

# UNIT LESSON PLAN

## High School Engineering Design Cooperative Lesson

**Unit Title:** Introduction to a Design Project for Engineers

**Objective:** Students will be asked to form effective teams where each group consists of maximum five people and choose a role for each person in the group.

### Content Standards: Next Generation Science Standards

Students who demonstrate understanding can:

HS-ETS 1-4. Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

### Stage 1: Desired Results

**Objectives: What knowledge and skills will students acquire?**

Students will learn about:

- Ultimate and serviceability limit state design, parties involved and flow of civil engineering project, sustainable issues and latest technology
- Principles of Structural Engineering and Structural Design
- Architectural drawing and structural key plans

### Stage 2: Evidence of Learning: Assessment of Skills and Knowledge

**What evidence will show that students understand the unit goals? This lesson's goals.**

- A. The layout of the house must adopt the specifications listed in Uniform Building by-laws (1984)
- B. The house must fulfill the fire safety and building regulations
- C. The design of the house must be cost effective.

Work as a group and design an architectural drawing which fulfills all the stated requirements.

### Stage 3: Learning Experiences

See Guided Lesson Plan Unit #1 download

### Materials

SkyCiv Software  
Rubric