

Course Code	PHYS8001 (RPG)		
Title	Selected Topics in Computational Modelling and Data Analysis in Physics		
Offering Department	Physics		
Course Co-ordinator	Prof X D Cui    Physics		
Course Co-ordinator Email	xdcui@hku.hk		
Teachers Involved	Name	Department	Percentage
	Various teachers in the department	Physics	100
Course Objectives	This course aims to familiarise students with research oriented techniques in computer modelling and data analysis.		
Course Contents & Topics	<p>Topics include:</p> <ol style="list-style-type: none"> <li>Advanced techniques, with emphasis on recently developed techniques, in branches of experimental physics</li> <li>Data analysis and computer modelling relevant to experiments</li> </ol> <p>Topics in condensed matter physics and the physics of materials will predominate but other fields such as nuclear physics, astrophysics etc. will also be featured from time to time.</p>		
Course Learning Outcomes (CLO)	<p>On successful completion of this course, students should be able to:</p> <p>CLO 1 have a comprehensive overview of topics in computational modelling and data analysis in physics</p> <p>CLO 2 understand the basic concepts, research oriented techniques and research advances in computational modelling and data analysis in physics</p> <p>CLO 3 apply knowledge in understanding computational modelling and data analysis in physics</p>		
Pre-requisites (and Co-requisites and Impermissible combinations)	Nil		
Offer in 2024 - 2025	Y	1st sem    2nd sem	Examination    Dec    May
Course Grade	Pass or Fail		
Grade Descriptors	<p>Pass: Demonstrate substantial command of a broad range of knowledge and skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to familiar and some unfamiliar situations. Apply effective organizational and presentational skills. Apply effective lab skills and techniques. Correct use of data of results to draw appropriate conclusions.</p> <p>Fail: Demonstrate little or no evidence of command of knowledge and skills required for attaining the course learning outcomes. Lack of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems. Organization and presentational skills are minimally effective or ineffective. Apply minimally effective or ineffective lab skills and techniques. Misuse of data and results and/or unable to draw appropriate conclusions.</p>		
Course Type	Lecture-based elective course		
Course Teaching & Learning Activities	Activities	Details	No. of Hours
	Lectures		36

	Laboratory		12
	Tutorials		8
	Reading/Self study		80
Assessment Methods and Weighting	Methods	Details	Weighting in final course grade (%)
	Examination		50
	Coursework		50
Quota	9999 (9999 if no quota)		
Required/recommended reading and online materials	Nil		