

PHYS-4962 Group Theory for Physicists

Class Calendar – Summer 2024

N. – Group Theory in a Nutshell for Physicists

| Class | Date | Topic | Reading |
|-------|------------|-----------------------------|-----------|
| 01 | May 20 | Review of Linear Algebra | N.pg 1-33 |
| 02 | May 23 | Finite Groups | N.I.1+2 |
| 03 | May 29 (W) | Lie Algebra | N.I.3 |
| 04 | May 30 | Representation Theory | N.II.1+2 |
| 05 | Jun 3 | Character Tables | N.II.3 |
| 06 | Jun 6 | Representations revisited | N.II.4 |
| 07 | Jun 10 | Degeneracies and Symmetries | N.III.1+3 |
| 08 | Jun 13 | Special Orthogonal Groups | N.IV.1 |
| 09 | Jun 17 | Special Orthogonal Groups | N.IV.2 |
| 10 | Jun 20 | Angular Momentum | N.IV.3 |
| 11 | Jun 24 | Special Unitary Groups | N.IV.4 |
| 12 | Jun 27 | Exam 1 | |
| | Jul 3-7 | No classes, summer break | |
| 13 | Jul 8 | Spinors | N.IV.5+6 |
| 14 | Jul 11 | The Eightfold Way of SU(3) | N.V.1+2 |
| 15 | Jul 15 | Lie Algebra of SU(3) | N.V.3+4 |
| 16 | Jul 18 | Spinor Representations | N.VII.1 |
| 17 | Jul 22 | The Lorentz Group | N.VII.2 |
| 18 | Jul 25 | Weyl Equation | N.VII.3 |
| 19 | Jul 29 | Dirac Equation | N.VII.4 |
| 20 | Aug 1 | Dirac and Majorana Spinors | N.VII.5 |
| 21 | Aug 5 | The Gauged Universe | N.IX.1 |
| 22 | Aug 8 | Grand Unification | N.IX.2 |
| 23 | Aug 12 | Grand Unification | N.IX.3+4 |
| 24 | Aug 15 | Exam 2 | |
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