1.	Title of the course	Mathematical Physics II
2.	Course number	PH507L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To PH5202/10
6.	To be offered by	Department of Physics
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** To equip students with a mathematical background that require to describe the physical phenomena by introducing the essentials of integral transforms, complex analysis, and group theory.	
10.	**Course Content:** Integral transforms: Laplace and Fourier transforms, Parseval theorem, convolution theorem and its applications; complex analysis: complex variables, analytic functions of a complex variable, Cauchy-Riemann conditions, power series, Cauchy integral theorem, conformal mapping, singularities, residue theorem, contour integration, analytic continuation, multiple-valued functions, branch points and branch cuts; Group theory: elements of group theory, discrete and continuous groups (Lie groups), generators, representations, character tables and the orthogonality theorem.	
11.	**Textbook(s):** 1. Arfken G, Weber H and Harris F, *Mathematical Methods for Physicists: A Comprehensive Guide*, Academic Press (2013). 2. Spiegel M R, Lipschutz S and Spellman D, *Schaums Outlines Series: Complex Variables*, McGraw-Hill (2009).	
12.	**Reference(s):** 1. Balakrishnan V, *Mathematical Physics with Applications, Problems and Solutions*, Ane Books (2017). 2. Dass T and Sharma S K, *Mathematical Methods in Classical and Quantum Physics*, Universities Press (1998). 3. Riley K F, Hobson M P and Bence S J, *Mathematical Methods for Physics and Engineering*, Cambridge University Press (2006).	