

Semester	AUG 2022
Open to semester	3
Course code	PH2123
Course title	Mathematical Methods for Physics (Elective)
Credits	3 /
Course Coordinator & participating faculty (if any)	Sachin Jain*, Susmita Adhikari
Nature of Course	Lectures and Tutorials
Pre-requisites	Basic knowledge of Calculus is desirable. Some basics can be reviewed quickly if required.
Objectives (goals, type of students for whom useful, outcome etc)	To provide the key mathematical tools needed for a physics student. This is a key course for students wanting to study physics. Students from other disciplines will also find it useful if they plan to study any quantitative science.
Course contents (details of topics /sections with no. of lectures for each)	<ol style="list-style-type: none"> 1. Linear vector spaces 2. Matrix algebra 3. Vector calculus 4. Complex algebra 5. Probability and statistics 6. Fourier series and transforms 7. Ordinary Differential Equations-I
Evaluation /assessment	<p>End-Sem Examination-40%</p> <p>Mid-Sem Examination-40%</p> <p>Others-20% %</p>
Suggested readings (with full list of authors, publisher, year, edn etc.)	<ol style="list-style-type: none"> 1. Mathematical Methods for Physicists: G. Arfken and H. Weber (2012) 7th edition, Academic Press 2. Mathematical Method in physical sciences, M.L. Boas, 3rd Edition. 3. Vector Analysis, Schaum's Outline of Vector Analysis, 2ed, Murray R Spiegel 4. In case any other references required, will be shared at the time of lecture.