

Course Information

PHYS 5802 Group Theory and its Application to Particle Physics Fall 2008

Professor: Pat Kalyniak
Room 3310, Herzberg
520-4376; Kalyniak@physics.carleton.ca

Lectures: Wednesdays, Fridays 10:00 – 11:30
Southam Hall 308
Lectures on September 12 and November 21 will be rescheduled

Marks: Assignments 60%
Final Exam 40%

Website: <http://www.physics.carleton.ca/~kalyniak/phys5802/index.html>

A general outline is given below:

- I Symmetry and Invariance
Basic Group Properties
Brief review of Linear Vector Spaces
Group Representations
- II Symmetric group
- III Lie groups
Unitary groups
Young Tableaux methods
Examples and Applications: Quark Model
- IV Dynkin Diagram Methods

Useful References:

J.P. Elliott and P.G. Dawber, Symmetry in Physics, Oxford (out of print?)
Fl. Stancu, Group Theory in Subnuclear Physics, Oxford
M. Hamermesh, Group Theory and its Application to Physical Problems, Dover
Wu-Ki Tung, Group Theory in Physics, World Scientific
E.P. Wigner, Group Theory, Academic Press
H. Georgi, Lie Algebras in Particle Physics, Frontiers in Physics
R. Slansky, “Group Theory for Unified Model Building”, Physics Reports 79, 1981

For Department policies, please see <http://www.physics.carleton.ca/Policies.html> This link contains information regarding the issues of Plagiarism and of Academic Accommodation. **It is your responsibility to read these policies.** See over for Carleton statements on academic accommodation.

Academic Accommodation

You may need special arrangements to meet your academic obligations during the term because of disability, pregnancy or religious obligations. Please review the course outline promptly and write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

It takes time to review and consider each request individually, and to arrange for accommodations where appropriate. Please make sure you respect these timelines particularly for in-class tests, mid-terms and final exams, as well as any change in due dates for papers.

You can visit the Equity Services website to view the policies and to obtain more detailed information on academic accommodation at <http://carleton.ca/equity/accommodation>

"Students with disabilities requiring academic accommodations in this course must contact a coordinator at the Paul Menton Centre for Students with Disabilities to complete the necessary Letters of Accommodation. After registering with the PMC, make an appointment to meet and discuss your needs with me in order to make the necessary arrangements as early in the term as possible, but no later than two weeks before the first assignment is due or the first test requiring accommodations. Please note the deadline for submitting completed forms to the Paul Menton Centre is November 7th, 2008 (for fall and fall/winter term courses) / March 6th, 2009 (for winter term courses)"