

**Department of Physics
University of Maryland**

Physics 401 Syllabus

Fall 2013

Course Title: Quantum Physics I

Course Description: The goals of this course include for students to acquire an understanding of:

- (a.) the broad principles of quantum theory and
- (b.) their applications in diverse problems in physics.

Course Webpage: Updates to the course can be found on-line at;

<http://www.physics.umd.edu/courses/Phys401/>

Instructor: Sylvester James Gates, Jr., Room 4121 (Toll Physics Building),
telephone: 301-405-6025
electronic mail: GATESS@WAM.UMD.EDU
webpage: <http://umdphysics.umd.edu/people/faculty/135-gates.html>

T.A.: Ming Song, Room 3101 (Toll Physics Building),
telephone: 301-405-6191
electronic mail: theorysong@gmail.com

Textbook: D. J. Griffiths,, *Introduction to Quantum Mechanics*,
Second Ed., Prentice Hall - Required.

Lecture/Recitation: (L) Monday, Wednesday & Friday, 10:00-10:50,
Physics Bldg., Rm. 1201.

(R) Wednesday, 11:00-11:50,
Physics Bldg., Rm. 1201.

Office Hours:

Prof. Gates is normally available for scheduled office hours between 11:00

and 12:00 a.m. every Monday and Friday immediately after class under ordinary circumstances. Students are encouraged to contact Prof. Gates to arrange meetings at other times as desired.

For students with access to electronic mail, inquiries may be sent to the instructor at any time via e-mail. In particular, e-mail is the preferred way to reach Prof. Gates as he is generally available via this mode of contact.

The time, date, and location of office hours for T, A. will be announced.

E-mail:

Prof. Gates uses e-mail to communicate with students. Thus, it is vital that students provide this information as soon as possible. Students should use e-mail for quick correspondence regarding lecture material, homework problems, etc., be responsible for making sure their correct e-mail address has been sent, and **checking** their e-mail daily. Important messages will often be sent to the class by email. Appropriate questions about the homework **may** be sent.

Reading Assignments:

All reading assignments are required. It may occur that examination problems will be drawn from material not covered in lecture, recitation nor homework, but were covered as a reading assignment. In order to maximize the benefits of lecture attendance, it is **best** to complete these assignment beforehand.

Lecture Attendance:

If you do not plan to regularly attend lecture, it is unlikely that you will receive a high grade in this course. There are two reasons for this:

- (a.) class scans – on random days, there will be a quiz of 15 minutes duration to check that students have memorized correctly the important concepts & equations that have been discussed.
- (b.) often on examinations, there will appear material that is drawn from the lecture notes that does not appear in the textbook.

Homework:

Homework will be given regularly during the semester. It will be collected, graded and returned to students as quickly as possible. A record will be kept of each student's completed problems. This tally will be used to calculate the homework grade.

The homework in this course will be accepted in electronic format. Though **not**

mandatory, this is **much** preferred and student are encouraged to do so. At the simplest level this can be done by writing a clear and easily legible document by hand, make a jpg image of each page of the document, combine these into a single electronic file, and to be submitted that via e-mail.

Of course, the direct creation of a submission by use of text editors to create a .doc, .docx, .pdf, etc. file is also acceptable.

Each page of the submission should be included as a separate electronic document. For example, if a homework assignment consists of four pages, and the student wishes to submit them as pdf files, there should a separate pdf file for page one, a separate file for page two, etc. All of these pages can be submitted in the form of a zipped file containing all of the homework assignment. The submission of ONLY answers is not acceptable since solutions can be copied from sources places. Homework must show sufficient proof that a derivation of the solution was carried out.

Whenever such a submission is made, the student is responsible to ensure that an electronic message for the submission is received. If this is not the case after two (2) days, a follow up query should be sent.

Late homework will ONLY be accepted with a physician's or other official written note. However, points will be deducted from the grade on late homework at a rate of 10 points/day.

A Guide to Doing 'Hand-App' Created Homework:

If you wish to have the best possible grades on homework returned, you **must**

- *1. Staple pages together.
- *2. Turn in **neat** homework (points may be deducted otherwise).
- *4. Write mathematical solutions in **pencil**.
- *5. **SHOW YOUR WORK!** Solutions or answers turned in without explanation will **NOT** receive full credit.

Examinations:

There will be 2 exams given during the lecture periods (50 minutes in length). Both exams contribute to the final grade for the course. The final exam will occur during the standard exam period and detailed information will be sent to each student via e-mail. You **must** take the final exam to pass the course. There will be no make-up for the exams, unless there is a strictly and well documented reason (medical problem, religious holiday, or serious family crisis).

Details such as which topics will be covered in each exam, whether crib sheets will be allowed, etc. will be sent out in electronic mail.

Grading:

The final grade for the course will be determined by the following formula;

$$\begin{aligned} \text{F.G.} = & \frac{25}{100}(\text{H. W.}) + \frac{25}{100}(\text{In Class Exams}) \\ & + \frac{15}{100}(\text{Scans}) + \frac{35}{100}(\text{Final Exam}) . \end{aligned}$$

Disability Support Services:

The UMCP campus offers support in these cases. It is the responsibility of the effected students to contact the Counseling Center, Rm. 0126 Shoemaker Building 301-314-7682 or on-line at <http://www.inform.umd.edu/dss/> in order to take advantage of this assistance. After this contact the course instructor.

Academic Dishonesty:

The University of Maryland has an established policy on academic dishonesty (see the webpage at

<http://www.inform.umd.edu/CampusInfo/Departments/PRES/policies/iii100a.html>).

Students are advised to become familiar with the policy which in part states,

“The University can function properly only if its members adhere to clearly established goals and values. Essential to the fundamental purpose of the University is the commitment to the principles of truth and academic honesty. Accordingly, The Code of Academic Integrity is designed to ensure that the principle of academic honesty is upheld. While all members of the University share this responsibility. The Code of Academic Integrity is designed so that special responsibility for upholding the principle of academic honesty lies with the students.”

Students who infringe upon this UMCP policy will be subject to **severe** sanction.

CourseEvalUM:

Your participation in the evaluation of courses through CourseEvalUM is a responsibility you hold as a student member of our academic community. Your feedback is confidential and important to the improvement of teaching and learning at the University as well as to the tenure and promotion process. CourseEvalUM will be open for you to complete

your evaluations for Fall semester courses between near the end of the term. Please go directly to the website

<http://www.courseevalum.umd.edu>

to complete your evaluations. By completing all of your evaluations each semester, you will have the privilege of accessing online, at Testudo, the evaluation reports for the thousands of courses.