Course Number: MSE 304

Course Title: Applied Quantum Mechanics

Academic Semester: Summer          Academic Year: 2015/ 2016
Semester Start Date: Jun 05, 2016    Semester End Date: Aug 04, 2016

Class Schedule: Tue, Wed, Thu, 9am-11am

Instructor(s) Name(s): Udo Schwingenschlogl
Email: udo.schwingenschlogl@kaust.edu.sa
Office Location: B3 R3233
Office Hours: Thu, 12pm-1pm

COURSE DESCRIPTION FROM PROGRAM GUIDE


COMPREHENSIVE COURSE DESCRIPTION


GOALS AND OBJECTIVES

1: The student will be able to formulate and explain fundamental concepts of quantum mechanics.

2: The student will learn to solve Schrodinger’s equation to obtain eigenvectors and energies.
3: The student will learn to calculate and describe the propagation of a particle in a simple, one-dimensional potential.

4: The student will learn to calculate a transition rate by applying perturbation theory.

REQUIRED KNOWLEDGE

Classical mechanics and electrostatics, Fourier transform, Taylor series expansion, basic matrix manipulation, 1st and 2nd order differential equations.

REFERENCE TEXTS


METHOD OF EVALUATION

<table>
<thead>
<tr>
<th>Graded content</th>
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<tbody>
<tr>
<td>Midterm exam (30%)</td>
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<tr>
<td>Final exam (60%)</td>
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<td>Participation in class (10%)</td>
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COURSE REQUIREMENTS

Assignments

Preparation of text, active participation, revision of class content, exercises

Course Policies

Full participation required.

Additional Information

NOTE
The instructor reserves the right to make changes to this syllabus as necessary.