# Course Syllabus

**PHYS 633: Quantum Mechanics**

Willamette 318  
TTh 2-3:50 PM  
Spring 2017  
Instructor: Spencer Chang

**Office:** Willamette Hall 462

**Office Hours:** In office (W 5-6pm, F 10-11am) or by appointment. Feel free to come chat about the course, my research, or anything that interests you.

**E-mail:** chang2@uoregon.edu (mailto:chang2@uoregon.edu)

**Teaching Assistants:** Andrew Blakie

## Course Description

This course is the final quarter of a three quarter sequence in graduate level quantum mechanics.

## Learning Outcomes

Through this course, students will learn:

- How to apply time dependent perturbation techniques to physical systems of interest, such as radiative transitions in atomic levels
- How to predict scattering amplitudes and analyze physical consequences from their analytic structure
- How to research a topic in quantum mechanics and give a 30 minute seminar-style presentation on it

## Text and other Course Requirements

The textbook for this course is “Principle of Quantum Mechanics” 2nd edition by R. Shankar. I also suggest “Modern Quantum Mechanics” by J. Sakurai.

## Workload and Grading Policy

There will be homework assignments offered roughly weekly, with about six total. These will comprise 70% of your grade. (Note: unlike previous quarters, the lowest grade will not be dropped). Please let me know as soon as possible about any issues with turning in a homework on time. Late homework will not be accepted without prior arrangement. In addition, there will be a research project, worth 30% of your grade, based on a 30 minute presentation near the end of the quarter and a write up of the notes. Your ultimate grade will be based on this composite score and I reserve the right to curve the grades if needed to generate a reasonable distribution, as well as the ability to improve your final grade to take into account...
improvement over the course (e.g. going from a B to a B+). Total work expected in a week will be about 2-3 hours of reading, 3-4 hours on the homework, and 3-4 hours of lecture.

**Course schedule and assignments**

We will cover roughly 1/2 chapter a week, see canvas course calendar pages for specific information on topics covered. Class will be primarily lecture based, but questions and discussion are highly encouraged. On average there will be about 75 minutes for each lecture, but we might use the full two hours (with a break) to make up or catch up.

**Collaboration Policy**

Discussion with classmates on homework is encouraged. However, students must submit their own work. The homework is essential to mastering the subject, thus it is more important to understand the methods than the final answers. Academic misconduct will not be tolerated. Please see the University Student Conduct Code ([http://conduct.uoregon.edu](http://conduct.uoregon.edu)) for more information.

**Electronics Policy**

Humans are terrible multi-taskers and thus, I encourage everybody to limit the use of technology in class to note taking and recording of lectures. Be aware of the distractions other uses have on your attention and those around you.

**Students with Disabilities**

Please arrange a meeting with me to discuss any aspects of the course which are barriers to your inclusion. All shared information will be kept confidential.

**Course Summary:**

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<th>Date</th>
<th>Details</th>
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<td>Tue Apr 4, 2017</td>
<td><a href="https://canvas.uoregon.edu/calendar?event_id=61435&amp;include_contexts=course_84123">PHYS 633: First Class</a> 2pm to 3:50pm</td>
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