

**MA 720-001
COURSE SYLLABUS**

**Department of Mathematics
North Carolina State University
Spring, 2019**

Instructor Information:

Dr. Kailash C. Misra
Office: SAS3112
Office Phone: 515-8784
Email: misra@ncsu.edu
Office Hour: T, Th 10:00-11:00 ; or by appointment.

Goal & Objective:

This is an introductory graduate course in Lie algebra which is part of the Ph.D. qualifying sequence MA520-720 on Linear and Lie algebra. The course will start with basic concepts in Lie algebras such as subalgebras, ideals, homomorphisms, derivations. Then we will discuss various properties of solvable, nilpotent and semisimple Lie algebras. In particular we will study the structure and representation theory of the smallest semisimple Lie algebra $sl(2, F)$ in detail. Then we will extend some of these results to the case $sl(2, F)$ as time permits. At the end of the course students will have a basic understanding of Lie algebras to continue further study in this important area of mathematics if they so desire.

Text Book:

Lecture notes in Lie algebras, (2018 ed.), by B. Bakalov and K.C. Misra

Test dates and Grading Policy:

There will be three mid-semester tests and a cumulative final exam. on April 30, Tuesday, 8:00-11:00AM. The dates for mid-semester tests will be announced in due course. Homework will be assigned during lecture. It is extremely important that you do the assigned homework problems in a timely

manner. We will discuss some homework problems in-class as time permits. Selected homework problems will be collected before each in-class test and graded. The mid-semester tests will count 60%, Final exam will count 30% and graded homework will count 10% of the course grade. Plus/minus grades will be used. Regular class attendance is strongly recommended. Attendance will be used in boarder line cases.

Prerequisite: MA 520 (or equivalent)

Drop/Revision Deadline: March 4, Monday.

Academic Integrity: Students are expected to abide by the University policy on Academic Integrity found at:
http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php

Remark:

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services Office for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.1).