

DRAFT – WILL CONTINUE TO BE DEVELOPED

Syllabus

Indiana Wesleyan University

PHYE-501: Mathematical Methods for Physics (Online)

Dates for Sessions: 5/7/18 – 7/1/18

Instructed By: Dr. Reuben Rubio

Instructor email: reuben.rubio@indwes.edu

Course Description: PHE-501 “Mathematical Methods for Physics”

This course develops a mathematical foundation to succeed in graduate level courses in classical mechanics, electrodynamics, thermodynamics/statistical physics, modern and quantum physics. It encompasses algorithmic skills but aims higher to develop the ability to relate mathematics and phenomena and the ability to analyze solutions for limitations and prediction of behavior.

Prerequisites: A bachelor’s degree with a Physics major or must be state certified (in any state) to teach Physics at a secondary school level is required. Undergraduate coursework must include calculus (through multivariate) and ordinary differential equations.

Note: This course is designed for those seeking the credentials required by many regional accrediting bodies in order to be able to teach advanced placement, concurrent early college and undergraduate college physics courses at an introductory level.

Graduate Certificate in Physics Program Description:

The Graduate Physics Certificate is an 18-hour program designed for those seeking the subject matter expertise credentials required by many regional accrediting bodies. Students will be qualified to teach advanced placement, concurrent early college, and undergraduate college Physics courses at an introductory level. This certificate provides broad understanding of the field of Physics while strengthening scientific communication and analysis. Designed to be instructed in a Christian environment, the courses incorporate a pedagogical approach designed to nurture Christian faith and understanding.