Physics 3750: Quantum Physics I.
Fall 2016.

Mon., Tues. and Thursday. Slot 6. 1:00pm – 1:50pm. Room C-3067.

Co-Requisite: Mathematics 2000. PHYS 3220 is recommended.
Pre-Requisite: PHYS 2750 (or 2056 or CHEM 2302), Mathematics 2000. PHYS 3220 is recommended.

Course description on department web page:
http://www.mun.ca/physics/undergraduates/syllabus/p3750.php

Instructor.
Prof. James LeBlanc.  Rm C-1059. jleblanc@mun.ca.


Course web page: See D2L

Textbook:

Evaluation.
Assignments  30%
Mid-term test  30%
Final Exam  40%

No supplementary exam.

Assignments (approximately 6):
- Due approximately every two weeks.
- To be turned in during class on the due date unless otherwise discussed.

Mid-term test:
- Tentatively scheduled for Thursday, Oct. 13th, 1pm (in class – 50 min)

Missed work:
- Students who cannot complete assignments or mid-term tests need to consult the University Calendar, Section 6.7.5 Exemptions from Parts of the Evaluation, and speak to the instructor.

Worksheets:
- Occasional unmarked in-class tutorials will be circulated and posted on D2L. Typically on topics covered in the previous week.

Tentative Outline.

I. The Wave Function (Ch. 1)
- Probabilities and statistical interpretation
- Expectation values
- Schrodinger equation
- Uncertainty principle
II. Time-independent Schrodinger equation (Ch. 2)
   - Stationary states
   - Particle in 1D
   - Infinite and finite potential well
   - Tunneling
   - Parity

III. Operators, Eigenfunctions (Ch. 3)
   - Bra-Ket notation
   - Operators
   - Eigenvalue problems
   - Matrix notation

IV. Schrodinger equation in three dimensions and angular momentum (Ch. 4)
   - Separation of variables
   - Particles in a 3D box
   - Spherical potentials
   - Angular momentum operators
   - Hydrogen atom
   - Intro to spin

Important general information from the University.

It is the student’s responsibility to acquaint themselves with these items. Please read.

   http://www.mun.ca/student/conduct/

6.8.2 Exemptions From Final Examinations
   http://www.mun.ca/regoff/calendar/sectionNo=REGS-0628

6.12 Academic Misconduct
   http://www.mun.ca/regoff/calendar/sectionNo=REGS-0748

Accommodations for Students with Disabilities
   http://www.mun.ca/blundon/accommodations/