

**Course Questionnaire:**<sup>†</sup> *Please complete and return in class on Tuesday.*

1. Name:
2. Major (if undergraduate)/field of study (if graduate):
3. Registered for credit?
4. Subfield(s) of interest or specialty:
5. Research interests or experience (experimental, theoretical; past, current, future...):
6. Describe your most recent study of classical mechanics: How many weeks of study? What level was it (elementary, intermediate, advanced)? What books did you use? Are you familiar with Lagrangians, symmetries and conservation laws (possibly from quantum mechanics)?
7. Describe your most recent study of electromagnetic theory: How many weeks of study? What level was it (elementary, intermediate, advanced)? What books did you use? If advanced, did you study the Lorentz covariant formulation ( $F_{\mu\nu}, \dots$ )? Lagrangian formulation?
8. Describe your most recent study of special relativity (and general relativity, if any): How many weeks of study? What level was it (elementary, intermediate, advanced)? What books did you use?

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<sup>†</sup> Modeled after Kip Thorne's 136abc questionnaire.

9. Describe your most recent study of quantum mechanics (and quantum field theory, if any): How many weeks of study? What level was it (elementary, intermediate, advanced)? What books did you use? Are you comfortable with the algebraic treatment of harmonic oscillators (i.e., using  $a$  and  $a^\dagger$ )?

10. Describe any study that you have had of elementary particle physics: How many weeks of study? What level was it (elementary, intermediate, advanced)? What books did you use? Who was your instructor?

11. Describe your most recent study of thermodynamics/statistical mechanics: How many weeks of study? What level was it (elementary, intermediate, advanced)? What books did you use?

12. Summarize your math experience, including what you feel are the most significant courses you have taken. Have you studied any group theory? (Does the sentence “ $SU(3)$  has 8 traceless hermitian generators” mean anything to you?)

13. To what extent have you studied vibrating strings or systems of harmonic oscillators?

14. Is there any other background experience that you think would be helpful for me to know about?

15. What made you decide to take this course and what do you hope and expect to get out of it? What sorts of things do you expect to know, understand, or be able to do at the end of the course?

16. Describe some of the qualities of a *great* course. If you have any favorite physics courses and instructors at Caltech and you don't mind sharing this information, which/who are they? If you can think of concrete things that they really did right, please list them.

17. What do you think excites you most about physics? What makes it interesting to you?

18. Is there anything else you would like to let me know?