

Power is at the core of the mechanical engineer's purpose. And that usually goes in one of two ways: producing it or harnessing it. Mechanical engineers are involved in everything from research and design to the development and testing phases of machines, devices, components, systems, processes, motors, and sensors.

Mechanical Engineer Interview Questions

Question #1: Besides Technical Expertise, What Skills Help You Succeed as a Mechanical Engineer?

"A strong sense for analytical thinking and problem-solving is essential. I see both of those skills working together symbiotically. When I'm thinking about a new design, I'm always analyzing how I can make it better than what's out there—how I can innovate or streamline. At the same time, I need to find the right solution to the problem. So another important skill is flexibility, as I don't want to limit myself, and I make sure that I properly listen to feedback from my team. Communication is then also key. We don't work in a vacuum, and I want to maintain congeniality and a consistent dialogue while being able to communicate complex ideas to those who may not understand all the technical aspects. Within all that, I'd also emphasize the ability to concentrate on one task over extended periods and an unwavering attention to detail."

Question #2: What Was Your First Engineering Design?

"I've always been interested in challenging the status quo. So, like most aspiring engineers, I started tinkering with things at an early age. But in college, I became fascinated by Dutch artist Theo Jansen, as his work showed me that creativity and engineering go together inherently. And I loved his kinetic sculptures—how they could walk using a rather simple rotary input. My significant other at the time really wanted a dog, but our dorms wouldn't allow any pets. So I put together a miniature version of typical Jansen linkage—using his planar mechanism on the legs for the walking movement and mimicking pieces from the artist's Strandbeest series, while also adding my own aesthetic touch. Of course, it was wind-propelled, but it worked!"

Question #3: What Mechanical Engineering Tasks Are Most Enjoyable to You?

"To start off, I absolutely love identifying a problem, brainstorming, and then coming up with a logical proposal for my solution. Following that, the drawing board where I create my blueprints and schematics is definitely my happy place. But I also find the tactile aspects of mechanical engineering to be exhilarating: Assembling a prototype or directly managing a manufacturing

process. And being a member of a talented team—resolving issues together—is always satisfying too."

Question #4: How Do You Describe Complex Designs to a Layperson, Non-Engineer, or Client?

"When I'm not speaking to a fellow engineer, I'm highly aware of terminology that could confuse my audience. If I'm talking to an internal team member, I'll make sure to clarify any terms they may not know, whether that's characterizing particular materials or defining one of the laws of thermodynamics. However, if I need to discuss a full-on concept or design with a client, I'll set up an in-person meeting and provide a visual presentation with step-by-step breakdowns, pausing at regular intervals to ask if they have any questions. I'll also finish by underlining how the design will benefit them overall."

Question #5: Can You Define a Piping and Instrumentation Diagram (P&ID)? And How Have You Used It in Your Work?

"As compared to a process flow diagram (PFD)—which depicts the bigger picture of the flow of a plant process—a piping and instrumentation diagram is much more detailed, delineating everything from processes, piping, mechanical equipment, instrumentation, and control devices, among other items."

"In my last position at an auto-manufacturing plant, I [drafted P&IDs](#) during the design stage of a site-expansion project and the installation of a new industrial process control. We worked on several versions by gathering different iterations of equipment and instrumentation engineering designs, as well as data from initial flowcharts."

Question #6: What System Do You Prefer to Control the Machinery You're Designing: Pneumatic, Electromechanical, or Hydraulic?

"I'm a big proponent of [pneumatic systems](#) for several reasons. First, you're going to get the most bang for your buck since their components are relatively cheap. But furthermore, pneumatics are typically most efficient—relying on a continual supply of compressed air—and are now used in many industries to drive machinery. They're fast, dependable, and somewhat simple, yet also safe—reducing any worries of fire hazards or explosions."