**Academic Year 2022-2023 (Lecture plan Term-I)**

**Name of the Staff:** <u>Asst. Prof. Ganesh K Bhosale</u>

## Subject : Business Accounting (103)

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FYBBA | Aug. 2022 | 11 | Definition and Scope, objectives, Accounting concepts, principles and conventions. Classification of accounts | 12 |
| | Sept. 2022 | 15 | Problems on Voucher system; Accounting Process, Journals, Ledger, Cash Book , subsidiary books ,Trial Balance preparation of Final Accounts of Sole Proprietorship(Trading and Profit & Loss Account and Balance Sheet ) | 15 |
| | Oct. 2022 | 12 | Meaning, importance and preparation of Bank Reconciliation Statement | 12 |
| | Nov. 2022 | 10 | Role of computers and Financial application, Accounting Software packages | 11 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

S.E. Society's
# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF BBA

Academic Year 2022-2023 (Lecture plan Term-I)

**Name of the Staff:** Asst. Prof. Ganesh K Bhosale

**Subject : Basics of Cost Accounting (204)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FYBBA | Aug. 2022 | 12 | Concept of Cost, Costing, Cost Accounting & Cost Accountancy , Origin, Objectives and Features of Cost Accounting , Difference between Financial and Cost Accounting, Conceptual analysis of Cost Unit & Cost Centre | 13 |
| | Sept. 2022 | 12 | Material, Labour and other Expenses, Classification of Cost & Types of Costs, Preparation of Cost Sheet | 12 |
| | Oct. 2022 | 14 | Meaning and Definitions, Classification of Overheads, Collection, allocation, apportionment and reapportionment of overheads 3.4 Under and over absorption – Definition and Reasons | 15 |
| | Nov. 2022 | 10 | Contract Costing – Meaning and features of contract costing, works certified and uncertified, escalation clause, cost plus contract, work in progress, profit on incomplete contract , Process Costing - Meaning, Features of process costing, preparation of process costing including Normal and Abnormal Loss/Gains, | 10 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

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Yerwada, Pune - 411 006
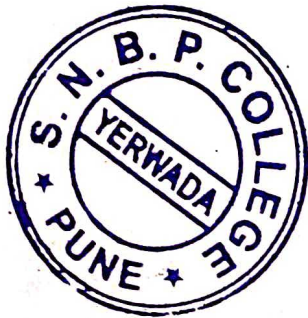
**Academic Year 2022-2023 (Term-I)**

Name of the Staff:   **Asst. Prof. Ganesh K Bhosale**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|------------------------------|--------------------------------------|
| FYBBA | Business Accounting (103) | 48 | 50 |
| TYBBA | Analysis of Financial Statements (505) | 48 | 49 |
| TYBBA | Legal Aspects of Finance & Security Laws (506) | 48 | 49 |
| | | | |

Date: 27/12/2022   Sign of the Staff

Head of the Department

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Yerwada, Pune - 411 006

**Name of the Staff:** **Asst. Prof. Ganesh K Bhosale**

**Subject : Financial Accounting (202)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| | Jan . 2023 | 10 | Definition and Scope, objectives, Accounting concepts, principles and conventions | 10 |
| FYBBA (CA) | Feb. 2023 | 15 | Voucher system; Accounting Process, Journals, Ledger, Cash Book , subsidiary books ,Trial Balance preparation of Final Accounts of Sole Proprietorship(Trading and Profit & Loss Account and Balance Sheet | 15 |
| | Mar. 2023 | 11 | Meaning, importance and preparation of Bank Reconciliation Statement | 12 |
| | Apr. 2023 | 12 | Role of computers and Financial application, Accounting Software packages | 12 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **49** |

### Academic Year 2022-2023 (Lecture plan Term-II)

**Name of the Staff:** <u>Asst. Prof. Ganesh K Bhosale</u>

**Subject : Analysis of Financial Statements (505)**

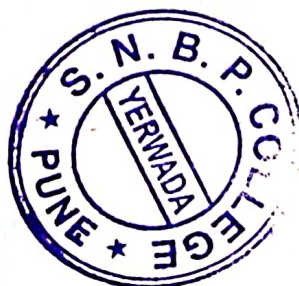| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FYBBA (CA) | Jan . 2023 | 12 | Introduction of Schedule III as per Companies Act 2013, Meaning and importance of Analysis of Financial Statements, Tools and Techniques of financial analysis Comparative Financial Statements, Trend Analysis, Common Size Financial Statements, 1.7 Ratio Analysis, Fund Flow Statement and C 1.8 Cash Flow Statement | 12 |
| | Feb. 2023 | 12 | Meaning, Importance, Advantages & Limitations of Ratio, Classification of Ratios Liquidity ratios, Turnover ratios, Profitability ratios and Solvency radios (Practical Problems based on the ratios- Problems based on reverse ratio is excluded. ) | 13 |
| | Mar. 2023 | 12 | Meaning, Objectives, Uses, and Limitations of Cash Flow Statement, Methods of Cash Flow Statements- Direct methods and indirect methods. Practical sums on an indirect method | 12 |
| | Apr. 2023 | 12 | Meaning, Objectives, Uses, and Limitations of Fund Flow Statement, Preparation of Fund Flow Statement-Fund from operations & statement of changes in Working Capita , Practical sums on Preparation of Fund Flow Statement- | 12 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **49** |

S.E. Society's
# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF BBA

### Academic Year 2022-2023 (Lecture plan Term-II)

**Name of the Staff:**   Asst. Prof. Ganesh K Bhosale

**Subject : Legal Aspects of Finance & Security Laws (506)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FYBBA (CA) | Jan . 2023 | 13 | Overview of Indian Financial System, Introduction to Legal aspect: - Finance, Securities market. Basics of insurance, Derivatives, Commercial Banking, Capital Markets, Money Market, Forward Market Commission of India (FMC), Pension Fund Regulatory and Development Authority (PFRDA). | 13 |
| | Feb. 2023 | 13 | Listing of Securities, Issue of Capital and Disclosure Requirements (ICDR), Procedure for Issue of Various Types of Shares and Debentures, Employee Stock Option Scheme and Employee Stock Purchase Scheme, Delisting of Securities. | 13 |
| | Mar. 2023 | 13 | Introduction to the Companies Act 2013, Overviews of Companies Act 2013, Legal Documents- Memorandum of Associations (MOA), Articles of Associations (AOA). Importance of Preparation of Financial Statements & its disclosure. Investor Education and Protection Fund (IEPF) under SEBI Regulations and Companies Act, 2013, | 14 |
| | Apr. 2023 | 9 | Introduction to GST, Types of GST, Overview of CGST, SGST, IGST& UTGST Act 2017, Eligibility to register under GST, Benefits of GST Registration. Procedure of GST Registration, Introduction to GST Network, Functions of GSTN. | 9 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **49** |

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**DEPARTMENT OF BBA**
**Course Completion Certificate**
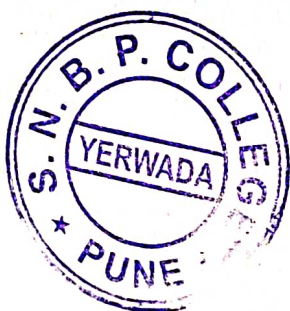
**Academic Year 2022-2023 (Term-II)**

**Name of the Staff:** <u>Asst. Prof. Ganesh K Bhosale</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|------------------------------|--------------------------------------|
| FYBBA | Basics of Cost Accounting (204) | 48 | 50 |
| FYBBA (CA) | Financial Accounting (202) | 48 | 49 |
| | | | |
| | | | |

Date: 18| 4| 2023        Sign of the Staff

Head of the Department

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Yerwada, Pune - 411 006

**Name of the Staff:** **Mrs. Sunanda Phadtare Bhosale**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. (Semiconductor Device) | August. 2022 | 10 | Unit 1. Semiconductor Diodes ( 6 L) Semiconductor, P and N type semiconductors, Formation of PN junction diode, it's working, Forward and Reverse bias characteristics, Zener diode: working principle, breakdown mechanism and characteristics, Working principle of Light emitting diode, photo diode, optocoupler, Solar cell working principle and characteristic. Unit 2. Bipolar Junction Transistor (BJT) ( 7 L) Bipolar Junction Transistor (BJT) symbol, types, construction, working principle, Transistor amplifier configurations - CB, CC (only concept), CE configuration: input and output characteristics, Definition of $\alpha$, $\beta$ and $\Upsilon$ , | 10 |
| | Sept. 2022 | 10 | Concept of Biasing (numerical problems not expected), Potential Divider bias, Transistor as amplifier (Concept of Gain and Bandwidth expected), Transistor as a switch. Unit 3. MOSFET MOSFET types, Working principle, Characteristics, Application of MOSFET as a Switch. | 10 |
| | Oct. 2022 | 9 | Unit 4. POWER SUPPLY ( 6 L) Block Diagram of Regulated Power Supply, Rectifiers (half wave, full wave, Bridge), rectifier with capacitor-filter, Use of Zener Diode as a Voltage Regulator, IC 78XX and 79XX as regulator, Block Diagram and explanation of SMPS, Block diagram and explanation of UPS Unit 5. OSCILLATORS Barkhauson Criteria, Low frequency Wein-bridge oscillator, High frequency crystal oscillator, | 10 |
| | Nov. 2022 | 7 | IC 555 as astable multivibrator used as square wave generator / clock Unit 6. DATA CONVERTERS Need of Digital to Analog converters, parameters, weighted resistive network, R-2R ladder network, need of Analog to Digital converters, parameters, Flash ADC, successive approximation ADC. | 7 |
| | | | | |
| **Total Lectures** | **36** | | **Total Lectures** | **37** |

**(Principles of Digital Electronics)**

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. (Principles of Digital Electronics) | August. 2022 | 10 | Unit 1: Number Systems and Digital codes , Introduction to Decimal, Binary and Hexadecimal number systems and their inter⌐ conversions, binary addition and binary subtraction using 2's complement, Binary Coded Decimal number, Gray Codes, Gray to Binary and Binary to Gray conversion, Alphanumeric representation in ASCII codes. | 10 |
| | Sept. 2022 | 10 | Unit 2: Logic gates and Boolean Algebra (14 ) Logic gates (NOT, AND, OR, NAND, NOR, XOR gate) with their symbol, Boolean equation and truth table, Universal gates Introduction of CMOS and TTL logic families, Parameters like voltage levels, propagation delay, noise margin, fan in, fan out, power dissipation (TTL NAND, inverter, CMOS gates etc. not expected) Rules and laws of Boolean algebra, De Morgan's theorem, simplification of Logic equations using Boolean algebra rules, Min terms, Max terms, Boolean expression in SOP and POS form, conversion of SOP/POS expression to its standard SOP/POS form | 10 |
| | Oct. 2022 | 9 | Karnaugh Map, problems based on SOP (upto 4 variables), digital designing using K Map for: Gray to Binary and Binary to Gray conversion, Unit 3: Combinational Circuits (12 L) Half adder and full adder, 4-Bit Universal adder/ Subtractor, applications of Ex-OR gates as parity checker and generator, study of Multiplexer (4:1) and Demultiplexer (1:4), | 9 |
| | Nov. 2022 | 7 | Encoders - Decimal/BCD to binary, 3X4 matrix keyboard encoder, priority encoder, Decoder- BCD to seven segment decoder, IC 74138 and IC 7447, Digital comparator, | 7 |
| | | | | |
| **Total Lectures** | | **36** | **Total Lectures** | **37** |

# Academic Year 2022-2023 (Lecture plan Term-I)

**Name of the Staff:** **Mrs. Sunanda Phadtare Bhosale**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc. (Microcontroller Architecture & Programming) | August. 2022 | 10 | UNIT- 1: Basics of Microcontroller & Intel 8051 architecture [08] Introduction to microcontrollers, difference in controller and processor. Architecture of 8051, Internal block diagram, Internal RAM organization, SFRS, pin functions of 8051, I/O port structure & Operation, External Memory Interface. UNIT-2: Programming model of 8051 Instruction classification, Instruction set, Addressing Modes: Immediate, register, direct, indirect and relative, assembler directives (ORG, END), | 10 |
| | Sept. 2022 | 10 | , features with examples, I/O Bit & Byte programming using assembly language for LED and seven segment display (SSD) interfacing. Introduction to 8051 programming in C. UNIT- 3: Timer /Counter, Interrupts [10] Timer / counter: TMOD, TCON, SCON, SBUF, PCON Registers, Timer modes, programming for time delay using mode 1 and mode 2. | 10 |
| | Oct. 2022 | 9 | Interrupts: Introduction to interrupt, Interrupt types and their vector addresses, Interrupt enable register and interrupt priority register (IE, IP) UNIT- 4: Interfacing, Serial Communication [08] Programming of serial port without interrupt | 10 |
| | Nov. 2022 | 7 | , Serial Communication: Synchronous and asynchronous serial communication, Use of timer to select baud rate for serial communication. Interfacing : ADC, DAC, LCD, stepper motor. | 7 |
| | | | | |
| **Total Lectures** | | **36** | **Total Lectures** | **37** |

**Digital Communication and Networking)**

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc (Digital Communication and Networking) | August. 2022 | 10 | UNIT 1: Introduction to Electronic Communication (9) Introduction to Communication: Elements of Communication system, types of noise sources, Electromagnetic spectrum, signal and channel bandwidth, Types of communication: simplex, half duplex, full duplex, baseband and broadband, Serial communication: asynchronous and synchronous, Information Theory: Information entropy, rate of information (data rate, baud rate), channel capacity, Nyquist theorem, Signal to noise ratio, Noise Figure, Shannon theorem, Error handling codes: Necessity, Hamming code, CRC | 10 |
| | Sept. 2022 | 10 | UNIT 2: Modulation and Demodulation (5) Introduction to modulation and demodulation: Concept and need of modulation and demodulation, Digital Modulation techniques: Pulse Code Modulation (PCM), FSK, QPSK, QAM. UNIT 3: Multiplexing, Spectrum Spreading and Media Access Control (12) Multiplexing techniques: Frequency division multiplexing, wavelength division multiplexing, Time division multiplexing | 10 |
| | Oct. 2022 | 9 | Spread Spectrum techniques: Frequency hopping Spread Spectrum, Direct Sequence Spread Spectrum Media Access Control (MAC): Random Access Protocol: ALOHA, CSMA, CSMA/CD, CSMA/CA, Controlled Access Protocols: Reservation, Polling, Token passing, Channelization Protocols: FDMA, TDMA, CDMA. UNIT 4: Computer Networking (10) Introduction to computer networks Types of networks : LAN, MAN, WAN, Wireless networks, Switching, Internet, Network topology : point to point, Star, Ring, Bus, Mesh, Tree, Daisy Chain, Hybrid | 10 |
| | Nov. 2022 | 7 | Network devices : Repeater, Switch, Networking cables, Router, Bridge, Hub, Brouter, Gateway. Wired LANs:- Ethernet: Ethernet protocol, standard Ethernet, 100 MBPS Ethernet, Gigabit Ethernet, 10 Gigabit Ethernet, Computer network model: OSI and TCP/IP. | 7 |
| | | 36 | | 37 |

# Computer Networks – II

| Class/ Subject | Month & Year | Lect ures Avai lable | Topic/Subtopic to be taught | Lect ures requ ired |
|---|---|---|---|---|
| T.Y.B.Sc. (Comput er Networks – II ) | Augus t. 2022 | 10 | Chapter 1 Application Layer 10 Lect Domain Name System • Name space-Flat name space, Hierarchical name space • Domain Name Space -Label ,Domain name, FQDN,PQDN • Distribution of Domain Name Space-Hierarchy of name servers, zone, Root server, Primary and secondary servers. • DNS in the Internet: Generic domains, Country domains,inverse domain • Resolution-Resolver,mapping names to address,mapping addresses to names,recursive resolution,iterative resolution,caching Electronic Mail- • Architecture-First scenario, second scenario, Third scenario, Fourth scenario • User agent-services of user agent, types of UA Format of e-mail • MIME-MIME header • Message transfer agent-SMTP • Message Access Agent: POP and IMAP File Transfer FTP-Communication over data control connection,File type,data structure,Transmission mode,anonymous FTP | 11 |
| | Sept. 2022 | 10 | Chapter 2 Multimedia 08 Lect Digitizing audio and video, Audio and Video compression Streaming Stored audio/video • First approach • Second approach • Third approach • Fourth approach Streaming live Real time interactive audio/video- Characteristics, Time relationship, timestamp, Playback buffer, ordering multicasting, translation RTP-Packet format RTCP-Message types Voice over IP-SIP,SIP sessionH.323- Architecture, Protocols Chapter 3 Cryptography and Network Security 09 Lect Terminology: Cryptography, plain text and cipher text, cipher key, | 10 |
| | Oct. 2022 | 9 | categories of cryptography-Symmetric key, asymmetric key Encryption model Symmetric key cryptography • Traditional ciphers – substitution cipher, shift cipher, Transposition cipher • Simple Modern ciphers-XOR, Rotation cipher, s-box,p-box • Modern round ciphers-DES • Mode of operation- Asymmetric key cryptography-RSA Security Services • Message confidentiality-With Symmetric key cryptography, with asymmetric key cryptography • Message integrity-Document and fingerprint, message and message digest • Message authentication- • Digital signature • Entity Authentication-Passwords, | 9 |
| | Nov. 2022 | 7 | Chapter 4 Security in the Internet 09 Lect IPSecurity(IPSec) • Two modes • Two security protocols • Services provided by IPSec • Security association • Internet key exchange • Virtual private network SSL/TLS • SSL services • Security parameters • Sessions and connections • Four protocols • Transport layer security PGP • Security parameters • Services • PGP algorithms • Key rings • PGP certificates Firewalls • Packet filter firewall • Proxy | 7 |
| | Total Lectu res | 36 | | 37 |

**Sign of the Staff**                              **Head of the Department**
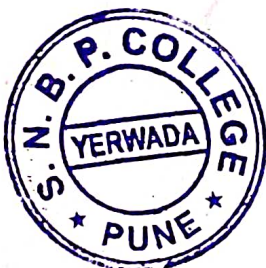
**Name of the Staff:**  <u>Mrs. Sunanda Phadtare Bhosale</u>
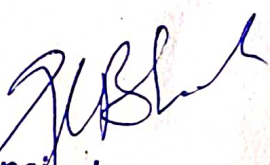
**Digital Marketing**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.CA. ( Digital Marketing) | August. 2022 | 15 | 1. E-Commerce 1.1 Introduction 1.2 Understanding Internet Marketing 1.3 Search Engine Optimization 1.4 Search Engine Marketing 1.5 Email Marketing 1.6 Digital Display Marketing<br>2. Introduction to New Age Media (Digital) Marketing 2.1 What is Digital Marketing 2.2 Digital vs. Real Marketing 2.3 Digital Marketing Channels 2.4 Types of Digital Marketing(Overview)-Internet Marketing ,Social Media Marketing, Mobile Marketing<br>3. Creating Initial Digital Marketing Plan 3.1 Content management 3.2 SWOT analysis: Strengths, Weaknesses, Opportunities, andThreats 3.3 Target group analysis EXERCISE: Define a target group | 16 |
| | Sept. 2022 | 15 | 4. Marketing using Web Sites 4.1 Web design 4.2 Optimization of Web sites 4.3 MS Expression Web EXERCISE: Creating web sites, MS Expression<br>5. Search Engine Optimization 5.1 SEO Optimization 5.2 Writing the SEO content EXERCISE: Writing the SEO content<br>6. Customer Relationship Management 6.1 Introduction to CRM 6.2 CRM platform 6.3 CRM models EXERCISE: CRM strategy | 15 |
| | Oct. 2022 | 9 | 7. Social Media Marketing 7.1 Understanding Social Media Marketing 7.2 Social Networking (Facebook, Linkedin, Twitter, etc.) Social Media (Blogging, Video Sharing - Youtube, Photosharing – Instagram, Podcasts) 7.3 Web analytics - levels 7.4 Modes of Social Media Marketing 7.4.1 Creating a Facebook page Visual identity of a Facebook page , Types of publications, Facebook Ads , Creating Facebook Ads , Ads Visibility 7.4.2 Business opportunities and Instagram options Optimization of Instagram profiles , Integrating Instagram with a Web Site and other social networks ,Keeping up with posts 7.4.3 Business tools on LinkedIn Creating campaigns on | 9 |
| | Nov. 2022 | 9 | 7.4.4 Creating business accounts on YouTubeYouTube ,Advertising , YouTube Analytics 7.4.5 E-mail marketing E-mail marketing plan , E-mail marketing campaign analysis , Keeping up with conversions 7.5 Digital Marketing tools: Google Ads, FaceBook Ads, Google Analytic, Zapier, Google Keyword Planner EXERCISE: Social Media Marketing plan. EXERCISE: Making a Facebook page and Google Ads<br><br>8. Digital Marketing Budgeting 8.1 Resource planning 8.2 Cost estimating 8.3 Cost budgeting 8.4 Cost control | 9 |
| | Total Lectures | 36 | | 37 |

Sign of the Staff                    Head of the Department

Name of the Staff:   <u>Ms. Sunanda Phadtare- Bhosale</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Semiconductor Devices and Basic Electronic | 36 | 36 |
| F.Y.B.Sc.(Cs) | Principles of Digital Electronics | 36 | 38 |
| S.Y.B.Sc.(Cs) | Microcontroller Architecture & Programmin | 36 | 36 |
| S.Y.B.Sc.(Cs) | Digital Communication and Networking | 36 | 38 |
| T.Y.B.Sc.(Cs) | Computer Networks | 48 | 49 |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Electronics Lab IA | 10 | 10 |
| S.Y.B.Sc.(Cs) | Practical Course I | 12 | 12 |

Date: 26|12|2022

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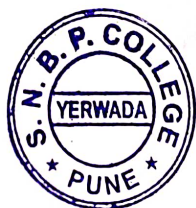
Head of the Department

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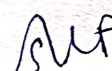
Name of the Staff:  **Ms. Sunanda Phadtare- Bhosale**
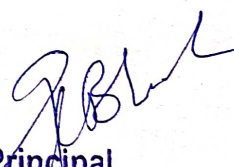
| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|----------------------------|-------------------------------------|
| S.Y.BBACA) | Digital Marketing | 48 | 48 |

Date: 26|12|20 22

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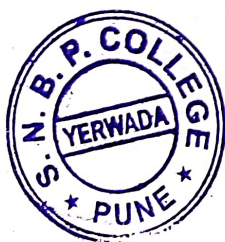
Head of the Department

Principal
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**Name of the Staff:** <u>Mrs. Sunanda Phadtare Bhosale</u>

**Instrumentation Systems**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. (: Instrumentation Systems ) | Jan. 2022 | 10 | Unit 1: Introduction to Instrumentation System (6 L) Block diagram of Instrumentation system, Definition of sensor, transducer and Actuators, Classification of sensors: Active and passive sensors. Specifications of sensors: Accuracy, range, linearity, sensitivity, resolution, reproducibility | 11 |
| | Feb. 2022 | 10 | Unit 2: Sensors and Actuators (12 L) Temperature sensor (Thermistor, LM-35), optical sensor (LDR), Passive Infrared sensor (PIR), Tilt Sensor, ultrasonic sensor, Motion sensor, Image Sensor, Actuators: DC Motor, stepper moto | 10 |
| | Feb. 2022 | 9 | Unit 3: Smart Instrumentation System and Smart Sensors (6 L) Block diagram of Smart Instrumentation system, Concept of smart sensor, Film sensors, Nano sensor | 9 |
| | March. 2022 | 7 | Unit 4: OPAMP as signal Conditioner (12 L) Concept, block diagram of Op amp, basic parameters (ideal and practical): input and output impedance, bandwidth, differential and common mode gain, CMRR, slew rate, IC741/ LM324, Concept of virtual ground, Op amp as inverting and non inverting amplifier, Unity gain follower, Opamp as adder, substractor, Op amp as current to voltage and voltage to current convertor, Voltage to frequency converter, Op amp as comparator, Problems based on above Op Amp applications. | 7 |
| | | 36 | | 37 |

## Basics of Computer Organisation:

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. (Basics of Computer Organisation:) | Jan. 2022 | 10 | Unit 1: Flip-flops (5 L) RS Flip Flop using NAND gate, clocked RS Flip Flop, D Latch, J K Flip Flop,T Flip Flop Unit 2: Shift registers and Counters (9 L) Shift registers - SISO, SIPO, PISO, PIPO shift registers, Ring Counter using D Flip flop. Counters -Synchronous and Asynchronous type, 3-bit Up, Down and Up-Down counter, Concept of modulus Counters (Timing Diagram of all above are expected | 11 |
| | Feb. 2022 | 10 | Unit 3: Basics of Computer System (12 L) Basic Computer Organization, Concept of Address Bus, Data Bus, Control Bus. CPU Block Diagram and Explanation of each block, Register based CPU organization, Concept of Stack & its organization, I/O organization: need of interface, block diagram of general I/O interface | 10 |
| | Feb. 2022 | 9 | Unit 3: Basics of Computer System (12 L) Basic Computer Organization, Concept of Address Bus, Data Bus, Control Bus. CPU Block Diagram and Explanation of each block, Register based CPU organization, Concept of Stack & its organization, I/O organization: need of interface, block diagram of general I/O interface | 9 |
| | March. 2022 | 7 | Unit 4: Memory Organization (10 L) Memory Architecture, Memory hierarchy, Types of Memories, Data Read/ Write process, Vertical and Horizontal Memory Expansion, Role of Cache memory, Virtual Memory | 7 |
| | | 36 | | 37 |

## Embedded System Design

| Class/ Subject | Month & Year | Lect ures Avai lable | Topic/Subtopic to be taught | Lect ures requ ired |
|---|---|---|---|---|
| S.Y.B.Sc. (: Embedde d System Design:) | Jan. 2022 | 10 | Unit 1:Introduction to Embedded systems using single board computers (SBC) (08) Single boards computer block diagram, types, Comparison of SBC models, Specifications, I/O devices (Storage, display, keyboard and mouse), Network access devices | 11 |
| | Feb. 2022 | 10 | Unit 2: Architecture of System on Chip (SOC) (08) Architecture of SoC, Basic version Broad Coprocessor, Pin Description of Raspberry Pi, Architectural features: CPU Overview, CPU Pipeline stages, CPU Cache Organization, Branch Prediction & Folding (Concept), GPU Overview | 10 |
| | Feb. 2022 | 9 | Unit 3:Programming using Python (10) Overview of Rasberian OS (Operating System), Installation, different types of Operating Systems Unit 3:Programming using Python (10) Overview of Rasberian OS (Operating System), Installation, different types of Operating Systems | 9 |
| | March. 2022 | 7 | Unit 4 : Interfacing of devices using Python Programming (10) Basic interfacing: LED, Switch, LCD Internal Advanced: Bluetooth, Wifi, Ethernet, External advanced: Camera, Serial Communication GSM, Ultrasonic Sensor, PIR, Finger Print reader. | 7 |
| | | 36 | | 37 |

# Wireless Communication and Internet of Things

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc. (Wireless Communication and Internet of Things:) | Jan. 2022 | 10 | Unit1: Wireless Communication: Cellular Telephony (12) Overview of wireless communication, Introduction of cellular telephony system: Frequency reuse, handoff strategies, Co-channel and adjacent channel interference, block diagram of mobile handset Overview of Cellular Telephony generations: 1G to 5G,3G (W-CDMA, UMTS), 4G(LTE) GSM: architecture, frame structure, mobility management, GPRS : architecture, application | 11 |
| | Feb. 2022 | 10 | Unit 2 : Short Range Wireless Technologies and Location Tracking (12) Short range Technologies : Bluetooth: Bluetooth architecture, Bluetooth protocol stack, Bluetooth frame structure Zigbee: Architecture, topologies, applications, Z wave: Protocol architecture, applications RFID: working of RFID system, types of RFID tags, RFID frequencies, applications Location Tracking: GPS system: components of GPS system (space segment, control segment, user segment), GPS receiver, Applications | 10 |
| | Feb. 2022 | 9 | Unit 3: IoT Architecture (08) Introduction to IOT : Evolution of IOT, M2M and/or IOT, Seven layer architecture of IoT, Role of cloud in IoT, cloud topologies, Cloud access, Protocols in IoT, Cross connectivity across IoT system components: • Device to Gateway-short range Wireless: cellphone as gateway, dedicated wireless Access points • Gateway to cloud: Long range connectivity, (wired, cellular, Satellite, WAN) • Direct Device to Cloud connectivity , Networking technologies: Low power local area networking (LPLAN), Low power wide area networking (LPWAN) technologies, comparison of LoRa, sigfox NB-IoT, Cat –M. | 9 |
| | March. 2022 | 7 | Unit 4: IoT Applications (04) Application domains, Challenges in IoT : Power consumption, Physical security, durability, Secure Connectivity, Secure Data Storage, Data volume, Scalability Case studies: Case Study 1: Smart Irrigation system for Agricultural field Case Study 2:Home Automation Case Study 3: Smart Cities | 7 |
| | | 36 | | 37 |

**Sign of the Staff**                    **Head of the Department**

## Academic Year 2022-2023 (Lecture plan Term-II)

**Name of the Staff:** **Mrs. Sunanda Phadtare Bhosale**

### Networking

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.CA (: Networking) | August. 2022 | 15 | 1 Introduction to Computer Network 1.1Basics of Computer Network 1.2 Network Topologies 1.2.1Mesh 1.2.2 Star, 1.2.3 Bus, 1.2.4Ring 1.3Types of Networks 1.3.1LAN,MAN,WAN, 1.3.2 Internetwork, , 1.4.2 Half Duplex, 1.4.3 Full Duplex 1.5. Server Based LANs & Peer-to-Peer LANs 1.6. Protocols and Standards 1.7. Network Software 1.7.1 Protocol Hierarchies,Layers, Peers,Interfaces 1.7.2 Design Issues of the Layers 1.7.3 Connection Oriented and Connectionless Service 2 Network Models 2.1 OSI Reference Model : Functions of each Layer 2.2 TCP/IP Reference Model,Comparison of OSI and TCP/IP Reference Model 2.3 TCP/IP Protocol Suite 2.4 Addressing 2.4.1Physical Addresses 2.4.2 Logical Addresses 2.4.3Port Addresses, 2.4.4 SpecificAddresses 2.5 IP Addressing 2.5.1 ClassfullAddressing 2.5.2 Classless Addressing | 16 |
| | Sept. 2022 | 15 | 3 Transmission Media 3.1Introduction, Types of Transmission Media 3.2 Guided Media: 3.2.1Twisted Pair Cable- Physical Structure,Categories,Connectors &Applications 3.2.2Coaxial Cable – Physical Structure, Standards, Connectors & Applications 3.2.3Fiber Optic Cable- Physical Structure,Propagation Modes,Connectors & Applications 3.3 Unguided Media: 3.3.1Electromagnetic Spectrum for Wireless Communication 3.3.2Propagation Modes Ground,Sky,Line-of-Sight 3.3.3Wireless Transmission:Radio Waves,Microwaves, Infrared 4 Wired and Wireless LAN 4.1 IEEE Standards 4.2 Standard Ethernet MAC Sublayer,Physical Layer 4.3 Fast Ethernet – Goals, MAC Sublayer,Topology, Implementation 4.4 Gigabit Ethernet – Goals, MAC Sublayer,Topology, Implementation 4.5 Ten-Gigabit Ethernet – Goals, MAC Sublayer, Physical Layer 4.6 Backbone Networks -Bus Backbone, Star Backbone 4.7 Virtual LANs Membership, IEEE standards advantages 4.8 Wireless LAN 4.8.1 IEEE 802.11 Architecture, 4.8.2 Bluetooth Architecture (Piconet, Scatternet) | 15 |
| | Oct. 2022 | 9 | 5 Network Devices 5.1 Network Connectivity Devices 5.1.1 Active and Passive Hubs 5.1.2 Repeaters 5.1.3 Bridges- Types of Bridges 5.1.4 Switches 5.1.5 Router 5.1.6 Gateways | 9 |
| | Nov. 2022 | 9 | 6 Network Security 6.1 Introduction 6.2 Need for Security 6.3 Security Services : 6.3.1 Message- -Confidentiality, Integrity, Authentication, Non repudiation. 6.3.2 Entity (User)- Authentication. 6.4 Types of Attack 6.5 Cryptography, PlainText,Cipher Text, Encryption,Decryption, Symmetric Key and Asymmetric Key Cryptography 6.6 SubstitutionTechniques, Caesar Cipher,and Transposition Cipher (Problems should be covered.) 6.7 Firewalls- Packet Filter firewall, Proxy firewall 6.8 Steganography,Copyright | 9 |
| | Total Lectures | 36 | | 37 |

Sign of the Staff

Head of the Department

Principal
S. N. B. P. COLLEGE
Maharas... g Board
Yerwada. Pun: 11 006

**Name of the Staff:** **Ms. Sunanda Phadtare- Bhosale**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Instrumentation Systems | 36 | 37 |
| F.Y.B.Sc.(Cs) | Basics of Computer Organisation | 36 | 36 |
| S.Y.B.Sc.(Cs) | Embedded System Design | 36 | 36 |
| S.Y.B.Sc.(Cs) | Wireless Communication and Interne Things | 36 | 38 |

| Class | Practical course taught | Number of practical's required | Number of practical's actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Electronics Lab IB | 10 | 10 |
| S.Y.B.Sc.(Cs) | Practical Course II, Project | 12 | 12 |
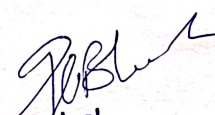
Date: 18/4/2023

Sign of the Staff

Head of the Department

Principal
S. N. B. P COLLEGE
Maharasht.... ...ng Board
Yerwac.. ...e : 411 006

**S.E. Society's**
**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF BBA(CA)**
**Course Completion Certificate**

**Academic Year 2022-2023 (Term-II)**

Name of the Staff:  **Ms. Sunanda Phadtare- Bhosale**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|----------------------------|-------------------------------------|
| S.Y.BBACA) | Networking | 48 | 50 |

Date: 18/4/2023

Sign of the Staff

Head of the Department

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S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

S.E. Society's

# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF BBA

### Academic Year 2022-2023 (Lecture plan Term-I)

**Name of the Staff:** <u>Asst. Prof. Dhanalaxmi Murgesh</u>

**Subject : Business Communication Skills (102)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| FYBBA | Aug. 2022 | 11 | Role of Communication in social and economic system Need for effective communication, meaning and definition, Principles of effective communication, Barriers to communication and over comings | 11 |
| | Sept. 2022 | 13 | Methods of Communications]: Linguistics, Non-Linguistics and Para- Linguistics, Art of Listening Written communication, Forms of written communication. Qualities, difficulties in written communication, Constraints in developing effective written communication Types or Channels of Communication: Internal- Vertical, Horizontal, Consensus, Grapevine External- Inward, Outward ,Merits and Limitations of methods & types of communication | 15 |
| | Oct. 2022 | 13 | Concept ,need and functions of Business .Correspondence , Types of Business letters ,Layout Drafting of business , Business Correspondence : Sales , Orders sales circulars and business promotion and resignation letter , leave , application letters ,Complaint , Credit verification, Correspondence with bank, Job application , and Reference check | 14 |
| | Nov. 2022 | 11 | Fax communication ,voice mail ,emails ,tele conferencing , communication through social media | 11 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **51** |

**Sign of the Staff**
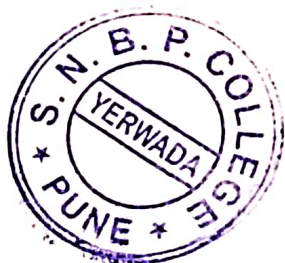
**Head of the Department**

**Principal**
**S. N. B. P. COLLEGE**
**Maharashtra Housing Board**
**Yerwada, Pune - 411 ?**

**Subject : Business Economics (Micro) (104)**

| Class | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.B.A | Aug. 2022 | 10 | Importance of economics in life, scope, forms of economy economic activities, economic problems , circular flow of economy Meaning and definition of business economics, scope of Business Economics Importance of economics in life, forms of economy, central problems of economics, market forces in solving economic problems, 5 sector flow of income and expenditure | 12 |
| | Sept. 2022 | 13 | Concept of demand supply Concept of demand, determinants of demand, individual demand, market demand, Law of demand, elasticity of demand, types of elasticity of demand. Practical implementation of elasticity of demand. Methods of measuring elasticity of demand. Concept of supply, determinants of supply, elasticity of supply. | 13 |
| | Oct. 2022 | 13 | Concept and types of revenue Importance of revenue , methods of calculation of revenue Interrelationship between marginal , total, and average revenue Concept of cost definition and importance of cost ,typology of cost analysis of cost | 13 |
| | Nov. 2022 | 12 | Concept of market and competition Meaning of market, types of markets - perfect competition, Monopoly, monopolistic competition, duopoly, and oligopoly. Price and output determination in different market conditions. Concept of Total Revenue, Average Revenue and Marginal Revenue, Methods of measuring TR, AR and MR, interrelationship between TR, AR and MR | 13 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **51** |

Sign of the Staff                     Head of the Department

I/c Principal
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Yerwada, Pune - 411 006

**Subject:- Global Competencies & Personality Development (303)**

| Class | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.B.A | Aug. 2022 | 12 | Definition and nature of personality, Characteristics of good personality, Determinants of personality development. Theories of personality development i. Psychoanalytical Theory by Sigmund Freud ii. Trait Theory by Allport and Big Five model iii. Social Cognition Theory by Albert Bandura | 12 |
| | Sept. 2022 | 11 | Meaning and need of global competence. Characteristics of globally competent individual (life-long learning, understanding cultural differences, adaptability, comfortable with change, problem-solving ability, critical and comparativethinking). Building self-esteem and self confidence SWOC Analysis and Personal Goal Setting | 12 |
| | Oct. 2022 | 13 | Effective communication skills, Preparation for self-introduction. Working on attitude i.e. Aggressive, assertive and submissive Development of leadership skills and introduction to Leadership styles. Team Building; develop ability to work under pressure, flexibility at workplace. Social empathy, building blocks of social empathy and development of social empathy. Social Responsibilities. Workplace ethics | 14 |
| | Nov. 2022 | 12 | Definition and importance of social image, Grooming basics and use of body language Time management Public-speaking, Proper e-mail and telephone etiquettes International and social etiquettes , Social graces and table manners | 12 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

**Subject: - Business Ethics (503)**

| Class | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.B.A | Aug. 2022 | 12 | 1.1 Meaning, Nature and Scope of Business Ethics 1.2 Ethics in Contemporary Business 1.3 Organizational Ethical Climate – Ethical Decision Making and Importance of Framing Ethical Policies 1.4 Why Ethical Problems occur in Business 1.5 Difference between workplace Ethics and Laws 1.6 Ethical Code of Conduct in Global Business 1.7 Government protection policies against illegal business practices. 1.8 Influence of Interest Groups on the Government | 12 |
| | Sept. 2022 | 12 | 2.1 Impact of Business Decisions on Stakeholders 2.2 Leadership Ethics at the organizational level – Training Ethics, imbibing organizational values and cultures, Awareness of rule and regulations of an organization, Upskilling and Ethical knowledge of employees. 2.3 Organization of Modern corporation and Interaction with stakeholders 2.4 Whistleblower Act and Employee Rights: Privacy and Safety 2.5 Collective Bargaining and Role of Management in implementing Ethics. 2.6 Ethics in Compliance Management – Fraud, Corruption, Sanction Violations, Conflict of Interests, Human Rights Violation. 2.7 Health and Safety Issues in Organizations – Workplace Safety, Measures to avoid accidents, Maintenance of Psychological well being of employees | 13 |
| | Oct. 2022 | 12 | 3.1 Role and Responsibility of Organizations towards government and society. 3.2 CSR Performance – Meaning and Responsibility. 3.3 CSR – Strategy in building community relationships. 3.4 Corporate Citizenship and – Concept and Stages 3.5 Ethical behaviour in Advertising Practices and Advertising ethics. 3.6 Ethical and Unethical Target Marketing in Business 3.7 Advertising abuses and Regulation 3.8 Media Industry – Role, Impact and Ethical Practices | 13 |

| | | | |
|---|---|---|---|
| Nov. 2022 | 12 | 4.1 Environmental Ethics and Human values – Meaning and Impact on Environmental problems 4.2 Environmental legislation – Laws and Regulation with Indian Context and Stages of becoming an ecologically sustainable organization. 4.3 Sustainable Development – Definition, Obstacles and Impact, Business operations – A threat to earth's ecosystem. 4.4 Difference between Customer and Consumerism 4.5 Government regulation agencies for Consumer protection and Protecting consumer privacy online. | 12 |
| | | **Total Lectures** | 50 |
| **Total Lectures** | 48 | | |
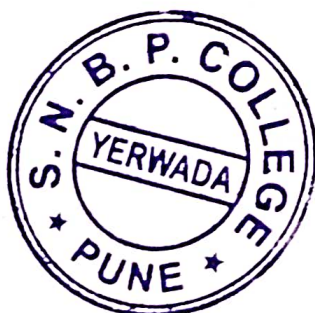
**Sign of the Staff**

**Head of the Department**

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## Subject : Business Communication Skills

| Class/ Subject | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| FYBBA (CA) | Aug. 2022 | 11 | Role of Communication in social and economic system Need for effective communication, meaning and definition, Principles of effective communication, Barriers to communication and over comings | 11 |
| | Sept. 2022 | 13 | Methods of Communications]: Linguistics, Non-Linguistics and Para- Linguistics, Art of Listening Written communication, Forms of written communication. Qualities, difficulties in written communication, Constraints in developing effective written communication Types or Channels of Communication: Internal-Vertical, Horizontal, Consensus, Grapevine External- Inward, Outward ,Merits and Limitations of methods & types of communication | 15 |
| | Oct. 2022 | 13 | Concept ,need and functions of Business .Correspondence , Types of Business letters ,Layout Drafting of business , Business Correspondence : Sales , Orders sales circulars and business promotion and resignation letter , leave , application letters ,Complaint , Credit verification, Correspondence with bank, Job application , and Reference check | 14 |
| | Nov. 2022 | 11 | Fax communication ,voice mail ,emails ,tele conferencing , communication through social media | 11 |
| | | | | |
| Total Lectures | | 48 | Total Lectures | 51 |

### Academic Year 2022-2023 (Term-I)

**Name of the Staff:** Asst. Prof. Dhanalaxmi Murgesh

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|-----------------------------|-------------------------------------|
| FYBBA | Business Communication Skills | 48 | 51 |
| FYBBA | Business Economics (Micro) | 48 | 51 |
| SYBBA | Global Competencies & Personality Development | 48 | 50 |
| TYBBA | Business Ethics | 48 | 50 |

Date: 27/12/2022  Sign of the Staff
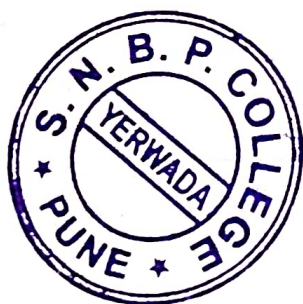
Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
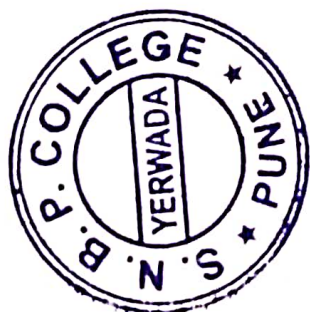Yerwada. Pune -411 006

**Name of the Staff:  Asst. Prof. Dhanalaxmi Murgesh**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FYBBA (CA) | Business Communication Skills | 48 | 51 |

Date: 27/12/2022  **Sign of the Staff**

**Head of the Department**

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# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF BBA

### Academic Year 2022-2023 (Lecture plan Term-II)

**Name of the Staff:** __Asst. Prof. Dhanalaxmi Murgesh__

**Subject :- Business Organisation Systems (201)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.BBA | Jan . 2023 | 12 | Concept of business and its characteristics, Objectives of business and prerequisites of a successful business, Development and evolution of Trade, commerce and industry, Recent Trends in Modern Business i.e. BPO, KPO, Entrepreneur & Homepreneur and online trading, digital marketing and payment methods | 13 |
| | Feb. 2023 | 12 | Forms of business organization and its selection, Meaning, characteristics, advantages and Limitations of Sole proprietorship, Partnership Firm, Limited Liability partnership Firms and private company, Joint Stock Company, virtual business organizations, boundary less organizations, OPC (One Person company) | 13 |
| | Mar. 2023 | 11 | Identification of ideas and opportunities, Influencing factors while setting up of business enterprise, Feasibility report of a business enterprise, Size and location of a business enterprise. licensing and basic legal formalities to start a new business enterprise | 12 |
| | Apr. 2023 | 10 | Levels of Distribution Channels and their role Domestic Trade: Concept of Domestic Trade, Wholesaling and Retailing Foreign Trade: Concept of Export and Import; Export and Import Procedure | 10 |
| | | | | |
| **Total Lectures** | **45** | | | **50** |

**Subject :- Fundamentals of Computers (206)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.BBA | Jan . 2023 | 11 | Introduction, Characteristics of Computers, Block diagram of computer, Booting Process, Types of Programming Languages-Machine Languages, Assembly Languages, High Level Languages, Data Organization, Drives, Files, Directories, Storage Devices, Primary Memory, RAM , ROM, Secondary Storage Devices - FD, CD, HDD, Pen drive I/O Device- Monitor and types of monitor, Printer and types of printer, Scanners,Digitizers,Plotters Number Systems-Introduction to Binary, Octal, Hexadecimal system Types of computers | 12 |
| | Feb. 2023 | 12 | Definition-Operating System, Functions of O.S., Types of O. S. – Single user O.S., Multiuser O.S., Overview of Windows O. S., Android O. S., IOS Definition, Goals, Applications, Components, Topology, Types of Topology, Types of Networks, LAN, MAN, WAN, | 12 |
| | Mar. 2023 | 11 | MS-Excel Various Functions such as Sum, average, count, max, min, Graph / Charts in Ms Excel MS–PowerPoint: Animation Effects, Transition Effects, Slide Show Setting | 12 |
| | Apr. 2023 | 11 | WWW, Internet, Internet Service Providers(ISP), Services Provided by the Internet: e-mail, search engine, Information security overview – Background and current scenario Types of Attacks , Goals of security ,Overview of security threats ,Weak / Strong passwords and password cracking Insecure Network connections, Digital signature | 12 |
| | | | | |
| **Total Lectures** | | **45** | | **48** |

## Subject:- Production and Operation Management- (402)

| Class/ Subject | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.BBA | Jan . 2023 | 12 | Introduction to Production and Operation Management – Meaning, Nature, Scope, Objectives, Importance, Functions of Production and Operation Management, Variety of business, Methods of manufacturing, Plant layout, Service layout, Safety considerations and environmental aspects. | 12 |
| | Feb. 2023 | 12 | Production Design: Meaning, Objectives, product policy, Techniques of product development. Production Planning - Meaning, Definition, Objectives, Scheduling, Routing, Dispatch, follow up. Production Control – Meaning, Objectives, Factors affecting production control. Caselets on design, planning and control. | 13 |
| | Mar. 2023 | 12 | Productivity and Quality Control- Meaning, Definition, Importance, Measurement techniques, Quality control, Quality circles, TQM. Ergonomics: Definition, Importance, Bio-Mechanical factors, safety equipment and device. | 12 |
| | Apr. 2023 | 12 | Maintenance Management : Introduction , Meaning, Types, Planning, Scheduling, Techniques. Modern Scientific maintenance methods , Automation and computer integrated manufacturing. | 13 |
| | | | | |
| **Total Lectures** | **48** | | | **50** |

**Subject:- Decision Making and Risk Management (403)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| SYBBA | Jan . 2023 | 12 | Decision Making and Risk Management – Introduction, Concept, Problem definition and framing. Rational Models of decision making, Other models - Myers Briggs, Bounded Rationality model, Retrospective decision model, OODA Loop Model, Ladder of Inference etc. Types of Decisions, Steps in Decision making process, Creative decision making process. Why rational models fail ?, Traps and cognitive barriers that lead to sub optimal decisions | 13 |
| | Feb. 2023 | 12 | Decision Making - Groupthink versus the wisdom of crowds, Avoiding decision-making traps. Intuition: pros and cons, Decisions making for corporate management, execution, and operation of projects, Role of technology in decision making and data analysis. EQ (Emotional Intelligence) versus IQ as essential decision making traits to manage risks Dealing with conflict and Risk - Resistance to change, Key elements of EQ: personal and social competencies, Dissonant decision making leadership and brain chemistry ,Qualitative and Quantitative risk analysis tools /methods – Introduction, Concept. Decision Models in strategic management, Decision making systems. | 12 |
| | Mar. 2023 | 12 | Definitions of leadership and followership, Motivational theory; common motives of leaders and followers. Identifying resources that affect your power and influence; use and misuse of power, Role of competition and conflict in leadership roles. Charisma, heroes, bullies and jerks – aspects to be considered in decision making and leadership. Decision making and Leadership - Values as underpinnings of leadership. | 13 |

| | Apr. 2023 | 12 | Importance of Team composition, Understanding your own value system and how it influences choices, political views, personal and organizational decisions Organizational values –examples of values for well-known corporations. Importance of shared values in decision making and avoiding risks. Vision statements as organizing templates for where organizations or individuals are aiming. Examples of individual and corporate vision statements Developing and communicating your own view of what needs changing or what is possible to avoid risks. Risk communication, Risk Sharing, Strategic and integral planning of projects. | 13 |
|---|---|---|---|---|
| | | | | 51 |
| **Total Lectures** | | **48** | | |

**Subject:- Management Information System (602)**

| Class/ Subject | Month & Year | Lectures Available | Topic/Sub topic to be taught | Lectures required |
|---|---|---|---|---|
| TYBBA | Jan. 2023 | 12 | Meaning and basic concept of Information Technology. Meaning and basic concept of Information System ,Meaning and basic concept of Management Information System. Role of Information Technology in Management Information System , Management Information System as an instrument for organizational change. | 12 |
| | Feb. 2023 | 12 | Decision Making, Models of Decision Making, ,Classical Model, Administrative Model and Herbert Simon's Model, Information & Types of information, Attributes of Information and its relevance to decision making. | 12 |
| | Mar. 2023 | 12 | System - Meaning and definition, System Analysis , Meaning and definition of system analysis ,Need for system analysis, System analysis of the existing system, System analysis of new requirements, System Development Model, Structured System Analysis and Design Object-Oriented Analysis. | 12 |
| | Apr. 2023 | 12 | MIS applications, DSS – GDSS - DSS applications in E enterprise, Knowledge Management System and KnowledgeBased Expert System, Enterprise Model System and E-Business, E-Commerce, E-communication, Business Process Reengineering. | 12 |
| | | | | |
| Total Lectures | | 48 | | 48 |

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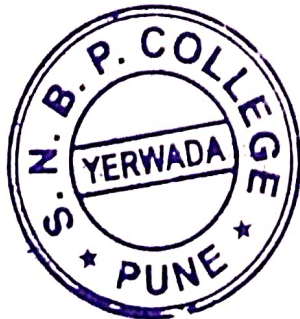Maharashtra Housing Board
Yerwada, Pune - 411 006

Name of the Staff:  **Asst. Prof. Dhanalaxmi Murgesh**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|----------------------------|-------------------------------------|
| FYBBA | Business Organisation & System | 45 | 50 |
| FYBBA | Fundamentals of Computers | 45 | 48 |
| SYBBA | Production & Operations Management | 48 | 50 |
| SYBBA | Decision Making & Risk Management | 48 | 51 |
| TYBBA | Management Information System | 48 | 48 |

Date: 18/02/22          **Sign of the Staff**          **Head of the Department**

I/c Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff:   Asst. Prof. Chandrabhansingh Gaur**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F Y BBA | Principles of Management | 50 | 51 |
| S Y BBA | Principles of Human Resource Management | 40 | 42 |
| S Y BBA | Consumer Behaviour & Sales Management | 48 | 50 |
| S Y BBA | Retail Management | 48 | 52 |
| T Y BBA | Research Methodology | 48 | 52 |
| T Y BBA | Marketing Environment Analysis and Strategies | 48 | 50 |
| T Y BBA | Legal Aspects in Marketing Management | 36 | 38 |

Date: 26/12/2022          Sign of the Staff

Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff:** Asst. Prof. Chandrabhansingh Gaur

## Principles of Management

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F Y BBA Principles of Management | Sept. 2022 | 16 | 1.Nature of management. 1.1Meaning & Importance ,Functions1.2 Role of Managers1.3 Management as an Art, Science, Profession and a Social System 1.4 Concept of Management, Administration, Organization &Universality of Management | 14 |
| | Oct. 2022 | 15 | 2.Evolution of management thoughts 2.1 Concept of Managerial Thoughts 2.2 Contribution of Frederick Taylor, Elton Mayo, Henry Fayol and Peter Drucker 2.3 Indian Management ethos (Indian )and different Styles for example (J.R.D Tata, Dhirubhai Ambani, N. R. Narayana Murthy, Verghese Kurien)… | 13 |
| | Nov. 2022 | 10 | 3.Major managerial Functions 3.1 Forecasting: Meaning, Need Types, Methods, Advantages, merits ,Disadvantages 3.2 Planning: Meaning, Need Types ,methods, Advantages, merits, Disadvantages 3.3 Organizing: Meaning, Concept, Delegation of Authority: Meaning, Importance Decentralization: Concepts, Meaning And, Importance 3.4 Decision Making: Types, Process, and Techniques Directions nature and principles and 3.5 Motivation: Meaning, Importance, Nature, Principles, and Theories3.6 Controlling :Meaning, Needs, Process, Techniques | 11 |
| | Dec. 2022 | 12 | Recent trends in Management 4.1 Management of change , management of crises, Total Quality Management (TQM): Meaning, Merits, Demerits ,stress management .(Principles ,concepts merits ) 4.2Knowledge Management: Meaning, Merits, Demerits4.3 Outsourcing: Meaning, Merits, Demerits | 13 |
| | | | | |
| **Total Lectures** | **53** | | **Total Lectures** | **51** |
| | | | | |

## Principles of Human Resource Management

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S Y BBA. Principles of Human Resource Management | Sept. 2022 | 12 | Introduction to HRM- Meaning, Definition, Features, Scope, Objectives, Importance, Principles of HRM, Evolution of HRM, Functions of HRM, Challenges of HRM, Role of HR Manager, Difference between HRM& Personnel Management, Challenges before HRM | 13 |
| | Oct. 2022 | 14 | Job Analysis- Meaning, Definition, Objectives, Benefits, Methods, Job Analysis Components- Job Description, Job Specification, Job Evaluation Human Resource Planning(HRP)- Meaning, Definition, Objectives, Process, Factors Influencing the Estimation of Human Resource in Organisation, Advantages & Limitations/Barriers of HRP. Caselets on Job Analysis & Human Resource Planning | 14 |
| | Nov. 2022 | 08 | Career Planning- Meaning, Definition, Objectives, Process, Benefits and Stages. Employee Morale & Job Satisfaction Employee Morale- Meaning, Definition, causes of low Morale, Job Satisfaction- Meaning, Definition, Factors contributing to Job Satisfaction, Measures to increase Job Satisfaction, Advantages of Job Satisfaction Case lets on Career Planning, Employee Morale & Job Satisfaction. | 10 |
| | Dec. 2022 | 12 | Work force Diversity, Technological Changes & HRM, International HRM, E- Human Resource Management, Human Resource Information System (HRIS), HRM in Virtual Organisations, Work from Home, Out-Sourcing, Changing Role of HRM. | 14 |
| | | | | |
| **Total Lectures** | | **46** | **Total Lectures** | **51** |

# Consumer Behaviour& Sales Management

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S Y BBA  Consumer Behaviour& Sales Management | Sept. 2022 | 12 | **Introduction and Determinants of Consumer Behaviour** Basics: Meaning of Customers & Consumers, Consumer Roles, Consumerism & De-marketing. Culture & Sub- Culture: Meaning, Characteristics & Relevance to Marketing Decisions. Social Class: Meaning, Measurement, Effect on Lifestyles. Social Groups: Meaning & Group Properties & Reference Groups. Family: Family Life Cycle & Purchasing Decisions. Marketing Mix: Influence of marketing mix variables. Personality & Self Concept: Meaning of Personality, Influence on Purchase Decisions. Motivation & Involvement: Types of Buying Motives, Motive Hierarchy, Dimensions of Involvement. Learning & Memory: Meaning & Principal Elements of Learning, Characteristics of Memory Systems, Recall. Attitudes: Meaning & Characteristics, Strategies for Changing Attitudes, Intensions Behaviours. | 14 |
| | Oct. 2022 | 16 | Consumer Decision Making Process  Problem Recognition: Types of consumer decisions, types of Problem Recognition, Utilizing problem recognition information Search & Evaluation: Types of information, Sources of Information Search, Search, Experience and Credence Aspects - Marketing Implications Situational Influences on Purchase Decisions Purchasing Process: Why do people shop? Store & Non-store Purchasing Processes, Purchasing Patterns. Post-purchase Evaluation &Behaviour: Consumer Satisfaction, Dissatisfaction, Customer Delight, Consumer Complaint Behaviour, Post- Purchase Dissonance. | 15 |
| | Nov. 2022 | 04 | Basics to Sales Management & its Organization Sales Management: Definition and meaning, Objectives, Sales Research, Sales Forecasting methods, Sales Planning and control: Goal setting, Performance measurement, diagnosis and corrective actions. Sales Organization: Need for Sales Organizations, their structure, Sales Managers Functions and responsibilities, Planning for major customers and sales Budget, Specific Characteristics of a successful salesman. | 06 |

| | Dec. 2022 | 16 | Training, Managing &Motivating the Sales Force A. Recruiting, Selection and Training of Sales force: Procedures and criteria extensively used as selection tools for recruiting and testing sales ability. Sales Force Job Analysis and Description B. Areas of sales Training: Company Specific Knowledge, product knowledge Industry and Market Trend Knowledge, customers and technology – Relationship Selling Process and Customer education. Value added Selling C. Motivating the Sales Team: Motivation Programs – Sales Meetings, Sales Contests, Sales Compensating, (Monetary compensation, incentive programs as motivators, NonMonetary compensation – fine tuning of compensation package. Supervising, D. Evaluating Sales Force Performance and Controlling Sales activities: Sales Records and Reporting Systems, Improving Sales Productivity, Ethical and Legal Issues in Sales Management. | 14 |
|---|---|---|---|---|
| | | | | |
| **Total Lectures** | | **48** | | **48** |

# Retail Management

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S Y BBA. Retail Management | Sept. 2022 | 12 | **Introduction to Retailing**<br>Structure of retail industry, types of retailers, market segments and channels, market trends, retail life cycle. | 12 |
| | Oct. 2022 | 16 | **Retailing Strategy**<br>Identifying and Understanding Customers, Customer segmentation, Selecting Target Market, Identifying Market Segments, selecting site locations, Strategic positioning and execution. Establishing and Maintaining Retail Image, Creating In-store Dynamics (Layouts & Plans) | 14 |
| | Nov. 2022 | 8 | **Managing the Retail Business**<br>Implementing Retail Marketing Plan, Brief Human Resource Requirements, Developing Product and Branding Strategies, Developing Merchandise Plans, Merchandising Strategy, | 10 |
| | Dec. 2022 | 12 | **Future of Retailing**<br>Introduction to recent trends and Technological Advancements in retailing. Omni Channel Retailing, shopping with AR (Augmented reality),Pop up shops, social shopping, private lable brand | 14 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

# Research Methodology

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| **T Y BBA.** Research Methodology | Sept. 2022 | 14 | Introduction to Research Methodology and Research Problem 1.1 Introduction to Research 1.2 Objectives of Research, 1.3 Motivations in Research, 1.4 Types of Research, 1.5 Research Approaches, 1.6 Significance of Research, 1.7 Research Process, 1.8 Criteria of Good Research, 1.9 Challenges before Researchers in India. 1.10 Meaning of Research Methodology. 1.11 Concept of Research Problem, 1.12 Selecting the Research Problem, 1.13 Techniques involved in defining Research Problem, 1.14 Formulation of Research Hypothesis and its importance | 15 |
| | Oct. 2022 | 14 | Research Design and Research Sampling 2.1 Research Design 2.2 Meaning of Research Design, 2.3 Need for Research Design, 2.4 Features of a Good Design, 2.5 Types of Research Design 2.6 Concept of Research Sampling, 2.7 Steps in Sampling Design, 2.8 Types of Sampling, 2.9 Determination of Sampling Size | 15 |
| | Nov. 2022 | 6 | Methods of Data Collection and Processing and Analysis of Data 3.1 Collection of Primary Data 3.2 Meaning and definition of Primary Data, 3.3 Advantages and Limitations of Primary Data, 3.4 Methods of Collecting Primary Data: 3.4.1 Observation Method, 3.4.2 Interview Method, 3.4.3 Questionnaire Method, 3.4.4 Scheduling/ Schedule Method 3.4.5 Other Methods 3.5 Collection of Secondary Data 3.5.1 Meaning and definition of Secondary Data, 3.5.2 Advantages and Limitations of Secondary Data, 3.5.3 Sources of collecting Secondary Data 3.6 Data Processing – 3.6.1 Editing, 3.6.2 Codification, 3.6.3 Classification, 3.6.4 Tabulation, 3.6.5 Scaling & Measurement 3.7 Data Analysis 3.7.1 Meaning of Data Analysis, 3.7.2 Need of Data Analysis, 3.7.3 Methods of Data Analysis 3.8 Testing of Hypothesis 3.8.1 Concepts in Testing of Hypothesis 3.8.2 Steps in the testing of hypothesis, 3.8.3 Chi-square Analysis, 3.8.4 Analysis of Variance | 06 |

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|---|---|---|---|
| Dec. 2022 | 16 | Interpretation and Report Writing 4.1 Interpretation4.1.1 Meaning of Interpretation, 4.1.2 Need of Interpretation, 4.1.3 Techniques of Interpretation, 4.1.4 Precaution in Interpretation 4.2 Report Writing – 4.2.1 Significance of Report Writing, 4.2.2 Steps in Writing Report, 4.2.3 The layout of the Research Report 4.3 Research Paper Writing– 4.3.1 Meaning of Research Paper, 4.3.2 Structure of Research paper, 4.3.3 Referencing Styles 4.3.4 Ethics in Report Writing and Research Paper Writing | 17 |
| | | | |
| **Total Lectures** | **48** | **Total Lectures** | **52** |

# Marketing Environment Analysis and Strategies

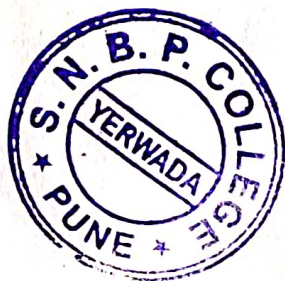| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T Y BBA. Marketing Environment Analysis and Strategies | Sept. 2022 | 14 | Marketing Environment 1.1 Introduction – Marketing Microenvironment – 1.1.1 Company, 1.1.2 Suppliers, 1.1.3 Marketing intermediaries, 1.1.4 Competitors, Customers 1.2.1 Macro Environment – 1.2.2 Demographic environment, 1.2.3 Economic environment, 1.2.4 Natural environment, 1.2.5 Technological environment, 1.2.6 Political environment, 1.2.7 Social environment, 1.2.8 Cultural environment | 14 |
| | Oct. 2022 | 16 | Business Analysis 2.1 Business Analysis process, 2.2 Analysis Parameters - Industry Size, Segment Size, Category Size, Segment wise contribution, Growth Patterns, 2.3 Growth Drivers, Competition CSF, KPI, BCG matrix, Porter's 5 force analysis 2.4 Data Analytics – Role of Data Analytics in Business Analysis. Scope, and its importance concerning marketing strategies. 2.4.1 Types of Data Analytics. 2.4.2 Challenges of Business Data Analytics. | 15 |
| | Nov. 2022 | 6 | Marketing Research 3.1 Need of Marketing research, 3.2 marketing research process, 3.3 Consumer Buying Behavior, Marketing environment affecting consumer-buying behaviour 3.4 Big Data Analytics – Concerning Consumer Psychologies | 07 |
| | Dec. 2022 | 14 | Marketing Strategies 4.1 Introduction, 4.2 Product and Pricing Strategies, 4.3 Market Segmentation and Targeting Strategies, 4.4 Distribution Strategies, Communication Strategies. 4.5 Digital Marketing Strategies – Importance, and Challenges. | 14 |
| | | | | |
| Total Lectures | 50 | | Total Lectures | 50 |

# Legal Aspects in Marketing Management

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T Y BBA. Legal Aspects in Marketing Management | Sept. 2022 | 12 | **Introduction and Doorstep Selling/Home Delivery** 1.1 Introduction to Legal Aspects of Marketing 1.2 Importance, Scope and Features 1.3 Door Step Selling/Home Delivery – Rules, Order Fixation and Cancellation, Applicability of Rules, Terms and Conditions, and Documents needed for Doorstep Selling/ Home Delivery. 1.4 Tele sales and Direct Mail Sales Concepts | 12 |
| | Oct. 2022 | 12 | **Advertising and Pricing** 2.1 Meaning and Definition, Importance, Types of Advertising (TV, Radio, Print form Advertising) 2.2 Laws for Broadcasting the Advertisement 2.3 Claims for Misleading Advertisement 2.4 Harms and Offence – Children, Medicine and Health, National and Societal Interest 2.5 Meaning and Importance of Pricing related laws 2.6 Laws related to price/payment consumer rights surcharge payment regulations | 10 |
| | Nov. 2022 | 04 | **Online Marketing and CRM** 3.1 Meaning and Definition of Online Marketing 3.2 Legal Consideration for Data Protection (data collected from potential customers, its usage, security) 3.3 Cookies –Monitoring and governing of cookies, security and confidentiality of client data while online marketing 3.4 Concept of CRM, Terms and Conditions related to CRM | 04 |
| | Dec. 2022 | 10 | **Project Report** Project preparation on any topic from the marketing syllabus. The guidelines for preparation of project report | 10 |
| | | | | |
| **Total Lectures** | | **38** | **Total Lectures** | **36** |

Sign of the Staff

Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

S.E. Society's
# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF BBA
### Academic Year 2022-2023 (Lecture plan Term-II)

**Name of the Staff:** Asst. Prof. Chandrabhansingh Gaur

**Subject - Principles of Finance**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F Y BBA Principles of Finance | Jan 2023 | 16 | Unit 1 Basic concepts in finance Definition - Nature and scope of finance function, Financial Management - Meaning – Approaches: - Traditional, Modern, Role of finance manager. | 14 |
| | Feb. 2023 | 15 | Unit 2. Sources of Finance External: - Shares, Debentures, Public Deposits, Borrowing from banks: - meaning, types, advantages and limitations of these sources, Internal: - Reserves and surplus, Bonus shares Retained earnings,. | 13 |
| | March. 2023 | 10 | Unit 3. Capital Structure Meaning criteria for determining capital structure, Factors affecting capital structure, Capitalization:- Meaning, over capitalization and Under Capitalization - meaning, causes, consequences, remedies | 11 |
| | April 2023 | 12 | Recent Trends in business finance:- Meaning and nature of Venture Capital, Leasing, Microfinance, Mutual Fund | 13 |
| **Total Lectures** | | **53** | **Total Lectures** | **51** |

# Subject - International Business Management

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S Y BBA.<br><br>International Business Management | Jan 2023 | 16 | **Introduction to International Business**<br>• Meaning, Nature and Scope of International Business<br>• Globalization – Effects on Economy, Advantages and Challenges<br>• International Trade Theories and its applications – Reasons for international trade Ricardo's Theory, Hecksher Ohlin Theory, Michael Porter's Diamond model. | 17 |
| | Feb. 2023 | 14 | **International Business Environment**<br>• International Corporations – Meaning, Scope and Nature<br>• Role and Importance of Multi National Corporations in International Business.<br>• Foreign Direct Investment – Meaning, Concept, Importance.<br>• Legal Aspects of FDI from Indian Context.<br>• Cultural and Demographic Environment – Meaning and Importance in International Business | 14 |
| | March. 2023 | 8 | **International Finance**<br>• Meaning of Exchange Rate<br>• Determination of exchange rate – Fixed, flexible and managed.<br>• Concept of Spot Rate, Forward rate and Futures<br>• Balance of Trade and Balance of Payments – Introduction, Concept and Importance.<br>• Documentation in International Trade and EXIM Finance.<br>• Financing Techniques and Export Promotion Schemes<br>• World Bank and International Monetary Fund – Objectives and Functions | 06 |
| | April 2023 | 16 | **International Economic Zones and Foreign Trade** • World Trade Organization (WTO) – Evolution and Functions<br>• Regional Trading Agreements, India and Trade Agreements, Regional Integration.<br>• Global Sourcing – Introduction, Concept, Challenges, Advantages (Indian Context )<br>• Composition and Direction of India's Foreign Trade since 2000.<br>• Case Studies in International Business with reference to Indian Economy on International Marketing International Finance International Human Resource Management International Strategic Management Ethics in International Business | 18 |
| | | | | |
| **Total Lectures** | | **48** | **Total Lectures** | **49** |

**Subject - Advertising and Promotion Management**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| **S Y BBA Advertising and Promotion Management** | Jan 2023 | 14 | Introduction and Advertising Effectiveness. <br>• Meanings, Definition, Functions, Criticism, Ethics, Social issues. <br>• Strategic advertising decisions -advertising budget, advertising framework planning and organisation. <br>• Advertising agency- Definition, functions, types structure. <br>• Advertising effectiveness – objectives of measuring advertising effectiveness, difficulties and evaluation of advertising effectiveness. | 15 |
| | Feb. 2023 | 16 | Copy and medias decisions <br>• Advertising copy- objectives, elements, types of copy, advertising layouts, components, layout format. <br>• Copy creations, pre-testing methods and measurements. <br>• Media decisions – advertising media, media planning , media research , media selection . | 16 |
| | March. 2023 | 6 | Promotion Management <br>• Promotion – Meaning, Definition, Objectives, factors affecting promotion, growth, techniques, Media technology used for promotions. <br>• Strategic Promotion – strategic and promotion, cross promotion, surrogate promotion. | 07 |
| | April 2023 | 16 | Online advertising <br>• Online advertising – pre-requisites of online advertising, Internet Advertising Today, purpose, types, advantages, social media advertising. | 17 |
| | | | | |
| **Total Lectures** | | 52 | | 54 |

**Subject - Digital Marketing**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S Y BBA Digital Marketing | Jan 2023 | 14 | Introduction to Digital Marketing<br>• Concept and meaning of Digital Marketing, Digital Marketing Process<br>• Meaning of Visibility, Increasing Visibility, Types of visibility, and Examples of visibility.<br>• Concept of Engagement, Visitors Engagement, its importance and examples of engagement.<br>• Bringing Targeted Traffic<br>• Inbound and outbound marketing<br>• Converting Traffic into Leads, Types of Conversion, Understanding Conversion Process<br>• Tools of Digital Marketing | 13 |
| | Feb. 2023 | 16 | Digital Marketing Planning and Structure<br>• Creating initial digital marketing plan, Target group analysis, Inbound vs Outbound Marketing,<br>• Content Marketing, Understanding Traffic, Understanding Leads, Strategic Flow for Marketing Activities.<br>• WWW, Domains, Buying a Domain, Website Language & Technology, Core Objective of Website and Flow,<br>• One Page Website, Strategic Design of Home Page, Optimization of Web sites, Design of WordPress web, SEO Optimization, Introduction to Web analytics, Web analytics – levels | 16 |
| | March. 2023 | 6 | Social Media Marketing<br>• Introduction of Social Media Marketing, Procedure and Fundamentals of –<br>• Facebook Marketing,<br>• Google AdWords, YouTube Marketing,<br>• Email Marketing - Content Writing | 6 |

| | | | |
|---|---|---|---|
| | April. 2023 | 16 | Computer Laboratory Work Digital marketing (also known as data-driven marketing) is an umbrella term for the marketing of products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium. (UI and UX) PPC Advertising With Google Ad-words Create Search Campaigns Creating Display Campaign Optimising Display Campaign Remarketing Google Ad-words Social Media Marketing like .<br>• Creating Search Engine Campaign Ads<br>• Creating Display Campaign<br>• Optimising Display Campaign<br>• Creating Facebook Advertising Campaign and other social media campaign<br>• Create Remarketing Campaign<br>• PR, Digital Marketing, Event Management, Advertising, Packaging, Product Design, Trade Shows, Sponsorship etc. Usurers Interfere and Usurers Experience<br>• Use of Marketing Communication tools effectively | 16 |
| | | | | |
| **Total Lectures** | 52 | | | 52 |

**Subject  - Management of Innovations and Sustainability**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| **T Y BBA**<br><br>**Management of Innovations and Sustainability** | Jan 2023 | 14 | Management of Innovation Sustainability: An Introduction 1.1 Introduction 1.2 Defining innovation 1.3 Approaches to innovation 1.4 Differences between invention and innovation 1.5 Product innovation and process 1.6 Technological innovation, commercial or organizational Innovation 1.7 Indicators Characteristics of innovation in different sectors 1.8 Sustainable innovation 1.9 Defining Sustainability Innovation 1.10 Sustainability as Key Driver of Innovation 1.11 Innovation for Sustainable Development. | 14 |
| | Feb. 2023 | 14 | Managing Innovation with Firms& Strategies and Concepts for Innovation. 1 Organisation and Innovation .2 The dilemma of Innovation Management .3 Organisational characteristics that facilitate the innovation process .4 Organisation structure and Innovation .5 The role of Individual in the Innovation Process .6 IT System and Their Impact on Innovations .7 The innovation imperative: Why innovate | 14 |
| | March. 2023 | 8 | Service Innovation and Sustainability Innovation in Business 3.1 The Growth in Service 3.2 Different Types of Services 3.3 Characteristics of service and how they differ from product 3.4 Classification of Service innovation 3.5 Service innovation and the consumer 3.6 Energy and Materials: New Challenges in the First Decade of the Twenty-first Century 3.7 Defining Sustainability Innovation | 6 |
| | April 2023 | 14 | Management of sustainable development 4.1 Economic aspects of sustainable development 4.2 Socio-political aspects of sustainable development 4.3 Ecologic aspects of sustainable development 4.4 Green organisations | 14 |
| | | | | |
| **Total Lectures** | | 50 | | 48 |

# Subject - International Brand Management

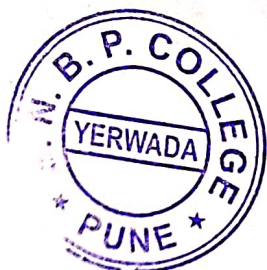| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T Y BBA<br><br>International Brand Management | Jan 2023 | 14 | Understanding Brand<br>1.1 Introduction, Brand concepts, 1.2 Purpose of Brands, 1.3 Characteristics of strong brands, 1.4 the purpose of branding, 1.5 fundamental concepts of branding | 14 |
| | Feb. 2023 | 14 | Developing Brand<br>2.1 Process and methods of developing brand elements, 2.2 creating brand associations and introducing a new brand in the international market, 2.3 identify effective marketing and marketing communications strategies, 2.4 Including the use of social/digital platforms, 2.5 Design marketing and marketing communications programs that build brand equity in the international market | 14 |
| | March. 2023 | 8 | Evaluating Brand<br>3.1 Processes and methods of measuring brand performance, 3.2 Qualitative and quantitative tools for measuring brand image and strength, 3.3 Interpret brand performance data, Brand evaluation plans in the international scenario | 6 |
| | April 2023 | 14 | Managing Brand<br>4.1 Concepts and tools for managing brands over time, international geographic areas, and market segments, 4.2 Consumer-brand relationships, Strategic alliances, Brand portfolios, and Brand repositioning/revitalization. | 14 |
| | | | | |
| **Total Lectures** | | **50** | | **48** |

**Subject – Cases in Marketing Management + Project**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T Y BBA Cases in Marketing Management + Project | Sept. 2022 | 16 | Case Study – Introduction 1.1 Case – Meaning – Objectives of Case Studies 1.2 Characteristics & Importance of Case Studies 1.3 Guidelines for Case Studies & Cases Discussion. | 16 |
| | Oct. 2022 | 16 | Areas of Case Study 2.1 Product Mix with PLC 2.2 Price Mix – Elements in Price Mix, Factor affecting Pricing, Pricing Methods. 2.3 Place Mix – Physical Distribution Management System, Types, Intermediaries, strategies, trends in SCM. 2.4 Promotion Mix – Elements, Advertising, Media Mix, AIDA, DAGMAR, IMC. 2.5 Extended Ps of Marketing Mix 2.6 New Product Development 2.7 Product Extension and Product Diversification. 2.8 Traditional Marketing and Modern Marketing 2.9 Rural Marketing2.10 Services Marketing 2.11 Organised&Unorganised Retail Marketing 2.12 E-Marketing and Digital Marketing 2.13 Green Marketing 2.14 Market Segmentation 2.15 Targeting 2.16 Positioning and Niche Market | 16 |
| | Nov. 2022 | 8 | Group Discussion, Assignments. Case Study. | 6 |
| | Dec. 2022 | 18 | Project Report – guidance To develop the ability about getting acquainted with the theory and its application in a real-life scenario. • To make students know about recent happening in marketing. • To understand the challenges faced/confronted in recent times etc | 18 |
| | | | | |
| **Total Lectures** | **58** | | | **56** |

Sign of the Staff

Head of the Department

**S.E. Society's**
**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF BBA**
**Course Completion Certificate**
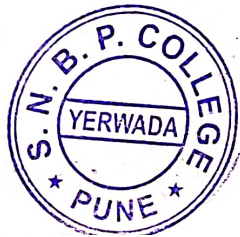
**Academic Year 2022-2023 (Term-II)**

Name of the Staff:   Asst. Prof. Chandrabhansingh Gaur

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|-----------------------------|--------------------------------------|
| | | | |
| F Y BBA | Principles of Finance | 48 | 50 |
| SY BBA | International Business Management | 48 | 49 |
| SY BBA | Advertising and Promotion Management | | |
| SY BBA | Digital Marketing | 48 | 47 |
| T Y BBA | Management of Innovations and Sustainability | 48 | 50 |
| T Y BBA | International Brand Management | 48 | 50 |
| T Y BBA | Cases in Marketing Management + Project | 56 | 58 |

Date: 18/04/2023

Sign of the Staff

Head of the Department

I/c Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY BBA Organisational Behaviour | Aug. 2022 | 10 | **Introduction to Organisational Behaviour** Meaning, Definition, Nature, Scope, Importance, Key Elements of OB, Disciplines that contribute to the OB field, Models of OB, Challenges for OB | 11 |
| | Sept. 2022 | 14 | **Individual Determinants of Organisational Behaviour** Individual Behaviour- Influencing factors- Personal, Psychological, Organisational System & Resources & Environmental Factors. Personality- Meaning, Definition, Key Determinants of Personality, Types of Personality, Theories of Personality Value & Attitude- Meaning, Definition and Types. Motivation- Meaning, Definition, Importance, Types, Theories- Maslow's Need Hierarchy Theory, McGregor's Theory X & Theory Y, Herzberg's Two- Factor Theory Caselets on Personality, Motivation, Value & Attitude | 14 |
| | Oct. 2022 | 14 | **Group Interaction & Organisational Behaviour** Group Dynamics- Meaning, Definition, Types, Reasons for forming Groups, Theories of Group Formation, Stages in Group Development, Group Behaviour, Group Cohesiveness Conflict - Meaning, Definition, Traditional & Modern View of Conflict, Organisational Performance & Conflict, Frustration Model, Conflict Management- Competing, Collaborating, Compromising, Avoiding, Accommodating. Leadership- Meaning, Definition, Leader V/S Manager, Styles of Leadership Caselets on Group Dynamics, Conflict Management & Leadership | 14 |
| | Nov. 2022 | 10 | **Dynamics of Organisation Organisational Culture-** Meaning, Definition, Levels, FOrganisational Culture- Meaning, Definition, Levels, Formation & Sustaining Organisational Culture Organisational Change- Meaning, Definition, Types, Forces for Change in Organisation, Resistance to Change, Management of Change Caselets on Organisational Culture & Change Management | 11 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

**Name of the Staff: Dr. Vinit Rokade**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY BBA Legal Aspects in Human Resources DSE | Aug. 2022 | 06 | **Introduction** Employer, employee, Rights of an employee at work place. HR Policy- Meaning and its importance. Legal issues related to HR in the Organisation | 07 |
| | Sept. 2022 | 12 | **Wage & Salary Administration and The Workmen's Compensation Act, 1923** Wage & Salary Administration- Meaning & Definition of Wage & Salary, Objectives of Wage & Salary Administration, Wage Differentials, Factors affecting Wage & Salary Levels The Workmen's Compensation Act,1923- Introduction,Main Features of the Act, Definitions, Provisions under the Act. | 13 |
| | Oct. 2022 | 8 | **The Payment of Gratuity Act,1972 and Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013** The Payment of Gratuity Act,1972 Introduction, Scope and Application, Definitions and Provisions under this Act. | 8 |
| | Nov. 2022 | 4 | Sexual Harassment of Women at Workplace (Prevention , Prohibition And Redressal) Act 2013 Introduction, Main Features of the Act, Provisions, Vishaka Guidelines **Business Exposure in HR** **Project work** | 8 |
| **Total Lectures** | | 30 | **Total Lectures** | 36 |

**Semester III**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY BBA<br><br>**Employee Recruitment & Record Management** | Aug. 2022 | 10 | **Manpower Planning and Forecasting**<br>Manpower planning, Meaning, Definition, Need, Objectives, Levels, Importance,<br>Process, Techniques of Manpower Forecasting, Factors influencing estimation of Manpower, Barriers to Manpower Planning | 10 |
| | Sept. 2022 | 14 | **Recruitment and Selection**<br>Recruitment : Meaning, Definition, Need, Factors Affecting Recruitment, Internal and External Sources of Recruitment and its Advantages and Disadvantages,<br>Traditional and New Methods of Recruitment- E Recruitment, Talent Acquisition,<br>Difference between Recruitment and Talent Acquisition. Selection: Meaning, Definition, Process, Difference between Recruitment and Selection, | 15 |
| | Oct. 2022 | 14 | **Employee Record Management**<br>Meaning, Definition, Essentials of a Good Record Principles of Record Keeping, Precautions in Maintaining Records, Importance of Employee records, Types of Employee records. | 15 |
| | Nov. 2022 | 10 | Computer Course (Prescribed Course or Online Course) C-406 HRM Tentative –Computer Enabled Project Topics for C-406<br>Blockchain integration. People analytics tools.<br>Real-time performance management. Biometric time tracking. Connected platforms in the workplace. Harassment-reporting tools. HRMS Business Value HCM cloud application Employees engagement Human Resources Cloud Powerhouse emerging technologies, including AI, chatbots, blockchain, and the Internet of Things (IoT).<br>Data Security and Privacy Controls HRMS to Oracle HCM Cloud, Core Human Resources<br>Onboarding, Benefits, Absence Management, Workforce Modeling and Predictions, Workforce Directory, HR Help Desk, Work Life Solutions, Advanced HCM Controls | 10 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TY BBA<br><br>Cross-Cultural HR & Industrial Relations | Aug. 2022 | 12 | **Introduction to cross Cultural Management**<br>Understanding Culture and Cross-Culture<br>Meaning of Culture,<br>Six Dimensions of National Culture by Professor Geert Hofstede,<br>Cultural differences and similarities,<br>Cultural Variables in Multinational EnterprisesCommunicating across Cultures<br>Negotiating across Cultures<br>Multicultural Teams<br>Cross-Cultural Management and business etiquette | 12 |
| | Sept. 2022 | 12 | **Cross-Culture and Human Resource Management**<br>Cross-Culture and Human Resource Management<br>Cross-cultural Human Resource Management<br>Motivation Across Cultures<br>Leadership and Decision MakingAcross Cultures<br>Communication & NegotiationAcross Cultures<br>Rewards Across Cultures<br>Training Across Cultures<br>Power and Conflict Across Cultures<br>Skills for a Global Manager<br>Cross-cultural Differences and Managerial Implications (The Role of Human Resource Management in Cross-Cultural Environment) | 12 |
| | Oct. 2022 | 12 | **Fundamentals of Industrial Relations**<br>Meaning and definition of Industrial Relations,<br>Evolution of Industrial Relation,<br>Importance of Industrial Relations,<br>Scope of Industrial relations<br>Approaches towards the study of Industrial Relations (Psychological Approach, Sociological Approach, Socio Ethical Approach, Gandhian Approach, Industrial Relations Approach and HR Approach)<br>Ethical Codes & Industrial Relations | 13 |
| | Nov. 2022 | 12 | **The Industrial Disputes Act,1947, The Factories Act, 1948 and The Maternity Benefit Act 2017**<br>The Industrial Disputes Act,1947, Definitions, Authorities under the Act, Power & Duties of authorities, Strike & lockout, Lay-off, Grievance Redressal Machinery, The Factories Act, 1948, Definitions, Authorities under the Act, Provisions regarding Safety, Provisions regarding Health, Provisions regarding Welfare, Provisions regarding Leave with Wages, Provisions regarding Working hours of adults The Maternity Benefit Act 2017 Application of Act. Definition -Right to payment of maternity benefit, Payment of maternity benefit in case of death of a woman, Provision of creche' facility | 13 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TY BBA<br><br>Cases in Human Resource Management + Project | Aug. 2022 | 10 | **Case Study – Introduction**<br>Case – Meaning – Objectives of Case Studies, Characteristics & Importance of Case Studies, Case Study analysis methodology (steps in Case Study Analysis)<br>Guidelines (Dos and Don'ts in Case Study Analysis). | 11 |
| | Sept. 2022 | 8 | **Areas of Case Study**<br>Functions of HRM, Challenges before HRM, Role of HR Manager, Job Analysis- Job Description, Job pecification, Job Evaluation, Manpower Planning and Forecasting, Recruitment and Selection, Training and Executive Development, Employee Compensation, Performance Appraisal, Career Planning, Employee Morale, | 10 |
| | Oct. 2022 | 7 | Job Satisfaction, Workforce Diversity, International HRM, E-HRM, Human Resource Information System, Work from Home, Change Management Out-Sourcing, Rights of an employee at the workplace., HR Policy, Legal issues related to HR in the Organization, Wage & Salary Administration, The Workmen's Compensation Act, 1923, | 8 |
| | Nov. 2022 | 5 | The Payment of Gratuity Act, 1972, Sexual Harassment of Women at Workplace, Workers Participation in Management, Organizational Development, Employee Record Management, Individual Behavior, Group Behavior, Personality, Values and Attitude, Group Dynamics, Conflict Management, | 6 |
| **Total Lectures** | | **30** | **Total Lectures** | **35** |

HOD

Academic Year 2022-2023 (Term-I)

Name of the Staff:  Dr. Vinit Rokade

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|------------------------------|--------------------------------------|
| SY BBA | Organisational Behaviour | 48 | 50 |
| SY BBA | Legal Aspects in Human Resources DSE | 30 | 36 |
| SY BBA | Employee Recruitment & Record Management | 48 | 50 |
| TY BBA | Cross-Cultural HR & Industrial Relations | 48 | 50 |
| TY BBA | Cases in Human Resource Management + Project | 30 | 35 |

Date: 27/12/2022

Sign of the Staff

Head of the Department

Principal
S. N. B. P COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

**Semester II**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY BBA<br><br>Human Resource Management Functions & Practices | Jan. 2023 | 10 | **Introduction to HRM Functions, Performance Appraisal, Training and Executive Development**<br>Introduction to HRM Functions ,<br>Performance Appraisal: Meaning, Definition, Purpose, Approaches, Process, Methods- Traditional and Modern Methods. Errors. Job Evaluation V/S Performance Appraisal.<br>Promotion, Demotion, Transfer and Separation.<br>Training- Meaning, Definition, Purpose, Areas, Importance, Process, Methods; E-Training<br>Executive Development - Meaning, Definition, Objectives, Process and methods, E-Development, Difference between Training and Executive Development. | 10 |
| | Feb. 2023 | 14 | **Employee Compensation and Other Functions of HRM**<br>Employee Compensation :Meaning, Definition, Objectives, Employee Compensation Administration, Determinants of Employee Compensation, Methods, Fringe Benefits.<br>Other Functions of HRM: Personnel Research, Human Resource Accounting (HRA), Strategic Human Resource Management | 15 |
| | March 2023 | 14 | **Introduction to HRM Practices, Workers Participation in Management**<br>Introduction to HRM Practices,<br>Workers Participation in Management: Definitions, objectives, Importance,<br>Forms,<br>Workers participation in Management practices in India. | 15 |
| | April 2023 | 10 | **Organisational Development**<br>Organisational Development: Concept and objectives of OD - Organisational development programme, organizational Development process power politics and ethics in OD –<br>Organizational learning organizational Development Interventions. | 10 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TY BBA<br><br>Global Human Resource Management | Jan. 2023 | 12 | **Introduction to Global HRM**<br>Meaning and definition of Global HRM,<br>Features of Global HRM,<br>Objectives of Global HRM,<br>Development of Global HRM,<br>Significance of Global HRM in International Business<br>Categorization of countries and employees in the concept of Global HRM<br>Difference between Global HRM and Domestic HRM | 12 |
| | Feb. 2023 | 12 | **Global HR Functions-I**<br>Global Staffing,<br>The role of expatriates and non-expatriates,<br>Staffing Policy Approaches in International HRM<br>Recruiting staff for Global Assignment<br>Global labour market<br>Global Recruitment function; head-hunters, cross-national advertising, e-recruitment;<br>Selecting staff for Global Assignment<br>Criteria and techniques, | 13 |
| | March 2023 | 12 | **Global HR Functions-II**<br>Global Training& Development<br>Meaning definition, Objectives, Importance, The role of expatriate training, Key components of effective pre-departure training, Developing staff through international assignments, Barriers in Global Training & Development<br>Global Compensation- Meaning & definition, Objectives, Key components of Global Compensation program, Approaches to Global Compensation<br>Barriers in Global Compensation | 13 |
| | April 2023 | 12 | **Global HRM Trends and Future Challenges**<br>Strategic HRM in multinational enterprises,<br>Ethics-related challenges for the HR function of the multinational enterprise<br>Challenges in an uncertain world: Safety, security and counterterrorism<br>The evolving role of the HRM function in MNCs Role of Technology in Global HRM Knowledge Management and Global HRM | 12 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

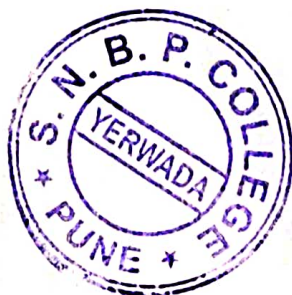| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TY BBA Business Project Management | Jan. 2023 | 12 | **Introduction to Project Management** <br> Defining Business Project Management <br> Exploring opportunities in the project management field <br> Developing Project management skills <br> Categorising different types of Business Projects <br> Understanding the difference between Projects & Programmes. | 12 |
| | Feb. 2023 | 12 | **Planning & Implementing your Project** <br> Planning a Project <br> Developing a Business Project Management Plan <br> Assessing the feasibility of a Project <br> Identifying & Managing the Risk <br> Managing a Project & Setting up a Project Database. <br> Creating an effective work schedule <br> Monitoring a business project <br> Managing Change <br> Address of Problems | 13 |
| | March 2023 | 12 | **Business Project Management Techniques** <br> Identifying Organisational Structures <br> Estimation of Costs & Budget <br> Using CPM tools (Gantt Chart, WBS, Project Network Diagram) <br> Establishing the CPM e. Implementing PERT Tool <br> Using Process improvement tools (Fishbone, SIPOC) | 13 |
| | April 2023 | 12 | **Managing Project issues & their commencement** <br> Identifying Project Costs <br> Calculating Return on Investment (ROI) <br> Calculating the Payback Period <br> Determining Net Present Value (NPV) <br> Identifying the life cycle of a Project <br> Handling over a Project <br> Closing a Project <br> Reviewing a Project | 12 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TY BBA<br><br>Recent Trends & HR Accounting | Jan. 2023 | 12 | **Employee Engagement**<br>1.1 Meaning and definition of employee Engagement,<br>1.2 Factors Influencing Employee Engagement,<br>1.3 Strategies for Enhancing Employee Engagement,<br>1.4 Company values and building employee loyalty,<br>1.5 Challenges in engaging employees,<br>1.6 Employee engagement and company branding strategies | 12 |
| | Feb. 2023 | 12 | **Human Resource Information System and Personnel Research**<br>2.1 Human Resource Information System<br>2.2 Meaning and definition of Human Resource Information System,<br>2.3 Components of Human Resource Information System,<br>2.4 Advantages and Limitations of Human Resource Information System,<br>2.5 Process of designing of Human Resource Information System<br>2.6 Personnel Research<br>2.7 Meaning and definition of Personnel Research,<br>2.8 Approaches to Personnel Research,<br>2.9 Process of Personnel Research | 13 |
| | March 2023 | 8 | **Human Resource Accounting and Human Resource Audit**<br>3.1 Human Resource Accounting<br>3.2 Meaning and definition of HR Accounting,<br>3.3 Need and Objectives of HR Accounting,<br>3.4 Advantages and Limitations of HR Accounting,<br>3.5 Human Resource Valuation: Monetary and Non Monetary methods of Human Resource Valuation<br>3.6 Human Resource Audit<br>3.7 Meaning, definition and objectives of Human Resource Audit,<br>3.8 Areas and levels of Human Resource Audit | 9 |
| | April 2023 | 4 | Revision | 6 |
| **Total Lectures** | | 36 | **Total Lectures** | 40 |

Staff

MOD

Hc Principal
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Maharashtra Housing Board
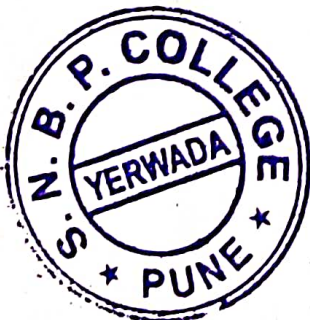Yerwada, Pune - 411 006

**Academic Year 2022-2023 (Term-II)**

**Name of the Staff:  Dr. Vinit Rokade**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| SY BBA | Human Resource Management Functions& Practices | 48 | 50 |
| TY BBA | Global Human Resource Management | 48 | 50 |
| TY BBA | Business Project Management | 48 | 50 |
| TY BBA | Recent Trends & HR Accounting | 36 | 40 |

**Date:**                    **Sign of the Staff**          **Head of the Department**

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada    :ne - 411 006

**Name of the Staff:** <u>Mrs. Prajakata C. Temkar</u>

## Subject - Database Management System

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.BA (CA)./DBMS | Aug. 2022 | 06 | File Structure and Organization 1.1 Introduction 1.2 Logical and Physical Files 1.2.1 File 1.2.2 File Structure 1.2.3 Logical and Physical Files Definitions 1.3 Basic File Operations 1.3.1 Opening Files 1.3.2 Closing Files 1.3.3 Reading and Writing 1.3.4 Seeking 1.4 File Organization 1.4.1 Field and Record structure in file 1.4.2 Record Types 1.4.3 Types of file organization 1.4.3.1 Sequential 1.4.3.2 Indexed 1.4.3.3 Hashed 1.5 Indexing 1.5.1 What is an Index? 1.5.2 When to use Indexes? 1.5.3 Types of Index 1.5.3.1 Dense Index 1.5.3.2 Sparse Index | 7 |
| | Sept. 2022 | 14 | Database Management System 2.1 Introduction 2.2 Basic Concept and Definitions 2.2.1 Data and Information 2.2.2 Data Vs Information 2.2.3 Data Dictionary 2.2.4 Data Item or Field 2.2.5 Record 2.3 Definition of DBMS 2.4 Applications of DBMS 2.5 File processing system Vs DBMS 2.6 Advantages and Disadvantages of DBMS 2.7 Users of DBMS 2.7.1 Database Designers 2.7.2 Application programmer 2.7.3 Sophisticated Users 2.7.4 End Users 2.8 Views of Data 2.9 Data Models 2.9.1 Object Based Logical Model a. Object Oriented Data Model b. Entity Relationship Data Model 2.9.2 Record Base Logical Model a. Relational Model b. Network Model c. Hierarchical Model 2.10 Entity Relationship Diagram(ERD) 2.11 Extended features of ERD 2.12 Overall System structure | 14 |
| | Oct. 2022 | 8 | Relational Model 3.1 Introduction 3.2 Terms a. Relation b. Tuple c. Attribute d. Cordinality e. Degree of relationship set f. Domain 3.3 Keys 3.3.1 Super Key 3.3.2 Candidate Key 3.3.3 Primary Key 3.3.4 Foreign Key 3.4 Relational Algebra Operations a. Select b. Project c. Union d. Difference e. Intersection f. Cartesian Product g. Natural Join | 8 |

| | Nov. 2022 | 12 | SQL (Structured Query Language) 4.1 Introduction 4.2 History Of SQL 4.3 Basic Structure 4.4 DDL Commands 4.5 DML Commands 4.6 Simple Queries 4.7 Nested Queries 4.8 Aggregate Functions | 12 |
|---|---|---|---|---|
| | Nov 2022 | 8 | Relational Database Design 5.1 Introduction 5.2 Anomalies of un normalized database 5.3 Normalization 5.4 Normal Form 5.4.1 1 NF 5.4.2 2 NF 5.4.3 3 NF 5.4.3.4 BCNF | 8 |
| **Total Lectures** | | **36** | | **37** |

## Subject - PHP

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY.B.BA( CA)/ PHP | Aug. 2022 | 6 | PHP Basics 1.1 Setting up a development environment 1.2 Variables, numbers and strings 1.3 Calculations with PHP 1.4 Using Arrays | 6 |
| | Aug. 2022 | 7 | Control Structures and Loops 2.1 Conditional Statements 2.2 Using Loops for Repetitive tasks 2.3 Combing Loops and Arrays | 7 |
| | Sept 2022 | 7 | 3 Functions, Objects and Errors 3.1 PHP's Built-in functions 3.2 Creating Custom functions 3.3 Passing Values by Reference 3.4 Understanding Objects | 8 |
| | Sept. 2022 | 7 | 4 Working with Forms 4.1 Building a Form 4.2 Processing a Form's Data 4.3 Differences between POST and GET 4.4 Preserving User Input | 7 |
| | Oct. 2022 | 7 | 5 More with Forms 5.1 Dealing with checkboxes and radiobuttons 5.2 Retrieving values from lists 5.3 Validating and restricting data 5.4 Sending Email 7 | 7 |
| | Oct. 2022 | 7 | 6 Storing and Protecting Data 6.1 Setting and Reading Cookies 6.2 Protecting Online Files 6.3 Understanding Session Variables | 7 |
| | Nov. 2022 | 7 | MySQL Database Overview 7.1 phpMyAdmin Overview 7.2 Using a MySQL Database 7.3 Reading and Writing Data | 7 |
| **Total Lectures** | | **48** | **Total Lectures** | **49** |

**Subject - Software Engineering**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY.B.BA( CA)/S.E | Aug. 2022 | 4 | Introduction to System Concepts 1.1 Definition 1.2 Basic Components 1.3 Elements of the System 1.4 Types of System 1.5 System Characteristics | 5 |
| | Aug. 2022 | 6 | Introduction to Software Engineering 2.1 Definition of Software 2.2 Characteristics of Software 2.3 Definition of Software Engineering 2.4 Need for Software Engineering 2.5 Mc Call's Quality factors 2.6 The Software Process 2.7 Software Product and Process 2.8 V& V Model | 6 |
| | Sept. 2022 | 8 | Software Development Life Cycle 3.1 Introduction 3.2 Activities of SDLC 3.3 A Generic Process Model 3.4 SDLC 3.5 Waterfall Model 3.6 Incremental Process Models 3.7 Prototyping Model 3.8 Spiral Model | 8 |
| | Sept. 2022 | 8 | Requirement Engineering 4.1 Introduction 4.2 Requirement Elicitation 4.3Requirement Elaboration 4.4 Requirement Gathering 4.5 Feasibility study 4.6 Fact Finding Techniques 4.7 SRS Format | 8 |
| | Oct. 2022 | 12 | Analysis And Design Tools 5.1 Decision Tree and Decision Table 5.2 Data Flow Diagrams (DFD) (Up to 2nd level) 5.3 Data Dictionary 5.4 Elements of DD 5.5 Advantages and Disadvantages of DD 5.6 Input and Output Design 5.7 Structured Design Concepts 5.8 Structure Chart 5.9 Coupling and Cohesion 5.10 Compulsory Case Studies on above topics | 12 |
| | Nov 2022 | 6 | Software Testing 6.1 Definition 6.2 Software testing Process 6.3 Unit Testing 6.4 Integration Testing 6.5 System Testing | 7 |
| | Nov 2022 | 4 | Software Maintenance and Software Re-Engineering 7.1 Maintenance definition and types 7.2 Software reengineering 7.3 Reverse Engineering 7.4 Restructuring and forward Engineering. | 5 |
| **Total Lectures** | | **48** | | **50** |

**Subject - Python**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBBA(CA)/ Python | Aug. 2022 | 16 | Unit 1: Introduction to Python 1.1 History, feature of Python, setting up path, working with python Interpreter, basic syntax, variable and data types, operators 1.2 Conditional statements- If, If-Else, nested if-else, Examples. 1.3 Looping-For,While,Nested loops, Examples 1.4 Control Statements-Break, Continue, Pass. 1.5 String Manipulation-Accessing String, Basic Operations, String Slices, Function and Methods, Examples. 1.6 Lists-Introduction, accessing list, operations, working with lists, function & methods. 1.7 Tuple-Introduction, Accessing tuples, operations working, function & methods, Examples. 1.8 Dictionaries-Introduction, Accessing values in dictionaries, working with dictionaries, properties, function, Examples. 1.9 Functions-Defining a function, calling a function, types of function, function arguments, anonymous function, global & local variable, Examples. | 17 |
| | Sept. 2022 | 6 | Unit 2: Modules and Packages 2.1Built in Modules 2.1.1 Importing modules in python program 2.1.2 Working with Random Modules. 2.1.3 E.g. - built-ins, time, date time, calendar, sys, etc 2.2 User Defined functions 2.2.1Structure of Python Modules 2.3 Packages 2.3.1 Predefined Packages 2.3.2User defined Packages | 6 |
| | Sep. 2022 | 8 | Unit 3: Classes ,Objects and Inheritance 3.1 Classes and Objects 3.1.1 Classes as User Defined Data Type 3.1.2 Objects as Instances of Classes 3.1.3 Creating Class and Objects 3.1.4 Creating Objects By Passing Values 3.1.5 Variables & Methods in a Class 3.2 Inheritance 3.2.1 Single Inheritance 3.2.2 Multilevel Inheritance3.2.3 Multiple Inheritance 3.2.4 Hybrid Inheritance 3.2.5 Hierarchical Inheritance 3.2.6 IS-A Relationship and HAS-A Relationship | 8 |
| | Oct. 2022 | 4 | Unit 4: Exception Handling 4.1 Python Exception 4.2 Common Exception 4.3 Exception handling in Python (try-except-else) 4.4 The except statement with no exception 4.5 Multiple Exception 4.6 The try-finally clause 4.7 Custom Exception and assert statement | 4 |

| | Oct. 2022 | 10 | Unit 5: GUI Programming 5.1 Introduction 5.2 Tkinter programming 5.4 Tkinter widgets 5.5 Frame 5.6 Button 5.7 Label 5.8 Entry | 11 |
|---|---|---|---|---|
| | Nov. 2022 | 4 | Unit 6: Python Libraries 6.1 Statistical Analysis- NumPy, SciPy, Pandas, StatsModels 6.2 Data Visualization- Matplotlib, Seaborn, Plotly 6.3 Data Modelling and Machine Learning- Scikit-learn, XGBoost, Eli5 6.4 Deep Learning- TensorFlow, Pytorch, Keras 6.5 Natural Language Processing (NLP)- NLTK, SpaCy, Gensim | 5 |
| **Total Lectures** | | **48** | **Total Lectures** | **49** |

Sign of the Staff

Head of the Department
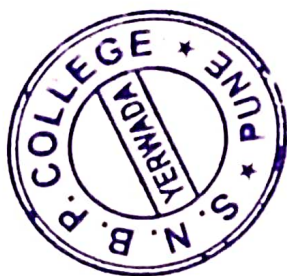
Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

## S.E. Society's
## S.N.B.P.College, Yerwada, Pune-06
### DEPARTMENT OF BBA(CA)
### Course Completion Certificate

**Academic Year 2022-2023 (Term-I)**

**Name of the Staff:**  <u>Mrs. Prajakata C. Temkar</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FYBCA | Database management system | 36 | 37 |
| S.Y.B.CA | PHP | 48 | 49 |
| SYBCA | Software engineering | 48 | 50 |
| TYBCA | Python | 48 | 49 |
| | | | |

| Class | Practical course taught | Number of practical's required | Number of practical's actually engaged |
|---|---|---|---|
| FYBCA | DBMS Practical | 12 | 13 |
| S.Y.B.CA | PHP Practical | 12 | 14 |
| TYBCA | Python Practical | 12 | 12 |
| | | | |

**Sign of the Staff**

**Head of the Department**

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

Date: 27|12|2022

### Academic Year 2022-2023 (Lecture plan Term-II)

**Subject - Relational Database**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.BA (CA)./ RDBMS | Jan. 2023 | 6 | Introduction To RDBMS<br>Introduction to popular RDBMS product and their features<br>Difference Between DBMS and RDBMS<br>Relationship among application programs and RDBMS | 6 |
| | Feb. 2023 | 14 | PL-SQL<br>Overview of PLSQL Data Types ,PLSQL Block Exception Handling,Functions, Procedures,Cursor,Trigger Package | 14 |
| | March. 2023 | 8 | Transaction Management<br>Transaction Concept<br>Transaction Properties<br>Transaction States, Concurrent Execution Serializability | 9 |
| | April 2023 | 8 | Concurrency Control & Recovery System<br>Lock Based Protocol, Timestamp Based Protocol Deadlock Handling, Failure Classification, Recovery & Atomicity, Recovery with concurrent transaction | 9 |
| | | | | |
| **Total Lectures** | | **36** | **Total Lectures** | **38** |

**Subject : Advance PHP**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. /Compiler Construction | Jan. 2023 | 6 | Introduction to Object Oriented Programming in PHP 1.1 Classes 1.2 Objects 1.3 Introspection 1.4 Serialization 1.5 Inheritance 1.6 Interfaces 1.7 Encapsulation | 6 |
| | Feb. 2023 | 4 | Web Techniques 2.1 Server information 2.2 Processing forms 2.3 Sticky forms 2.4 Setting response headers | 4 |
| | March. 2023 | 8 | XML 3.1 Introduction XML 3.2 XML document Structure 3.3 PHP and XML 3.4 XML parser 3.5 The document object model 3.6 The simple XML extension 3.7 Changing a value with simple XML | 8 |

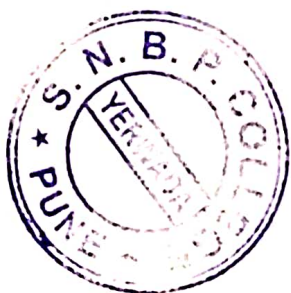| | April 2023 | 6 | Ajax with PHP 4.1 Understanding java scripts for AJAX 4.2 AJAX web application model 4.3 AJAX –PHP framework 4.4 Performing AJAX validation 4.5 Handling XML data using php and AJAX 4.6 Connecting database using php and AJAX | 6 |
| | April 2023 | 10 | Introduction to Web Services 5.1 Definition of web services 5.2 Basic operational model of web services, tools and technologies enabling web services 5.3 Benefits and challenges of using web services. 5.4 Web services Architecture and its characteristics 5.5 Core building blocks of web services 5.6 Standards and technologies available for implementing web services 5.7 Web services communication models 5.8 Basic steps of implementing web services. | 11 |
| | | 14 | PHP Framework (Joomla / Druple) 6.1 Introduction to Joomla/Druple 6.1.1 Introduction 6.1.2 Joomla/Druple features 6.1.3 How joomla/Drupleworks ? 6.1.4 The platformComponents, Modules and Plugins 6.2 Administering Joomla/Druple 6.2.1 Presentation Administration 6.2.2 Content Administration 6.2.3 System Administration 6.3 Working with Joomla/Druple 6.3.1 Adding articles 6.3.2 Adding menus to point to content 6.3.3 Installing new templates 6.3.4 Creating templates 6.3.5 Adding a Module and Component 6.3.6 Modifying the existing templates 6.3.7 Creating templates with web editors 6.3.8 Creating real templates | 15 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

## Subject - Dot Net Framework

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBBA(CA)/Dot net | Jan. 2023 | 5 | Introduction to VB.Net 2.1 Basics of VB.Net 2.1.1 Operators 2.1.2 Data Types 2.1.3 Control Structures 2.2Build Windows Applications 2.2.1 Controls: Form, TextBox, Button, Label, CheckBox, ListBox, ComboBox, RadioButton, DateTimePicker, MonthCalender, Timer, Progressbar,Scrollbar, PictureBox, ImageBox, ImageList, TreeView, ListView, Toolbar, StatusBar, Datagridview 2.2.2 Menus and PopUp Menu 2.2.3 Predefined Dialog controls: Color,Save,File,Open, Font 2.2.4 DialogBox - InputBox(), MessageBox, MsgBox() | 5 |

| | | | | | |
|---|---|---|---|---|---|
| | Feb. 2023 | 11 | Introduction to VB.Net 2.1 Basics of VB.Net 2.1.1 Operators 2.1.2 Data Types 2.1.3 Control Structures 2.2Build Windows Applications 2.2.1 Controls: Form, TextBox, Button, Label, CheckBox, ListBox, ComboBox, RadioButton, DateTimePicker, MonthCalender, Timer, Progressbar,Scrollbar, PictureBox, ImageBox, ImageList, TreeView, ListView, Toolbar, StatusBar, Datagridview 2.2.2 Menus and PopUp Menu 2.2.3 Predefined Dialog controls: Color,Save,File,Open, Font 2.2.4 DialogBox - InputBox(), MessageBox, MsgBox() | 12 |
| | March. 2023 | 12 | Introduction to C# 3.1 Language Fundamentals 3.1.1 Data type and Control Constructs 3.1.2 Value and Reference Types,Boxing 3.1.3 Arrays 3.1.4 String class and its various operations 3.1.5 Functions 3.2 Object Oriented Concepts 3.2.1 Defining classes and Objects 3.2.2 Access modifiers 3.2.3 Constructors 3.2.4 Inheritance 3.2.5 Interface 3.2.6 Abstract Class 3.2.7 Method Overloading and Overriding 3.2.8 Delegates | 12 |
| | April 2023 | 10 | Introduction to ASP.NET 4.1 What isASP.NET? 4.2 ASP.NET Page Life Cycle 4.3 Architecture ofASP.NET 4.4 Forms, WebPages, HTML forms, 4.5 Request & Response in Non-ASP.NET pages 4.6 Using ASP.NET Server Controls 4.7 Overview of Control structures 4.8 Functions 4.9 HTML events 4.9.1 ASP.NET Web control events 4.9.2 Event driven programming and postback 4.10 Introduction to Web forms 4.10.1 Web Controls 4.10.2 Server Controls 4.10.3 Client Controls 4.10.4 Navigation Controls 4.10.5 Validations 4.10.6 Master Page 4.10.7 State Management Techniques | 10 |
| | April 2023 | 10 | Architecture of Ado.Net 5.1 Basics of Ado.net 5.1.1Connection Object 5.1.2Command Object 5.1.3Dataset 5.1.4Data Table 5.1.5Data Reader Object 5.1.6Data Adapter Object 5.2 Datagridview& Data Binding: Insert, Update, Delete records 5.3 Navigation Using Data Source | 12 |
| **Total Lectures** | | **48** | **Total Lectures** | | **51** |

**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF BBA(CA)**
**Course Completion Certificate**

**Academic Year 2022-2023 (Term-II)**

**Name of the Staff:** **Mrs. Prajakata C. Temkar**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FYBCA | Relational Database management system | 36 | 38 |
| S.Y.B.CA | Advance PHP | 48 | 50 |
| TYBCA | Dot net | 48 | 51 |
| | | | |

| Class | Practical course taught | Number of practical's required | Number of practical's actually engaged |
|---|---|---|---|
| FYBCA | RDBMS Practical | 12 | 12 |
| S.Y.B.CA | Advance PHP Practical | 12 | 12 |
| TYBCA | Dot net Practical | 12 | 12 |
| | | | |

Sign of the Staff

Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune- 411 006

Date: 18|04|2023

**Name of the Staff:  Mrs. Prajakata C. Temkar**

**Subject  - Database Management System**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. /DBMS | Aug. 2022 | 03 | Introduction to DBMS<br>1.1. Introduction 1.2. File system Vs DBMS 1.3. Levels of abstraction & data independence 1.4.Structure of DBMS (Roles of DBMS Users) 1.5. Users of DBMS Advantages of DBMS | 03 |
| | Sept. 2022 | 11 | Conceptual Design<br>2.1. Overview of DB design process 2.2. Introduction to data models (E-R model, Relational model, Network model, Hierarchical model) 2.3. Conceptual design using ER data model (entities, attributes, entity sets, relations, relationship sets) 2.4. Constraints (Key constraints, Integrity constraints, referential integrity, unique constraint, Null/Not Null constraint, Domain, Check constraint, Mapping constraints) 2.5. Extended features – Specialization, Aggregation, Generalization 2.6. Pictorial representation of ER(symbols) 2.7. Structure of Relational Databases (concepts of a table) 2.8. DBMS Versus RDBMS 2.9. Case Studies on ER model | 12 |
| | Oct. 2022 | 09 | SQL<br>3.1. Introduction to query languages 3.2. Basic structure 3.3. DDL Commands 3.4. DML Commands 3.5. Forms of a basic SQL query (Expression and strings in SQL) 3.6. Set operations 3.7. Aggregate Operators and functions 3.8. Date and String functions 3.9. Null values 3.10. Nested Subqueries 3.11 SQL mechanisms for joining relations (inner joins, outer joins and their types) 3.12 Views 3.13. Examples on SQL (case studies) | 10 |

| | Nov. 2022 | 07 | Relational Database Design<br>3.1. Introduction to Relational-Database Design ( undesirable properties of a RDB design) 3.2. Functional Dependency(Basic concepts, F+, Closure of an Attribute set, Armstrong's axioms) 3.3. Concept of Decomposition 3.4. Desirable Properties of Decomposition ( Lossless join, Lossy join, Dependency Preservation) 3.5. Concept of normalization, Normal Forms (1NF,2NF and 3NF), Examples 3.6 Keys Concept with Examples : Candidate Keys and Super Keys, Algorithm to find the super keys / primary key for a relation | 08 |
| | | | | |
| **Total Lectures** | | 30 | **Total Lectures** | 33 |

**Subject = Theoretical Computer Science**

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc (CS)./ TCS | Aug. 2022 | 10 | Finite Automaton<br>Introduction: Symbol, Alphabet, String, Prefix & Suffix of Strings, Formal Language, Operations on Languages. Deterministic finite Automaton – Definition, DFA as language recognizer, DFA as pattern recognizer. Nondeterministic finite automaton – Definition and Examples. NFA To DFA (Myhill Nerode Method) NFA with ε-transitions Definition and Examples. NFA with ε-Transitions to DFA & Examples Finite automaton with output – Mealy and Moore machine, Definition and Examples. Minimization of DFA, Algorithm & Problem using Table Method. | 12 |
| | Sep. 2022 | 6 | Regular Expressions and Languages<br>Regular Expressions (RE): Definition & Example Regular Expressions Identities. Regular language-Definition and Examples. Conversion of RE to FA-Examples. Pumping lemma for regular languages and applications. Closure Properties of regular Languages | 6 |

| | Oct. 2022 | 10 | Context-Free Grammars and Languages Grammar - Definition and Examples. Derivation-Reduction - Definition and Examples. Chomsky Hierarchy. CFG: Definition & Examples. LMD, RMD, Parse Tree Ambiguous Grammar: Concept & Examples. Simplification of CFG: Removing Useless Symbols, Unit Production, ∈-production and Nullable Symbol. Normal Forms: Greibach Normal Form (GNF) and Chomsky Normal Form (CNF) Regular Grammar: Definition. Left linear and Right Linear Grammar-Definition and Example. Equivalence of FA & Regular Grammar Construction of regular grammar equivalent to a given DFA. Construction of a FA from the given right linear grammar | 11 |
| | Nov. 2022 | 5 | Push Down Automata Definition of PDA and examples. Construction of PDA using empty stack and final State method: Examples using stack method. Definition DPDA & NPDA, their correlation and Examples of NPDA CFG (in GNF) to PDA: Method and examples | 5 |
| | | 5 | Turing Machine The Turing Machine Model, Definition and Design of TM Problems on language recognizers. Language accepted by TM. Types of Turing Machines (Multitrack TM, Two-way TM, Multitape TM, Nondeterministic TM) Introduction to LBA (Basic Model) & CSG. (Without Problems) | 5 |
| **Total Lectures** | **36** | | **Total Lectures** | **39** |

## Subject  - Python Programming

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. (CS)/ Python Program ming | Aug. 2022 | 3 | Introduction to Python The Python Programming Language, History, features, Applications, Installing Python, Running Simple Python program Basics of Python Standard data types - basic, none, Boolean (true & False), numbers, Variables, Constants,Python identifiers and reserved words, Lines and indentation, multi-line statements and Comments,Input/output with print and input ,functions Declaration, Operations on Data such as assignment, arithmetic, relational, logical and bitwise operations, dry run, Simple Input and output etc | 3 |

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|---|---|---|---|
| Nov. 2022 | 04 | Modules ,Working with files, Exception handling<br><br>Modules: Importing module, Creating & exploring modules, Math module, Random module, Time module Packages: Importing package, creating package,examples Working with files: Creating files and Operations on files (open, close, read, write), File object attributes, file positions, Listing Files in a Directory, Testing File Types, Removing files and directories, copying and renaming files, splitting pathnames, creating and moving directories Regular Expression- Concept of regular expression, various types of regular expressions, using match function. Exception Handling: Built-in Exceptions, Handling Exceptions, Exception with Arguments, User-defined Exceptions. | 4 |
| | | | |
| **Total Lectures** | **18** | | **20** |

**Sign of the Staff**  **Head of the Department**

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**S.E. Society's**
**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF Bsc(CS)**
**Course Completion Certificate**
**Academic Year 2022-2023 (Term-I) (BSc(CS))**

Name of the Staff: <u>Mrs. Prajakata C. Temkar</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FYBSc(CS) | Database management Systems | 30 | 33 |
| TYBSc(CS) | Python | 18 | 20 |
| TYBSc(CS) | Theoretical Computer Science | 36 | 39 |
| | | | |
| | | | |
| | | | |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| F.Y.B.Sc. | Database management System | 12 | 12 |
| | | | |

Date: 27/12/2022

Sign of the Staff

Head of the Department

**Subject - Relational Database Management System**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. /RDBMS | Jan. 2023 | 8 | Relational Database Design Using PLSQL 1.1 Introduction to PLSQL 1.2 PL/PgSqL: Datatypes, Language structure 1.3 Controlling the program flow, conditional statements, loops 1.4 Stored Procedures 1.5 Stored Functions 1.6 Handling Errors and Exceptions 1.7 Cursors 1.8 Triggers | 8 |
| | Feb. 2023 | 6 | Transaction Concepts and concurrency control 2.1 Describe a transaction, properties of transaction, state of the transaction. 2.2 Executing transactions concurrently associated problem in concurrent execution. 2.3 Schedules, types of schedules, concept of Serializability, Precedence graph for Serializability. 2.4 Ensuring Serializability by locks, different lock modes, 2PL and its variations. 2.5 Basic timestamp method for concurrency, Thomas Write Rule. 2.6 Locks with multiple granularity, dynamic database concurrency (Phantom Problem). 2.7 Timestamps versus locking. 2.8 Deadlock and deadlock handling - Deadlock Avoidance( wait-die, wound-wait), Deadlock Detection and Recovery (Wait for graph). | 7 |
| | March. 2023 | 6 | Database Integrity and Security Concepts 3.1 Domain constraints 3.2 Referential Integrity 3.3 Introduction to database security concepts 3.4 Methods for database security 3.4.1Discretionary access control method 3.4.2Mandatory access control 3.4.3. Role base access control for multilevel security. 3.5 Use of views in security enforcement. 3.6 Overview of encryption technique for security. 3.7 Statistical database security | 7 |

| | April 2023 | 4 | Crash Recovery<br>4.1 Failure classification 4.2 Recovery concepts 4.3 Log base recovery techniques (Deferred and Immediate update) 4.4 Checkpoints. Relationship between database manager and buffer cache. Aries recovery algorithm. 4.5 Recovery with concurrent transactions (Rollback, checkpoints, commit) 4.6 Database backup and recovery from catastrophic failure | 5 |
| | | 2 | Other Databases<br>5.1 Introduction to Parallel and distributed Databases 5.2 Introduction to Object Based Databases 5.3 XML Databases 5.4 NoSQL Database 5.5 Multimedia Databases 5.6 Big Data Databases | 2 |
| **Total Lectures** | **26** | | **Total Lectures** | **29** |

## Subject : Compiler Construction

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. /Compiler Construction | Jan. 2023 | 4 | Introduction<br>Definition of Compiler, Aspects of compilation. The structure of Compiler. Phases of Compiler – Lexical Analysis, Syntax Analysis, Semantic Analysis, Intermediate Code generation, code optimization, code generation. Error Handling. Introduction to one pass & Multipass compilers, cross compiler, Bootstrapping. | 4 |
| | Feb. 2023 | 4 | Lexical Analysis (Scanner)<br>Review of Finite automata as a lexical analyzer, Applications of Regular Expressions and Finite Automata (lexical analyzer, searching using RE), Input buffering, Recognition of tokens. LEX: A Lexical analyzer generator (Simple Lex Program) | 4 |

| | March. 2023 | 14 | Syntax Analysis (Parser)<br>Definition, Types of Parsers Top-Down Parser – Top-Down Parsing with Backtracking: Method & Problems Drawbacks of Top-Down parsing with backtracking, 3.2.3Elimination of Left Recursion (direct & indirect) 3.2.4Need for Left Factoring & examples Recursive Descent Parsing: Definition Implementation of Recursive Descent Parser Using Recursive Procedures 3.4 Predictive [LL (1)] Parser (Definition, Model) 3.4.1Implementation of Predictive Parser [LL (1)] 3.4.2 FIRST & FOLLOW Construction of LL (1) Parsing Table Parsing of a String using LL (1) Table. Bottom-Up Parsers Operator Precedence Parser -Basic Concepts Operator Precedence Relations form Associativity & Precedence Operator Precedence Grammar Algorithm for LEADING & TRAILING (with ex.) Algorithm for Operator Precedence Parsing (with ex.) Precedence Functions Shift Reduce Parser Reduction, Handle, Handle Pruning Stack Implementation of Shift Reduce Parser (with examples) LR Parser: Model, Types [SLR (1), Canonical LR, LALR]-Method & examples. YACC (from Book 3) –program sections, simple YACC program for expression evaluation | 16 |

| | April 2023 | | Syntax Directed Definition Syntax Directed Definitions (SDD) Inherited & Synthesized Attributes Evaluating an SDD at the nodes of a Parse Tree, Example Evaluation Orders for SDD's Dependency Graph Ordering the Evaluation of Attributes S-Attributed Definition L-Attributed Definition Application of SDT Construction of syntax trees, The Structure of a Type 4. 4 Translation Schemes 4.4.1 Definition, Postfix Translation Scheme Code Generation and Optimization Compilation of expression – Concepts of operand descriptors and register descriptors with example. Intermediate code for expressions – postfix notations, Triples, Quadruples and Expression trees. Code Optimization – Optimizing transformations – compile time evaluation, elimination of common sub expressions, dead code elimination, frequency reduction, strength reduction. Three address code DAG for Three address code The Value-number method for constructing DAG's. Definition | |
| --- | --- | --- | --- | --- |
| | | 7 | | 9 |
| **Total Lectures** | | **36** | **Total Lectures** | **40** |

## Subject - Software Testing Tools

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
| --- | --- | --- | --- | --- |
| T.Y.B.Sc. / Software Testing Tools | Jan. 2023 | 4 | Introduction to Test case design How to identify errors, bugs in the given application. Design entry and exit criteria for test case, design test cases in excel. Describe feature of a testing method used. | 4 |
| | Feb. 2023 | 4 | Test cases for simple programs Write simple programs make use of loops and controlstructures. Write Test Cases for above programs. | 4 |

| | | | |
|---|---|---|---|
| March, 2023 | 4 | Test cases and Test plan<br>Write Test Plan for given application with resources required. Write Test case for given application. Prepare Test report for test cases executed. | 4 |
| April 2023 | 3 | Defect Report<br>Defect Life Cycle Classification of Defect Write Defect Report | 3 |
| April 2023 | 3 | Testing Tools<br>How to make use of Automation Tools Types of Testing Tools | 3 |
| **Total Lectures** | **18** | **Total Lectures** | **18** |
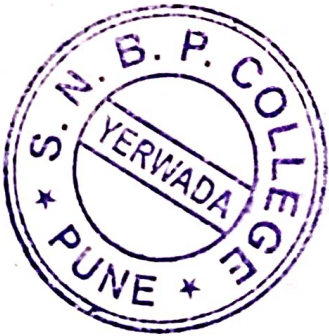
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S.E. Society's
# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF Bsc(CS)
### Course Completion Certificate

Academic Year 2022-2023 (Term-II)(BSc(CS))

Name of the Staff:  **Mrs. Prajakata C. Temkar**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FYBSc(CS) | Relational Database Management Systems | 26 | 29 |
| TYBSc(CS) | Software Testing Tools | 18 | 18 |
| TYBSc(CS) | Compiler Construction | 36 | 40 |
| | | | |
| | | | |
| | | | |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| F.Y.B.Sc. | Relational Database Management Systems Practical | 12 | 13 |
| | | | |

Sign of the Staff

Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

Date: 18|04|2023

**Name of the Staff:  Mr. Harshvardhan Randive**

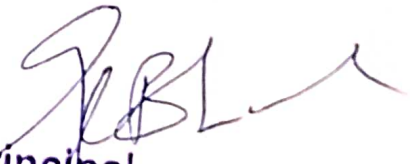**Subject : Business Mathematics**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.BBA | Aug. 2022 | 13 | Commission ,brokerage and premium, Banking and taxation and Calendar, Simple and compound interest | 14 |
| | Sept. 2022 | 12 | Profit and Loss, Percentage, Ratio and Proportion, Average | 12 |
| | Oct. 2022 | 12 | Matrix and Determinant, Permutation and Combination | 12 |
| | Nov. 2022 | 11 | Data interpretation, Linear Programming Problems | 12 |
| | | | | |
| **Total Lectures** | | **48** | | **50** |

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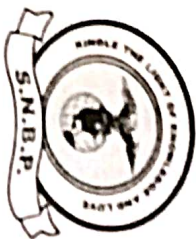
S.E. Society's
S.N.B.P.College, Yerwada, Pune-06
DEPARTMENT OF BBA
Course Completion Certificate
Academic Year 2022-2023 (Term-I)

Name of the Staff: **Mr. Harshavardhan Gautam Randive**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F.Y.BBA | Business Mathematics | 48 | 50 |

Date: 18|04|2023

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The Principal
S. N. B. P. COLLEGE
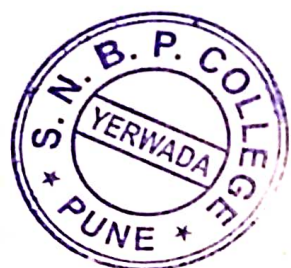Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff:** Mr. Harshvardhan Randive

**Subject : Business Statistics**

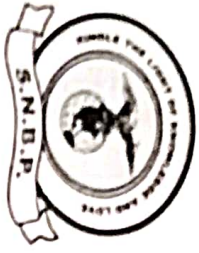| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.BBA | Jan . 2023 | 10 | Raw Data, variable, discrete variable, continuous variable, constant, attribute with illustration, Classification, Frequency Distribution, Graphs and Diagram, Concept and meaning of Measure of Central Tendency, Objectives of Measure of Central Tendency, Requirements of good Measure of Central Tendency | 10 |
| | Feb. 2023 | 18 | Types of Measure of Central Tendency, Arithmetic Mean (A M), Median, Mode for discrete and Continuous frequency distribution, Merits & Demerits of A M , Median, Mode, Numerical Problem, Determination of Mode and Median graphically, Empirical relation between mean, median and mode, Combined Mean, Numerical Problems, Concept and meaning of Measure of dispersion, Requirements of good Measure of dispersion, Types of Measure of Dispersion- Absolute & Relative Measure dispersion (Range, Standard Deviation (S D ), Variance, Quartile Deviation, Coefficient of Range, Coefficient of Quartile Deviation, and Coefficient of Variation (C.V), | 16 |
| | Mar. 2023 | 12 | Combined Standard Deviation, Numerical Problems, Concept and meaning of Correlation, Types of correlation, Methods to study Correlation:- Scatter Diagram, Karl Pearson correlation coefficient, Spearman Rank Correlation Coefficient ( with Repeated Ranks), Numerical Problems on Correlation, Regression- Concept and meaning of regression, lines of regression equation of Y on X and X on Y. | 14 |
| | Apr. 2023 | 08 | Regression coefficient, properties of regression coefficients, Numerical problems on regression, Concept and Meaning of Index Number, Notations, Construction of price Index, Number, Problems in the construction of Index no. Cost of living index number (CLI), Family Budget index number, Uses of index number, Numerical Problems | 10 |
| | | | | |
| **Total Lectures** | 48 | | | 50 |

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**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF BBA**
**Course Completion Certificate**
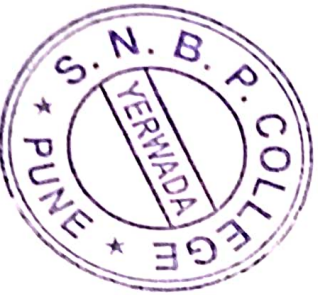Academic Year 2022-2023 (Term-II)

Name of the Staff: <u>Mr. Harshavardhan Gautam Randive</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F.Y.BBA | Business Statistics | 48 | 50 |

Date: 18/4/2023

Sign of the Staff

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Maharashtra Housing Board
Yerwada, Pune-411 006

**Name of the Staff:** <u>Mr. Harshvardhan Randive</u>

**Subject : Business Stats**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.BBA CA | Aug. 2022 | 12 | Role of Statistics, in information business science tabulation, Data condensation and tabulation, Data Condensation and graphical methods. Graphs, Diagrams | 12 |
| | Sept. 2022 | 12 | Criteria for good measures of central tendency, arithmetic mean, Median, mode for grouped and ungrouped data, combined mean, Concept of dispersion, | 13 |
| | Oct. 2022 | 12 | Absolute and relative measure of dispersion, range, variance, Standard deviation, Coefficient of variation, Quartile Deviation, Coefficient of Quartile deviation, | 12 |
| | Nov. 2022 | 12 | Concept of correlation, positive & negative correlation, Karl Pearson's Coefficient of correlation, meaning of regression, Two Regression equations, Regression coefficients and properties | 14 |
| | | | | |
| | | | | |
| **Total Lectures** | | **48** | | **51** |

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S.E. Society's
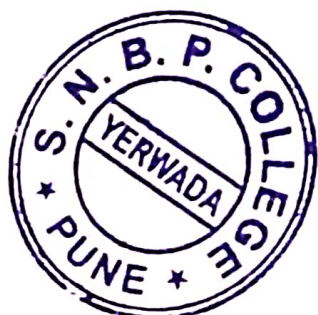**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF BBA(CA)**
**Course Completion Certificate**
Academic Year 2022-2023 (Term-I)

Name of the Staff: <u>**Mr. Harshavardhan Gautam Randive**</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|-------|---------------------|----------------------------|-------------------------------------|
| F.Y.BBACA) | Business Statistics | 48 | 51 |

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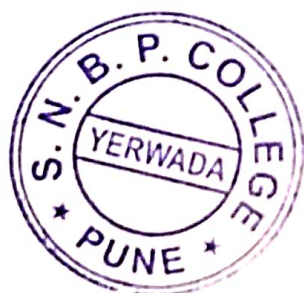Yerwada, Pune - 411 006

Date: 27/12/2022

Name of the Staff: **Mr. Harshvardhan Randive**

Subject : **Business Mathematics**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.BBA CA | Jan . 2023 | 14 | Ratio, Types of rations, proportion, types of proportions, Variation, types of variations, percentage, computation of percentage, Terms and formulae, Trade discount, Cash Discount, problems involving cost proce, selling price | 14 |
| | Feb. 2023 | 14 | Trade discount cash discount, Commission and brokerage problems on commission and brokerage, Simple interest, compound interest, EMI, Shares, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares, examples and problems, Concept of Mutual Funds, Change in Net Asset Value (NAV). | 14 |
| | Mar. 2023 | 10 | Systematic Investment Plan (SIP), Examples and Problems, Matrices, types of matrices, algebra of matrices, determinant, Adjoint matrix, inverse matrix, System of linear equations, solution of system of linear equation, by adjoint method | 12 |
| | Apr. 2023 | 10 | LPP, formulation of LPP and Solution of LPP by graphical method, Concept of transportation, problem, initial Basic feasible solution, North-West corner Method, Least Cost Method, Vogal's Approximation Method. | 11 |
| | | | | |
| **Total Lectures** | **48** | | | **51** |

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S.E. Society's
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DEPARTMENT OF BBA(CA)
Course Completion Certificate
Academic Year 2022-2023 (Term-II)

Name of the Staff: **Mr. Harshavardhan Gautam Randive**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F.Y.BBACA) | Business Mathematics | 48 | 51 |

Date: 18/04/2022

Sign of the Staff

Head of the Department

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Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff: Mr. Harshvardhan Randive**

## Subject : Matrix Algebra

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. | Aug. 2022 | 04 | Matrix Operations, The Inverse of a Matrix, Characterization of Invertible Matrices, System of linear equations | 04 |
| | Sept. 2022 | 12 | Row reduction and Echelon Forms, Vector Equations, The Matrix Equation Ax=b, Solutions sets of linear systems | 10 |
| | Oct. 2022 | 12 | Partitioned Matrices, Matrix factorization [Lu decomposition], Linear Independence, Introduction to Linear transformation, the Matrix of Linear transformation | 12 |
| | Nov. 2022 | 08 | Subspaces of Rn, Dimension & rank, Introduction to determinants, Properties of Determinant, Cramer's rule, Volume and linear transformation | 10 |
| | | | | |
| **Total Lectures** | | **36** | **Total Lectures** | **36** |

## Subject : Discrete mathematics

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. | Aug. 2022 | 07 | Revision, Rukes of Inference, Predicates and Quantifiers, Relations, types of relations, equivalence relations, partial ordering relations | 08 |
| | Sept. 2022 | 13 | Diagram of relations, matrix representations and composition of relations, Poset, Hasse diagram, Lattices, Complemented lattice, bounded lattice, Boolean functions | 13 |
| | Oct. 2022 | 07 | Representation of Boolean Functions, Cardinality of set, basic of counting, the Pigeonhole Principle, Generalized permutations and combinations, Combination with repetitions, permutation with indistinguishable objects. | 08 |
| | Nov. 2022 | 09 | Recurrence Relations, Linear recurrence relations with constant coefficients, Homogeneous Solutions, Particular solutions, Total Solutions | 09 |
| | | | | |
| **Total Lectures** | | **36** | **Total Lectures** | **38** |

## Subject : Descriptive statistics

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. | Aug. 2022 | 09 | Definition, importance, scope and limitations of stats, Data Condensation, Graphical Representation, Numerical problem related to real life situations, Measure of central tendency | 10 |
| | Sept. 2022 | 14 | Arithmetic Mean, median Mode, Partition Values, concept of dispersion, requisites of good measures of dispersion, absolute and relative measure of dispersion, Measure of dispersion, Variance & Standard deviation, Numerical problem related to life situations | 14 |

| | Oct. 2022 | 10 | Concept of Raw and Central moments, Measure of Skewness, person's and Bowley's coefficient of Skewness, Measure of skewness based on moments, Measure of Kurtosis, Numerical problem related to life situations | 10 |
|---|---|---|---|---|
| | Nov. 2022 | 07 | Attributes, Consistency of data upto 2 attributes, Concept of independence and association of two attributes, Yule's coefficient of association (Q), $-1 \leq Q \leq 1$, interpretation. | 08 |
| **Total Lectures** | | **40** | | 42 |

## Subject : Mathematical Statistics

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc. | Aug. 2022 | 10 | Counting Principles, Permutation, and Combination, Deterministic and non-deterministic models, Random Experiment, Sample Space (Discrete and Continuous), Events types and operations, Probability, Theorems of probability. | 11 |
| | Sept. 2022 | 08 | Numerical problems related to real life situations, Concepts and definitions of conditional probability, multiplication theorem $P(A \cap B) = P(A).P(B|A)$, Bayes Theorem, True positive, False positive and sensitivity of test as applications of Bayes theorem, Concept of Posterior probability, problems on posterior probability, Concept and Definition of independence of two events, Numerical problems related to real life situations, Definition of random variable (r.v.), discrete and continuous random variable. | 07 |
| | Oct. 2022 | 10 | Definition of probability mass function (p.m.f.) of discrete r.v. and Probability density function of continuous r.v, Cumulative distribution function (c.d.f.) of discrete and continuous r.v. and their properties, Definition of expectation and variance of discrete and continuous r.v., theorem on expectation and variance, Determination of median and mode using p.m.f. only, Numerical problems related to real life situations, Discrete Uniform Distribution: definition, mean, variance | 10 |
| | Nov. 2022 | 12 | Binomial distribution, Geometric Distribution (p.m.f $p(x) = pqx$, x = 0,1,2..........): definition, mean, variance, Poisson Distribution, Illustration of real life situations, Numerical problems related to real life situatios. | 12 |
| | | | | |
| **Total Lectures** | | **40** | | **40** |

## Subject : Groups and Coding theory

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc | Aug. 2022 | 05 | Division Algorithm, G.C.D using algorithm, and expressing it as linear combination, Euclid's Lemma, equivalence relations, Congruence relation on et of integers, Equivalence class partition, Binary operation, Group, Elemaentary properties of group | 06 |
| | Sept. 2022 | 03 | Order of a group, order of an element, Subgroups, definitions, finite subgroup test, subgroup of Zn, Generator, cyclic group, finding generation of Zn, permutation group, definition group , compression two permutation, representation as product of disjoint cycle, inverse and order of permutation, even/odd permutation, Cosets | 05 |

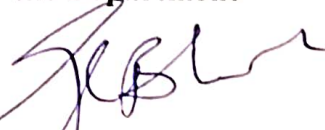| | Oct. 2022 | 10 | Coding of binary information and error detection, Decoding | 10 |
|---|---|---|---|---|
| | Nov. 2022 | 18 | Error Correction, Public key cryptography | 18 |
| | | | | |
| **Total Lectures** | | **36** | | **39** |

## Subject : Numerical Techniques

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc | Aug. 2022 | 04 | Introduction to errors, False Position Method, Newton-Raphson Method, Differences, Forward Differences, Backward Differences, Central Differences, Other Differences ($\delta$, $\mu$ operators), | 04 |
| | Sept. 2022 | 16 | Properties of operators, Relation between operators, Newton's Gregory Formula for Forward Interpolation, Newton's Gregory Formula for Backward Interpolation, Lagrange's Interpolation Formula, Divided Difference, Newton's Divided Difference formula, General Quadrant Formula, | 15 |
| | Oct. 2022 | 08 | Trapezoidal Rule, Simpson's one-Third Rule, Simpson's Three-eight Rule | 10 |
| | Nov. 2022 | 08 | Euler's method, Euler's Modified Method, Runge-Kutta Methods | 09 |
| | | | | |
| **Total Lectures** | | **36** | | **38** |

Sign of the Staff
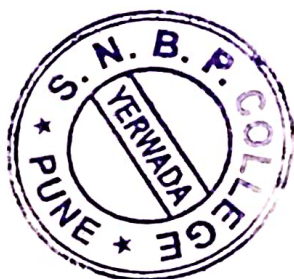
Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

S.E. Society's
S.N.B.P.College, Yerwada, Pune-06
DEPARTMENT OF B.Sc.(Cs)
Course Completion Certificate
Academic Year 2022-2023 (Term-I)

Name of the Staff: **Mr. Harshavardhan Gautam Randive**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Matrix Algebra | 36 | 36 |
| F.Y.B.Sc.(Cs) | Discrete Mathematics | 36 | 38 |
| F.Y.B.Sc.(Cs) | Descriptive Statistics | 40 | 42 |
| F.Y.B.Sc.(Cs) | Mathematical Statistics | 40 | 40 |
| S.Y.B.Sc.(Cs) | Groups & Coding theory | 36 | 39 |
| S.Y.B.Sc.(Cs) | Numerical Techniques | 36 | 38 |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Mathematics Practical - I | 10 | 12 |
| F.Y.B.Sc.(Cs) | Statistics Practical - I | 10 | 12 |
| S.Y.B.Sc.(Cs) | Python Programming Language - I | 12 | 12 |

Date: 27/02/2022

Sign of the Staff

Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada Pune - 411 006

**Name of the Staff:** **Mr. Harshvardhan Randive**

**Subject : Linear Algebra**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc | Jan . 2023 | 10 | Vector spaces and subspaces, Null spaces, Column space and linear transformation, linearly independent sets, Coordinate systems | 10 |
| | Feb. 2023 | 10 | The dimension of vector space, Rank, Eigen values and eigen vectors, The Characteristics equation, Diagonalization, Eigen vectors and linear transformations | 10 |
| | Mar. 2023 | 10 | Inner product, length and orthogonality, Orthogonal sets, orthogonal projections, Diagonalization of Smmetric matrices, Quadratic forms | 11 |
| | Apr. 2023 | 06 | Affine combination, Affine independence, Convex combinations | 06 |
| | | | | |
| **Total Lectures** | | **36** | | 37 |

**Subject : Graph Theory**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc | Jan . 2023 | 10 | Definitions, Basic terminologies and properties of graph, Special types of graphs, Some applications of special types of graph, matrix representation and elementary results, | 10 |
| | Feb. 2023 | 08 | Isomorphism of graphs, Walk, trail, path, cycle, elementary properties of connectedness, counting paths, between vertices, Cut edge, cut vertex, cut set, vertex connectivity, edge connectivity and properties, Shortest path problem, Dijkstra'a algorithm. | 08 |
| | Mar. 2023 | 08 | The Konigsberg bridge problem, Euler trail, path, circuit and tour, elementary properties and Fleury's algorithm, Hamilton path, circuit, elementary properties and examples, Introduction of Travelling salesman problem, Chinese postman problem. | 07 |
| | Apr. 2023 | 10 | Definitions, basic terminologies, properties and applications of trees, Weighted graph, definition and properties of spanning tree, shortest spanning tree, Kruskal's algorithm, Prim's algorithm, M-ary tree, binary tree, definitions and properties, tree traversal: preorder, inorder, postorder, infix, prefix, postfix notations and examples. | 11 |
| | | | | |
| **Total Lectures** | | **36** | | 36 |

## Subject : Method of applied stats

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc | Jan . 2023 | 10 | Concept of bivariate data, scatter diagram, its interpretation, concept of correlation, Positive correlation, negative correlation, zero correlation, Karl Pearson's coefficient of correlation, properties of correlation coefficient, Interpretation of correlation coefficient, coefficient of determination with interpretation , Spearman's rank correlation coefficient, Numerical problems | 10 |
| | Feb. 2023 | 12 | Concept of linear and nonlinear regression, Illustrations, appropriate situations for regression and correlation, Linear regression, Concept of regression coefficients, Properties of regression coefficients, Nonlinear regression models, | 12 |
| | Mar. 2023 | 10 | Numerical problems related to real life situations, Concept of multiple regressions, Yule's Notations, Fitting of multiple regression planes, Concept of partial regression coefficients, interpretations, Concept of multiple correlation: Definition of multiple correlation coefficientand its formula, | 10 |
| | Apr. 2023 | 08 | Concept of partial correlation. Definition of partial correlation coefficient and its formula, Meaning and utility, Components of time series, Additive and multiplicative models, Methods of estimating trend, Numerical problems related to real life situation | 10 |
| | | | | |
| **Total Lectures** | | **40** | | **42** |

## Subject :  Continuous probability distribution & Testing hypothesis

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| F.Y.B.Sc | Jan . 2023 | 10 | Uniform distribution, Exponential Distribution, Parato distribution, Normal Distribution, Numerical problems related to real life situations | 11 |
| | Feb. 2023 | 04 | Concept of population and sample, Definitions, Null hypothesis and alternative hypothesis, critical region, type 1 and type 11 error, one and two sided test, | 04 |
| | Mar. 2023 | 20 | test hypothesis and p – value, Large Sample Tests, Test based on F- distribution, Test based on t – distribution, Chi square distribution, | 18 |
| | Apr. 2023 | 06 | Numerical problems related to real life situations, Concept of simulaions, random numbers, pseudo random number, adv & dis- adv of simulations, applications, Methods of simulation, Linear congruential generator and simulation from Uniform, Exponential and Normal Distribution. | 08 |
| | | | | |
| **Total Lectures** | | **40** | | **41** |

## Subject : Computational Geometry

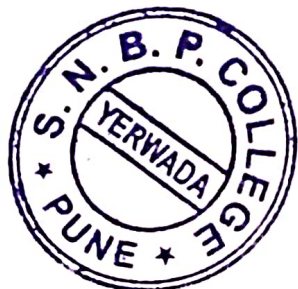| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc | Jan . 2023 | 12 | Representation of points, Transformation and Transformation of points, straight lines, Midpoint Transformation, Transformation of intersecting lines, rotations, reflections, scaling, shearing, combined transformation of unit square, Solid Body transformations | 12 |

| Feb. 2023 | 08 | Translation and homogeneous coordinates, rotation about an arbitrary point, Reflection through an arbitrary line, Three Dimensional – scaling, shearing, rotation, reflection, translation, Multiple transformation, Rotation about- an axis parallel to coordinate axes, an arbitrary line, Reflection through- coordinate plane, planes parallel to coordinate plane, arbitrary plane | 08 |
| Mar. 2023 | 08 | Orthographic projections, Axonometric projections, Oblique projections, Single point perspective projection | 08 |
| Apr. 2023 | 08 | Plane and space Curves – Introduction, Curve representation, Parametric curves, Parametric representation of a circle and generation of circle, Bezier Curves – Introduction, definition, properties (without proof), Curve fitting (up to n = 3), equation of the curve in matrix form (upto n = 3) | 08 |
| | | | |
| **Total Lectures** | **36** | | **36** |

## Subject : Operation research

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc | Jan. 2023 | 12 | Introduction Definition and Examples, Problem solving using Graphical method, Theory of Linear Programming, Slack and surplus variables, Standard form of LPP, Some important definitions, Assumptions in LPP, Limitations of Linear programming, Applications of Linear programming, Advantages of Linear programming Techniques | 12 |
| | Feb. 2023 | 08 | Simplex method, Big- M Method, Special cases of LPP : Alternative solution, Unbounded solution, Infeasible solution, Duality in Linear Programming, Primal to dual conversion, Examples | 07 |
| | Mar. 2023 | 06 | Assignment Model -Introduction, Hungerian method for Assignment problem, Introduction, Tabular representation | 07 |
| | Apr. 2023 | 10 | Methods of IBFS (North-West rule, Matrix-minima, Vogel's Approximation), Algorithms, The Optimality Test of Transportation Model (MODI method only) | 10 |
| | | | | |
| **Total Lectures** | **36** | | | **36** |

**Sign of the Staff**

**Head of the Department**

S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

S.E. Society's
**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF B.Sc.(Cs)**
**Course Completion Certificate**
Academic Year 2022-2023 (Term-II)

Name of the Staff: **Mr. Harshavardhan Gautam Randive**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Linear Algebra | 36 | 37 |
| F.Y.B.Sc.(Cs) | Graph Theory | 36 | 36 |
| F.Y.B.Sc.(Cs) | Methods of Applied Statistics | 40 | 42 |
| F.Y.B.Sc.(Cs) | Probability Distribution & Testing Of Hypothesis | 40 | 41 |
| S.Y.B.Sc.(Cs) | Computational Geometry | 36 | 36 |
| S.Y.B.Sc.(Cs) | Operation Research | 36 | 38 |

| Class | Practical course taught | Number of practical's required | Number of practical's actually engaged |
|---|---|---|---|
| F.Y.B.Sc.(Cs) | Mathematics Practical - II | 10 | 12 |
| F.Y.B.Sc.(Cs) | Statistics Practical - II | 10 | 12 |
| S.Y.B.Sc.(Cs) | Python Programming Language - II | 12 | 12 |

Date:

Sign of the Staff

Head of the Department

Principal
**S. N. B. P. COLLEGE**
Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff:  Asst. Prof. Rajeshri Gaikwad**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FYBCA C Language | Aug. 2022 | 16 | **1. Introduction to C language** 1.1 History 1.2 Basic structure of C Programming 1.3 Language fundamentals 1.3.1 Character set, tokens 1.3.2 Keywords and identifiers 1.3.3 Variables and data types 1.4 Operators 1.4.1 Types of operators 1.4.2 Precedence and associativity 1.4.3 Expression **2. Managing I/O operations** 2.1 Console based I/O and related built-in I/O functions 2.1.1 printf(), scanf() 2.1.2 getch(), getchar() 2.2 Formatted input and formatted output **3. Decision Making and looping** 3.1 Introduction 3.2 Decision making structure 3.3 Loop control structures 3.4 Jump statements 3.4.1 break 3.4.2 continue 3.4.3 goto 3.4.4 exit | 16 |
| | Sept. 2022 | 12 | **4.Programs through conditional and looping statements** Addition / Multiplication of integers Determining if a number is +ve / -ve / even / odd Maximum of 2 numbers, 3 numbers Sum of first n numbers, given n numbers Integer division, Digit reversing, Table generation for n, ab Factorial, sine series, cosine series, nCr , Pascal Triangle Prime number, Factors of a number **5.Arrays and Strings** 5.1 Introduction to one-dimensional Array 5.1.1 Definition 5.1.2 Declaration 5.1.3 Initialization 5.2 Accessing and displaying array elements | 13 |
| | Oct. 2022 | 10 | 5.3 Finding smallest and largest number from array 5.4 Reversing array 5.5 Finding odd/even/prime number from array 5.4 Introduction to two-dimensional Array 5.5 Accessing and displaying array elements 5.6 Matrices: Addition, Multiplication, Transpose, Symmetry, upper/lower triangular 5.7 Introductions to Strings **6. Functions** 6.1 Introduction 6.1.1 Purpose of function 6.1.2 Function definition 6.1.3 Function declaration 6.1.4 Function call 6.2 Types of functions 6.3 Call by value and call by reference | 11 |
| | Nov. 2022 | 8 | **7. Introduction to pointer** 7.1 Definition 7.2 Declaration 7.3 Initialization 7.4 Indirection operator and address of operator 7.5 Pointer arithmetic 7.6 Dynamic memory allocation 7.7 Functions and pointers **8. Structures** 8.1 Introduction to structure 8.2 Definition 8.3 Declaration 8.4 Accessing members 8.5 structure operations 8.6 nested structure | 9 |
| **Total Lectures** | | **46** | **Total Lectures** | **49** |

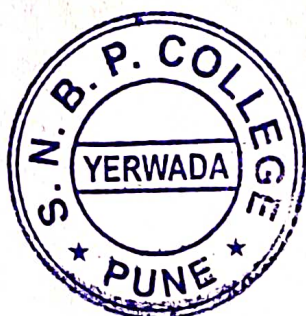| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SYBCA Data Structure | Aug. 2022 | 12 | **1. Introduction to data structure** 1.1 Data type and data object 1.2 Abstract Data Type (ADT) 1.3 Type of data structure 1.4 Algorithm analysis 1.4.1 Space and Time complexity 1.4.2 Asymptotic notation – BigO, Omega$\Omega$ 1.4.3 Simple algorithms and its complexity as examples **2. Array as a data structure** 2.1 Array representation- Row and column major 2.2 Sorting techniques with time complexity: Bubble sort, Insertion sort, Merge sort, Quick sort 2.3 Searching techniques with time Complexity: Linear search, Binary search | 12 |
| | Sept. 2022 | 12 | **3.Linked List** 3.1Introduction 3.2 Representation -Static &Dynamic 3.3 Types of linked lists- singly, doubly, circular 3.4.Operations-create, display, insert, delete, reverse, search, sort, concat, merge 3.5 Applications – single variable polynomial manipulation **4. Stack** 4.1 Introduction 4.2 Representation -Static &Dynamic 4.3 Operations– push, pop 4.4 Applications – Recursion, Infix to postfix, Infix to prefix, postfix evaluation | 12 |
| | Oct. 2022 | 10 | **5. Queue** 5.1 Introduction 5.2 Representation -Static &Dynamic 5.3 Operations– insert, delete 5.4 Circular queue 5.5 Priority queue 5.6 Applications **6.Tree** 6.1Introduction 6.2 Tree terminologies- all definitions, root, leaf, level, height, depth 6.3 Binary tree 6.3.1 Types 6.3.2 Types of Traversal– Preorder, Inorder, Postorder | 10 |
| | Nov. 2022 | 11 | 6.3.3 Representation – Static &Dynamic 6.4 Binary Search Tree (BST) **7.Graph** 7.1Introduction 7.2 Graph terminologies 7.3 Representation – Adjacency matrix, Adjacency list, Adjacency multilist 7.4 Traversal– DFS, BFS 7.5 Applications AOV network – Topological sort AOE network – Critical path | 12 |
| | | | | |
| **Total Lectures** | | **45** | **Total Lectures** | **46** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBCA Object-Oriented Software Engineering | Aug. 2022 | 11 | **1. Object Oriented Concepts and Modeling** 1.1 What is Object Orientation? (Introduction to class, Object, inheritance, polymorphism) 1.2 Model 1.2.1 Importance of Modeling 1.2.2 Object Oriented Modeling 1.3 Object oriented system development 1.3.1 Function/data methods 1.3.2 Object oriented analysis 1.3.3 Object oriented construction 1.3.4 Object oriented testing 1.4 Identifying the elements of an object model<br>**2. Introduction to UML** 2.1 Overview of UML 2.2 Conceptual Model of UML 2.3 Architecture 2.4 S/W Development Life Cycle | 12 |
| | Sept. 2022 | 12 | **3. Basic and Advanced Structural Modeling** 3.1 Classes Relationship, Common mechanism, Diagrams, Class diagram 3.2 Advanced classes, Advanced Relationship, Interface, Types and Roles, Packages, Object Diagram<br>**4. Basic Behavioral Modeling** 4.1 Interactions 4.2 Use cases, Use Case Diagram 4.3 Interaction Diagram 4.4 Activity Diagram 4.5 State chart Diagram | 12 |
| | Oct. 2022 | 11 | **5. Architectural Modeling** 5.1 Component , Components Diagram 5.2 Deployment Diagram<br>**6. Object Oriented Design** 6.1 Generic components of OO Design model 6.2 System Design process 6.2.1 Partitioning the analysis model 6.2.2 Concurrency and subsystem allocation 6.2.3 Task Mgmt component 6.2.4 Data Mgmt component<br>**7. Object Oriented Analysis** 7.1 Iterative Development 7.2 Unified process & UP Phases Inception Elaboration Construction Transition | 11 |
| | Nov. 2022 | 08 | 7.3 Understanding requirements 7.4 UP Disciplines 7.5 Agile UP<br>**8. Object Oriented Testing** 7.1 Overview of Testing and object oriented Testing 7.2 Types of Testing 7.3 Object oriented Testing strategies 7.4 Test case design for OO software 7.5 Inter class test case design | 09 |
| | | | | |
| **Total Lectures** | | **42** | | **44** |

**Sign Of Staff**

**Head Of Department**

**Principal**
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada 411 006

## Academic Year 2022-2023 (Lecture plan Term-I)

## Name of the Staff: Asst. Prof. Rajeshri Gaikwad

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SYBSc Data Structure - I | Aug. 2022 | 12 | **1. Introduction to Data Structures and Algorithm Analysis** 1.1 Introduction 1.1.1 Need of Data Structure 1.1.2 Definitions - Data and information, Data type, Data object, ADT, Data Structure 1.1.3 Types of Data Structures 1.2 Algorithm analysis **2.Array as a Data Structure** 2.1 ADT of array, Operations 2.2Array applications - Searching 2.2.1 Sequential search, variations - Sentinel search, Probability search, ordered list search 2.2.2 Binary Search 2.2.3 Comparison of searching methods 2.3 Sorting Terminology- Internal, External, Stable, In-place Sorting | 12 |
| | Sept. 2022 | 10 | 2.3.2 Non Comparison Based Sorting: Counting Sort, Radix Sort, complexity analysis. 2.3.3 Comparison of sorting method **3.Linked List** 3.1 List as a Data Structure, differences with array. 3.2 Dynamic implementation of Linked List, internal and external pointers 3.3 Types of Linked List – Singly, Doubly, Circular 3.4 Operations on Linked List - create, traverse, insert, delete, search, sort, reverse, concatenate, merge, time complexity of operations. | 10 |
| | Oct. 2022 | 10 | **4. Stack** 4.1 Introduction 4.2 Operations – init(), push(), pop(), isEmpty(), isFull(), peek(), time complexity of operations. 4.3 Implementation- Static and Dynamic with comparison 4.4 Applications of stack 4.4.1 Function call and recursion, String reversal, palindrome checking 4.4.2 Expression types - infix, prefix and postfix, expression conversion and evaluation (implementation of infix to postfix, evaluation of postfix) 4.4.3Backtracking strategy - 4 queens problem | 10 |
| | Nov. 2022 | 08 | **5. Queue** 5.1 Introduction 5.2 Operations - init(), enqueue(), dequeue(), isEmpty(), isFull(), peek(),time complexity of operations, differences with stack. 5.3 Implementation - Static and Dynamic with comparison 5.4 Types of Queue - Linear Queue, Circular Queue, Priority Queue, Double Ended Queue (with implementation) 5.5 Applications – CPU Scheduling in multiprogramming environment, Round robin algorithm | 08 |
| **Total Lectures** | | **40** | | **40** |

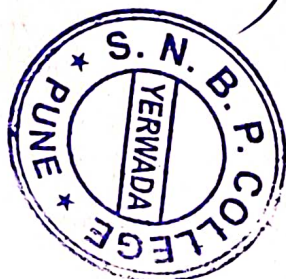| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBSc Foundation in Data Science | Aug. 2022 | 6 | **1. Introduction to Data Science** Introduction to data science, The 3 V's: Volume, Velocity, Variety Why learn Data Science? Applications of Data Science The Data Science Lifecycle Data Scientist's Toolbox Types of Data Structured, semi-structured, Unstructured Data, Problems with unstructured data Data sources Open Data, Social Media Data, Multimodal Data, standard datasets Data Formats Integers, Floats, Text Data, Text Files, Dense Numerical Arrays, Compressed or Archived Data, CSV Files, JSON Files, XML Files, HTML Files , Tar Files, GZip Files, Zip Files, Image Files: Rasterized, Vectorized, and/or Compressed | 7 |
| | Sept. 2022 | 10 | **2. Statistical Data Analysis** 2.1.Role of statistics in data science 2.2.Descriptive statistics Measuring the Frequency Measuring the Central Tendency: Mean, Median, and Mode Measuring the Dispersion: Range, Standard deviation, Variance, Interquartile Range 2.3.Inferential statistics Hypothesis testing, Multiple hypothesis testing, Parameter Estimation methods, 2.4.Measuring Data Similarity and Dissimilarity Data Matrix versus Dissimilarity Matrix, Proximity Measures for Nominal Attributes, 2.5.Concept of Outlier, types of outliers, outlier detection methods | 10 |
| | Oct. 2022 | 10 | **3. Data Preprocessing** Data Objects and Attribute Types: What Is an Attribute?, Nominal , Binary, Ordinal Attributes, Numeric Attributes, Discrete versus Continuous Attributes Data Quality: Why Preprocess the Data? 3.3.Data munging/wrangling operations Cleaning Data - Missing Values, Noisy Data (Duplicate Entries, Multiple Entries for a Single Entity, Missing Entries, NULLs, Huge Outliers, Out□of□ Date Data, Artificial Entries, Irregular Spacings, Formatting Issues - Data Transformation – Rescaling, Normalizing, Binarizing, Standardizing,Label and One Hot Encoding Data reduction Data discretization | 11 |
| | Nov. 2022 | 10 | **4. Data Visualization** Introduction to Exploratory Data Analysis Data visualization and visual encoding Data visualization libraries Basic data visualization tools Histograms, Bar charts/graphs, Scatter plots, Line charts, Area plots, Pie charts, Donut charts Specialized data visualization tools Boxplots, Bubble plots, Heat map, Dendrogram, Venn diagram, Treemap, 3D scatter plots | 11 |
| | | | | |
| **Total Lectures** | | **36** | | **39** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBSc Web Technology - I | Aug. 2022 | 10 | **1. Introduction to HTML, HTTP and PHP** Overview of HTML and Basic Tags , Creating Forms ,Tables, HTML5 Semantics. CSS basic concept ,Three ways to use CSS, Box Model, Navigation Bar . Introduction to Web server and Web browser . HTTP basics . PHP Basics: Use of PHP, Lexicalstructure, Language basics . | 10 |
| | Sept. 2022 | 8 | **2. Function and String** Defining and calling a function Default parameters Variable parameters, Missing parameters Variable function, Anonymous function Types of strings in PHP Printing functions Encoding and escaping Comparing strings Manipulating and searching strings Regular expressions | 08 |
| | Oct. 2022 | 10 | **3. Arrays** Indexed Vs Associative arrays Identifying elements of an array Storing data in arrays Multidimensional arrays 3.4Extracting multiple values Converting between arrays and variables Traversing arrays Sorting Action on entire array **4.Files and database handling** Working with files and directories Opening and Closing, Getting information about file, Read/write to file, Splitting name and path from file, Rename and delete files Reading and writing characters in file Reading entire file | 11 |
| | Nov. 2022 | 8 | Random access to file data Getting information on file Ownership and permissions Using PHP to access a database Relational databases and SQL PEAR DB basics Advanced database technique **5. Handling email with php** Email background Internet mail protocol Structure of an email message Sending email and validation of Email_id with php | 09 |
| | | | | |
| **Total Lectures** | | **36** | | **38** |

Date: 26/12/2022

Gaikwad

Staff
(Rajeshri Gaikwad)

HOD

F/c Principal
S. N. B. R. COLLEGE
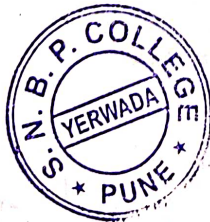Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff:  Asst. Prof. Rajeshri Gaikwad**

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FYBCA | C Language | 46 | 49 |
| SYBCA | Data Structure | 45 | 46 |
| TYBCA | Object-Oriented Software Engineering | 42 | 44 |
| SYBSc | Data Structure - I | 40 | 40 |
| TYBSc | Foundation in Data Science | 36 | 39 |
| TYBSc | Web Technology  - I | 36 | 38 |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| F.Y.BCA | C Language | 12 | 14 |
| S.Y.BCA | Data Structure | 12 | 12 |
| S.Y.B.Sc. | Data Structure - I | 12 | 14 |
| T.Y.B.Sc. | Foundation in Data Science | 12 | 12 |
| T.Y.B.Sc. | Web Technology | 12 | 14 |

**Sign of the Staff**　　　　　　　　　　**Head of the Department**　　　　**Principal**
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

**S.E. Society's**
# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF BCA
### Course Completion Certificate

**Academic Year 2022-2023 (Term-II)**

**Name of the Staff: Asst. Prof. Rajeshri Gaikwad**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FYBCA Web Technology | Jan. 2023 | 12 | **1. Introduction** 1.1 Clients- Servers and Communication 1.2 Internet-Basic, Internet Protocols (HTTP, FTP, IP) 1.3 World Wide Web(WWW) 1.4 HTTP request message, HTTP response message <br> **2. Web Design** 2.1 Concepts of effective web design 2.2 Web design issues including Browser Bandwidth and Cache 2.3 Display resolution 2.4 Look and Feel of the Website 2.5 Page Layout and linking 2.6 User centric design 2.7 Sitemap 2.8 Planning and publishing website 2.9 Designing effective navigation | 12 |
| | Feb. 2023 | 12 | **3. HTML** 3.1 Introduction to HTML 3.2 Basic HTML Structure 3.3 Common HTML Tags 3.4 Physical and Logical HTML 3.5 Types of Images, client side and server-side Image mapping 3.6 List, Table, Frames 3.7 Embedding Audio, Video 3.8 HTML form and form elements 3.9 Introduction to HTML Front Page | 12 |
| | Mar. 2023 | 10 | **4. Style sheets** 4.1 Need for CSS 4.2 Introduction to CSS 4.3 Basic syntax and structure 4.4 Using CSS₁ 4.4.1 background images, colors and properties, 4.4.2 manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS 4.5 Overview and features of CSS2 and CSS3 | 10 |
| | Apr. 2023 | 10 | **5. JavaScript** 5.1 Introduction to Java Script 5.2 Identifier & operator, control structure, functions 5.3 Document object model(DOM), 5.4 DOM Objects (window, navigator, history, location) 5.5 Predefined functions, math & string functions 5.6 Array in Java scripts 5.7 Event handling in Java script | 10 |
| **Total Lectures** | | 44 | | 44 |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SYBCA C Plus Plus | Jan. 2023 | 12 | 1. **Introduction to C++** 1.1. Basics of C++, 1.2. Structure of C++ Program, keywords in C++, 1.3. Data types hierarchy in C++, 1.4. Operators in C++: Scope resolution operator, Insertion and Extraction operator New and Delete operators. 1.5. Reference variable. 1.6. Manipulators function: endl, setw, set fill, set precision.<br>2. **Object oriented Concepts** 2.1. Object oriented concepts 2.2. Features, 2.3. Advantages and Applications of OOP 2.4. Difference between Procedure oriented programming and object oriented programming.<br>3.**Classes and Objects** 3.1. Structure sand class, Class, Object, Access specifies, 3.2. Class members, 3.3. Defining member functions :Inside and outside the class definition, 3.4. Creating objects. String class, operation on string, Array of objects. 3.5. 'this' pointer. | 12 |
| | Feb. 2023 | 12 | 4.**Function in C++** 4.1. Call by reference, Return by reference, 4.2. Function overloading and default arguments 4.3. Inline function 4.4. Passing and returning objects from functions, Static class members 4.5. Friend Concept – Function, Class<br>5.**Constructors and Destructors** 5.1. Memory allocation and static data members 5.2. Definition of constructor Types of constructors: Default Constructor 5.3. Constructor with default arguments 5.4. Parameterized Constructor 5.5. Copy Constructor 5.6. Overloaded constructors in a class<br>6.**Operator overloading** 6.1. Introduction, rules of operator overloading 6.2. Operator overloading: 6.3. Unary and binary operators, 6.4. Comparison, arithmetic assignment operator 6.5. Overloading new & delete operators 6.6. Overloading without friend function and using friend function | 12 |
| | Mar. 2023 | 10 | 7. **Inheritance** 7.1. Introduction 7.2. Types of Inheritance: Single inheritance Multiple inheritance, Multilevel inheritance Hierarchical inheritance Hybrid inheritance. 7.3. Derived Class Constructor sand Destructors<br>8.**VirtualFunction&Polymorphism** 8.1.Introduction, Pointer to object, Pointer to derived 8.2.class, Overriding member functions, Virtual function, Rules for virtual functions, pure virtual function, Run- time type information (RTTI) | 11 |
| | Apr. 2023 | 12 | 9.**Working with files** 9.1.File operations – Text files, Binary files 9.2.File stream class and methods 9.3.File updation with random access 9.4.Overloading insertion and extraction operator<br>10.**Templates** 10.1 Introduction function templates, function templates with multiple parameters 10.2 Overloading of template functions, Class Templates, class template with multiple Parameters, member function templates 10.3 Introduction to Standard Template<br>11.**Exception handling** 11.1 Exception Handling Mechanism 11.2 The try block 11.3 The catch block 11.4 Throw statement 11.5 The try/throw/catch sequence | 13 |
| **Total Lectures** | | **46** | | **48** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBCA Recent Trends In IT | Jan. 2023 | 12 | 1.Software Process And Project Metrics, Analysis Concepts And Principles Measures, metric indicators, metric in process and the project domains, software measurement, metrics for software quality, software quality assurance, Requirement analysis, communication techniques, analysis principles, software prototyping, Case Study<br>2. Distributed Databases Standalone v/s Distributed databases, Replication, Fragmentation, Client / Server architecture, types of distributed databases | 12 |
| | Feb. 2023 | 12 | Object – Relational Databases Abstract Data types, Nested Tables, Varying Arrays, Large Objects, Naming Conventions for Objects, Case Study<br>3. Data Warehouse What is Data Warehouse? , A Multidimensional Data Model, Data Warehouse Architecture, Data Warehouse Implementation, Data cube Technology, From Data Warehousing to Data Mining, Data Mining, Functionalities, Data Cleaning, Data Integration and Transformation, Data Reduction | 12 |
| | Mar. 2023 | 12 | 4. Network Security Cryptography; Introduction to Cryptography, Substitution Ciphers, Transposition Ciphers, One-Time Pads, Two Fundamental Cryptographic Principles; Symmetric Key Algorithms; DES-The Data Encryption Standards, AES – The Advances Encryption Standard; Public Key algorithms; RSA, Other Public Key algorithms; Digital Signatures, Symmetric-Key Signature, Public key Signature, Message Digests | 12 |
| | Apr. 2023 | 08 | 5. Computing and Informatics Introduction to computing, Types of computing: Cloud, Green, Soft, Mobile, Case Study | 09 |
| Total Lectures | | 44 | | 45 |

# S.E. Society's
# S.N.B.P.College, Yerwada, Pune-06
## DEPARTMENT OF BSC
## Course Completion Certificate

### Academic Year 2022-2023 (Term-II)

### Name of the Staff: Asst. Prof. Rajeshri Gaikwad

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FYBSc Advance C | Jan. 2023 | 11 | **1. Pointers** 1.1. Introduction to Pointers. 1.2. Declaration, definition, initialization, dereferencing. 1.3. Pointer arithmetic. 1.4. Relationship between Arrays & Pointers- Pointer to array, Array of pointers. 1.5. Multiple indirection (pointer to pointer). 1.6. Functions and pointers- Passing pointer to function, Returning pointer from function, Function pointer. 1.7. Dynamic memory management- Allocation(malloc(),calloc()), Resizing(realloc()), Releasing(free())., 1.8. Memory leak, dangling pointers. 1.9. Types of pointers. **2. Strings** 2.1 String Literals, string variables, declaration, definition, initialization. 2.2 Syntax and use of predefined string functions | 12 |
| | Feb. 2023 | 12 | 2.3 Array of strings. 2.4. Strings and Pointers 2.5. Command line arguments **3. Structures And Unions** 3.1. Concept of structure, definition and initialization, use of typedef. 3.2. Accessing structure members. 3.3. Nested Structures 3.4. Arrays of Structures 3.5. Structures and functions- Passing each member of structure as a separate argument, Passing structure by value / address. 3.6. Pointers and structures. 3.7. Concept of Union, declaration, definition, accessing union members. 3.8. Difference between structures and union. | 12 |
| | Mar. 2023 | 11 | **4. File Handling** 4.1. Introduction to streams. 4.2. Types of files. 4.3. Operations on text files. 4.4. Standard library input/output functions. 4.5. Random access to files. | 11 |
| | Apr. 2023 | 08 | **5. Preprocessor** 5.1. Role of Preprocessor 5.2. Format of preprocessor directive 5.3. File inclusion directives (#include) 5.4. Macro substitution directive, argumented and nested macro 5.5. Macros versus functions | 09 |
| **Total Lectures** | | 42 | | 44 |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SYBSc Data Structure - II | Jan. 2023 | 10 | 1.Tree 1.1 Concept and Terminologies 1.2 Types of Binary trees - Binary tree, skewed tree, strictly binary tree, full binary tree, complete binary tree, expression tree, binary search tree, Heap 1.3 Representation – Static and Dynamic 1.4 Implementation and Operations on Binary Search Tree - Create, Insert, Delete, Search, Tree traversals– preorder, inorder, postorder ( recursive implementation), Level-order traversal using queue, Counting leaf, non-leaf and total nodes, Copy, Mirror. 1.5 Applications of trees 1.5.1 Heap sort, implementation 1.5.2 Introduction to Greedy strategy, Huffman encoding | 11 |
| | Feb. 2023 | 08 | 2. Efficient Search Trees 2.1 Terminology: Balanced trees - AVL Trees, Red Black tree, splay tree, Lexical search tree -Trie 2.2 AVL Tree- concept and rotations 2.3 Red Black trees - concept, insertion and deletion. 2.4 Multi-way search tree - B and B+ tree - Insertion, Deletion | 08 |
| | Mar. 2023 | 12 | 3.Graph 3.1 Concept and terminologies 3.2 Graph Representation –Adjacency matrix, Adjacency list, Inverse Adjacency list, Adjacency multilist 3.3 Graph Traversals – Breadth First Search and Depth First Search (with implementation) 3.4 Applications of graph CBCS: 2020-21 S.Y.B.Sc. Computer Science Savitribai Phule Pune University Page 12 3.4.1 Topological sorting 3.4.2 Use of Greedy Strategy in Minimal Spanning Trees (Prims and Kruskals algorithm) 3.4.3 Single source shortest path - Dijkstra's algorithm | 12 |
| | Apr. 2023 | 06 | 4. Hash Table 4.1 Concept of hashing 4.2 Terminologies – Hash table,Hash function, Bucket, Hash address, collision, synonym, overflow etc. 4.3 Properties of good hash function 4.4 Hash functions : division function, MID square , folding methods 4.5 Collision resolution techniques 4.5.1 Open Addressing - Linear probing, quadratic probing, rehashing 4.5.2 Chaining - Coalesced , separate chaining | 06 |
| | | | | |
| Total Lectures | | 36 | | 37 |

| Class/Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBSc Data Analytics | Jan. 2023 | 8 | 1.Introduction to Data Analytics Concept of data analytics Data analysis vs Data analytics Types of analytics Diagnostic Analytics, Predictive Analytics , Prescriptive Analytics, Exploratory Analysis, Mechanistic Analysis Mathematical models - Concept Model evaluation: metrics for evaluating classifiers - Class imbalance - AUC, ROC (Receiver-Operator Characteristic) curves, Evaluating value prediction models | 8 |
| | Feb. 2023 | 10 | 2. Machine Learning Overview Introduction to Machine Learning, deep learning, Artificial intelligence Applications for machine learning in data science The modeling process Engineering features and selecting a model, Training the model, Validating the model, Predicting new observations Types of machine learning Supervised learning, Unsupervised learning, Semi-supervised learning, ensemble techniques Regression models 2.6. Concept of classification, clustering and reinforcement learning. | 10 |
| | Mar. 2023 | 12 | 3. Mining Frequent Patterns, Associations, and Correlations What kind of patterns can be mined Class/Concept Description: Characterization and Discrimination, Mining Frequent Patterns, Associations, and Correlations, Classification and Regression for Predictive Analysis, Cluster Analysis, Outlier Analysis Mining frequent patterns - Market Basket Analysis. Frequent Itemsets, Closed Itemsets, and Association Rules Frequent Itemset Mining Methods Apriori Algorithm Generating Association Rules from Frequent Itemsets Improving efficiency of apriori algorithm Frequent pattern growth (FP-growth) algorithm | 12 |
| | Apr. 2023 | 12 | 4. Social Media and Text Analytics Overview of social media analytics Social Media Analytics Process, Seven layers of social media analytics, accessing social media data Key social media analytics methods Social network analysis Link prediction, Community detection, Influence maximization, Expert finding, Prediction of trust and distrust among individuals Introduction to Natural Language Processing Text Analytics : Tokenization, Bag of words, Word weighting : TF-IDF, n-Grams, stop words, Stemming and lemmatization, synonyms and parts of speech tagging Sentiment Analysis Document or text summarization Trend analytics Challenges to social media analytic | 12 |
| **Total Lectures** | | **42** | | 42 |

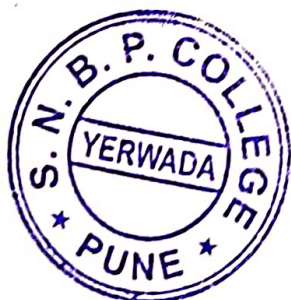| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBSc Web Technology -II | Jan. 2023 | 10 | 1.**Introduction to Web Techniques** Variables Server information Processing forms Setting response headers Maintaining state PHP error handling<br>2. **XML** What is XML? XML document Structure PHP and XML XML parser The document object model | 10 |
| | Feb. 2023 | 12 | The simple XML extension Changing a value with simple XML<br>3. **Java Script and Jquery** Overview of JavaScript Object Orientation and JavaScript Basic Syntax(JS datatypes, JS variables ) Primitives, Operations and Expressions Screen Output and keyboard input(Verification and Validation) JS Control statements and JS Functions JavaScript HTML DOM Events, JS popup boxes(alert, confirm, prompt). Jquery library , Including jquery library in page Jquery selector , DOM manipulation using jquery | 12 |
| | Mar. 2023 | 06 | 4. **AJAX** Introduction of AJAX AJAX web application model AJAX –PHP framework Performing AJAX validation Handling XML data using php and AJAX Connecting database using php and AJAX | 06 |
| | Apr. 2023 | 08 | 5. **PHP framework CodeIgniter** CodeIgniter - Overview, Installing CodeIgnite Application Architecture MVC Framework , Basic concept of CodeIgniter, Libraries Working with databases Load external JS and CSS page & redirecting from controller , Adding JS and CSS , Page redirection. Loading dynamic data on page & session management, cookies management | 08 |
| **Total Lectures** | | 36 | | 36 |

Date : 18/04/2023

Gaikwad

(Rajeshri Gaikwad)

HOD

I/c **Principal**
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

Academic Year 2022-2023 (Term-II)

Name of the Staff: Asst. Prof. Rajeshri Gaikwad

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FYBCA | Web Technology | 44 | 44 |
| SYBCA | C Plus Plus | 46 | 48 |
| TYBCA | Recent Trends In IT | 36 | 36 |
| FYBSc | Advance C | 42 | 44 |
| SYBSc | Data Structure - II | 36 | 37 |
| TYBSc | Data Analytics | 42 | 42 |
| TYBSc | Web Technology -II | 36 | 36 |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| F.Y.BCA | Web Technology | 12 | 12 |
| S.Y.BCA | C Plus Plus | 12 | 12 |
| S.Y.B.Sc. | Data Structure -II | 10 | 10 |
| T.Y.B.Sc. | Data Analytics | 12 | 12 |
| T.Y.B.Sc. | Web Technology -II | 12 | 12 |

Sign of the Staff                    Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff:** <u>Mrs. Savitri Mane</u>

**Big Data**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.BA (CA)./Big Data | Aug. 2022 | 12 | INTRODUCTION TO BIG DATA 1.1 Introduction to Big Data 1.2 Types of Digital Data 1.3 Big Data Analytics 1.4 Application of Big data | 12s |
| | Sept. 2022 | 12 | INTRODUCTION TO DATA SCIENCE 2.1 Basics of Data Analytics 2.2 Types of Analytics – 2.2.1 Descriptive, 2.2.2 Predictive, 2.2.3 Prescriptive 2.2.4 Statistical Inference 2.3 Populations and samples 2.3.1 Statistical modelling, 2.3.2 Probability 2.3.3 Distribution 2.3.4 Correlation 2.3.5 Regression | 12 |
| | Oct. 2022 | 12 | INTRODUCTION TO MACHINE LEARNING 3.1 Basics of Machine Leaning 3.2 Supervised Machine Learning 3.2.1 K- Nearest-Neighbours, 3.2.2 Naïve Bayes 3.2.3 Decision tree 3.2.4 Support Vector Machines 3.3 Unsupervised Machine Learning 3.3.1 Cluster analysis 3.3.2 K means 3.3.3 EM Algorithm 3.3.4 Association Rule Mining 3.3.5 Apriori algorithms 3.4 Regression Analysis 3.4.1 Linear Regression 3.4.2 Nonlinear Regression | 12 |
| | Nov. 2022 | 12 | DATA ANALYTICS WITH R/ WEKA MACHINE LEARNING 4.1 Introduction 4.2 Data Manipulation 4.3 Data Visualization 4.4 Data Analysis | 12 |
| **Total Lectures** | | **48** | | **48** |

**Course Title: CA-503 Core Java**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. / CA-503 Core Java | Jan. 2023 | 12 | Java Fundamentals 1.1 Introduction to Java. 1.1 Features of Java 1.2 Basics of Java: - Data types, variable, expression, operators, constant. 1.3 Structure of Java Program. 1.4 Execution Process of java Program. 1.5 JDK Tools. 1.6 Command Line Arguments. 1.7 Array and String: 1.7.1 Single Array & Multidimensional Array 1.7.2 String, String Buffer 1.8 Built In Packages and Classes : 1.8.1 java.util:- Scanner, Date, Math etc. 1.8.2 java.lang Classes, Objects and Methods 2.1 Class and Object 2.2 Object reference 2.3 Constructor: Constructor Overloading 2.4 Method: Method Overloading, Recursion, Passing and Returning object form Method 2.5 new operator, this and static keyword, finalize() method 2.6 Nested class, Inner class, and Anonymous inner class | 12 |
| | Feb. 2023 | 12 | Inheritance, Package and Collection 3.1 Overview of Inheritance 3.2 inheritance in constructor 3.3 Inheriting Data members and Methods, 3.4 Multilevel Inheritance – method overriding Handle multilevel constructors 3.5 Use of super and final keyword 3.6 Interface: 3.7 Creation and Implementation of an interface, Interface reference 3.8 Interface inheritance 3.9 Dynamic method dispatch 3.10 Abstract class 3.11 Comparison between Abstract Class and interface 3.12 Access control 3.13 Packages 3.13.1 Packages Concept 3.13.2 Creating user defined packages 3.13.3 Java Built inpackages 3.13.4 Import statement, Static import 3.14 Collection 3.14.1 CollectionFramework. 3.14.2 Interfaces: Collection, List, Set 3.14.3 Navigation: Enumeration, Iterator, ListIterator 3.14.4 Classes: LinkedList, ArrayList, Vector, HashSet | 13 |
| | March. 2023 | 12 | File and Exception Handling Exception 4.1 Exception and Error 4.2 Use of try, catch, throw, throws and finally 4.3 Built in Exception 4.4 Custom exception 4.5 Throwable Class. File Handling 4.6 Overview of Different Stream (Byte Stream, Character stream) 4.7 Readers and Writers class 4.8 File Class 4.9 File Input Stream , File Output Stream 4.10 Input Stream Reader and Output Stream Writer class 4.11 FileReader and FileWriter class 4.12 Buffered Reader class. | 12 |

| | April 2023 | 13 | Applet, AWT, Event and Swing Programming Applet 5.1 Introduction 5.2 Typesapplet 5.3 Applet Lifecycle 5.3.1 Creatingapplet 5.3.2 Applet tag 5.4 AppletClasses 5.4.1 5.4.2 5.4.3 AWT Color Graphics Font 5.5 Components and container used inAWT 5.6 Layoutmanagers 5.7 Listeners and Adapterclasses 5.8 Event Delegationmodel Swing 5.9 Introduction to Swing Componentand Container Classes 5.10 Exploring Swing Controls- JLabel and Image Icon, JText Field, The Swing Buttons JButton, JToggle Button, JCheck Box, JRadio Button, JTabbed Pane, JScroll Pane, JList, JTable, JComboBox, Swing Menus, Dialogs,JFileOpen,JColorChooser. | 13 |
| --- | --- | --- | --- | --- |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

## CA-501 Cyber Security

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBBA( CA)/ CA-501 Cyber Security | Jan. 2023 | 12 | Chapter 1:- Introduction to Cyber Crime and Cyber Security 1.1 Introduction 1.2 Cybercrime: Definition and Origin of the Word 1.3 Cybercrime and Information Security 1.4 Who are Cybercriminals? 1.5 Classifications of Cybercrimes: E-Mail Spoofing, Spamming, Cyber defamation, Internet Time Theft, Salami Attack/Salami Technique, Data Diddling,Forgery, Web Jacking, Newsgroup, Spam/Crimes Emanating from Usenet Newsgroup, Industrial Spying/Industrial Espionage, Hacking,OnlineFrauds,Computer Sabotage, Email Bombing/Mail Bombs, Computer Network Intrusions, Password Sniffing, Credit Card Frauds, Identity Theft 1.6 Definition of Cyber Security 1.7 Vulnerability, Threats and Harmful acts 1.8 CIA Triad 1.9 Cyber Security Policy and Domains of Cyber Security Policy | 5 |
| | Feb. 2023 | 12 | Chapter 2 :- Cyber offenses and Cyberstalking 2.1 Criminals Plan: Categories of Cybercrime Cyber Attacks: Reconnaissance, Passive Attack, Active Attacks, Scanning/Scrutinizing gathered Information, Attack (Gaining and Maintaining the System Access), Social Engineering, and Classification of Social Engineering. 2.2 Cyberstalking: Types of Stalkers, Cases Reported on Cyberstalking, Working of Stalking 2.3 Real-Life Incident of Cyber stalking 2.4 Cybercafe and Cybercrimes Chapter 3:- Tools and Methods Used in Cybercrime 3.1 Introduction 3.2 Proxy Servers and Anonymizers 3.3 Phishing 3.4 Password Cracking 3.5 Keyloggers and Spywares 3.6 Virus and Worms 3.7 Trojan Horses and Backdoors 3.8 Steganography 3.9 DoS and DDoS Attacks 3.10 SQL Injection | 12 |
| | March. 2023 | 12 | Chapter 4 :- Cybercrimes and Cyber security: The Legal Perspectives 4.1 Introduction 4.2 Cybercrime and the Legal Landscape around the World 4.3 Why Do We Need Cyberlaws: The Indian Context 4.4 The Indian IT Act 4.5 Challenges to Indian Law and Cybercrime Scenario in India 4.6 Consequences of not Addressing the Weakness in Information Technology Act 4.7 Digital Signatures and the Indian IT Act 4.8 Amendments to the Indian IT Act 4.9 Cybercrime and Punishment 4.10 Cyberlaw, Technology and Students: Indian Scenario | 12 |

| | April 2023 | 12 | Chapter 5:- Cyber Forensics 5.1 Introduction 5.2 Historical background of Cyber forensics 5.3 Digital Forensics Science 5.4 The Need for Computer Forensics 5.5 Cyber Forensics and Digital evidence 5.6 Forensics Analysis of Email 5.7 Digital Forensics Lifecycle 5.8 Challenges in Computer Forensics 06 6 Chapter 6:- Cybersecurity: Organizational Implications 6.1 Organizational Implications: Cost of cybercrimes and IPR issues 6.2 Web threats for organizations 6.3 Security and Privacy Implications from Cloud Computing 6.4 Social media marketing 6.5 Social computing and the associated challenges for organizations Chapter 7:- Cybercrime: Illustrations, Examples and Mini-Cases 7.1Real-Life Examples 7.2 Mini-Cases 7.3 Illustrations of Financial Frauds in Cyber Domain 7.4 Digital Signature-Related Crime Scenarios 7.5 Digital Forensics Case Illustrations 7.6 Online Scams | 10 |
|---|---|---|---|---|
| **Total Lectures** | **48** | | **Total Lectures** | **48** |

# Internet of Things (IoT)

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBBA( CA)/ CA-IoT | Jan. 2023 | 5 | Fundamentals of IoT 1.1 Basic Concepts of IoT 1.2 Major components of IoT devices 1.3 IOT Architecture 1.4 Pros & Cons of IOT | 5 |
| | Feb. 2023 | 5 | Communication Technologies 2.1 Wireless Communication: Bluetooth, ZigBee, WiFi, RF Links 2.2 Wired Communication: Ethernet 2.3 IOT Protocol: MQTT, CoAP, XMPP, OSGi | 5 |
| | March. 2023 | 5 | Microcontroller Fundamental and Arduino uno 3.1 System on Chip & Microcontroller 3.2 Arduino UNO: Introduction to Arduino, Arduino UNO, Arduino Board, The Anatomy of an Arduino Board 3.3 The Development Environment of Arduino Board 3.4 Writing Arduino Software, The Arduino Sketch 3.5 Fundamentals of Arduino Programming 3.6 Trying the code on an Arduino Emulator 3.7 Arduino Libraries 25 Programming & Interfacing 3.8 Application of IoT 3.9 Case studies: Home Automation, Smart Parking, etc. | 5 |
| Total Lectures | | 15 | Total Lectures | 15 |
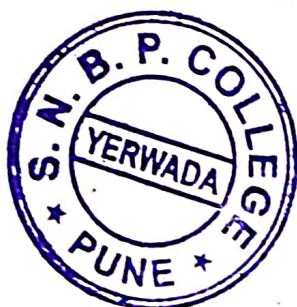
Sign of the Staff

Head of the Department

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

**Name of the Staff:** __Mrs. Savitri Mane__

Software Engineering

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc. / Software Engineering | Aug. 2022 | 9 | 1.1 Definition of Software 1.2 Nature of Software Engineering 1.3 Changing nature of software 1.4 Software Process 1.4.1 The Process Framework 1.4.2 Umbrella Activities 1.4.3 Process Adaptation 1.5 Generic Process Model 1.6 Prescriptive Process Models 1.6.1 The Waterfall Model 1.6.2 Incremental Process Models 1.6.3 Evolutionary Process Models 1.6.4 Concurrent Models 1.6.5 The Unified Process | 10 |
| | Sept. 2022 | 9 | 2.1 What is Agility? 2.2 Agile Process 2.2.1 Agility Principles 2.2.2 The Politics Of Agile Development 2.2.3 Human Factors 2.3 Extreme Programming(XP) 2.3.1XP Values 2.3.2XP Process 2.3.3 Industrial XP | 9 |
| | Oct. 2022 | 9 | 3.1 Requirement Elicitation, 3.2 Software requirement specification (SRS) 3.2.1 Developing Use Cases (UML) 3.3 Building the Analysis Model 3.3.1 Elements of the Analysis Model 3.3.2 Analysis Patterns 3.3.3 Agile Requirements Engineering 3.4 Negotiating Requirements 3.5 Validating Requirements 4.1 Introduction to UML 4.2Structural Modeling 4.2.1 Use case model 4.2.2Class model 4.3Behavioral Modeling 4.3.1 Sequence model 4.3.2 Activity model | 9 |
| | Nov. 2022 | 9 | 4.3.3 Communication or Collaboration model 4.4 Architectural Modeling 4.4.1 Component model 4.4.2 Artifact model 4.4.3 Deployment model 5.1 Design Process 5.1.1 Software Quality Guidelines and Attributes 5.1.2 Evolution of Software Design 5.2 Design Concepts 5.2.1 Abstraction 5.2.2 Architecture 5.2.3 Patterns 5.2.4 Separation of Concerns 5.2.5 Modularity 5.2.6 Information Hiding 5.2.7 Functional Independence 5.2.8 Refinement 5.2.9 Aspects 5.2.10 Refactoring 5.2.11 Object Oriented Design Concepts 5.2.12 Design Classes 5.2.13 Dependency Inversion 5.2.14 Design for Test 5.3 The Design Model 5.3.1 Data Design Elements 5.3.2 Architectural Design Elements | 10 |
| | | | | |
| **Total Lectures** | **36** | | **Total Lectures** | **38** |

# CS-355 Java -I

| Class | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc (CS)./ CS-355 Java -I | Aug. 2022 | 8 | Object Oriented Programming Concepts A short history of Java Features OR Buzzwords of Java Java Environment Simple Java Program Java Tools – jdb, javap, javadoc Types of Comments Data Types Final Variable Declaring 1D, 2D Array Accepting Input (Command Line Arguments, BufferedReader, Scanner) | 9 |
| | Sep. 2022 | 8 | Defining your own classes Access Specifiers (public, protected, private, default) Array of Objects Constructors, Overloading Constructors and Use of 'this' keyword static block, static fields And methods Predefined Classes • Object Class, Methods (equals(), toString(),hashcode(), getClass()) • String Class And StringBuffer Class,Formatting String data using format() method Creating , Accessing And Using Packages Wrapper Classes | 9 |
| | Oct. 2022 | 10 | Inheritance Basics (extends Keyword) and Types of Inheritance Superclass, Subclass and use of Super Keyword Method Overriding and runtime polymorphism Use of final keyword related to method and class Use of abstract class and abstract methods Defining and Implementing Interfaces Runtime polymorphism using interface Concept of Marker and Functional Interfaces Dealing with errors , Exception class, Checked And Unchecked Exception Catching Exceptions, Multiple Catch Block, Nested try block Creating User Defined Exception | 10 |
| | Nov. 2022 | 10 | Introduction to Files And Streams Input-OutputStream : FileInput/OutputStream, BufferedInput/OutputStream, DataInput/OutputStream What is AWT? What is Swing? Difference between AWT and Swing The MVC Architecture And Swing Layouts And Layout Managers Containers And Components – JFrame, JButton, JLabel, JText, JTextArea, JCheckBox And JRadioButton, JList, JComboBox, JMenu And related Classes Dialogs (Message, Confirmation, Input), JFileChooser, JColorChooser Event Handling: Event Sources, Listeners Adapters And Anonymous Inner Class | 10 |
| **Total Lectures** | | **36** | **Total Lectures** | **38** |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. (CS)/ CS-351 OS-I | Aug. 2022 | 9 | • Operating Systems Overview- system Overview and Functions of operating systems • What does an OS do? • Operating system Operations • Operating system structure • Protection and security • Computing Environments- Traditional, mobile , distributed, Client/server, peer to peer computing • Open source operating System • Booting • Operating System services, • System calls Types of System calls and their working. | 10 |
| | Sep. 2022 | 9 | Process Concept – The processes, Process states, Process control block. • Process Scheduling – Scheduling queues, Schedulers, context switch • Operations on Process – Process creation with program using fork(), Process termination • Thread Scheduling- Threads, benefits, Multithreading Models, Thread Libraries | 10 |
| | Oct. 2022 | 9 | Basic Concept – CPU-I/O burst cycle, Scheduling Criteria ,CPU scheduler, Preemptive scheduling, Dispatcher • Scheduling Algorithms – FCFS, SJF, Priority scheduling, Round-robin scheduling, Multiple queue scheduling, Multilevel feedback queue scheduling<br>Basic Concept – CPU-I/O burst cycle, Scheduling Criteria ,CPU scheduler, Preemptive scheduling, Dispatcher • Scheduling Algorithms – FCFS, SJF, Priority scheduling, Round-robin scheduling, Multiple queue scheduling, Multilevel feedback queue scheduling | 10 |
| | Nov. 2022 | 9 | Background – Basic hardware, Address binding, Logical versus physical address space, Dynamic loading, Dynamic linking and shared libraries • Swapping • Contiguous Memory Allocation – Memory mapping and protection, Memory allocation, Fragmentation • Paging – Basic Method, Hardware support, Protection, Shared Pages • Segmentation – Basic concept, Hardware • Virtual Memory Management – Background, Demand paging, Performance of demand paging, Page replacement – FIFO, Optimal, LRU, MFU | 10 |
| | | | | |
| Total Lectures | | 36 | | 40 |

Sign of the Staff

Head of the Department

**S.N.B.P. College, Yerwada, Pune-06**
**DEPARTMENT OF BBA (CA)**
**Course Completion Certificate**

**Academic Year 2022-2023 (Term-I)**

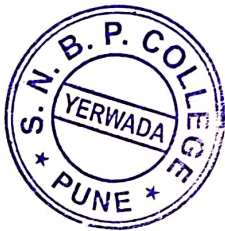Name of the Staff: <u>Ms. Savitri Prashant Mane</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| S.Y.B.Sc. | CS 232 Software Engineering | 36 | 38 |
| S.Y.B.C.A. | CA Big Data | 48 | 48 |
| T.Y.B.C.A | CA-503 Core Java | 48 | 50 |
| T.Y.B.C.A | CA-501 Cyber Security | 48 | 48 |
| T.Y.B.C.A | CA-507 IOT(Add on) | 15 | 16 |
| T.Y.B.Sc. | CS-355 Java -I | 36 | 38 |
| T.Y.B.Sc. | CS-351 OS-I | 36 | 40 |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| T.Y.B.Sc. | CS-357 OS-I | 12 | 14 |
| T.Y.B.Sc. | CS-359 Java -I | 12 | 12 |
| T.Y.B.C.A | Core Java | 12 | 13 |
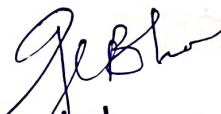
Sign of the Staff

Head of the Department

Date: 27|12|2022

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CA - OS

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.BA (CA)./ OS | Jan. 2023 | 12 | Introduction to Operating System 1.1 What is operating system 1.2 Computer system architecture 1.3 Services provided by OS 1.4 Types of OS 1.5 Operating System Structure – -Simple structure -Layered approach -Micro kernels -Modules 1.6 Virtual Machines – Introduction, Benefits System Structure 2.1 User operating system Interface 2.2 System Calls– -Process or job control -Device Management -File Management 2.3 System Program 2.4 Operating System Structure | 12 |
| | Feb. 2023 | 12 | Process Management 3.1 Process Concept – - The process - Process states - Process control block 3.2 Process Scheduling – - Scheduling queues - Schedulers -Context Switch 3.3 Operation on Process – - Process Creation - Process Termination 3.4 Interprocess Communication – CPU Scheduling 4.1 What is scheduling 4.2 Scheduling Concepts – - CPU-I/O Burst Cycle - CPU Scheduler -Preemptive and Non-preemptive scheduling - Dispatcher 4.3 Scheduling criteria 4.4 Scheduling Algorithms – - FCFS - SJF ( Preemptive& non-preemptive) - Priority Scheduling (Preemptive& Non-preemptive) - Round Robin Scheduling - Multilevel Queues - Multilevel Feedback queues | 12 |
| | March. 2023 | 12 | Process Synchronization 5.1 Introduction 5.2 Critical section problem 5.3 Semaphores – - Concept - Implementation - Deadlock & Starvation - Types of Semaphores 5.4 Classical Problems of synchronization – -Bounded buffer problem - Readers & writers problem - Dining Philosophers problem Deadlock 6.1 Introduction 6.2 Deadlock Characterization 6.3 Necessary Condition 6.4 Deadlock Handling Technique– - Deadlock Prevention - Deadlock Avoidance – - Safe State - Resource allocation graph algorithm - Bankers algorithm - Deadlock Detection - Recovery from Deadlock – -Process Termination -Resource Preemption | 12 |

| | April 2023 | 12 | Memory Management 7.1.Background – -Basic hardware - Address binding - Logical versus physical address space - Dynamic loading - Dynamic linking and shared libraries 7.2 Swapping 7.3 Contiguous Memory Allocation – - Memory mapping and protection -Memory allocation - Fragmentation 7.4 Paging – - Basic Method - Hardware support - Protection - Shared Pages 7.5 Segmentation – - Basic concept - Hardware 7.6 Virtual Memory Management – - Background - Demand paging - Performance of demand paging - Page replacement – - FIFO - OPT - LRU - Second chance page replacement – MFU File System 8.1 Introduction & File concepts (file attributes, Operations on files) 8.2 Access methods – - Sequential access - Direct access 8.3 File structure – - Allocation methods - Contiguous allocation - Linked Allocation - Indexed Allocation 8.4 Free Space Management – - Bit Vector - Linked List – Grouping I/O System 9.1 Introduction 9.2 I/O Hardware 9.3 Application of I/O Interface 9.4 Kernel I/O Subsystem 9.5 Disk Scheduling – - FCFS | 12 |
| | | | | |
| **Total Lectures** | 48 | | **Total Lectures** | 48 |

**Course Title: CA-603 Adv. Java**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. / CA-603 Adv. Java | Jan. 2023 | 12 | JDBC 1.1 Introduction 1.2 JDBC Architecture. 1.3 JDBC Process 1.4 Working with ResultSet Interface. Multithreading: 2.1 Introduction to Multithreading. 2.2 Thread creation: Thread Class, Runnable Interface. 2.3 Life cycle of Thread. 2.4 Thread Priority. 2.5 Execution of Thread Application. 2.6 Synchronization and Interthread communication. | 12 |
| | Feb. 2023 | 12 | Networking: 3.1 Overview of Networking. 3.2 Networking Basics: Port Number, Protocols and classes. 3.3 Sockets, Reading from and Writing to a Socket. | 12 |
| | March. 2023 | 12 | Servlet and JSP 4.1 Introduction to Servlet 4.2 Types of Servlet: Generic Servlet and Http Servlet 4.3 Life cycle of servlet 4.4 Session Tracking. 4.5 Servlet with database. JSP 4.6 Introduction to JSP. 4.7 JSP Life Cycle. 4.8 Components of JSP. 4.9 JSP with Database.. | 13 |
| | April 2023 | 12 | Spring & Hibernate Spring: 5.1 Introduction 5.2 Applications and Benefits of spring 5.3 Architecture and Environment Setup 5.4 Hello World Example 5.5 Core Spring- IoC Containers, Spring Bean Definition, Scope, Lifecycle Hibernate 5.6 Architecture and Environment 5.7 Configuration, Sessions, Persistent Class 5.8 Mapping Files, Mapping Types 5.9 Examples | 13 |
| **Total Lectures** | | **48** | **Total Lectures** | **50** |

## CA-602 Software Testing

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| **TYBBA( CA)/ CA-602 Software Testing** | Jan. 2023 | 12 | ntroduction 1.1 Introduction, Nature of errors, 1.2 Testing Objectives 1.3 Testing principles 1.4 Testing fundamentals, 1.5 Software reviews, Formal Technical reviews, 1.6 Inspection and walkthrough 1.7 Testing Life Cycle 10 2 Approaches to Testing –Testing Methods 2.1 White Box Testing and types of white box testing 2.2 Test Case Design 2.3 Black Box Testing and types of black box testing 2.4 Gray Box Testing | 12 |
| | Feb. 2023 | 12 | Software Testing Strategies &Software metrics 3.1 Software Testing Process 3.2 Unit Testing 3.3 Integration- Top-down ,Bottom up 3.4 System Testing 3.5 Acceptance Testing (alpha, Beta testing) 3.6 Validation and Verification 3.7 Big Bang Approach 3.8 Sandwich approach 3.9 Performance Testing 3.10 Regression Testing 3.11 Smoke Testing 3.13 Load Testing | 12 |
| | March. 2023 | 12 | Software metrics 4.1 Introduction 4.2 Basic Metrics –size-oriented metric, Function – oriented metric 4.3 Cyclometic Complexity Metrics Examples on Cyclometic Complexity 10 5 Testing for Specialized Environments 5.1 Testing GUI's 5.2 Testing of Client/Server Architectures 5.3 Testing Documentation and Help Facilities 5.4 Testing for Real-Time Systems | 12 |
| | April 2023 | 12 | Testing Tools& Software Quality Assurance (Introduction) 6.1 JUnit, Apache JMeter, Win runner 6.2 Load runner, Rational Robot 6.3 Quality Concepts, Quality Movement, Background Issues, SQA activities 6.4 Formal approaches to SQA 6.5 Statistical Quality Assurance 6.6 Software Reliability 6.7 The ISO 9000 Quality Standards 6.8 SQA Plan 6.9 Six sigma 6.10 Informal Reviews | 12 |
| **Total Lectures** | | 48 | **Total Lectures** | 48 |

# CA-607 Soft Skill (Add on)

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TYBBA( CA)/ CA-607 Soft Skill(Add on) | Jan. 2023 | 2 | Introduction to Soft Skills 1.1 An Introduction to Soft skill - 1.1.1 Definition and Significance of Soft Skills 1.1.2 Soft skill Process 1.1.3 Uses of Soft Skill Development. | 2 |
| | Feb. 2023 | 3 | Communication Skills 2.1 Introduction - Components of communication process, Communication process , Effective communication process. 2.2 Types of communication – 2.2.1 Verbal Communication – • Punctuation • Meaning & opposites , vocabulary • Real Life conversations 2.2.2 Non – Verbal Communication - • Facial Expression , Posture , Gesture , Eye contact • appearance (dress code ), Body Language, listening skills • essential formal writing skills | 3 |
| | March. 2023 | 5 | Skills Development 3.1 Interview Skills – Interviewer `and Interviewee – in-depth perspectives. Before, During and After the Interview. Tips for Success. 3.2 Presentation Skills - Types, Content, Audience Analysis, Essential Tips Before, During and After, Overcoming Nervousness. 3.3 Etiquette and Manners - Social and Business 3.4 Time Management - Concept, Essentials, Tips 3.5 Personality Development - Meaning, Nature, Features, | 5 |
| | April 2023 | 5 | Skill Implementation 4.1 Resume writing – 4.1.1 How to write your resume. • Contact details. • Opening statement. • List of key skills. • List of technical/software skills. • Personal attributes/career overview. • Educational qualifications. • Employment history /volunteering/work placements. • References/referees. 4.1.2 Types of resume 4.2 Group Discussion - Importance, Planning, Elements, and Skills assessed, Effectively disagreeing, Initiating, Summarizing and Attaining the Objective. 4.3 Teamwork and Leadership Skills - Concept of Teams, Building effective teams, Concept of Leadership and honing Leadership skills , A Good Leader, Leaders and Managers , Types of Leaders , Leadership Behaviour. | 5 |
| Total Lectures | | 15 | Total Lectures | 15 |

Sign of the Staff

Head of the Department

**CS 242 Computer Network**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| S.Y.B.Sc./ Computer Network | Jan. 2023 | 9 | 1.1 Data communication, components, data representation 1.2 Networks, network criteria, network types - LAN, WAN, Switching, The Internet, Accessing the Internet 1.3 Network Software- Protocol hierarchies, Design Issues of the layer, Connection Oriented and Connectionless Services, 1.4 Reference models - OSI Reference Models, TCP/IP Reference model, Connection devices in different layers, Comparison of OSI and TCP/IP Reference Models. | 9 |
|  | Feb. 2023 | 9 | 2.1 Communication at the physical layer, data rate limits - Noiseless channel (Nyquist bit rate), noisy channel (Shannon capacity), Performance - bandwidth, throughput, latency, bandwidth-delay product, jitter 2.2 Design issues of Data Link Layer, Services - Framing, flow control, error control, congestion control, Link layer addressing 2.3 Framing Methods - Character Count, Flag bytes with Byte Stuffing, Flags bits with Bit Stuffing, Physical Layer Coding Violations 2.4 The Channel allocation problem, Static and dynamic allocation, Media Access Methods - Taxonomy of multiple-access protocols 2.5 Switching and TCP/IP layers, Types - circuit switching, packet switching and message switching 2.6 Wired LANs - Standard Ethernet characteristics, Addressing, Access method, implementation, Fast and Gigabit Ethernet 2.7 Wireless LANs - Architectural comparison, Characteristics, Access control, IEEE 802.11 | 10 |

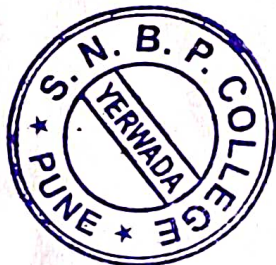| | March. 2023 | 9 | 3.1 Network layer services - Packetizing, Routing and forwarding, other services 3.2 Open and closed loop congestion control 3.3 IPv4 addressing- Address space, classful addressing, Subnetting, Supernetting, classless addressing, Network address resolution (NAT) 3.4 Forwarding of IP packets- based on destination address, based on label 3.5 Network Layer Protocols- Internet Protocol (IP), IPv4 datagram format, Fragmentation, options 3.6 Mobile IP- addressing, agents, Three phases 3.7 Next Generation IP- IPv6 address representation, address space, address types, IPv6 protocol, packet format, extension header, Difference between IPv4 and IPv6 3.8 Routing - General idea, Algorithms - Distance vector routing, link state routing, path vector routing | 9 |
|---|---|---|---|---|
| | April 2023 | 9 | 4.1 Transport layer Services- Process-to-process communication, Addressing, Encapsulation and decapsulation, Multiplexing and demultiplexing, Flow control, Pushing or pulling, Flow control, Buffers, Sequence numbers, Acknowledgements, sliding window, congestion control 4.2 Connectionless and Connection-oriented service, Port numbers 4.3 Transport layer protocols- User datagram protocol, user datagram, UDP services 4.4 Transmission Control Protocol - TCP Services, TCP Features, TCP Segment format, three-way handshake for connection establishment and termination, State transition diagram, windows in TCP. | 10 |
| **Total Lectures** | | **36** | **Total Lectures** | **38** |

**Course Title: CS-364 Java –II**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. / CS-364 Java -II | Jan. 2023 | 9 | Concept of data analytics Data analysis vs Data analytics Types of analytics Diagnostic Analytics, Predictive Analytics , Prescriptive Analytics, Exploratory Analysis, Mechanistic Analysis Mathematical models - Concept Model evaluation: metrics for evaluating classifiers - Class imbalance - AUC, ROC (Receiver-Operator Characteristic) curves, Evaluating value prediction models | 10 |
| | Feb. 2023 | 9 | Introduction to Machine Learning, deep learning, Artificial intelligence Applications for machine learning in data science The modeling process Engineering features and selecting a model, Training the model, Validating the model, Predicting new observations Types of machine learning Supervised learning, Unsupervised learning, Semi-supervised learning, ensemble techniques Regression models | 10 |
| | March. 2023 | 9 | Introduction to Machine Learning, deep learning, Artificial intelligence Applications for machine learning in data science The modeling process Engineering features and selecting a model, Training the model, Validating the model, Predicting new observations Types of machine learning Supervised learning, Unsupervised learning, Semi-supervised learning, ensemble techniques Regression models | 10 |
| | April 2023 | 9 | Overview of social media analytics Social Media Analytics Process, Seven layers of social media analytics, accessing social media data Key social media analytics methods Social network analysis Link prediction, Community detection, Influence maximization, Expert finding, Prediction of trust and distrust among individuals Introduction to Natural Language Processing Text Analytics : Tokenization, Bag of words, Word weighting : TF-IDF, n- Grams, stop words, Stemming and lemmatization, synonyms and parts of speech tagging Sentiment Analysis Document or text summarization Trend analytics Challenges to social media analytics | 10 |
| | | | | |
| | **Total Lectures** | 36 | **Total Lectures** | 40 |

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| T.Y.B.Sc. / CS-361 OS-II | Jan. 2023 | 9 | System model • Deadlock Characterization – Necessary conditions, Resource allocation graph • Deadlock Methods- Prevention and Deadlock Avoidance - Safe state, Resource allocation graph algorithm, Banker's Algorithm • Deadlock Detection • Recovery from Deadlock – Process termination, Resource preemption | 10 |
| | Feb. 2023 | 9 | File concept , File attributes, File operations • Access Methods – Sequential, Direct, Other access methods • Directory overview, Single level directory, Two level directory, Tree structure directory, Acyclic graph directory, General graph directory • Allocation Methods – Contiguous allocation, Linked allocation, Indexed allocation • Free Space Management – Bit vector, Linked list, Grouping, Counting, Space maps  Overview, Disk Structure • Disk Scheduling, FCFS Scheduling, SSTF Scheduling, Scan Scheduling-Scan Scheduling, Look Scheduling , Disk Management | 9 |
| | March. 2023 | 9 | What is a distributed system, Design goals • Types of distributed systems • Architectural styles : Layered architectures , Object-based architectures, Resource- centered architectures • System architecture – Centralized organization, Decentralized organizations, peer-to- peer systems, Hybrid architectures. | 9 |
| | April 2023 | 9 | Introduction • Features • Special Constraints and Requirements of Mobile Operating System • Special Service Requirements • ARM & Intel architectures – Power management • Mobile OS architectures – Underlying OS, kernel structure & native level programming, Runtime issues, Approaches to power management • Commercial Mobile Operating Systems - Windows Mobile, iPhone OS (iOS), Android • A Comparative Study of Mobile Operating Systems (Palm OS, Android, Symbian OS, Blackberry OS, Apple iOS) | 10 |
| **Total Lectures** | | 36 | **Total Lectures** | 38 |

Sign of the Staff

Head of the Department

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Maharashtra Housing Board
Yerwada, Pune - 411 006

Name of the Staff: <u>Ms. Savitri Prashant Mane</u>

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| S.Y.B.C.A. | CA OS | 48 | 48 |
| S.Y.B.Sc. | CS 242 Computer Network | 36 | 38 |
| T.Y.B.C.A | CA-603 Adv. Java | 48 | 50 |
| T.Y.B.C.A | CA-602 Software Testing | 48 | 48 |
| T.Y.B.C.A | CA-607 Soft Skill(Add on) | 15 | 16 |
| T.Y.B.Sc. | CS-364 Java -II | 36 | 38 |
| T.Y.B.Sc. | CS-361 OS-II | 35 | 38 |

| Class | Practical course taught | Number of practicals required | Number of practicals actually engaged |
|---|---|---|---|
| T.Y.B.Sc. | CS-367 OS-II | 12 | 14 |
| T.Y.B.Sc. | CS-369 Java -II | 12 | 12 |
| T.Y.B.C.A | Adv. Java | 12 | 13 |

Date: 18|04|2024

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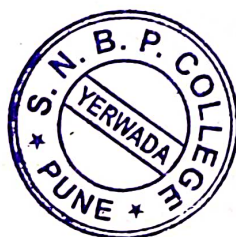
Head of the Department

Principal
S.N. B. P. COLLEGE
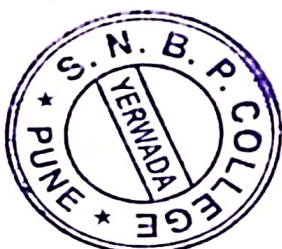Maharashtra Housing Board
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## Academic Year 2022-2023 (Lecture plan Term-I)

Name of the Staff:  **Dr. Chitralekha Pawar**  Semester I

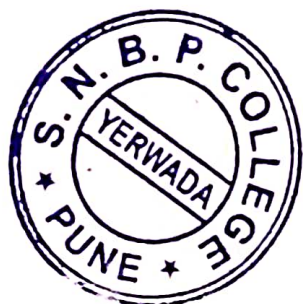| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| FY BBA<br><br>Business Demography | Aug. 2022 | 12 | **Concept of demography**<br>Meaning, importance and need of demography. Studies<br>Study of demography. As an essential discipline of social<br>economic change ,Scope and components of Demography<br>Factors affecting mortality, fertility rate,<br>Methods to calculate fertility and mortality rate. | 13 |
| | Sept. 2022 | 12 | **Distribution of population and population growth**<br>Density and population distribution<br>Concept of over and under population<br>Method of assessment of population growth | 12 |
| | Oct. 2022 | 12 | **Population as resources**<br>Importance of human resource as development of the nation<br>Concept of literacy and its importance in modern society<br>Concept of sex ratio age and sex pyramid<br>Concept of working and dependent population | 12 |
| | Nov. 2022 | 12 | **Urbanization and its implications**<br>Concept of urbanization factors affecting urbanization. and<br>rural population , Features and importance Urbanization. Behavioral and demographic Structure and<br>various factors responsible for urbanization | 13 |
| **Total Lectures** | | 48 | **Total Lectures** | 50 |

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| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY BBA<br><br>Banking & Finance | Jan. 2023 | 10 | **Introduction**<br>Introduction- Origin, meaning and definition of bank,<br>evolution of banking in India, structure of banking system in India | 10 |
| | Feb. 2023 | 12 | **Functions of Banks**<br>Functions of Banks- 1. Primary functions- Accepting<br>deposits and granting loans<br>2. Secondary functions- Public utility services and<br>agency services | 13 |
| | March 2023 | 13 | **Regulatory Authorities in India**<br>Reserve Bank of India (RBI) – Role and functions of<br>RBI, Credit control measures, Qualitative and quantitative credit control<br>Insurance Development Authority (IRDA)- Objectives, Powers and functions of IRDA<br>SEBI- Objectives, power and functions of SEBI | 13 |
| | April 2023 | 13 | **Technology in banking**<br>Need and importance of technology in banking. ATM,<br>Debit card, Credit card, Tele banking, Net banking,<br>mobile banking, RTGS, NEFT, Swift (Society for worldwide interbank financial telecommunication)<br>cyber security in E- banking | 14 |
| **Total Lectures** | | 48 | **Total Lectures** | 50 |

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**Head of the Department**

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Yerwada, Pune - 411 006

**Semester III**

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| SY BBA<br><br>Management Accounting | Aug. 2022 | 8 | **Introduction**<br>Management Accounting- Definition, Objectives,<br>Scope, Functions, Advantages, Limitations.<br>Distinction between Financial Accounting and Management Accounting.<br>Distinction between Cost Accounting and Management Accounting | 8 |
| | Sept. 2022 | 14 | **Analysis and interpretation of Financial statement**<br>Introduction of Schedule III as per Company Act 2013, (Statement of Profit & Loss, Statement of Balance sheet format)<br>Methods of Analysis- Comparative statements, Common size statements, Trend percentage or trend ratios (Horizontal Analysis), Fund flow Statement.<br>Introduction of ratio Analysis- meaning, necessity<br>& advantages of ratio analysis.<br>Types of Ratio- Liquidity Ratios, Leverage Ratios, Activity Ratios, profitability Ratios (Introduction and Problems on following ratios only)<br>Current ratio, Quick ratio, Gross profit ratio, Net profit ratio, Operating expenses ratio, Debt equity ratio, Debtors turnover ratio Stock turnover ratio | 14 |
| | Oct. 2022 | 13 | **Marginal Costing**<br>Marginal Costing- Meaning, definition of marginal cost and marginal costing, Advantages and limitations of marginal costing, Contribution,<br>Profit volume ratio (P/V Ratio), Breakeven Point (BEP), Margin of Safety, problems on contribution, P/Ratio, BEP and MOS | 14 |
| | Nov. 2022 | 13 | **Budget & Budgetary control**<br>Budget and budgetary Control-Meaning, Definition, Nature of budget and budgetary control, Types of budget- as per time, functions and variability, Objectives of budget and budgetary control, Steps in budgetary control, advantages and disadvantages of budgetary control, Problems on cash budget. | 13 |
| **Total Lectures** | | 48 | **Total Lectures** | 49 |

Semester V

| Class/ Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TY BBA<br><br>Analysis of Financial Statements | Aug. 2022 | 12 | **Introduction of Analysis & Interpretation of Financial Statements**<br>Introduction of Schedule III as per Companies Act 2013,<br>Meaning and importance of Analysis of Financial Statements,<br>Tools and Techniques of financial analysis-<br>Comparative Financial Statements,<br>Trend Analysis,<br>Common Size Financial Statements,<br>Ratio Analysis, Fund Flow Statement and C<br>Cash Flow Statement | 12 |
| | Sept. 2022 | 12 | **Ratio Analysis**<br>Meaning, Importance, Advantages & Limitations of Ratio,<br>Classification of Ratios-<br>Liquidity ratios,<br>Turnover ratios,<br>Profitability ratios and<br>Solvency radios (Practical Problems based on the<br>ratios- Problems based on reverse ratio is excluded. ) | 13 |
| | Oct. 2022 | 12 | **Cash Flow Statement**<br>Meaning, Objectives, Uses, and Limitations of Cash<br>Flow Statement,<br>Methods of Cash Flow Statements- Direct methods and<br>indirect methods.<br>Practical sums on an indirect method | 12 |
| | Nov. 2022 | 12 | **Fund Flow Statement**<br>Meaning, Objectives, Uses, and Limitations of Fund<br>Flow Statement,<br>Preparation of Fund Flow Statement-Fund from operations & statement of changes in Working Capita<br>Practical sums on Preparation of Fund Flow Statement | 13 |
| **Total Lectures** | | 48 | **Total Lectures** | 50 |

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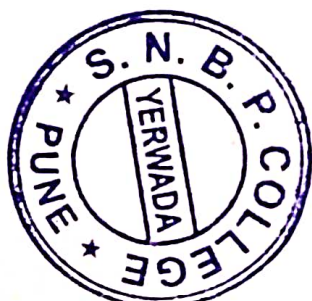
CA P

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Semester V

| Class/Subject | Month & Year | Lectures Available | Topic/Subtopic to be taught | Lectures required |
|---|---|---|---|---|
| TY BBA<br><br>Legal Aspects of Finance & Security Law | Aug. 2022 | 13 | **Introduction to legal aspects of Finance**<br>Overview of Indian Financial System,<br>Introduction to Legal aspect: - Finance,<br>Securities market.<br>Basics of insurance, Derivatives, Commercial Banking, Capital Markets, Money Market, Forward<br>Market Commission of India (FMC), Pension Fund<br>Regulatory and Development Authority (PFRDA) | 13 |
| | Sept. 2022 | 13 | **The issue, Listing of Securities & Investor Protection**<br>Listing of Securities,<br>Issue of Capital and Disclosure Requirements (ICDR),<br>Procedure for Issue of Various Types of Share and Debentures,<br>Employee Stock Option Scheme and Employe Stock Purchase Scheme | 13 |
| | Oct. 2022 | 13 | **Companies Act 2013 & Investor Protection**<br>Introduction to the Companies Act 2013,<br>Overviews of Companies Act 2013,<br>Legal Documents- Memorandum of Associations<br>(MOA), Articles of Associations (AOA).<br>Importance of Preparation of Financial Statements & its disclosure.<br>Investor Education and Protection Fund (IEPF) under SEBI Regulations and Companies Act, 2013 | 14 |
| | Nov. 2022 | 9 | **Goods & Service Act 2017**<br>Introduction to GST,<br>Types of GST, Overview of CGST, SGST, IGST& UTGST Act 2017,<br>Eligibility to register under GST, Benefits of GST Registration.<br>Procedure of GST Registration,<br>Introduction to GST Network, Functions of GSTN | 11 |
| **Total Lectures** | | **48** | **Total Lectures** | **51** |

CAP

**Sign of the Staff**

**Head of the Department**

Principal
S. N. B. P. COLLEGE
Maharashtra Housing Board
Yerwada, Pune - 411 006

**S.E. Society's**
**S.N.B.P.College, Yerwada, Pune-06**
**DEPARTMENT OF BBA**
**Course Completion Certificate**
**Academic Year 2022-2023 (Term-I)**

Name of the Staff:  Dr. Chitralekha Pawar

| Class | Theory course taught | Number of lectures required | Number of lectures actually engaged |
|---|---|---|---|
| FY BBA | Business Demography | 48 | 50 |
| SY BBA | Supply Chain Management | 48 | 50 |
| SY BBA | Fundamentals Of Rural Developments | 48 | 49 |
| SY BBA | Management Accounting | 48 | 49 |
| SY BBA | Banking & Finance | 48 | 50 |
| TY BBA | Database Administration & Data Mining | 48 | 50 |

Date: 26-12-2022

Sign of the Staff

Head of the Department

Principal
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