A</b>  Course #12340	Junior	10	This course is designed for students to engage in various hands-on activities to explore the nature of assorted engineering fields. During this exploration, students will gain insight into the educational requirements of the engineering profession, required skills for most engineers, and the roles and functions of engineers. In addition, through challenging and enjoyable projects, students will learn Newton's Laws of Motion, the cornerstone of engineering. Other problem-solving projects will focus on mechanical engineering, electronic engineering, structural engineering, and electrical engineering. While utilizing the engineering design process, students will design, develop, model, and test an engineering solution based on given criteria.  <b>Adopted curricular materials:</b> No textbook assigned.
<b>GREEN Engineering B</b>  Course #12341	Senior	10	This course is designed to build on the foundation begun in Engineering A. Students continue to survey aspects of the primary engineering disciplines and principles of engineering style problem solving. The course focuses on providing necessary introductory skills mastery of AutoCADD 2D and 3D functions required to visualize and document engineering and architectural designs. Assignments reflect introductory to moderate complexity and reflect industry standards for general graphics, design drawings and technical working drawings. Traditional technical drawing concepts are presented, as well as assignments in reading and interpreting various types of technical working drawings. Students also produce one research paper and various other written assignments related to engineering/architectural problem investigations. <i>Prerequisite(s): Math I or (Algebra I) or higher mathematics and Engineering A with a C or better, or instructor approval.</i>  <b>Adopted curricular materials:</b> No textbook assigned.

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**Green Renewable Energy Engineering Network (GREEN) Academy  
(continued)**

Course	Class Restrictions	Credits	Description
<b>GREEN General Business</b>  Course #12500	Freshman	5	This course introduces students to the entire field of business careers, the function of money (making it as well as spending it), checking accounts, budgets, credit and purchasing. The course is a good foundation for other business courses.  <b>Adopted curricular materials:</b> No textbook assigned.
<b>GREEN Marketing</b>  Course #12501	Senior	5	This course allows students to gain an understanding of how the marketing functions of product, place, price, and promotion are integrated in the business environment. The marketing principles and concepts learned in class are designed to prepare motivated students who plan to major in marketing, management, or business in college, for those who have aspirations to own/operate their own business, and those who desire employment or are currently working in marketing occupations. <i>Prerequisite(s): Computer Technology.</i>  <b>Adopted curricular materials:</b> Marketing Essentials, Glencoe
<b>GREEN Drafting, Advanced and Computer Assisted Drafting</b>  Course #12102	Seniors	10	This course provides architectural or machine tool drafting depending on student interest. Advanced tools, techniques and theories will be covered in either area. The course will cover basic computer-assisted drafting (CADD) techniques and theories. Basic drafting and machine drawings will be used to train the student. Written assignments and projects are required. This course may be repeated for credit and will transfer to a CADD program. Seniors enrolling in Advanced Drafting may request math credit for the course. <i>Prerequisite(s): Instructor's approval or one semester of CADD</i>  <b>Adopted curricular materials:</b> Residential Design Using Revit Architecture 2009, SDC

Related electives that a student in the GREEN Academy might take include:

- Intermediate Computers
- Business Law
- Computer Technology Repair

***For a description of academic courses and the electives identified above, see Section 1.  
Please contact the school should you need further information.***

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## School of Technology, Engineering and Media (STEM)

STEM is a unique program that allows students to focus on one of four areas of study: Computer Specialist, Engineering Specialist, Media Specialist or Generalist. After completing core introductory classes, students will select one area of study for their mastery coursework. Each specialist area provides with skills necessary to gain employment or to pursue advanced study at a college or university. Course instruction is enhanced through mentoring and internships. Each area of the program is explained in more detail below:

### STEM Academy Programs of Study

*Students enrolled in this academy must complete a sequence of Career Technical Education courses noted below as well as their core academic courses (e.g., English, mathematics, science, social science, etc.) as one cohort.*

#### Computer Specialist

The Computer Specialist area incorporates a standards-based/mastery approach that allows students to accelerate learning as they demonstrate mastery of each curricular standard. On-line and module-based curriculum is used to facilitate instructional delivery. Successful program completion will result in focusing on one or more computer related majors with some areas offering industry certification.

**Industry Sector:** Information & Communication Technologies

**Pathway:** Network Communications, Programing and Systems Development

Grade	Academic 1	Academic 2	Academic 3	CTE	Advisory
9	N/A	N/A	N/A	Computer Technology <b>AND</b> Intermediate Computers	Yes
10	Biology	World History	English 10	Computer Networking Basics, LAN	Yes
11	Chemistry	U.S. History	English 11	Web Design and Development	Yes
12	Physics			Adv. Computers/Computer Related ROP	Yes

The CTE courses required for this academy are described below.

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## School of Technology, Engineering and Media (STEM) (continued)

### Engineering Specialist

Engineering Specialists complete mastery courses in Computer Assisted Drafting and Engineering. Engineering modules include Electrical Systems, Robotics, Pneumatics, Structural Engineering, Mechanical Systems, Machining and Manufacturing, Environmental Systems and Aerospace Systems.

**Industry Sector:** Engineering and Architecture

**Pathway:** Engineering Design

Grade	Academic 1	Academic 2	Academic 3	CTE	Advisory
9	N/A	N/A	N/A	Computer Technology <b>AND</b> Intermediate Computers	Yes
10	Biology	World History	English 10	Computer Aided Drafting and Design (CADD)	Yes
11	Chemistry	U.S. History	English 11	Engineering A	Yes
12	Physics			Advanced CADD and Engineering B	Yes

The CTE courses required for this academy are described below.

### Media Specialist

The Media Specialist program prepares students for career paths in the field of media communications behind or in front of the camera. Areas of focus include Digital Video Production, Television Studio Production and Multimedia Design. The Franklin High School's television studio allows students hands-on access to multiple levels of video technology as they learn aspects of television production by creating digital news broadcasts, school related projects, and portfolio products.

**Industry Sector:** Arts, Media, and Entertainment

**Pathway:** Media and Design Art

Grade	Academic 1	Academic 2	Academic 3	CTE	Advisory
9	N/A	N/A	N/A	Computer Technology <b>AND</b> Intermediate Computers	Yes
10	Biology	World History	English 10	Video 1	Yes
11	Chemistry	U.S. History	English 11	Video 2	Yes
12	Physics			Television Occupations I & II	Yes

The CTE courses required for this academy are described below.

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School of Technology, Engineering and Media (STEM) (continued)

**Generalist**

Students interested in all three major areas of STEM can choose as a Generalist strand. Mastery of this strand is obtained by completing coursework in the three specialist areas.

The CTE courses required for this academy are described below.

Course	Class Restrictions	Credits	Description
<b>STEM Audio Production 1</b>  Course #12156	Sophomore Junior Senior	10	This course is designed to expose and prepare students for career opportunities in the audio field. This will be accomplished through learning the basic principles of signal flow, multi-track recording, MIDI Programming, and digital audio workstations. It will serve as an introduction to the theory and practice of audio in radio, television, film, and music production. Students will read articles from scholarly and commercial literature, learn the fundamentals of the design of recording digital equipment, and carry out planned lab activities using industry standard software. Students can earn Cosumnes River College credit for RTVF 319. <i>Prerequisite: None.</i>  <b>Adopted curricular materials:</b> No textbook assigned
<b>STEM Computer Aided Design/Drafting (CADD)</b>  Course #12100	Sophomore	10	This course serves as the foundation for all other CAD courses. The focus is on developing computer-aided design/drafting skills, for those with little or no CAD experience, using Auto CAD software. Students are introduced to the computer hardware and the latest development of program and components. Lectures and exercises cover all the basic functions such as colors, dimensioning, layers and blocks. Projects such as creating a vise are done to learn and practice the different drawing techniques involved. The class takes in all the fundamentals in making a full-fledged drawing, from scaling to plotting. Meets 10 credits of mathematics. Students must pass 10 credits to meet the Technology Proficiency Graduation Requirement.  <b>Adopted curricular materials:</b> <i>Applying Auto-Cad, Glencoe</i>
<b>STEM Computer Technology</b>  Course #12111	Freshman	5	This course focuses on computer technologies and their uses as applied to academic success. Students will learn keyboarding skills, word processing, computer operations, spreadsheets, database, library research technologies, and telecommunications. Students will be able to apply the skills learned in this course to complete assignments in other courses throughout their school career, by using the computer to conduct research, prepare papers, solve problems, and manage information. This course meets the Technology graduation requirement.  <b>Adopted curricular materials:</b> <i>Century 21 Computer Applications &amp; Keyboarding, South Western</i>
<b>STEM Computers, Intermediate</b>  Course #12131	Freshman	5	This course provides students an opportunity to continue hands-on experience with computer operations. Students will learn programming techniques, how to use advanced word-processing, desktop publishing to include multimedia presentation and other management systems. <i>Prerequisite(s): Computer Technology with a grade of C.</i>  <b>Adopted curricular materials:</b> <i>Microcomputer Applications for Business, South Western</i>

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School of Technology, Engineering and Media (STEM) (continued)

Course	Class Restrictions	Credits	Description
<b>STEM Computer Networking Basics (LAN)</b>  Course #12134	Sophomore	10	This in-depth course explores wiring, protocols, management and configuration of Local Area Networks (LAN). Upon successful completion of this course, students will be fluent in setup and management of LAN routers, switched hubs, servers and workstations. Students should have a firm understanding of computer operating systems (Windows or Mac) and Internet basics prior to enrolling in this course. <i>Prerequisite(s): Computer Technology.</i>  <b>Adopted curricular materials:</b> No textbook assigned.
<b>STEM Computer Technology Service Repair</b>  Course #16700	Seniors	10	This course is designed to prepare students for a variety of entry-level careers in computer technology. Students will acquire the skills necessary to build, repair, upgrade and install computers. Troubleshooting, as well as network installation techniques, will also be featured. It will offer a solid foundation to students who want to pursue college and/or trade schools. Students will learn skills useable on the IBM PC and Macintosh platforms.  <b>Adopted curricular materials:</b> No textbook assigned.
<b>STEM Engineering A</b>  Course #12340	Junior	10	This course is designed for students to engage in various hands-on activities to explore the nature of assorted engineering fields. During this exploration, students will gain insight into the educational requirements of the engineering profession, required skills for most engineers, and the roles and functions of engineers. In addition, through challenging and enjoyable projects, students will learn Newton's Laws of Motion, the cornerstone of engineering. Other problem-solving projects will focus on mechanical engineering, electronic engineering, structural engineering, and electrical engineering. While utilizing the engineering design process, students will design, develop, model, and test an engineering solution based on given criteria.  <b>Adopted curricular materials:</b> No textbook assigned.
<b>STEM Engineering B</b>  Course #12341	Senior	10	This course is designed to build on the foundation begun in Engineering A. Students continue to survey aspects of the primary engineering disciplines and principles of engineering style problem solving. The course focuses on providing necessary introductory skills mastery of AutoCADD 2D and 3D functions required to visualize and document engineering and architectural designs. Assignments reflect introductory to moderate complexity and reflect industry standards for general graphics, design drawings and technical working drawings. Traditional technical drawing concepts are presented, as well as assignments in reading and interpreting various types of technical working drawings. Students also produce one research paper and various other written assignments related to engineering/architectural problem investigations. <i>Prerequisite(s): Math I or (Algebra I) or higher mathematics and Engineering A with a C or better, or instructor approval.</i>  <b>Adopted curricular materials:</b> No textbook assigned.
<b>STEM Exploring Computer Science</b>  Course #16108	Sophomore Junior Senior	10	This course focuses on the creative, collaborative, interdisciplinary, and problem-solving nature of computing, featuring an inquiry-based approach to learning and teaching. As part of this curriculum, students will develop real-world computing problems that are culturally relevant and address social and ethical issues while delivering foundational computer science knowledge to students. Students will engage in several in-depth projects to demonstrate the real-world application of computing. <i>Prerequisite(s): Computer Technology</i>  <b>Adopted curricular materials:</b> No textbook assigned.

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School of Technology, Engineering and Media (STEM) (continued)

Course	Class Restrictions	Credits	Description
<b>STEM Television Occupations I &amp; II</b>  Course #16801 Course #16802	Junior Senior	5	This course will emphasize all aspects of digital video creation, from pre-production planning all the way through final video editing and output to tape. Software programs to be used include movie, Adobe Premiere, Final Cut Pro, and Adobe After Effects. Students will produce, direct, and edit a number of digital video projects. These projects will span the range from short movies to commercials and music videos; some will be assignments from the instructor but often they will be chosen by the student. Students will be encouraged to act in class projects. Each student will also write, in screenplay format, a short movie. Finished projects will be entered into student digital video competitions, such as Sacramento's Tower of Youth project. After the successful completion of this class, students can receive 3 units of college credits in Television Production from Sacramento State University.  <u>Adopted curricular materials:</u> No textbook assigned.
<b>STEM Video Production I</b>  Course #12152	Sophomore	10	This course is an introductory, hands-on course where students learn to use digital video and television studio production equipment in both a classroom and studio environment. Computers running software for non-linear editing will be used to produce a variety of video projects for classroom and school-wide broadcasting. Skills taught include script writing, storyboarding, camera operation, use of audio, lighting, editing, short films, commercials, public service announcements and working in different roles as a member of a video production team. <i>Prerequisite(s): Computer Technology and Multimedia or instructor approval.</i>  <u>Adopted curricular materials:</u> <i>Digital Video: Production Cookbook</i> , O'Reilly Media, Inc.
<b>STEM Video Production II</b>  Course #12153	Junior Senior	10	This course builds on skills learned in Video I. The emphasis of this course is to plan and produce intermediate projects in a variety of digital film and television subjects. Students will further develop independent skills and team leadership roles in all areas of digital media production. These skills include storyboarding, scriptwriting, set building, directing, lighting, producing and editing. Projects will involve pre-and postproduction of school news and special projects for potential broadcast to the campus and on public television. <i>Prerequisite(s): Video Production I.</i>  <u>Adopted curricular materials:</u> No textbook assigned.
<b>STEM Web Design and Development</b>  Course #12138	Junior	5 5	This course provides students with historical background, varied programming skills, design elements, and current technological practices that will be used to develop professional Web pages. Students will use the Internet to research Web pages and various works of art, which are created via electronic media. In addition, HTML/Java programming language and graphic enhancing software will be combined with artistic layout and design methods to create both functional and aesthetically pleasing Web pages for use on the Internet.  <u>Adopted curricular materials:</u> <i>Microsoft Front Page 98</i> , Course Technology

**For a description of academic courses and the electives identified above, see Section 1. Please contact the school should you need further information.**