

I – Academic Planner

A. Teaching Plan (Year : 2021-2022 Semester: Odd)

Teacher's Name Pranav Kumar Department Physics

Online classes

Mid Semester break: 10-10-2021 to 17-10-2021

S. No.	UPC	Paper Name	Core/AECC /GE/SEC	Topic/Unit	Start Date	EndDate
1	32227506	Astronomy and Astrophysics	DSE	Unit-1 (Part 1) : 1. Astronomical Scales	20.07.2021	17.08.2021
2	32227506	Astronomy and Astrophysics	DSE	Unit2: 1. Astronomical techniques 2. Physical principles	18.08.2021	31.08.2021
3	32227506	Astronomy and Astrophysics	DSE	Unit3: 1. The sun 2. The solar family 3. Stellar spectra and classification Structure	1.09.2021	30.09.2021
4	32227506	Astronomy and Astrophysics	DSE	Unit4: The milky way	01.10.2021	20.10.2021
5	32227506	Astronomy and Astrophysics	DSE	Unit5: Galaxies	21.10.2021	18.10.2021
6	32227506	Astronomy and Astrophysics	DSE	Unit 6: Large scale structure & expanding universe	29.10.2021	06.11.2021
7	32227506	Astronomy and Astrophysics	DSE	Unit 1(Part2): Basic Concept of Positional Astronomy	08.11.2021	18.11.2021
8	32221301	MATHEMATICAL PHYSICS-II (Practical)	Core	Introduction to Numerical computation software Scilab	16.08.2021	04.09.2021
9	32221301	MATHEMATICAL PHYSICS-II (Practical)	Core	Interpolation by Newton Gregory Forward and Backward difference formula, Error estimation of linear interpolation. Lagrange Interpolation.	05.09.2021	18.09.2021
10	32221301	MATHEMATICAL PHYSICS-II (Practical)	Core	Numerical Integration	20.09.2021	27.09.2021
11	32221301	MATHEMATICAL PHYSICS-II	Core	Solution of Linear system of equations: Solve system of linear equations using Gauss elimination	04.10.2021	23.10.2021

		(Practical)		method and Gauss Seidal method. Inverse of a matrix		
12	32221301	MATHEMATICAL PHYSICS-II (Practical)	Core	Generation of Special functions using user defined functions and compare with Scilab built in functions	24.10.2021	06.11.2021
13	32221301	MATHEMATICAL PHYSICS-II (Practical)	Core	Solution of Ordinary Differential Equations (ODE) First order Differential equation Euler, modified Euler and Runge-Kutta (RK) second and fourth order methods	08.11.2021	8.12.2021
14	32221501	QUANTUM MECHANICS AND APPLICATIONS (Practical)	Core	Problem1: Solve the s-wave Schrodinger equation for the ground state and the first excited state of the hydrogen atom Numerical Method: Finite Difference Method to solve Boundary Value Problem Probability Density	20.07.2021	21.09.2021
15	32221501	QUANTUM MECHANICS AND APPLICATIONS (Practical)	Core	Problem2: Solve the s-wave radial Schrodinger equation for an atom for the screened coulomb potential. Shooting method.	25.09.2021	05.10.2021
16	32221501	QUANTUM MECHANICS AND APPLICATIONS (Practical)	Core	Problem3: Solve the s-wave radial Schrodinger equation for a particle of mass m for the harmonic and anharmonic oscillator potential. Also show that for large n the system approaches to classical behavior.	09.10.2021	16.10.2021
17	32221501	QUANTUM MECHANICS AND APPLICATIONS (Practical)	Core	Problem4: Solve the s-wave radial Schrodinger equation for the vibrations of hydrogen molecule using Morse potential. Plot the potential and Wave function for few energy levels.	17.10.2021	31.10.2021
18	32227502	Advanced Mathematical Physics LAB	Core	Linear algebra: Multiplication of two 3 x 3 matrices, Eigenvalue and eigenvectors, Determination of the principal axes of moment of inertia through diagonalization. Estimation of ground state energy and wave function of a quantum system.	02.11.2021	18.11.2021

B. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic					
Type / Nature (FDP/Webinar/Workshop etc.)					
Organizing In-charge					
Details regarding invited Resource Person					
Nature of Participation (e.g. Invited Speaker, Participant etc.)					
Date/s		Timing/s		Mode	Online

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C. Internal Assessment: House Exam (Test/Presentation etc.)&Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
1	32227506	Astronomy and Astrophysics	Computational Assignment 1. Solar data 2. Light Curve 3. SDSS_0266 data)	1. 12 Sept 2021 2. 07 Oct 2021 3. 28 Oct 2021	1. 3 Oct 2021 2. 25 Oct 2021 3. 18 Nov 2021
2	32227506	Astronomy and Astrophysics	Quiz-1	17-09-2021	17-09-2021
3	32227506	Astronomy and Astrophysics	Quiz-2	8-10-2021	8-10-2021
4	32227506	Astronomy and Astrophysics	Quiz-3	27-10-2021	27-10-2021
5	32227506	Astronomy and Astrophysics	Quiz-4	20-11-2021	20-11-2021

*Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester

D. Organization of Department/College Society Meetings by Staff Advisor/Convener

Department/Society	Meeting Date	Purpose

E. College Functions

College Function	Function Date	Role to be played
Orientation Program		

I – Academic Planner

A. Teaching Plan (Year : __2021-2022_ Semester: Even)

Teacher's Name __Pranav Kumar____ Department __Physics____

Online Mode and Offline

Mid semester break 13-03-2022 to 20-03-2022

S. No.	UPC	Paper Name	Core/AECC /GE/SEC	Topic/Unit	Start Date	EndDate
1	32227626	Classical Dynamics	DSE	Unit-1: Classical Mechanics of Point Particles (online mode)	01.01.2022	12.02.2022
2	32227626	Classical Dynamics	DSE	Unit2: Small Amplitude Oscillations	14.02.2022	05.03.2022
3	32227626	Classical Dynamics	DSE	Unit3: Special Theory of Relativity	07.03.2022	12.04.2022
4	32227626	Classical Dynamics	DSE	Unit4: Fluid Dynamics	13.04.2022	28.04.2022
5	32221602	STATISTICAL MECHANICS (Practical)	CORE	Problem 3 of syllabus Online	01.01.2022	11.02.2022
6	32221602	STATISTICAL MECHANICS (Practical)	CORE	Problem 4 of syllabus	12.02.2022	05.03.2022
7	32221602	STATISTICAL MECHANICS (Practical)	CORE	Problem 5 of syllabus	7.03.2022	29.03.2022
8	32221602	STATISTICAL MECHANICS (Practical)	CORE	Problem 2 of syllabus	30.03.2022	16.04.2022
9	32221602	STATISTICAL MECHANICS (Practical)	CORE	Problem 1 of syllabus	18.04.2022	28.04.2022
10	32221401	MATHEMATICAL PHYSICS-III	CORE	Problem 1: Boundary Value Problem : Finite Difference Method, Shooting Method; 2 nd order differential equation	03.01.2022	12.02.2022

				using Euler, RK2 and RK4 methods , SHM		
11	32221401	MATHEMATICAL PHYSICS-III	CORE	Problem 2,3: Gauss Quadrature Integration Method: Show the orthogonality relation of special function like Legendre Polynomial, Complex integration. Verify shift theorem of Dirac Delta function using Gaussian distribution as Dirac Delta function in the limit of Standard deviation tends to zero. Also through Gauss quadrature Method.	14.02.2022	02.04.2022
12	32221401	MATHEMATICAL PHYSICS-III	CORE	Problem 4: Verify and plot Fourier expansion of period functions 1) Square wave 2) Saw tooth wave 3) Triangular wave 4) Any other periodic function	04.04.2022	16.04.2022
13	32221401	MATHEMATICAL PHYSICS-III	CORE	Problem 5: For any given observed data points, fit a best fit curve using least square method. Also calculate the error between observed data and fitted curve. Also plot the error bar in the curve. (Online)	18.04.2022	28.04.2022
14						
15						
16						

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Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
1	32227626	Classical Dynamics	Complete Syllabus Assignment	04-05-2022	26-05-2021
2	32227626	Classical Dynamics	Unit 1,2,3 Quiz test	26-04-2022	26-04-2021

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