

# Develop an MEP Based Scheduling Learning Module With Industry Support and Guidance, to Understand the Impact on the General Contractor

The Construction Management (CM) program at Cal Poly, San Luis Obispo is recognized as one of the best construction programs in country. The curriculum does an extraordinary job at teaching how to utilize software and technology to create a project schedule. The one thing that the curriculum lacks is learning sequencing of events when it comes to scheduling, and where to look to obtain this information. Although learning sequencing for scheduling is hard to teach because it comes with years of industry experience, it is important to have a basic understanding of how things come together to create a functioning project schedule. A way to understand sequencing is by learning a about the design of the systems that the general contractor is installing. By learning what the engineers do, it allows for the general contractor to understand how much time is going to be needed to install the required systems. As a general contractor it is important to bring on your MEP subcontractors early on because the MEP trades make up a great chunk of their overall budget. This learning module will not only help understand sequencing for general schedules, it will also make students more aware of the impact specialty contractors have on the general contractor.

**Key Words:** Construction, Schedule, MEP, Sequencing, Specialty

## LEARNING MODULES

CAL POLY

Construction Management  
College of Architecture and Environmental Design

HVAC System Design

ASSIGNMENT:

- Create an HVAC system design for Bonderson Building Architectural Drawings.

DELIVERABLES:

- Area Takeoff
  - Open Architectural drawing set on Bluebeam.
  - Measure the Building Footprint in Square Feet (SF).
- Load Calculations
  - Load Calculation is a process used to determine what is the best size, application and style of the HVAC Equipment.
  - Use Square Footage of Building Space, and distinguish between usable space and non-usable space.
  - Count all windows, doors
    - Check Specs for any Window Treatment.
  - Count Number of Floors.
- Equipment Selection
  - Use information from Load Calculations to pick the Equipment that is best suitable for Bonderson building.
  - Look up HVAC systems and compare their specifications to the load calculations you just created.
  - Estimate Lead Time of the system.
- Grille/Register/Diffuser Layout
  - Calculate CFM per room serviced throughout the building
    - To calculate CFM, you need to know the size of your HVAC unit in tons. Then multiply this number by the output of the HVAC system, which is usually an average of 400. Finally, divide by the total Area (SF) of Bonderson.

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Module of Procedure for Creating a Construction Schedule

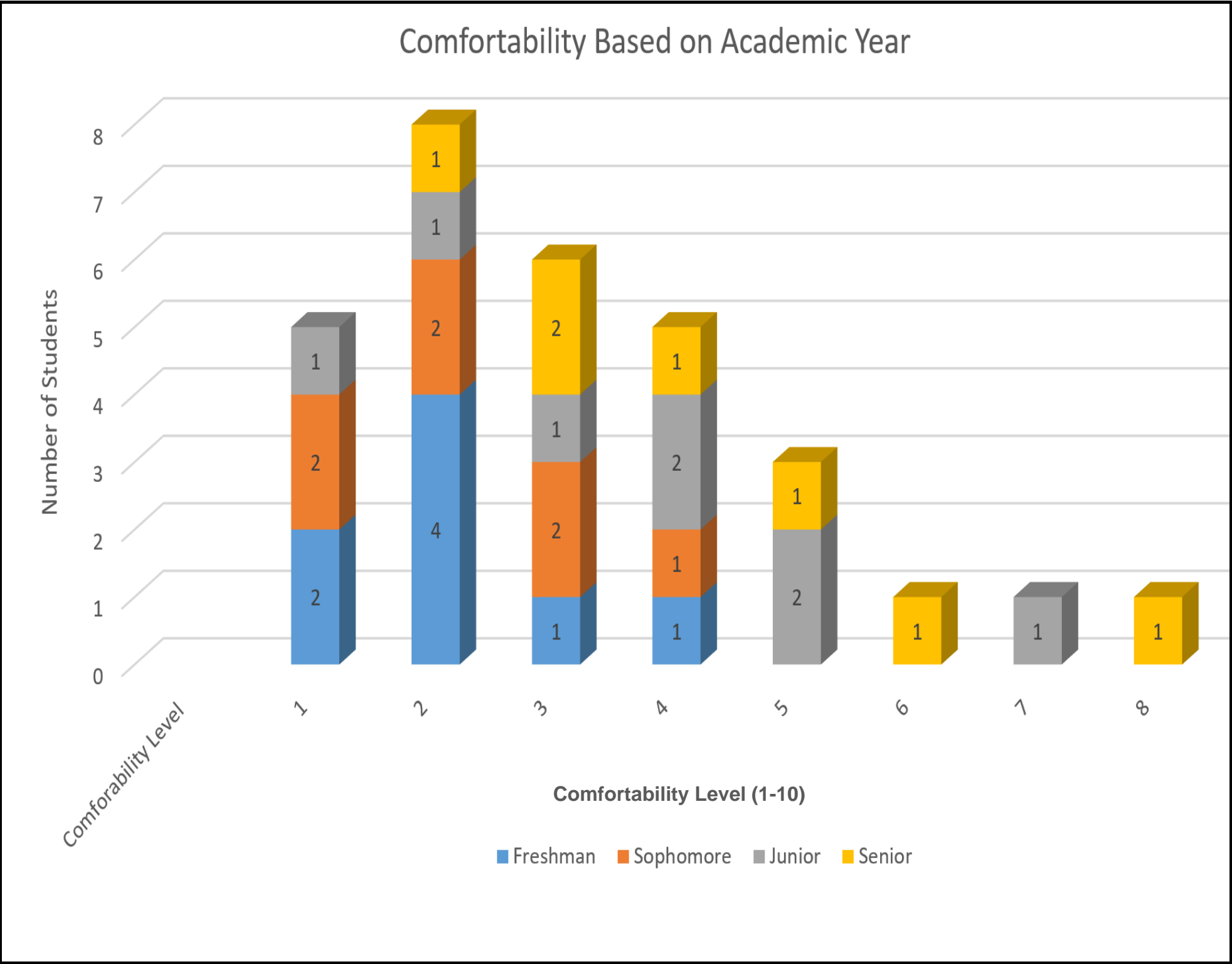
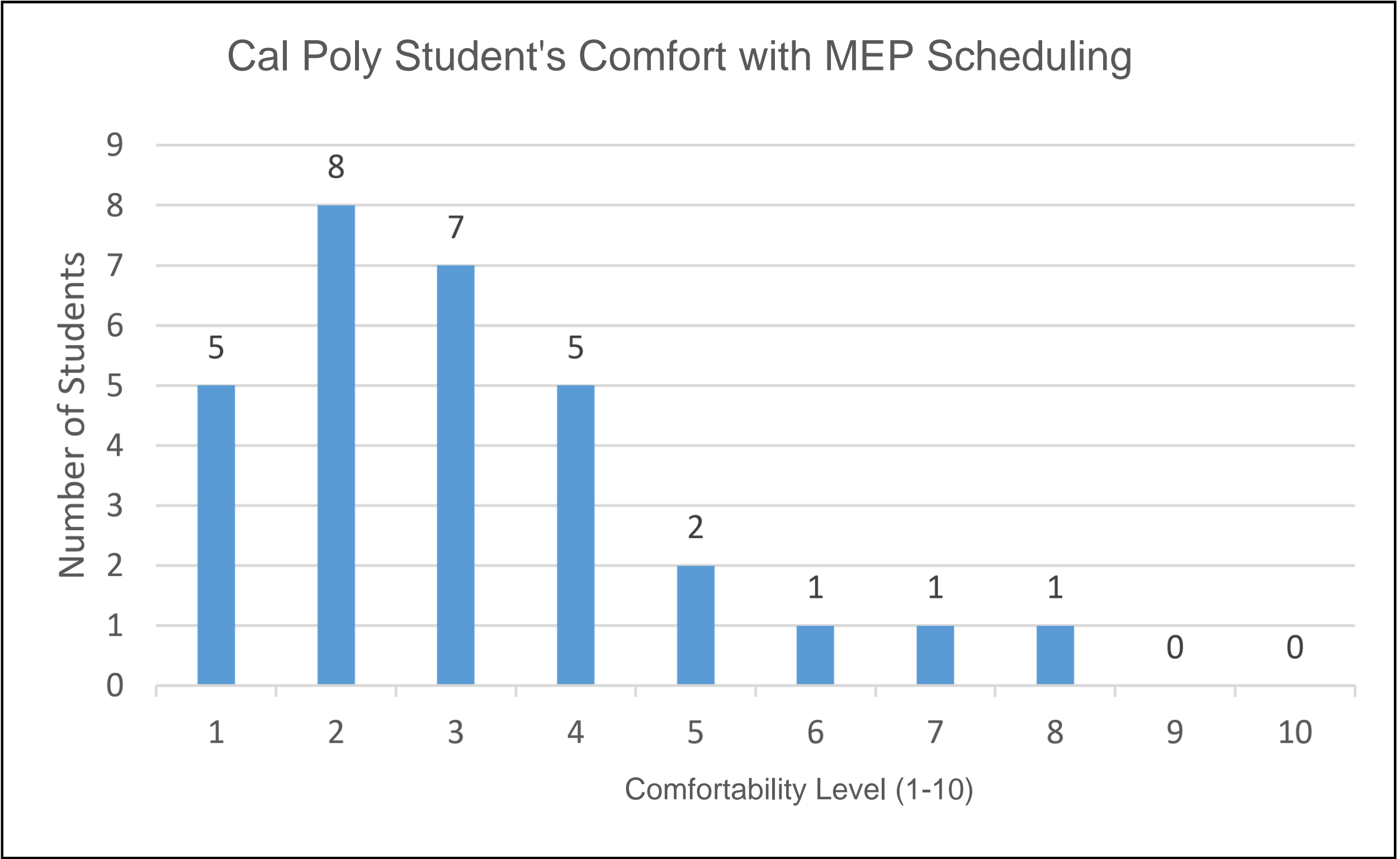
ASSIGNMENT:

- Gathering all the information needed from the construction documents to build a complete schedule.

DELIVERABLES:

- Review Spec Book for Critical Dates and create a Table with **Key** Project Scheduling Information.
  - List the Notice to Proceed (NTP)
  - List the Project Duration
  - Calculate Substantial Completion Date and Final Completion Date and List.
  - If any additional milestone requirements are listed in the contract documents, then add them into the table.
  - Check allowed days for Submittal Review?
  - Check allowed days for RF1 responses?
- Create a Procurement Schedule.
  - Review Project Plans and Specs and Create a List of Deferred Submittals and Long Lead Time Items.
    - Fire Sprinkler Design
    - Fire Alarm Design
    - Design, Structural Calculations for Curtain Walls.
    - Security Design Shop Drawings

Notice to Proceed	5/3/2019
Project Duration	250 days
Final Completion	5/15/2020
List any Additional Milestone Requirements from the Contract Documents.	



California Polytechnic State University,  
San Luis Obispo.  
Construction Management  
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By Andy Rios  
arios12@calpoly.edu

