Case Study 01: What Does An Engineer Actually Do?

When You Wonder What A Day In An Engineer's Life Really Looks Like

INTRODUCTION

We have been discussing engineering disciplines. Why? Because as engineering is a broad term and encompasses many disciplines. A chemical engineer is very likely to have a significantly different job description than a robotics engineer. On the other hand, a mechanical engineer might have a very similar job as a robotics engineer.

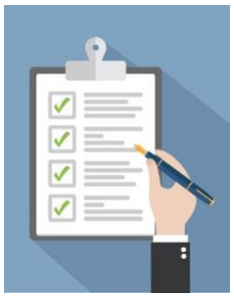
So what do *you* want to do? What type of engineering appeals to you? Do you have any idea what a typical day looks like for an engineer in your chosen field? Let's find out.

OBJECTIVES

Specific goals for this exercise are:

- Think about engineering disciplines and what appeals to you personally
- Decide on a discipline to focus on for this case study
- Research your chosen engineering discipline
- Evaluate your information and consider whether the field you selected is compatible with your expectations

STEP 1: DECIDE ON A DISCIPLINE



1. Consider your own personal interests. Make a list of the things you enjoy doing the most. Now make a list of things you really *don't* like doing (you don't want to get stuck in a field where you have to do something you really dislike for an alarming amount of your time). Add about five things to each list.
2. Identify the engineering discipline that appeals to you the most. What about that field do you like the best? Within that field, what would your dream job look like? Is there a specific company you have always wanted to be a part of?
3. Watch some videos. Check out this YouTube playlist, or search "day in the life of a <your field> engineer" to get some video snapshots of what different engineering jobs are like, and what an engineer is actually doing all day on the job. Watch more than one video; different jobs are going to be, well, *different*. Don't assume that the one video you watch about that one job in that one field is representative of all engineering jobs! Cite links to the video(s) you watched.
4. Notice the types of tasks the engineers you watched perform over the course of their day. How much time do they spend doing the "actual engineering," you know, the fun stuff? How much of their day is taken up by other tasks, like meetings, paperwork, client consultations, etc.?

STEP 2: RESEARCH YOUR OPTIONS

5. Graduate school? Sure, you have barely gotten started on your undergraduate career, but will you need an advanced degree to achieve your desired level of success? Check these rankings and find a graduate program in your field. What would be your dream school to get an MS degree?
6. Consult the NSPE Licensure page. Will you need a PE (Professional Engineer) license to practice your discipline? What is the process for becoming a licensed PE? Will you become an EIT (look it up!) before you are licensed as a PE? What do you have to do to become an EIT?
7. Consider your salary requirements. It's well known that engineering starting salaries are very good. How much are you worth? How much money do you need? Are you willing to accept a lower salary for a job in a more desirable location? Would you take a less desirable job just because it offered higher starting pay? Are there factors other than just the paycheck that would make a position more or less attractive to you?
8. Find a job! Use online job finders like Indeed, Glass Door, LinkedIn, or EngineerJobs.com to research what kinds of jobs are listed in your discipline. Are there many jobs available in your field? Will you have to relocate to another city or part of the country to get a good job? Is there a dream company that you want to work for?

STEP 3: DEVELOP A NETWORK

9. Look up the most prominent professional society for your chosen discipline and consider joining. This Wikipedia list is not a bad place to start, but it's by no means as comprehensive as it thinks it is. Here's another pretty decent list, but you can also Google "professional society <your field>" for your discipline-specific results. Most organizations offer student memberships for a nominal fee. Why join? Because a journal subscription is typically included as a part of your membership, and it will help keep you at the front of your field: How do you know what topics are hot/in demand? Look at what they are publishing. Also, you can notice who is getting published. You might want to know who the hotshots/experts in your field are, and where they work! List two professional societies that are relevant to your chosen discipline, and what a student membership costs (if anything).

10. Cultivate some contacts. Join LinkedIn, and keep your account professional and up-to-date. Look up the companies you would love to work for and follow them! Discover some new companies that you didn't even know existed! Maybe follow some of the individuals who are established leaders in your field. Add your professors as contacts—when it's time to ask for letters of recommendation, a professor who knows what you've been doing for that two years since you took their course is going to be more likely to agree to write a letter, and it will be a much better letter.
11. Ask an engineer. If you know someone who is currently employed as an engineer, talk to them! Ask them how they got where they are. Ask them what they wish someone had told them when they were just getting started. Even if they are not part of your specifically chosen field, ask!

STEP 4: PUT IT ALL TOGETHER

12. Reconcile the original list you made with the discipline you have selected. Given your current level of understanding, do you think your chosen field is compatible with your likes and dislikes? (For example, do you think Forest Engineering would be a good career choice for a person who dislikes hiking, camping, or getting dirty outdoors?)
13. Evaluate what you have just learned. Does your research into what an actual engineering career will look like energize your ambition? Do you want to revisit your list and think about the relative importance of some of the things you initially thought were important? Do you want to add things to your list that you had not previously considered?
14. Submit your findings. Use the Case 01 Assignment in the Week 04 folder in the Online Classroom. This case study is due no later than 6:00 PM on Friday, 02 February 2024.

REFERENCES

Types of Engineering: Salary Potential, Outlook, and Using Your Degree: https://www.snhu.edu/about-us/newsroom/stem/types-of-engineering

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Is Your Degree Worth It? Engineering Education and Job Satisfaction: https://www.engineering.com/story/is-your-degree-worth-it-engineering-education-and-job-satisfaction

Find the Best Engineering Schools: https://www.usnews.com/best-graduate-schools/top-engineering-schools

National Society of Professional Engineers Licensure: https://www.nspe.org/resources/licensure

Job Listings at Indeed: https://www.indeed.com/

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Job Listings at Engineer Jobs: https://www.engineerjobs.com/

List of Engineering Societies: https://en.wikipedia.org/wiki/List_of_engineering_societies

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Professional networking at LinkedIn: https://www.linkedin.com/