OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

<table>
<thead>
<tr>
<th>FACULTY/DEPARTMENT:</th>
<th>Physics 351</th>
<th>COURSE NAME/NUMBER</th>
<th>FORMER COURSE NUMBER</th>
<th>UCFV CREDITS</th>
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</thead>
<tbody>
<tr>
<td>Faculty of Science, Health &amp; Human Services/Physics</td>
<td>Quantum Mechanics</td>
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<td>3</td>
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**CALENDAR DESCRIPTION:**

This fundamental course on quantum mechanics is the gateway to modern physics. The Schrödinger equation and basic postulates of the theory will be examined. Topics will include one-dimensional problems, angular momentum, hydrogen atom, and spin.

**PREREQUISITES:** PHYS 252

**COREQUISITES:**

**PRE OR CO-REQUISITE:** PHYS 381

**SYNONYMOUS COURSE(S)**

(a) Replaces: n/a
(b) Cannot take: n/a for further credit.

**SERVICE COURSE TO:**

**TOTAL HOURS PER TERM:** 75

**TRAINING DAY-BASED INSTRUCTION**

<table>
<thead>
<tr>
<th>STRUCTURE OF HOURS</th>
<th>LENGTH OF COURSE</th>
<th>HOURS PER DAY</th>
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<tbody>
<tr>
<td>Lectures: 75 Hrs</td>
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<tr>
<td>Seminar: Hrs</td>
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<tr>
<td>Laboratory: Hrs</td>
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<tr>
<td>Field Experience: Hrs</td>
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<tr>
<td>Student Directed Learning: Hrs</td>
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<tr>
<td>Other (Specify): Hrs</td>
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**MAXIMUM ENROLLMENT:** 24

**EXPECTED FREQUENCY OF COURSE OFFERINGS:** Once every two years

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)

☑ Yes ☐ No

WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)

☐ Yes ☒ No

TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:

☑ Yes ☐ No

**AUTHORIZATION SIGNATURES:**

Course Designer(s): Tim Cooper; revised Derek Hamett

Chairperson: Gillian Mimmack (Curriculum Committee)

Department Head: Norm Taylor

Dean: Jackie Snodgrass

UPAC Approval in Principle Date:       UPAC Final Approval Date: December 14, 2005
LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:
To build up the students intuitive understanding of quantum mechanics and their knowledge of the formal structure of quantum mechanics.
To enable the students to solve various problems in each of the topic areas listed in the Calendar Description section.
Since quantum mechanics involves such a radical shift in the students' thinking, this course intentionally repeats some of the material in the prerequisite course, PHYS 252.

METHODS:
Lecture, demonstration, small group practice, discussion, audio-visual presentation, use of models and charts, seminars and presentations.

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):
Credit can be awarded for this course through PLAR (Please check:) ☑ Yes ☐ No

METHODS OF OBTAINING PLAR:
Departmental Review and/or Course Challenge

TEXTBOOKS, REFERENCES, MATERIALS:
[Textbook selection varies by instructor. An example of texts for this course might be:]
Texts:
Griffiths, D., Introduction to Quantum Mechanics
Optional texts:
Morrison, Michael A., Understanding Quantum Physics (Volume 1)
Liboff, R., Introductory Quantum Mechanics
Messiah, A., Quantum Mechanics (Vol. 1-2)

SUPPLIES / MATERIALS:

STUDENT EVALUATION:
[An example of student evaluation for this course might be:]
Assignments  30%
Midterm                 30%
Final   40%

COURSE CONTENT:
[Course content varies by instructor. An example of course content might be:]
1. Schrodinger equation
2. One dimensional problems
3. Mathematical formalism
4. Three dimensional problems and angular momentum