Math 648, Topics in Differential Geometry
Spring 2001
Bian Hall

This course covered the basics of Lie group theory and
representation theory, from the point of view of matrix groups
(that is, closed subgroups of GL(n;C)). Topics covered included:
examples of Lie groups and topological properties such as
connectedness, compactness, and simple connectedness; the Lie
algebra and the exponential mapping; the Baker-Campbell-Hausdorff
formula and the relationship between Lie algebra homomorphisms
and Lie group homomorphisms; basic representations theory
including the representations of SU(2); the representations of
SU(3); and general semisimple Lie groups/algebras and their
representations.