

Effective Use of AI in this course

Developing your critical thinking and problem-solving skills is key to mastering physics. Relying on AI as a substitute for thinking limits your learning and will impact exam performance. **Always attempt the readings and homework assignments independently first.**

Here are example prompts to get you started using AI constructively. Some of the prompts will require further input from you (e.g., specific equation or problem statement you are asking about, etc.).

- **Understanding concepts**

- “I am confused about the difference between electric field and electric potential. Please explain it to me and provide some examples.”
- “Explain the relation between the differential equation form of the laws of magnetostatics and the integral expression for the magnetic field.”
- “Explain the meaning of each term in this equation.”
- “What’s the physical meaning of the electric displacement field?”

- **Problem-solving strategies and studying for exams**

- “Guide me on how to set up equations for this magnetostatics problem.”
- “Explain how symmetries can be used to simplify problems in electrostatics.”
- “Explain the difference between solving this problem by first finding the electric potential versus directly finding the electric field.”
- “I find many solutions for the vector potential in this problem, while only one is asked for. Can you explain to me where I am making a mistake?”
- “Verify the steps of my calculation for this separation of variables problem.”
- “I struggled with this problem. Provide me with a similar problem so I can get more practice.”