

**I. COURSE INFORMATION**

- A. Physical Science 205 Engineering Physics II
- B. 5 credit hours
- C. Serway, Raymond and John W. Jewett. *Physics for Scientists and Engineers*. 9<sup>th</sup> ed. Boston: Cengage, 2009
- D. Prerequisite: PSC 204 Engineering Physics I
- E. KRSN: PHY 2030 Engineering Physics II with Lab

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

**II. COURSE DESCRIPTION**

This course emphasizes light, sound and electricity. The course is commonly required of engineers, science and health science majors.

**III. LEARNING OUTCOMES**

- A. Evaluate situations involving Engineering Physics II topics by choosing the appropriate conceptual frameworks
- B. Recall relevant physical models and to successfully apply these models using techniques of symbolic and numerical analysis in order to generate solutions to problems in Engineering Physics II topics
- C. Think critically by utilizing problem solving techniques to evaluate and analyze context rich, multi-step problems in Engineering Physics II topics, selecting relevant information, selecting an approach to solving the problem and carry out the analysis needed to generate and communicate solution(s)
- D. Perform measurements using physical apparatus, analyze the collected data including appropriate treatment of errors and uncertainties, generate and communicate conclusions based on the data and analysis for experimental investigations in Engineering Physics II topics

**IV. MAJOR CONTENT AREAS**

- A. Specific heats, heat transfer and thermodynamics
- B. Oscillations and one dimensional waves
- C. Electricity and magnetism
- D. Electrical fields, electrical potential
- E. Capacitors, Resistance and DC current
- F. Work and energy relations in electrical circuits
- G. Magnetic fields and applications
- H. Alternating Current circuits

**V. ASSIGNMENTS (may include but are not limited to)**

- A. Reading assignments
- B. Writing assignments
- C. Discussions
- D. Laboratory exercises

**VI. EVALUATION METHODS (may include but are not limited to)**

- A. Attendance and participation
- B. Assignments
- C. Laboratory reports
- D. Comprehensive final