

Syllabus

- weeks 1-2: Relativistic field theory, Noether's Theorem, the Dirac Equation & QED.
- week 3: Basics of nuclear physics.
- weeks 4-5: Connecting theory & experiment, Feynman rules, QED calculations.
- weeks 6-7: Higgs mechanism, electroweak unification, parity violation, EW calculations.
- week 8: Quark mixing & CP violation.
- week 9: QCD, asymptotic freedom, perturbative QCD calculations.
- weeks 10-11: mesons, nucleons, DIS, parton distribution functions, jets, etc.
- weeks 12-14: select topics on accelerators, detectors, nuclear & particle physics.
- week 15: physics beyond the Standard Model.