

PHY612: THEORETICAL PARTICLE PHYSICS

M.C. Gonzalez-Garcia

12:50-2:10 TuTh: Semester starts January 24th

Weeks 1-2 Jan 24/Feb 2

Introduction: Lagrangians, Fields for elementary particles.
QED for electrons. Kinematics, cross sections, observables.

Week 3 Feb 7/9

Symmetries: Global, chiral symmetries
Abelian and non-Abelian gauge symmetries

Week 4 Feb 14/16

Deep inelastic scattering: quarks and the parton model

Week 5 Feb 21/23

Strong Interactions and QCD

Week 6 Feb 28/March 1

Weak Interactions

Week 7 March 6/8

The Standard Model and the Higgs Mechanism

Week 8 March 13/15

Tests of SM: Precision Measurements and physics at the Z pole

Week 9 March 20/22

Higgs Physics

Week 10 March 27/29

Flavour Physics in the Standard Model: CKM and B Physics

Spring Break (April 2-8)

Week 11 April 10/12

Neutrinos

Week 12 April 17/19

Beyond the Standard Model: GUTS and Technicolor

Week 13 April 24/26

Beyond the Standard Model: MSSM

Week 14 May 1/3

Beyond the Standard Model