

Semester	AUG 2022
Open to semester	7,13,21
Course code	PH4133/PH6373
Course title	Quantum Field Theory-I
Credits	3 /3
Course Coordinator & participating faculty (if any)	Diptimoy Ghosh
Nature of Course	Lectures
Pre-requisites	Quantum Mechanics 1 and 2, Special Relativity, Group Theory, Mathematical methods (in particular complex analysis, Fourier transform)
Objectives (goals, type of students for whom useful, outcome etc)	The goal of this course is to introduce students to the fundamentals of quantum field theory, as a framework that underlies a large part of contemporary Physics. This course will be particularly useful for students in theoretical high-energy physics.
Course contents (details of topics /sections with no. of lectures for each)	Classical field theory, symmetries, Canonical quantisation, Scalar field theory, Dirac, Weyl and Majorana fermion fields, Electromagnetic field, Gauge invariance, Quantum Electrodynamics
Evaluation /assessment	End-Sem Examination-50% Mid-Sem Examination-50% Others-%
Suggested readings (with full list of authors, publisher, year, edn etc.)	Quantum Field Theory, M. Peskin & D. Schroeder Quantum Field Theory by Weinberg Vol 1