

# Math 744: Lie Groups

## Fall 2016

### BASIC INFORMATION

**Class** meets MWF 12:00 - 12:50 am in MTH 0106

**Instructor:** Karin Melnick

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Office hours (tentative) Mon 1:30 - 3 pm

**Web page** for course <http://www.math.umd.edu/~karin/liegroups16.html>

### MATERIAL

*All recommended texts will be on reserve in the EPSL Library.*

#### **Primary recommended text:**

- *Lie Groups, Lie Algebras, and Representations* by B.C. Hall

#### **Additional recommended texts:**

- *Lie Groups: Beyond an Introduction* by A.W. Knap
- *Buildings: Theory and Applications* by P. Abramenko and K.S. Brown

#### **Course Outline:**

**Week 1** (8/29–9/2) Introduction, Matrix Groups (Hall Ch. 1)

**Weeks 2 - 3** (9/7–9/16) Lie Algebras, Exponential Map, and Logarithm (Hall Chs. 2, 3)

**Weeks 4 - 6** (9/19–10/7) Lie Algebra-Lie Group Correspondence (Hall Chs. 3, 5)

**Weeks 7 - 8** (10/10–10/21) Basic Representation Theory (Hall Ch. 4)

**Weeks 9 - 12** (10/24–11/18) Structure Theory (Hall Chs. 7, 8)

**Weeks 13 - 15** (11/21–12/12) Additional Topics as time permits, such as Buildings

**Homework problems** will be assigned during class and compiled on the web site. They will be due every two weeks in class on Wednesday.

#### POLICIES

**Collaboration:** You are encouraged to work together on homework assignments, but the work you submit should be your own.

**Classroom Etiquette:** Please turn off all cell phones and other potentially disruptive electronic devices and keep them out of sight.