Engineering Senior Design: The Last Chance Saloon

An ACRL-STS Information Literacy Chat

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Abstract

The American Society of Engineering Education estimates that beginning engineers will spend over half of the time on the job after graduation doing research. Despite this, many engineering librarians report that they rarely have an opportunity to speak with undergraduate students in a classroom setting. Design classes, particularly at the senior level, are often the last (and possibly only aside from first-year experiences) chance for librarians to engage engineering undergraduates. Students need both new knowledge and a refresher on important concepts in information literacy as it applies to engineering, but they often struggle with finding the best sources or knowing where or how to look given the constraints of their project, and are often reluctant to ask for assistance.
Introduction

The Program At UMass Dartmouth
- What did I cover? (relation to ACRL Frameworks)
- How did I build it?
- What could be changed or improved?

Transitioning It To Stanford (And Elsewhere)
- What are the differences in location?
- What are challenges and opportunities?
Some Background

Typical Engineering Curricula
• Problem solving and figuring things out as you go
• Traditionally lab-based, very dense and packed
• Contemporary engineering stresses design and “soft skills”

Typical Librarian Teaching
• Literature of a field, whether scholarly or discipline specific
• Many variations in embeddedness into curriculum
Why Even Bother?

If You Ain’t Learned By Now...
• Can you really impart anything onto students about to leave?
• How is someone who may have never seen you before going to start?

Searching As Strategic Exploration
• Part of exploration is discovering improvements and efficiencies
• The very heart of engineering design!
• Why shouldn’t we teach this?
What Did I Cover?

Early Editions
- Articles & Patents in the fall
- Standards, Suppliers & CI in the spring

Solely Mechanical Engineering
- One lecture only, no follow-up unless students sought it

Late Editions
- Articles, Standards, Patents in the fall
- Data Management, Suppliers, CI in the spring

How Did I Build It?

All Engineering Disciplines
- One lecture for most, with consults and quizzes for Mechanical groups
Results & Discussion

Early Feedback – Positive!
- Well received at beginning, and was able to build out an instruction portfolio for all engineering students based around this class
- Debate about whether or not to keep Data Management or CI

Improvements?
- Spring Lecture less well-received by ECE and BioEng over time
- Change in MNE faculty led to a different final iteration
Results & Discussion

What Helped?
• Having a faculty member champion the cause
• See above
• Of course, there’s more to it than that…

Would I Change Anything Now?
• I would have pushed harder to get all sections earlier
• I would have pushed harder to get into more underclassman courses
• I would have “flipped” more of the material earlier on
How Could I Modify This At Stanford?

Teaching Focus To Research Focus
- Senior Design not as integral to the experience here
- Much larger scale and scope of engineering

Resources I Never Dreamed Possible…
- The d-School
- The ASEE student chapter
- The Technical Communication Program
Some Discussion Questions

How do you reach difficult populations, or students who don’t normally pass through your program?

How do you become more “embedded” in the curriculum? Or even if you can, do you want to be and can you manage the scale?

How do you assess what students already know effectively, and then what they took away from you at the end?
Acknowledgements & Contact

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