The Ultimate Engineering Interview Prep Guide

Whether you’re fresh out of school, transitioning into the industry, or advancing your career, this guide will prep you for your next big interview.
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Before we dive into getting you prepared for your next job interview, let’s first take a closer look at the future of engineering jobs. With Industry 4.0 in full swing and a rapidly aging workforce, the role engineers play in the industry is shifting. While having the top talent to keep up with the latest and greatest technologies and processes might be daunting to employers, it’s an exciting time to be an engineer.

What’s Industry 4.0?
Industry 4.0 refers to the fourth industrial revolution that’s transforming economies, jobs, and societies through new technologies and processes including:
- Big Data & analytics
- Autonomous robots and AI
- Simulation
- Horizontal & vertical system integration
- The Industrial Internet of Things
- Cybersecurity
- The cloud
- Additive manufacturing
- Augmented reality

What these industry challenges mean for job seekers
The rise of Industry 4.0 has created a hiring crisis for employers — they simply can’t keep up with the speed of innovation. Not to mention, the industry is facing a labor shortage because of the aging population. One-quarter of all engineers are 55 years or older and approaching retirement. As these workers retire, they take their years of experience along with them, leaving skill gaps that companies are struggling to fill.

But is this positive for job seekers? Yes! These changes mean there are new engineering roles posted every day and employers are spinning trying to find applicants. With the right preparation, you can be that applicant!

- 3.5 million jobs need to be filled in the manufacturing industry in the next decade³
- 139,000+ newly created engineering jobs are projected to become available in the U.S. between 2016-2026⁴
- 12,500 mechanical engineering jobs are posted each month on average, but 25% of them don’t get filled.⁵
- 715,000+ engineering job listings are currently available on LinkedIn in the U.S.⁶

The Outlook: There are — and will continue to be — hundreds of thousands of engineering jobs available in the U.S. because of Industry 4.0 and the wave of retiring engineers.

What it Means for Employers: They are dealing with a lot of available positions that they’re desperate to fill.

What it Means for You: Plenty of opportunities to switch industries, advance your career, or land your first job in engineering.
Skills That Will Make You Stand Out

Whether you've been in the industry for two decades or you’re just starting out, you need a mix of both technical skills (a.k.a., hard skills) and soft skills to thrive as an engineer. The age-old stereotype that engineers are highly technical people without any interpersonal or communication skills is one that doesn't bode well in the real world. In short, technical skills matter. But soft skills matter, too.

Not only do you need to have these hard and soft skills, but you need to be able to communicate how you demonstrate them. You'll have the opportunity to do this on both your resume and during the interview process.

Skills Engineers Need

**Soft skills:** Communication, teamwork, attention to detail, motivation, willingness to learn, interpersonal skills, and leadership.

**Hard skills:** Design software proficiency, GD&T, design-to-cost, mathematics, critical thinking, industry knowledge, hands-on experience with machining, product design, and real-world application of knowledge.

What I've seen time and time again is that developing the 'soft skills' is dismissed throughout [an engineer's] formal training. They can't make the progress or impact that matches their technical skills because they lack communication, creativity, and interpersonal skills that are required.  

- Ash Norton, engineer and career coach

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**Average U.S. Engineering Salary by Industry**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>$89,195</td>
</tr>
<tr>
<td>Architecture/Civil</td>
<td>$83,540</td>
</tr>
<tr>
<td>Biomedical</td>
<td>$80,310</td>
</tr>
<tr>
<td>Electronics</td>
<td>$80,289</td>
</tr>
<tr>
<td>Defense</td>
<td>$78,865</td>
</tr>
<tr>
<td>Energy</td>
<td>$77,806</td>
</tr>
<tr>
<td>Mechanical</td>
<td>$75,158</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>$72,135</td>
</tr>
</tbody>
</table>

**Average U.S. Engineering Salary by Job Title**

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP of Engineering</td>
<td>$188,917</td>
</tr>
<tr>
<td>Director of Engineering</td>
<td>$174,899</td>
</tr>
<tr>
<td>Engineering Manager</td>
<td>$135,424</td>
</tr>
<tr>
<td>Senior Engineer</td>
<td>$96,742</td>
</tr>
<tr>
<td>Engineer</td>
<td>$78,831</td>
</tr>
<tr>
<td>CAD Designer</td>
<td>$49,964</td>
</tr>
<tr>
<td>Engineering Technician</td>
<td>$47,916</td>
</tr>
<tr>
<td>CAD Drafter</td>
<td>$45,736</td>
</tr>
</tbody>
</table>
Every good resume has the same six components in common. Read about these must-have elements below to make sure your resume will stand out against other engineering candidates. See Appendix 1 for a completed resume example.

1. **Personal information**
   Your personal information should go at the top of your resume. This section should include your full name (use the same name as your LinkedIn profile so the hiring team can easily look you up), phone number, email, and permanent address. If you don’t feel comfortable including your entire address, your city, state, and zip code will work fine.

2. **Education**
   This section of your resume should include the institution, city and state, degree(s) earned, and graduation year. If you’re a recent graduate, you might also want to add notable honors and your GPA (if it’s above a 3.4). If you don’t have a formal degree, add certificates, licenses, and any online courses you’ve taken to this section.

   Traditionally, education is one of the first components of a resume. However, it doesn’t need to be. For example, if you earned your degree two decades ago, add your education after your work experience. If you graduated recently and don’t have a lot of work experience, keep this information at the top.

3. **Professional experience**
   This section should include your job title, company, city, state, dates of employment, and a bulleted list of job responsibilities, results, and achievements. List in reverse-chronological order, starting with your most recent experience. If you’re an industry veteran, only go in-depth with the last 10-15 years of your career. After that, simply list out your other roles and skip the job responsibilities portion. If you’re an entry-level engineer and don’t have much professional experience, add details about your work from any internships, industry organizations, competitions, or relevant school projects.

   Use our Quick Tips For Resume Writing in this section to get started writing out your responsibilities. And don’t forget, use facts, figures, and data points when possible (e.g., Implemented Design-to-Cost method that decreased expenses by 18%).

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**Quick Tips For Resume Writing**

1. If you can, keep it to one page
2. Only describe the last 10-15 years of your career
3. Use Calibri, Cambria, or Garamond fonts
4. Incorporate facts, figures, and data points when possible
5. Have at least two proofreaders

See Appendix 1 for a completed resume example.
You should be prepared to answer 20 common interview questions.

1. **Prepare examples of your successes and challenges**
   Before your first interview, come up with a project, or a component of a project, that went well and one situation that didn’t. In that same vein, have an interaction with a coworker — big or small — that went well and also one that was challenging. If you have these four scenarios in mind, you’ll be able to pull from real examples when the interviewer asks situation-based questions about your successes, challenges, problem-solving skills, communication style, etc.

2. **Research the company**
   Before the interview, you should have a solid understanding of what the company does and who its customers and competitors are. Having this context will help you ask better questions and appear more prepared.

3. **Bring a list of questions**
   Write down the questions you want to ask and bring them with you to the interview. Plus, having paper and a pen along with you will allow you to write down any notes you’d like to during your conversation.

4. **Prepare a reference list**
   If you elected to leave this information off of your resume due to space constraints, bring at least three copies of your reference list. For each reference, include a full name, title, company, phone number, email address, and a brief statement about your relationship with the person (e.g., Sarah was my manager at ABC Company for three years.)
5 Create interview cheat sheets
If you’re submitting a lot of applications and doing plenty of interviewing, it’s a good idea to make cheat sheets so you can keep all of the companies and roles straight. The cheat sheet can be very informal. Consider including the company, location, position title, interviewers’ names and roles, one sentence about the company, and a note about what excites you about the role. You can also keep track of the application status (e.g., when you applied, phone or in-person interview, and when you can expect to hear a decision).

6 Send a thank you note
After an in-person interview, you should always send a thank you email to your interviewers for taking the time to speak with you. This is also an opportunity to confirm your enthusiasm for the role and demonstrate your soft communication skills.
See Appendix 2 for a thank you note example.

Quick Guide: What to Wear to an Interview

Business professional: Formal pant, dress, or skirt suits, collared shirts or blouses, ties, minimal jewelry, closed-toed dress shoes.

Business casual: No suit jacket, dress pants or khakis, collared shirts with or without a tie, blouses, sweaters, cardigans, closed-toe shoes.

Smart casual: Slightly less formal than business casual, but still polished. Fashion-forward, bright colors and patterns are welcomed. Trendy dress pants or jeans, blazers, closed or open-toed shoes.

Tip: Before your interview, ask the hiring manager about the company’s dress code and then dress one level up. For example, if you’re interviewing at a casual office, either dress smart casual or business casual.

NEED TO COMMUNICATE YOUR SKILLS? TRY THE STAR APPROACH

<table>
<thead>
<tr>
<th>S</th>
<th>SITUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>EXPLAIN THE SITUATION YOU WERE IN. “I was asked to implement a GD&amp;T system and I didn't have any prior experience.“</td>
</tr>
<tr>
<td>T</td>
<td>TASK</td>
</tr>
<tr>
<td>D</td>
<td>DESCRIBE THE TASK YOU HAD TO COMPLETE. “Because I had no previous experience, I had to quickly learn how to read, interpret, and apply GD&amp;T methods to my drawings.”</td>
</tr>
<tr>
<td>A</td>
<td>ACTION</td>
</tr>
<tr>
<td>D</td>
<td>DESCRIBE THE SPECIFIC ACTIONS YOU TOOK TO COMPLETE THE TASK. “I took an online GD&amp;T course to get up to speed, defined applications, characteristics, and symbols, and then trained my colleagues.”</td>
</tr>
<tr>
<td>R</td>
<td>RESULT</td>
</tr>
<tr>
<td>S</td>
<td>SUMMARIZE THE RESULTS OF YOUR ACTIONS. “After I implemented the new GD&amp;T methodology, communication with our manufacturer improved and our team’s errors decreased by 35%.”</td>
</tr>
</tbody>
</table>
20 common interview questions you should be prepared to answer

1. Tell me about the most challenging engineering project you've worked on.

2. Describe a written technical report or presentation you had to complete.

3. Explain a time you had to use logic to solve an engineering problem.

4. Describe a time you demonstrated leadership skills at work.

5. What processes do you follow to catch any mistakes in your work?

6. What engineering skills have you learned or improved upon in the past six months?

7. What software packages are you familiar with?

8. Describe a time you used problem-solving skills to figure out a design problem.

9. What strengths do you have that make you a good engineer?

10. What's your most successful engineering project?

11. How do you stay current with the latest technology?

12. Describe a time you had to work on a team and something didn't go well. What would you do differently?

13. Have you ever had an experience with a difficult client, employer, or employee? How did you handle the situation?

14. Tell me about a time you got negative feedback on your work. How did you respond?

15. Why are you interested in this role? Why are you interested in working at this company?

16. What will be the biggest challenge for you in this position?

17. Describe your ideal manager.

18. What are your salary expectations?

19. Do you have security clearance to work on classified projects?

20. Where would you like to be in your career five years from now?

10 questions you should be prepared to ask

1. Can you describe the culture of the company and the engineering team?

2. What's the biggest opportunity facing the engineering team right now?

3. What's the biggest challenge facing the engineering team right now?

4. What's the typical career path for someone in this role?

5. Are there opportunities for professional development in this role?

6. What does success look like in this role? And how is that measured?

7. What's one aspect of this role that has the steepest learning curve? What could I do to get up to speed quickly?

8. If you're able to share, what are the most immediate projects in the pipeline for this position?

9. What are the next steps in the interview process?

10. Are there any other questions you have for me?
20 common interview questions

- Have you ever had an experience with a difficult differently?
- What's your most successful engineering project?
- Describe a time you used problem-solving skills.
- What's one aspect of this role that has the biggest challenge facing the engineering team right now?
- Describe a written technical report or presentation you've worked on.
- Describe a time you demonstrated leadership.
- Explain a time you had to use logic to solve an engineering problem.
- Describe a time you had to complete a project, or a component of a project, that went well and also one that was challenging. If you have these four scenarios in your career, have an interaction with a coworker — big or small — that went well and also one that was challenging.
- Prepare examples of your successes, challenges, projects in the pipeline for this position?
- What's the biggest challenge for you in this role?
- Describe your ideal manager.
- Are there opportunities for professional development or new technologies?
- What's your most successful project?
- Why are you interested in this role? Why are you interested in working at this company?
- What does success look like in this role? And how will you measure your success?
- If you're able to share, what are the most immediate projects in the pipeline for this position?
- What's the biggest challenge for the engineering team right now?
- Do you have security clearance to work on classified projects?
- If you're able to share, what are the most immediate projects in the pipeline for this position?
- How do you stay current with the latest technology at work.

10 questions you should be prepared to ask

- What do you want to know about the company for three years?
- What will be the biggest challenge for you in this role?
- Why are you interested in this role? Why are you interested in working at this company?
- What's the biggest challenge facing the engineering team right now?
- Can you describe the culture of the company?
- What's the biggest challenge facing the engineering team right now?
- Can you describe the culture of the company?

An Online Learning Platform

Built by engineers, for engineers, SolidProfessor helps you achieve your career goals through our expert-led video tutorials, exercises, and quizzes.

Our tutorials will help you improve the technical skills hiring managers are looking for when searching through candidates' resumes. Here are some of our most popular course topics to help get you started:

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- 10+ courses

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- 3 courses

**FEA**
- 3 courses

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- 3 courses

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- 2 courses

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- Aaron, Sales Drafter at CP Group

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**Sign Up**
20 common interview questions

- What are your salary expectations?
- What will be the biggest challenge for you in this interested in working at this company?
- Tell me about a time you got negative feedback on your work. How did you respond?
- Have you ever had an experience with a difficult client, employer, or employee? How did you
- Describe a time you had to work on a team and
- What's your most successful engineering project?
- What software packages are you familiar with?
- What processes do you follow to catch any mistakes in your work?
- What engineering skills have you learned or
- Explain a time you had to use logic to solve an engineering problem.
- Describe a written technical report or presenta-
- What are the next steps in the interview process?
- If you're able to share, what are the most imme-
- What's one aspect of this role that has the steepest learning curve? What could I do to get
- What does success look like in this role? And how ing team right now?
- What are your salary expectations?
- What is your primary motivation for considering this role?
- How do you define success in a role like this?
- What are the next steps in the interview process?
- If you're able to share, what are the most imme-
- What's one aspect of this role that has the steepest learning curve? What could I do to get
- What does success look like in this role? And how
Hi [First Name],

Thank you for the opportunity to discuss the [job title] position. It was a pleasure meeting with you [and any other interviewers' names] today! I was impressed with [brief description of something you connected with about the position or company].

Once again, thank you for your time and consideration. If there is any additional information I can provide you with to help in your decision, please let me know.

I look forward to hearing back from you!

Regards,

[Your Full Name]
References

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2 Economic Modeling. In-Demand and Aging: A Look at Engineers and Engineering Technicians in the Workforce.
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5 Economic Modeling. In-Demand and Aging: A Look at Engineers and Engineering Technicians in the Workforce.
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7 Interesting Engineering: 10 Essential Skills That Hiring Managers Look for in Engineers
8 Forbes: 6 Soft Skills Technical Employees Need to Thrive
9 Glassdoor Salaries
10 Glassdoor Salaries
11 Monster. How to Trim Your Resume to One Page.
12 Career Builder. How Far Back Should You Go On a Resume?
14 The Balance Careers. What is Business Attire?