

**Physics 324 – Modern Physics
Spring Quarter, 2012**

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I. Theoretical Part:

Main Textbook:

1. **Modern Physics from a to Z** by J.W. Rohlf (Wiley, 1994)
ISBN-10: 0471572705
ISBN-13: 978-0471572701

Material covered: Chapters 1–4.

Ch 1: Survey of Particles and Forces

Ch 4: Special Relativity

Ch 3: Plank's constant

Ch. 8: The Hydrogen Atom and Ch 9: Beyond the Hydrogen Atom

Additional reading: **The Feynman Lectures on Physics**

by R. P. Feynman, R. B. Leighton, and M. Sands (Addison Wesley; any edition)

ISBN-10: 0805390456

ISBN-13: 978-0805390452

The Principle of Least Action (Vol. 2)

Homework: I will assign a number of problems weekly.

We will have problem discussion sessions regularly.

II. Experimental Part:

You will be assigned two or three different experimental tasks, such as,

- Studying of the emission spectra of the various gases such as hydrogen, deuterium, sodium, and oxygen.
- Experimental determination of the Rydberg constant
- Others

Your exact experimental tasks and the form of lab reports will be given to you later by your Lab instructor, Dr. Galina Dzyubenko.

Grading: Theory, 50% Experiment, 50%

Theory Grading:

Theoretical	50%
Experimental	50%

Exam: Theoretical. Final exam date TBA.