Project Lead the Way: Civil Engineering and Architecture
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Welcome!!!
Building enthusiasm for and a real understanding of the role, impact, and practice of civil engineering and architecture as it relates to building design and development is a primary goal of the course. I am committed to working with you so that you can succeed.

Course Description:
Civil Engineering and Architecture (CEA) is a high school level specialization course in the PLTW Engineering Program. In CEA students are introduced to important aspects of building design, site design, and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using 3D architectural design software. Utilizing the activity-project-problem-based (APB) teaching and learning pedagogy, students will progress from completing structured activities to solving open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills.

Course Objective:
Use 3D modeling software, AutoDesk Revit Architecture, to create and test your own residential and commercial designs, factoring in:
• Materials and Systems
• Structural Design
• Cost / Efficiency Analysis
• Storm Water Management
• Site Design and Considerations
• Utilities and Services
• Building Codes
• Architectural Style and Guidelines

By the end of this course, the successful student will be able to:
1. Apply elements of good residential design to the design of a basic house to meet the needs of a client.
2. Demonstrate the appropriate use of surveying equipment and complete surveying projects with accurate results.
3. Understand the process and purpose of soil analysis as it relates to the construction process and apply this understanding in designing appropriate footers for classroom projects.
4. Exhibit mastery over the vocabulary utilized in this course.
5. Create cost estimates.
6. Create a site map and sketch a project site.
7. Apply principles of sustainable design.
8. Determine the correct materials to use in various design applications.
9. Exhibit a comprehensive understanding of 3D architectural software used to create computer models.
10. Create floorplans based on the International Building Code.

Materials/Supplies Needed:
Class Engineering Notebook
Your mypltw.org username and password (No textbook is required; curriculum is online)
Your school email/google account

Grading Scale:

Range	Grade
100 – 93 %	A
92 – 90 %	A-
89 – 87 %	B+
86 – 83 %	B
82 – 80 %	B-
79 – 77 %	C+
76 – 73 %	C
72 – 70 %	C-

69 – 67 %	D+
66 – 63 %	D
63 – 60 %	D-
Below 60 %	F

Activities/Notebook	60%
Assessments/Presentations	40%

Come to class every day and be on time.
Grades are updated every day.

Work not finished in class is HOMEWORK!
You can always check your grade online.

College Credit through Cerritos College with B or higher.