

What to do when the paper is blank!



Some suggestions for getting started on your project

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ME 195A

Understand the problem



➤ Develop a goal statement

- Ex: “Design a means to measure and record the acceleration of the Engineering Building during an earthquake so that the data can be retrieved within 30 minutes afterwards.”
 - 📖 Note: HOW it will be done is NOT specified
- Work with your sponsor to refine the goal
- Ask lots of questions
 - 📖 Why?

Research the Background and State-of-the Art



➤ Use all resources available to you

- Professors
- Colleagues
- Library (<http://www.sjlibrary.org/>)
- Internet
- Other sources

Develop the Functional Specifications



- Quantitative description of how your design must perform
- Ex. For acceleration measurement system:
 - 0 to 1.5 g range
 - 0.05 g trigger
 - 0.02 g resolution
 - 3 minute recording time with 15 second delay
 - must function in the event of mains power failure
 - must allow data to be accessed within 30 minutes after earthquake without access to the building
 - 15 year operational life

Generate Solutions



- Think broadly at the start
 - Quantity over quality
- Record ideas in an engineering notebook
 - bound
 - have pages witnessed and signed to protect IP
- Try quick models and mockups
 - Use foamcore, cardboard, CAD models, wood, etc.

Select the Most Promising Approach

➤ Use a structured approach

Attribute	Concept		
	1	2	3
a	7	9	4
b		Etc.	
c			
Total or weighted sum	<hr/>		