

PHY 422A : Mathematical Methods II, course handout

02/01/2020

- The course announcements, problem sets, examination questions, and solutions (sometimes) will be posted at
<http://home.iitk.ac.in/~didas/s20/phy422a.html>
- **Course Timings :** TuThF 08:00-09:00, T201 and tutorials W 8:00-9:00, T201.
- **References :** No textbook will strictly be followed. Parts of the course will use the following useful references :
 1. *Group Theory in a Nutshell* by *A. Zee* .
 2. *Mathematical Methods of Physics* by *J. Mathews* and *R. J. Walker*.
 3. *Mathematics for Physics* by *M. Stone* and *P. Goldbart*.
 4. *Lie Algebras in Particle Physics* by *H. Georgi*.
- **Evaluation :** This will consist of 2 class tests (20%), 1 midsemester examination (35%) and 1 endsemester examination (45%).
- **Contents :** We will cover various essential topics in *group theory*, for the first part of this course, with the goal to understand *representation theory* using various theorems and tools.
The second half of this course will focus on solving *partial differential equations* using mainly *Greens function* techniques.