

Department of Physics University of Maryland

Physics 711 Syllabus

Spring 2015

Course Title: Symmetry Problems in Physics

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

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

Instructors: Sylvester James Gates, Jr., Room 1117 (Physics Building),
telephone: 301-405-6025
electronic mail: GATESS@WAM.UMD.EDU
webpage: <http://umdp.physics.umd.edu/people/faculty/135-gates.html>

William Linch, Room 1117 (Physics Building),
electronic mail: wdlinch3@gmail.com
webpage: <http://terpconnect.umd.edu/~wdlinch3/>

Textbook: H. Georgi, *Lie Algebras In Particle Physics: from Isospin To Unified Theories*
Second Ed., Westlake Press - Required.

R. Cahn, *Semi-Simple Lie Algebras and their Representations*
E-copy: <http://phyweb.lbl.gov/~rncahn/www/liealgebras/book.html>

Lecture/Recitation: Tuesday & Thursday, 12:30—14:45,
Physics Bldg., Rm. 0405.

Office Hours:

Prof. Gates is normally available for scheduled office hours between 10:00 and 11:00 a.m. every Tuesday and Thursday immediately before 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.

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.

Grading:

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

$$\begin{aligned} \text{F.G.} = & \frac{30}{100}(\text{H. W.}) + \frac{30}{100}(\text{Midterm Exam}) \\ & + \frac{40}{100}(\text{Final Exam}) \quad . \end{aligned}$$

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. Homework will consist of a variety of types of activities. A small amount will require some elementary mathematics. There will be essays, web-based research projects, and group assignments.

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 Homework:

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

- *1. Submit homework by email to GATESS@WAM.UMD.EDU. If handwritten, it is acceptable to submit a **legible** scan or photograph.
- *2. Turn in **neat** homework (points may be deducted otherwise).
- *4. Write mathematical solutions in **pencil** (499G).
- *5. **SHOW YOUR WORK!** Solutions or answers turned in without explanation will **NOT** receive full credit (499G).

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>

for more information). 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 before 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 for which 70% or more students submitted their evaluations.