Minnesota State University Moorhead

PHYS 430: Quantum Mechanics

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Application of quantum mechanics to atoms and molecules.

B. COURSE EFFECTIVE DATES: 06/01/1995 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Schroedinger equation and its application in 1, 2, and 3 dimensions: Free particle, Particle in a box, Step potentials, Harmonic oscillator, Hydrogen atom
2. Matrix formulation of quantum mechanics
3. Appropriate applications in science and technology

D. LEARNING OUTCOMES (General)

1. Demonstrate an understanding of quantum mechanical and classical limits and when they apply.
2. Demonstrate an understanding of the mathematical tools of quantum mechanics.
3. Develop the skills of a physicist: checking units, limiting cases, developing conceptual and mathematical skills.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted