

Developing a Scheduling Module For Construction Management Labs

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The Cal Poly Construction Management Department is renowned as one of the best programs in the nation. From holding one of the highest competition success rates to almost 100% job placement right out of school for graduates, Cal Poly undoubtedly lives up to that reputation. With that, in order to ensure that the department continues to produce well rounded graduates, it is crucial to regularly assess any potential shortcomings that the construction management curriculum may possess. As one of the three sides of the construction management triangle, the ability to read and create a construction schedule is a crucial skill for any project engineer or manager to possess. There is a broad spectrum of elements that go into creating a project schedule: from the programs, to the sequencing, to the overall logistics. This topic is something that is lacking in the current curriculum. This construction scheduling module would add to the overall Cal Poly Construction Management degree as well as benefit the graduates for the entirety of their careers.

Key Words: Master Schedules, Scheduling Courses, Primavera, Construction Education

The Problem: Students are not confident in their scheduling abilities to perform up to industry standards and expectations



Week	Content
Week 1	Introduction to Scheduling
Week 2	Sequencing and Linking Tasks
Week 3	Preconstruction Activities
Week 4	Mobilization/Make Ready Work
Week 5	Structure (Steel, Concrete, etc.)
Week 6	Interior Build Out
Week 7	Skin
Week 8	Commissioning
Week 9	Project Close Out

The Solution: A scheduling module that can be applied to the CM 313 course that will ensure every individual student is exposed to scheduling and scheduling softwares

Weekly Scheduling Exercises

COLLEGE OF ARCHITECTURE & ENVIRONMENTAL DESIGN
 CONSTRUCTION MANAGEMENT DEPARTMENT
 CM 313 - COMMERCIAL CONSTRUCTION MANAGEMENT ANDREW KUINE - LECTURER
 CONSTRUCTION SCHEDULE - PRECONSTRUCTION

ASSIGNMENT:

- Create a comprehensive 'Preconstruction Schedule' for the UC Irvine Mesa Court Expansion using the construction documents on Polylearn and the information provided below.
- There should be a continuous logic flow of critical path activities from Notice to Proceed, Design, Fabrication and Delivery Lead Times, Structure, Rough-In, Finishes, Punchlist and Commissioning.
 - Organize your activities so they are easy to read, are grouped intuitively, and the schedule "flows" well.

DELIVERABLES:

1. Preconstruction:
 - a. Design - The design package must be approved before that scope of work can begin.
 - b. Design packages are often used to allow construction to begin while the design is being completed. Don't forget design development drawings must occur before design packages for construction can begin. Design packages #3, #4 & #5 cannot begin until #1 and #2 are complete.
 - i. Design Package 1 – Demo & Site Utilities (34 WD)
 - ii. Design Package 2 – Structure (65 WD)
 - iii. Design Package 3 – Skin (100 WD)
 - iv. Design Package 4 – MEP and Finishes (115 WD)
 - v. Design Package 5 – Site Finishes (80 WD)
 - c. Procurement (245 WD)
 - i. It is imperative for project success to capture and track all long lead item procurement for MCEP.
 - ii. Activities should encompass all scopes required to execute the job.
 1. Elevators (80 WD)
 2. Mechanical (60 WD)
 3. Electrical Systems (80 WD)
 4. Glazing/Skin (140 WD)
 5. Kitchen Equipment (70 WD)

DUE DATE: See Polylearn

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 CM 313 - COMMERCIAL CONSTRUCTION MANAGEMENT ANDREW KUINE - LECTURER
 CONSTRUCTION SCHEDULE - EXTERIOR AND SKIN

ASSIGNMENT:

- Create a comprehensive 'Exterior/Skin Schedule' for the UC Irvine Mesa Court Expansion using the construction documents on Polylearn and the information provided below.
- There should be a continuous logic flow of critical path activities from Notice to Proceed, Design, Fabrication and Delivery Lead Times, Structure, Rough-In, Finishes, Punchlist and Commissioning.
 - Organize your activities so they are easy to read, are grouped intuitively, and the schedule "flows" well.

DELIVERABLES:

4. Construction
 - a. Exterior & Skin
 - i. Main Podium (60 WD)
 - ii. South Podium (60 WD)
 - iii. North Tower (114 WD)
 - iv. Center Tower (100 WD)
 - v. South Tower (100 WD)

DUE DATE: See Polylearn

Each week students will cover a new section of a typical construction schedule with the final deliverable being a comprehensive schedule for a commercial construction project