M.V.P. Samaj's

KPG ARTS, COMMERCE & SCIENCE COLLEGE, IGATPURI, DIST. NASHIK

TEACHING PLAN

YEAR 2023-24

TERM –II

DEPARTMENT : COMPUTER SCIENCE **NAME OF THE TEACHER** : PROF. C.D. CHAUDHARI
CLASS : F.Y.B.Sc (COMPUTER SCI.)
PAPER NO : I (CS) **TITLE** :INTRODUCTION TO PROGRAMMING AND 'C' PROGRAMMING

MONTH	TOPIC	UNITWISE DETAILS	NO.OF LECTURES
DECEMBER	Arrays	Array declaration, initialization Types-one, two and multidimensional Passing arrays to functions Examples on arrays	08
	Pointers	Pointer Declarations, initialization Dereferencing pointers Pointer arithmetic Pointer to pointer Array and pointers Dynamic memory allocation	04
JANUARY	Strings	String declaration & initialization Standard library functions Strings & pointers Array of Strings	04
	Structures & Unions	Creating Structures Accessing structure members Array of structures Passing structures to functions Nested structures Pointers and structures Unions Difference between structures & unions Examples of structures & unions	06 02
FEBRUARY	C Preprocessor	Format of preprocessor directives File Inclusion directives Macro substitution Nested macro Argumented macros Conditional compilation	06
	Command line arguments	Accessing command line arguments. Examples of CLA	06
MARCH	File Handling	Streams, Types of files Opening files, Reading & writing files, Random access to files	10
	Revision/Journal Submissions	Revision of the topics	02
	Semester-End Exams	Semester-End Exams	
APRIL	University Exams	University Exams	
MAY	University Exams & Holidays	University Exams & Holidays	

Mr. C.D. Chaudhari
Head of the CS Dept.

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YEAR 2023-24

TERM –I

DEPARTMENT : COMPUTER SCIENCE **NAME OF THE TEACHER** : PROF.C.D.CHAUDHARI
CLASS : F.Y.B.Sc (COMPUTER SCI.)
PAPER NO : I (CS-) **TITLE** :INTRODUCTION TO PROGRAMMING AND 'C' PROGRAMMING

MONTH	TOPIC	UNITWISE DETAILS	NO.OF LECTURES
JUNE	Admission Process	Admission Process	---------
JULY	Introduction to Programing Language C Tokens	Variables Constants – character, integer, float, string, escape sequences Data types – built-in and user defined Operators and Expressions Operator types.	2
AUGUST	Control Structures	Decision making structures If,if-else, switch Loop Control structures While,do-while,for Examples of each loop	2
SEPTEMBER	Functions in C Recursive Function	Function, Advantages of functions Standard Library functions Recursion , Call By Value Call By Reference Parameter passing	06
OCTOBER	Revision Semester-End Exams University Exams	User defined functions Storage classes Recursion Revision of the topics Semester-End Exams	05 01
NOVEMBER	University Exams & Holidays	University Exams & Holidays	

4.7

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MARATHA VIDYA PRASARAK SAMAJ'S
KARMVEER PUNJABABA GOVARDHANE
ARTS, COMMERCE AND SCIENCE COLLEGE, IGATPURI
Affiliated to SavitribaiPhule Pune University, Pune
NAAC reaccredited 'B' Grade (CGPA: 2.52) ID NO. PU/NS/ASC/023/1982

DEPARTMENT OF MARATHI
Teaching Plan (P.G.)
Academic Year:2023-2024

- Name of the teacher : Prof. V.B. Rathod
- Class : MA , Sem : I (Credit – 04)
- Subject : MAR501MJ : Arvachin Marathi Sahityacha Itihas (1818 to 1920)

Sr. No.	Month	No. of Lect. (Per Month)	No. of Lect. (Per Week)	Topics
1.	July	15	04	Sahitya Itihas - Swarip
			04	Sankalpana
			04	Kalkhand – prachin, Arvachin
			03	Sahitya Nirmiti Ani Kalkhand Sahsambhandh
2.	August	15	04	Sahitya Nirmiti Prerana
			04	Kalik Sambandh
			04	Samajik Parshvbhumi
			03	Dharmik Parshvbhumi
3.	September	15	04	Sanskrutik Parshvbhumi
			04	Mudran kala v Granth Vyavahar
			04	Sarkri Patalivaril Pathy Pustake – Vyakaran
			03	Bhashantar Yug
4.	October	15	04	Prerana ,Pravruti, Swarup
			04	Vatchal
			04	Nirikshane
			03	Question Paper &Repetition

(Prof. V. B. Rathod)
Sub. Teacher.

H.O.D.

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DEPARTMENT OF MARATHI
Teaching Plan (P.G.)
Academic Year:2023-2024

- Name of the teacher : Prof. V.B. Rathod
- Class MA , Sem : II (Credit – 04)
- Subject : MAR551MJ : Arvachin Marathi Sahityacha Itihas (1920to 2010)
-

Sr. No.	Month	No. of Lect. (Per Month)	No. of Lect. (Per Week)	Topics
1.	December	15	04	Sahitya Itihas - Swarip
			04	Sankalpana
			04	Kalkhand – prachin, Arvachin
			03	Sahitya Nirmiti Ani Kalkhand Sahsambhandh
2.	January	15	04	Sahitya Nirmiti Prerana
			04	Kalik Sambandh
			04	Samajik Parshvbhumi
			03	Dharmik Parshvbhumi
3.	February	15	04	Sanskrutik Parshvbhumi
			04	Mudran kala v Granth Vyavahar
			04	Sarkri Patalivaril Pathy Pustake – Vyakaran
			03	Bhashantar Yug
4.	March	15	04	Prerana ,Pravruti, Swarup
			04	Vatchal
			04	Nirikshane
			03	Question Paper &Repetition

(Prof. V.B. Rathod) HOD. PRINCIPAL
Sub. Teacher.

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DEPARTMENT OF MARATHI
Teaching Plan (P.G.)
Academic Year:2023-2024

- Name of the teacher : Prof. V. B. Rathod
- Class : MA, Sem : I (Credit -04)
- Subject : MAR 502 : Eaitihasik Bhasha Vidnyan

Sr. No.	Month	No. of Lect. (Per Month)	No. of Lect. (Per Week)	Topics
1	July	15	04	Bhasha- Swarup, Padhati
			04	Abhyasachi Aavshyakata
			04	BahshA Ange ,v Padhati
			03	Sankalpana , Mahatv
2	August	15	04	Bhahsa Kul Sankalpana
			04	Bhasha Punrachan
			04	Bhasha Vargikaran
			03	Jagtik Bhasha Kule
3	September	15	04	Indo Eropiyan Bhasha
			04	Aary Bhasha Kul Ani Marathi Bhasha
			04	Bhasha Udgam - Vikas
			03	Bhasha - Vividha Utpatti
4	October	15	04	Marathichi Purvpithika
			04	Marathi NirmitiKal
			04	Antar- Bahir Vartul Sidhant – Kalik Tappe
			03	Question Paper & Repetition

(Prof. V. B. Rathod)
Sub. Teacher.

(H. O. D.)

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DEPARTMENT OF MARATHI

Teaching Plan

Academic Year:2023-2024

- Name of the teacher : Prof. Y.P. Ugale
- Class : MA, Sem : IV (Credit -04)
- Subject : CBOP12 : Loksahityachi Multatve Ani Marathi Loksahitya Bhag 1

Sr. No.	Month	No. of Lect. (Per Month)	No. of Lect. (Per Week)	Topics	Method
1.	July	15	04	Lok sahitya Swarup Vyapti	Lecture
			04	Lok v sahitya – pad	PPT
			04	Prayojane	Lecture
			03	Uppatti	Lecture
2.	August	15	04	Lok sahityacha Abhyas	PPT
			04	Lok sahitya V Lok Jivan	Lecture
			04	Lok sahitya V Granthik sahitya sambndh	Lecture
			03	Jagtik Abhyas Kshetre	Lecture
3.	September	15	04	Vividh sampraday Vvegalepan	Lecture
			04	Loksahitya V Lok Jivan	Lecture
			04	Lok sahityacha nisarg – tatvdnyan – Manavi Jivan – Samaj – sanskruti – Dharm	Lecture
			03	Lok sahity v Maha Kavya Yancha Anubandh	Lecture
4.	October	15	04	Sant kavichi Kavita	Lecture
			04	Abhang – Ovi- Pade – Gavlani	Lecture
			04	Aratya – Bharude - Vishesh	Lecture
			03	Prasnpatrika -	Interactive

Sub. Teacher

(H.O.D.)

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TEACHING PLAN

YEAR 2023-24

TERM –I

DEPARTMENT : COMPUTER SCIENCE **NAME OF THE TEACHER** : PROF.C.D.CHAUDHARI
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YEAR 2023-24

TERM –II

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		Pointers and structures Unions Difference between structures & unions Examples of structures & unions	02
FEBRUARY	C Preprocessor	Format of preprocessor directives File Inclusion directives Macro substitution Nested macro Argumented macros Conditional compilation	06
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DEPARTMENT OF COMMERCE
Teaching Plan - (2023-24)

Name of Teacher: Mr. Sonawane A. Y. Subject: 356E/366E - Cost and Works Accounting Paper- III

C1955 - T.Y.B.Com

Month	Semester- V - Particulars	No. of Lectures
June	Admission Process	-
July	**Topic 1 Marginal Costing** 1.1 Meaning and concepts- Fixed cost, Variable costs, Contribution, Profit-volume Ratio, Break-Even Point, Margin of Safety. and Angle of Incidence. 1.2 Cost-Profit-Volume Analysis- Assumptions and limitations of cost-profit volume analysis 1.3 Application of Marginal Costing Technique:- Make or buy decision, Acceptance of export order & Limiting factors. 1.4 Ethical and Non-Financial Considerations relevant to decision making. (simple Practical Problems based on concepts excluding decision making)	12
Aug	**Topic 2 Budgetary Control** 2.1 Definition and Meaning of Budget & Budgetary control 2.2 Objectives, essentials, and procedure of Budgetary control 2.3Advantages and Limitations of Budgetary control 2.4 Types of Budgets 2.5 Zero Base Budgeting (Simple practical problems based on cash and flexible Budget only)	12
Sept.	**Topic 3 Uniform costing and Inter-firm Comparison** 3.1 Meaning, objectives, advantages, and disadvantages of Uniform Costing. 3.2 Uniform Cost Manual 3.3 Meaning, pre-requisite, advantages, and disadvantages of Inter-firm comparison. (Theory Only)	12
Oct.	**Topic 4 MIS and Supply Chain Management** 4.1 Management Information System- Introduction, features, and procedure, preparation. 4.2 Supply Chain Management(SCM)- Meaning, features, and Models of SCM. (Theory Only)	12
	Total	48
Nov.	Diwali Vocation	
	Semester- VI - Particulars	
Dec.	**Topic 1 Standard Costing** 1.1 Definition and meaning of standard cost and Standard Costing. 1.2 Types of standards, setting up of Material, Labour Standards 1. 3 Difference between Standard Costing & Budgetary Control. 1.4 Advantages and Limitations of standard costing 1.5 Variance Analysis & its Significance 1.6. Meaning, types, and causes of material & labour variances. 1.7. Problems on Material & Labour variances.	12
Jan.	**Topic 2 Pricing Decisions** 2.1 Principles of Product Pricing 2.2 Pricing Policy 2.3 Pricing of New Products and Finished Products 2.4 Target Costing. Meaning ,Importance in Pricing decision 2.3 Pricing Methods a. Competition based b. Cost-based c. Value-based (Simple Problems Only)	12
Feb.	**Topic 3 Cost Accounting Standards and Cost Management for Specific Sector** 3.1 Cost Accounting Standards a. CAS-6 Material Cost b. CAS-7 Employee Cost 3.2 Cost Management for Specific Sector a. Agricultural Sector b. Information Technology (IT) Sector	12
Mar.	**Topic 4 Cost Accounting Record Rules & Cost Audit:** 4.1 Introduction to cost accounting record u/s 148 of the companies Act 2013. 4.2 Cost records and Verification of Cost Records 4.3 Cost Audit – History, Meaning, applicability, Scope, objectives & advantages of Cost Audit 4.4 Cost auditor – Qualification, disqualification, rights, and duties. 4.5 Preparation and Submission (XBRL) Cost Audit Report.	12
	Total	**48**
April.	**Annual Examination**	
May.	**Celebration of Maharashtra Day on 1st May Summer Vacation**	

Mr. Sonawane A. Y.
Subject Teacher

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HoD

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DEPARTMENT OF COMMERCE
Teaching Plan - (2023-24)

Name of Teacher: Mr. Sonawane A. Y. Subject: 355E/365E - Cost and Works Accounting Paper- II
Class - T.Y.B.Com

Month	Semester- V - Particulars	No. of Lectures
June	Admission Process	-
July	**Topic 1:-Overheads** 1.1 Meaning and definition of overheads. 1.2 Classification of overheads 1.3 Introduction to Cost Accounting Standard, Cost Accounting Standard Board 1.4. Introduction to of CAS 3, CAS 11, CAS 15 1.5 Cost Accounting Standard 3: Production and operation Overheads	12
Aug	**Topic 2 Accounting of Overheads (Part-I)** 2.1 Collection and Allocation of overheads. 2.2 Apportionment and Reapportionment of overheads 2.3 Simple problem of primary distribution of Overhead 2.4 Simple Problem of Secondary distribution of overheads (Repeated & Simultaneous Equation method only)	12
Sept.	**Topic 3:-Accounting of Overheads (Part-II)** 3.1 Absorption - Meaning, Rate and Methods of Overhead Absorption 3.2 Under and Over Absorption of overheads- Meaning, Reasons and Accounting treatment 3.3 Simple problems on the accounting treatment of under and overabsorption of Overheads	12
Oct.	**Topic 4 Activity Based Costing** 4.1 Definitions-Stages in Activity Based Costing 4.2 Purpose and Benefits of Activity Based Costing 4.3 Cost Pools and Cost Drivers 4.4 Problems on Activity Based Costing [Simple Problems only]	12
	Total	48
Nov.	Diwali Vocation	
	Semester- VI - Particulars	
Dec.	**Topic 1 Methods of Costing** 1.1. Introduction to Methods of Costing. 1.2 Job Costing Meaning, Features, Advantages and Limitations (Simple problems Only) 1.3 Introduction of Batch costing- (theory Only)	12
Jan.	**Topic 2 Contract Costing** 2.1 Meaning and Features of Contract Costing 2.2 Work-Certified and Uncertified, Escalation clause, Retention Money, Cost Plus contract, work-inprogress 2.3 Profit on incomplete contract	12
Feb.	**Topic 3 Process Costing** 3.1 Meaning and features of process costing 3.2 Preparation of process accounts including normal and abnormal loss/gain 3.3 Joint Products and By Products [Theory and Simple problems] 3.4 Cost Accounting Standard 19: Joint Cost.	12
Mar.	**Topic 4-Service Costing** 4.1 Meaning, Features and Applications of service costing 4.2 Cost Unit-Simple and Composite 4.3 Cost Sheet for Transportation Service 4.4 Cost Statement for Hospital and Hotel Organization 4.5 Cost Accounting Standard 13: Cost of service cost center.	12
	Total	**48**
April.	**Annual Examination**	
May.	**Celebration of Maharashtra Day on 1st May Summer Vacation**	

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Subject Teacher

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DEPARTMENT OF COMMERCE
Teaching Plan - (2023-24)

Name of Teacher: Mr. Sonawane A. Y.
C1955 - F.Y.B.Com

Subject: 114A/124A - Business Mathematics and Statistics

Month	Semester- I - Particulars	No. of Lectures
June	Admission Process	-
July	**Topic 1:-Interest and Annuity** Interest: Concept of Present value and Future value, Simple interest, Compound interest, Nominal and Effective rate of interest, Examples and Problems Annuity: Ordinary Annuity, Sinking Fund, Annuity due, Present Value and Future Value of Annuity, Equated Monthly Installments (EMI) by Interest of Reducing Balance and Flat Interest methods, Examples and Problems.	12
Aug	**Topic 2 Share and Mutual Funds** Shares: Concept of share, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares. Examples and Problems Mutual Funds: Concept of Mutual Funds, Problems on calculation of Net Income after considering entry load, Dividend, Change in Net Asset Value (NAV) and exit load. Averaging of price under the Systematic Investment Plan (S.I.P.). Examples and Problems	12
Sept.	**Topic 3:-Population and Sample** Definition of Statistics, Scope of Statistics in Economics, Management Science and Industry. Concept of population and sample, methods of data collection: Census and sampling with illustration. Methods of random sampling – SRSWR, SRSWOR, Stratified, Systematic (Description of sampling procedures only).	12
Oct.	**Topic 4 Measures of Central Tendency and Measures of Dispersion** Frequency distribution: Raw data, attributes and variables, Classification of data, frequency distribution, cumulative frequency distribution, Histogram and ogive curves. Requisites of ideal measures of central tendency, Arithmetic Mean, Median and Mode for ungrouped and grouped data. Combined mean, Merits and demerits of measures of central tendency, Geometric mean: definition, merits and demerits, Harmonic mean: definition, merits and demerits, Choice of A.M., G.M. and H.M. Concept of dispersion, Measures of dispersion: Range,Variance, Standard deviation (SD) for grouped and ungrouped data, combined SD, Measures of relative dispersion: Coefficient of range, coefficient of variation. Examples and problems.	12
	Total	48
Nov.	Diwali Vocation	
	Semester- II - Particulars	
Dec.	**Topic 1:-Matrices and Determinants** Definition of a Matrix, Types of Matrices, Algebra of Matrices, Determinants, Adjoint of a Matrix, Inverse of a Matrix via Adjoint Matrix, Homogeneous System of Linear equations, Condition for Consistency of homogeneous system, Solution of Non-homogeneous System of Linear equations (not more than three variables), Applications in Business and Economics, Examples and Problems.	12
Jan.	**Topic 2 Linear Programming Problems (LPP)** Definition and terms in a LPP, formulation of LPP, Solution by Graphical method, Examples and Problems	12
Feb.	**Topic 3 Correlation and Regression** Concept and types of correlation, Scatter diagram, Interpretation with respect to magnitude and direction of relationship. Karl Pearson's coefficient of correlation for ungrouped data. Spearman's rank correlation coefficient. (with tie and without tie) Concept of regression, Lines of regression for ungrouped data, predictions using lines of regression. Regression coefficients and their properties (without proof). Examples and problems.	12
Mar.	**Topic 4-Index Numbers** Concept of index number, price index number, price relatives. Problems in construction of index number. Construction of price index number: Weighted index Number, Laspeyre's, Paasche's and Fisher's method. Cost of living / Consumer price index number: Definition, problems in construction of index number. Methods of construction: Family budget and aggregate expenditure. Inflation, Uses of index numbers, commonly used index numbers. Examples and problems.	12
	Total	48
April.	**Annual Examination**	
May.	**Celebration of Maharashtra Day on 1st May Summer Vacation**	

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KPG Arts, Commerce and Science College Igatpuri, Dist.: Nashik

Department of Chemistry

Teaching Plan (2023-24) Odd Term (UG-V, PG-III)

Name of the Teacher: Dr. Dnyaneshwar Sanap

Class & Subject:

1. MSC II: CHO-351: Structure Determination of Organic Compounds by Spectroscopic Methods
2. TYBSC: CH-504: Inorganic Chemistry-I
3. TYBSC: CH-506: Inorganic Chemistry Practical-I

Month	Class	Theory / Practical	Topic to be taught	Remark
August 2023	TYBSC	Theory	**MOT of Coordination Compounds:** Electro-neutrality principle, multiple bonding (dπ-pπ and dπ-dπ), Nephelauxetic effect and Nephelauxetic series (Recapulation from VBT and CFT), Need and introduction of MOT, Assumptions, MO treatment to octahedral complexes with sigma bonding, Formation of MOs from metal orbitals and Composite Ligand Orbitals (CLO), MO correlation diagram for octahedral complexes with sigma bonding, effect of π bonding on MO correlation diagram, Charge transfer spectra, Advantages of MOT over VBT and CFT.	
		Practical	1. Gravimetric estimation of Fe as Fe2O3. 2. Gravimetric estimation of Ba as BaSO4 using homogeneous precipitation method. 3. Gravimetric estimation of Nickel as Ni – DMG 4. Preparation of hexamminenickel (II) chloride, [Ni (NH3)6] Cl2.	
	MSC II	Theory	**Mass Spectrometry:** Principle, ionization methods like EI, CI, ESI, MALDI and FAB, Fragmentation of typical organic compounds, stability of fragments, Rearrangements, factors affecting fragmentation, ion analysis, ion abundance, High-Resolution mass spectrometry in determination of molecular formula.	
September 2023	TYBSC	Theory	**Inorganic Reaction Mechanism:** Basic concepts of stability and lability, stability constants, Factors affecting lability, chelate effect. Classification of inorganic reactions, ligand substitution reactions: Intimate and stoichiometric mechanism of ligand substitution. Substitution Reactions in Four Coordinate	

			square planar complexes: Trans effect and Trans effect series, applications of trans effect, stereochemistry of substitution.	
		Practical	4. Preparation of Potassium trioxalatoferrate (III), K3[Fe(C2O4)3]. 5. Preparation of tris(glycinato)nickelate (II), [Ni(gly)3] 6. Inorganic Qualitative analysis (Mixture No. 1) 7. Inorganic Qualitative analysis (Mixture No. 2)	
	MSC II	Theory	**1H NMR Spectroscopy:** Recapitulation of basic principle, Fourier Transform technique, Pulse sequence, relaxation processes. different types of spin coupling, first order analysis of spectra, different spin systems (AB, AM, AX, ABX/AMX spin systems with examples), factors affecting coupling constants, non-equivalence due to restricted rotations, rate processes. Simplification of complex spectra (High field NMR, Spin Decoupling, Shift reagents, NOE, Chiral Solvents, D2O exchange, etc.), 31P, 19F NMR (Problems based on number of signals and splitting pattern)	
October 2023	TYBSC	Theory	**Chemistry of transition elements:** Position in periodic table, electronic configuration, trends in properties w.r.t.(a) size of atoms and ions (b) reactivity (c) catalytic activity (d) oxidation state (e) complex formation ability (f) colour (g) magnetic properties (h) non-stoichiometry (i) density, MP & boiling points	
		Practical	8. Inorganic Qualitative analysis (Mixture No. 3) 9. Inorganic Qualitative analysis (Mixture No. 4) 10. Inorganic Qualitative analysis (Mixture No. 5)	
	MSC II	Theory	**13-C NMR Spectroscopy**: Principle, Types of 13C NMR Spectra: un-decoupled, Proton decoupled, off resonance, APT, INEPT, DEPT, chemical shift, factors affecting chemical shifts, Homo nuclear (13C-13C) and Hetero nuclear (13C-1H) coupling constants. 2D NMR Spectroscopy in structure elucidation: (a) Homonuclear: COSY, TOCSY, 2DINADEQUATE, 2D-ADEQUATE, NOESY, ROESY (b) Heteronuclear: HETCOR, HSQC, HMQC, HMBC	
November 2023	TYBSC	Theory	**Chemistry of f-block elements:** I. Lanthanides: Position in periodic table, Name and electronic configuration of lanthanides, Oxidation States, atomic and ionic radii, Lanthanide contraction, its causes and consequences on chemistry of Lanthanides and post lanthanide elements, Occurrence and separation: Bulk separation, Individual separation by modern methods viz., Ion exchange and solvent extraction method, applications of lanthanides. II. Actinides: Position in periodic table, names and their electronic configurations. IUPAC nomenclature system for super heavy elements, Oxidation States, Occurrence and general methods of preparation of transuranic elements viz., Neutron Bombardment, Accelerated projectile bombardment and Heavy ion bombardment. Nuclear Fuels-Nuclear fission and fusion fuels, comparison between Lanthanides and Actinides.	

			Metals, Semiconductors & Superconductors: Introduction, Metallic bonding, Band theory in metals with respect to Na along with n (E) and N(E) diagrams, Electrical conductivity of metals (Na, Mg, Al), Valence electrons and conductivity of metals, Effect of temperature and impurity on electrical conductivity of metals, Semiconductors, types of Semiconductors: I. Intrinsic II. Extrinsic, effect of temperature and impurity on semi conductivity, n & p type semiconductors ZnO and NiO, Superconductivity: Discovery, property, models, structure and superconductivity, low and high temperature superconductors, applications of superconductors.	
	MSC II	Theory	**Problems solving**: Structure elucidation using UV, IR, 1D (1H and13C) NMR and 2D NMR (1H-1H, COSY / 13C- 1H HETCOR only), APT, DEPT and MS data as well as spectra.	

Signature of Faculty

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Teaching Plan (Year 2023-24)

Department: Physics
SEMESTER I
Class: F.Y.B.Sc.
Lecture: 36

Name of the Teacher: Mr.G.W.Gangurde
Name of the Paper: PHY-111 **Mechanics and Properties of Matter**
Credits-02

Month	**Syllabus (Topics) to be completed as per University circular**	**No of lectures prescribed**	**Syllabus (Topics) completed in the class room**	**No of lectures taken**	**Method of teaching used**
June			Admission Process		
July	Unit-1 **Motion**	09	• Introduction to motion, • Types of motion, • Displacement, • Velocity, • Acceleration, • Inertia, • Newton's laws of motion with their explanations, • Various types of forces in nature, • Frames of reference (Inertial and Non inertial), • Laws of motion and it's real life applications, • Problems.	12	Black Board
Aug	Unit-2 **Work and Energy**	07	• Kinetic energy, • Work Energy Theorem, • Work done with constant force, • Work done with varying force (spring force), • Conservative and Non conservative forces, • Potential energy, • Law of energy conservation, • Gravitational potential energy, • Problems.	10	Black Board

Sept	Unit-3 **Fluid Mechanics**	08	• Concept of viscous force andviscosity, • Coefficient of viscosity, • Steady and Turbulent flow, • Reynolds number, • Equation of continuity, • Bernoulli's Principle, • Applications of Bernoulli'sPrinciple (Ventury Meter, PitotTube), • Applications of viscous fluids, • Problems.	09	Black Boar d
Oct	Unit-4 **Properties o fMatter**	12	• Surface tension, • Angle of contact, • Factors affecting surfacetension, • Jaeger's method for • determination of surfacetension, • Applications of surface tension. • Stress and Strain, • Hook's law and Coefficient of elasticity, • Young's modulus, • Bulk modulus, • Modulus of rigidity, • Work done during longitudinalstrain, • Volume strain, • Shearing strain, • Poisson's ratio, • Relation between three elastic moduli, (Y, η, K), • Applications of elasticity, • Problems.	12	Black Boar d
Nov			**Exam**		

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Teaching Plan (Year 2023-24)

Department:Physics
SEMESTER I
Name of the Teacher: Ms.P.G.Purkar
Class: F.Y.B.Sc.
Name of the Paper: PHY-112 **Physics Principles and Applications**
Lecture: 36
Credits-02

Month	Syllabus to be completed as per University circular	No of lectures prescribed	Syllabus completed in the class room	No of lectures taken	Method of teaching used
July	Unit-1 **Physics of Atoms**	08	• Introduction to Atom • Atomic Models: 1. Thomson's Atomic Model 2. Rutherford's Atomic Model 3. Bohr's Atomic Model • Atomic Spectra: 1. Emission line Spectrum 2. Absorption line spectrum 3. Uses of Atomic Spectra • Classical planetary model of Hydrogen Atom • The Bohr Theory of the Hydrogen Atom • The Hydrogen Spectrum • Frank-Hertz experiment • Problems	10	Black Board
Aug	Unit-2 **LASERS and Its Applications**	07	• Introduction to LASERS • Basic Principle of Lasers: Three Processes • Characteristics of Lasers: brief explanation • Boltzmann Distribution Law • Population Inversion and Pumping • Types of Lasers: 1. He-Ne Laser 2. Ruby Laser • Applications of Lasers • Problems	08	Black Board
Sept	Unit-3 **Physics of Molecules**	08	• Introduction to Bonding Mechanisms • Forces between Atoms • Types of Bonding: 1. Ionic Bonds 2. Covalent Bonds 3. van der Waal's Bonds	08	Black Board

			4. Hydrogen Bond 5. Metallic Bond • Rotation energy levels of adiatomic molecule • Vibration energy levels of a diatomic molecule • Problems		
Oct	Unit-4 **Sources of Electromagnetic Waves** Unit-5 **Applications of Electromagnetic Waves**	06 07	• Introduction to ElectromagneticWaves: Historical Perspective • General properties of Electromagnetic radiations • Electromagnetic spectrums andits sources • Production of electromagneticwaves: Hertz experiment • Plank's hypothesis of Photons • Applications of various waves inelectromagnetic spectrum • Microwave oven • RADAR • Pyroelectric thermometer • X-ray radiography • CT Scan • Solar cell and its types • Problem	08 08	Black Board
Nov			Exam		

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