Syllabus PHYS 414: Quantum Mechanics

- **Subject**: You’ll learn how to apply Quantum Mechanics first to simple systems, then to atoms, molecules, photons, metals, etc. This requires some mathematics: complex numbers, differential equations, and linear algebra (there is an Appendix in the textbook on linear algebra).

- **Instructor**: S.J. van Enk, 251 Wil, svanenk@uoregon.edu

- **Office hours**: Thursdays and Fridays, 2.00pm-3.00pm. However, I have an open door policy and you can ask me questions about anything at any time.

- **TA**: Christopher Jackson, omgphysics@gmail.com.

- **Textbook**: D. J. Griffiths, *Introduction to Quantum Mechanics*, second edition. A popular book, although not to everyone’s liking. We will probably get through Chapters 1–3 and part of 4 this term, 5, 6 and 7 next term, and 9, 10, and 12 in spring.

- **Some other books**:
  - at roughly the same level: Ballentine, *Quantum Mechanics*,
  - Liboff, *Introductory Quantum Mechanics*,
  - Feynman, *Feynman’s Lectures on Physics*, Vol. 3 (for insights and fun),
  - at a more introductory level: French and Taylor, *Introduction to QM*,
  - Mark Beck (ex-UO!) *Quantum Mechanics*
  - at a higher level: Sakurai, *Modern Quantum Mechanics* (used in the graduate course at the UO),
  - Mandl, *Quantum Mechanics*,
  - Shankar, *Principles of Quantum Mechanics*
  - all levels mixed up + philosophy: Science library: QC 174.12

- **Homework**: Due every Friday by 5pm, except in the weeks of the Quiz/Midterm. Late homework (handed in before Monday’s lecture) counts for 75%. Your lowest homework score will be dropped.
Collaboration is good, even encouraged, but you have to write down your solutions independently. No points for copying.

- **Grading:**
  
  Quiz (18%),
  Midterm (20%),
  Final (30%),
  Homework (32%).

  I will not curve any individual homework score, quiz score, or midterm score, but I do curve the final grade. If the scores are reasonable, the average score will correspond to a B, one standard deviation above (below) will be an A (C).

- **Blackboard:** I use just one part of blackboard: course documents (solutions to problems, articles related to material, notes, statistics on homework/quiz/midterm scores)