



Sample Mock Interview Questions

College of Engineering, Technology, and Physical Sciences

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Interview Questions for Artificial Intelligence (A.I.) Majors

- How would you clean a dataset with missing values?
- What's the difference between supervised and unsupervised learning?
- Tell me about a time you had to debug a challenging issue in your code. What did you learn?
- Describe a group project where you had to apply AI concepts. What role did you play?
- How do you stay current with developments in AI?
- Give an example of a time you faced a setback on a technical project. How did you handle it?
- Tell me about a time when you had to explain a complex technical topic to a non-technical audience.
- Can you explain the difference between supervised and unsupervised learning?
- Walk me through a machine learning project you've worked on. What problem were you solving?
- What is overfitting in machine learning, and how do you prevent it?
- What's the difference between AI, machine learning, and deep learning?
- What tools or frameworks have you used for AI development (e.g., TensorFlow, PyTorch)?
- How would you explain gradient descent to someone with no background in AI?

Interview Questions for Chemistry Majors

- Why did you choose to major in Chemistry?
- Which field of chemistry are you most interested in (e.g., organic, inorganic, analytical, physical, biochemistry)?
- What career paths are you considering, and how does your chemistry degree support those goals?
- How do you keep up with recent developments in the chemical sciences?
- How do you ensure accuracy and safety in a laboratory setting?
- Describe an experiment you designed. What hypothesis did you test?
- How would you explain PCR or CRISPR to a non-scientist?
- What are the differences between ionic and covalent bonds?
- Explain Le Chatelier's Principle and how it applies to chemical equilibrium.
- How do you ensure accuracy and precision when conducting lab experiments?
- What techniques have you used for chemical analysis (e.g., titration, spectroscopy, chromatography)?
- Can you explain the concept of pH and how buffers work?
- Describe a lab project where you synthesized a compound. What was the process?
- What safety protocols do you follow when working with hazardous chemicals?



Interview Questions for Chemistry Majors on an Education Track

- Why did you choose to major in chemistry and pursue a career in education?
- What age group or grade level do you feel most passionate about teaching, and why?
- How do you stay current with developments in the field of chemistry?
- How would you explain the concept of the periodic table to high school students?
- Describe a hands-on experiment or lab activity you might use to teach chemical reactions.
- How do you ensure that students understand complex topics like stoichiometry or balancing equations?
- What teaching strategies do you use to make chemistry engaging and accessible for all learners?
- What educational technology tools are you familiar with that enhance science learning?
- How would you incorporate virtual labs or simulations into your chemistry curriculum?
- What has been the most impactful experience during your education preparation so far?

General Interview Questions for Civil, Electrical, and Mechanical Engineering Majors

- Tell me about your educational background and course you have completed. How have they helped you prepare for engineering projects?
- Why did you choose to major in engineering?
- What's your favorite engineering course and why?
- What engineering project (academic or personal) best represents your skills?
- Have you participated in any engineering competitions or student organizations? What was your experience?
- Tell me about a time you encountered a design error. How did you resolve it?
- Have you ever had to work with conflicting opinions on a project team? How did you handle it?
- Describe a time you used CAD or simulation software. What was the outcome?
- How do you approach designing a solution that meets specific constraints (e.g., budget, safety, materials)?
- How do you stay updated about the latest trends in engineering technology?

Interview Questions for Civil Engineering Majors

- Can you explain the difference between load-bearing and non-load-bearing structures?
- How do you determine the appropriate foundation for a structure?
- What are the main types of soil tests used in construction?
- How would you design a stormwater drainage system?



Interview Questions for Electrical Engineering Majors

- What's the difference between AC and DC current, and where are each used?
- Describe how a basic circuit with a resistor, capacitor, and inductor behaves.
- Have you worked with any microcontrollers or embedded systems? Describe a project.
- How do you ensure safety when designing or testing electrical systems?
- What is Ohm's Law, and how is it used in practical applications?

Interview Questions for Mechanical Engineering Majors

- What is the difference between stress and strain? How are they measured?
- How do you determine whether a design is feasible and cost-effective?
- What tools have you used for CAD or simulation (e.g., SolidWorks, ANSYS)?
- Describe a thermodynamic cycle and its application in real-world systems.
- What are the key considerations in selecting materials for a mechanical system?

Interview Questions for Computer Science Majors

- Why did you choose your major?
- Tell me about a time when you had to quickly learn a new programming language or tool.
- Describe a team project where you had a conflict. How did you resolve it?
- How do you manage your time when working on multiple assignments and projects?
- Describe a time when you received constructive criticism. How did you respond?
- Tell me about a coding challenge or error you struggled with. What did you do to overcome it?
- Suppose your code works, but your teammate's code breaks the app. How do you approach the situation?
- What is the difference between a stack and a queue?
- How would you optimize a slow-running program?
- Can you write a function to reverse a string in your preferred language?
- Describe how a hash table works.
- What is the difference between a process and a thread?
- How does garbage collection work in Java or Python?
- What is recursion? Can you provide a use case where it is useful?
- Write a function in your preferred language that checks if a string is a palindrome.
- Explain the concept of inheritance and give an example.
- What is the difference between an interface and an abstract class?



Interview Questions for Construction Management Majors

- Why did you choose to major in Construction Management?
- What area of construction are you most interested in (residential, commercial, industrial, infrastructure)?
- What courses have you taken that will prepare to handle construction projects?
- What construction project management software are you familiar with (e.g., Procore, AutoCAD, Revit, Primavera, Microsoft Project)?
- How do you stay organized when managing multiple tasks or assignments?
- Give an example of a time when you had to communicate technical information to a non-technical audience.
- How do you ensure a project stays on schedule and within budget?
- Can you walk me through the steps of a construction project from pre-construction to close-out?
- How would you manage subcontractors on a job site?
- What safety standards or regulations are you familiar with (e.g., OSHA)?
- How would you handle a change order during a construction project?
- How would you manage conflicts between subcontractors?
- What factors do you consider when preparing a project estimate?
- What types of contracts have you studied, and how do they impact project risk?
- How would you deal with a delay caused by weather or material shortages?



Interview Questions for Mathematics Majors

- Tell me why did you choose your major.
- How do you approach solving a complex math problem you've never encountered before?
- Walk me through a project or assignment where you applied mathematical modeling or statistical analysis to solve a real-world problem.
- Tell me about a time you faced a challenging math problem. How did you approach solving it?
- Describe a project or assignment where you had to analyze a large dataset. What steps did you take, and what did you learn?
- Give an example of how you've applied mathematical concepts to solve a real-world problem.
- Have you ever made a mistake in a math-based assignment or calculation? What happened, and how did you correct it?
- Can you explain the difference between permutations and combinations with an example?
- Describe how you've used linear algebra or calculus in a real-world application or academic project.
- Explain your expertise using tools or programming languages (e.g., MATLAB, R, Python).
- How do you see your math degree applying to industries such as finance, data science, or engineering?
- What were the best aspects of mathematics major program?
- Has your program enabled you to understand the proof of correctness of mathematical results?
- Explain your proficiency with optimization techniques. How have you optimized processes, algorithms, or systems using mathematical methods.
- Describe a challenging project where you had to explain complex mathematical concepts to non-experts. How did you ensure clear communication and understanding?



Interview Questions for Physics Majors

- Tell me why did you choose your major.
- Describe how you manage multiple academic responsibilities, such as labs, homework, and group projects.
- Tell me about a time you encountered a challenging physics problem. How did you approach it?
- Describe a lab experiment that didn't go as planned. What did you do?
- Have you ever worked on a team project where members had different strengths? How did you contribute?
- Give an example of a time when you had to learn a new software tool or research technique quickly.
- How would you explain Newton's Laws to someone without a science background?
- What are some practical applications of quantum mechanics or thermodynamics that you've encountered in your studies?
- Can you describe an experiment you've conducted and the scientific method you followed?
- What programming languages or tools have you used for data analysis (e.g., Python, MATLAB, LabVIEW)?
- How do you apply statistical methods in analyzing experimental data?
- Can you give an example of a research paper or project where you had to analyze and interpret data?

Interview Questions for Physics Majors on an Education Track

- Why did you choose to study physics, and what inspired you to pursue teaching?
- What grade level or age group are you most excited to teach, and why?
- What do you find most rewarding about teaching physics?
- How would you explain Newton's First Law of Motion to a student who has never studied physics?
- Describe a classroom experiment or demonstration you would use to explain the concept of energy conservation.
- How do you make abstract physics concepts—like electromagnetism or quantum theory—more understandable and engaging for students?
- What resources or tools do you use to stay current with physics curriculum standards?
- How would you ensure all students, regardless of background, feel included and encouraged in your physics class?
- What technology tools do you use (e.g., simulations, graphing software, online labs) to enhance physics learning?
- What has been your most meaningful learning experience as a student of physics, and how will that shape your teaching?



Interview Questions for Systems & Materiel Engineering Majors

- Tell me about a time you led or participated in a cross-functional engineering team.
- Tell me why did you choose your major.
- Describe a situation where you had to resolve a conflict between system stakeholders.
- Have you ever worked on a system that failed in the field or during testing? What did you learn from the experience?
- How do you prioritize tasks when managing multiple technical deliverables?
- Give an example of a time you had to communicate technical concepts to non-engineers.
- How do you approach the trade-off analysis process in system design?
- Explain how you would conduct a Failure Mode and Effects Analysis (FMEA) on a complex system.
- What systems engineering tools or methodologies have you used (e.g., SysML, MBSE, DOORS)?
- Describe the systems development life cycle. How have you applied it in a project?
- Can you explain how risk management is handled in a system engineering environment?
- Describe a materiel engineering project where material selection was critical. What factors influenced your decision?
- Can you walk me through a life cycle analysis you performed for a system or product?