**SYLLABUS – Civil Engineering and Architecture 2023-24**

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**Course Description**

Civil Engineering and Architecture (CEA) is a central course in the PLTW Engineering Program. In CEA, students apply math, science, and standard engineering practices to design both residential and

commercial projects and document their work using 3D architectural design software. Through both individual and collaborative team activities, projects, and problems, students will problem solve as they practice common design and development protocols such as project management and peer review.

Students will develop skill in engineering calculations, technical representation, documentation of design solutions according to accepted technical standards, and use of current 3D architectural design and modeling software to represent and communicate solutions.

**Course Goals**: The overarching goals of this course is to improve problem-solving, critical thinking, and communication skills while exploring:

* History of Engineering and Architecture
* Building Design and Construction

Sentinel HS

* Cost and Efficiency Analysis
* Residential Design
* Commercial Applications
* Services and Utilities
* Site Considerations
* Commercial Building Systems
* Civil Infrastructure: exploration and design

**Text**: No text is required; however,access to Google Classroom is necessary for course content.

**Required Materials**: **Engineering notebook** (either assigned in cr student can purchase new). A dedicated folder or binder is also recommended. Notebooks can be ordered [**here**](https://www.amazon.com/Engineering-Notebook-Technology-Composition-Architect/dp/B08YQFWG8F/ref%3Dsr_1_4?crid=3MAL1HS4SFC1F&keywords=engineering+notebook&qid=1693260636&sprefix=engineering+notebook%2Caps%2C196&sr=8-4).

**Availability**: My mission is to help you succeed. I am typically available by 30 minutes before school, during lunch periods, and by appointment. Don’t struggle alone, ask for help in a timely manner--I am here for you--help yourself.

Policies: Refer to Student Handbook and MCPS policies.

**Expectations**: In this class, you are expected to model those skills necessary to be a respectful, responsible, and engaged citizen. As such, be honest and kind, treat others as you would like to be treated, be on time to class with the appropriate tools, and participate—**you are a member of a team**.

**Grading**: Standard grading: less than 60% (F), 60-69% (D), 70-79% (C), 80-89% (B), 90-100% (A).

• Projects and Assignments – 70% (\*Collaboration, contribution, and participation also scored per rubric)

• Engineer Notebook, notes, and organization – 10%

• Assessments (quizzes and tests)- 20%

Late work: accepted until the unit/project completion date (for up to 60% credit).

**Lab Safety**: Our room and build area is a lab where you will engage in many building projects. It is essential all engineers follow lab safety guidelines. Failure to follow instructions will result in removal from lab and zero project credit.

**I am excited to learn with you this year. Welcome ENGINEERS BUILD EVERYTHING!**

PLTW Engineering | PLTW. (2016, July 14). Retrieved from https://www.pltw.org/our-programs/pltw-engineering