Overview
Today, ceiling tile installation is still done completely manually. Armstrong wishes to automate this process, making ceiling tile installation quick and efficient for people of all skill levels. Team 1 is focused specifically on automating the measurement process, while team 2 is creating an automated tile cutter.

Objectives
Design a proof-of-concept system meeting the following requirements:
- Accurately measures ceiling tile size,
- Does not significantly slow the measurement process, and
- Integrates with Armstrong Team 2's automated tile cutter design.

Approach
- Gathered requirements from Armstrong
- Visited Armstrong's Installation School to observe the current state-of-the-art ceiling installation process, and to talk with contractors about their requirements and ideas
- Generated two core design concepts: a smartphone-camera-based approach and a laser-rangefinder-based approach
- Developed both approaches to evaluate feasibility and decided upon the camera approach
- Completed an initial prototype and tested on a simple ceiling tile grid of our own design
- During testing, paid close attention to ease of use and accuracy
- After testing, finalized prototype for showcase, improving accuracy and usability

Outcomes
- This project generates a new, modern approach to ceiling tile measurement, including a proof-of-concept app
- With this technology, ceiling tile installation is made more accessible and efficient for installers of all skill levels