Lecture Notes on Modern Physics (Phys.323)
(Fall, 2011)

Masatsugu Sei Suzuki
Department of Physics, State University of New York at Binghamton
Binghamton, New York 13902-6000
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I taught the Phys.323 (Modern Physics) in Fall 2011. This course is usually taught for students who just have finished the Phys.131 and 132 (Introductory Physics) in the SUNY at Binghamton. In Phys.131 and 132, we do not teach the modern physics (we teach the simple case of the special relativity). The number of students enrolled in the Phys.323 was 30. My lecture notes are presented here. In the class, of course, the entire topics have not been covered because of such limited times. Although my lecture notes are far from completeness, it is my hope that this notes may be useful for physics students who want to understand the essence of physics. While preparing these lectures notes, I must confess that I really enjoyed studying physics using the Mathematica.

I used a text book of Modern Physics for Scientists and Engineers, Third edition, Stephen T. Thornton and Andrew Rex (Brooks/Cole Cengage Learning). Selected topics of Chapters (between Chapters 2 and 10) were taught. I also adopted the system of the WebAssign as the homeworks (some of problems chose from the textbooks. The homeworks for each chapter were sloved by students using the internet.

Note that students need knowledge of quantum mechanics for some topics. Even if they have difficulty of understanding them at this moment, it is suggested that they could read again after they study the quantum mechanics in near future.

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