

Rhodes College
Department of Physics
Physics 401-Quantum Physics

Course Outline-Fall 1998

This course has been introduced into the curriculum to provide students with an overview of the nature of quantum processes and understanding of current developments in the interpretation of quantum physics, especially measurement theory. We will place primary emphasis on the understanding of quantum processes; more detailed development of the mathematical tools for approaching quantum physics is to be found in the companion course next term, Physics 402, Quantum Mechanics.

The text is A.P. French and E. F. Taylor: *An Introduction to Quantum Physics*, Norton and Co., 1978. Although somewhat dated, it is a model of clarity. I will supplement the text as appropriate, particularly in the areas of particle spin, development of wave functions, operators, Dirac notation and in regards new (1980s-1990s) developments in quantum measurement theory.

We will emphasize class discussion and participation; therefore, student preparation for topics is essential, and expected. Class attendance is required. Each class absence in excess of three will result in deduction of a letter grade. Thus, the fourth absence will result in one letter grade loss, the fifth, two, etc. Please manage your time effectively. Scheduled assignments are due at the start of the class day. No late work will be accepted.

Grades will be determined from the following weights:

Class Participation	20%
Assignments	20%
Tests	30%
Paper	10%
Exam	20%

One paper is due, on Thursday, December 3, involving a topic relevant to this course. The subject of the paper requires my approval, no later than Tuesday, November 3. The paper should not exceed 3000 words--nor be a small fraction of this amount.

Unless specifically labelled as a group effort, assignments, tests the paper and the exam are to be carried out under the Honor Code.

My office hours are 9-10 am MWF, 1-2 M and 1-2 Th. Other times are available by appointment; please contact me via email (rmac).

