SHIVAJI UNIVERSITY, KOLHAPUR - 416004,
MAHARASHTRA
PHONE:EPABX-2609000, www.unishivaji.ac.in, bos@unishivaji.ac.in
शिवाजी विद्यापीठ, कोल्हापूर -४१६००४,महाराष्ट्र
दूरध्वनी-ईपीएबीएक्स -२६०९०००, अभ्याससमंडळे विभाग दुरध्वनी ०२३१-२६०९०९४

Estd. 1962
"A++" Accredited by
NAAC (2021)
With CGPA 3.52

Ref./SU/BOS/Com & Mgt./258 **Date : 03/05/2025**

To,

The Principal
All Affiliated (Commerce & Management) Colleges/ Institutions,
Shivaji University, Kolhapur

Subject :Regarding syllabi of B.Com. (Computer Application) Part-II (Sem. III & IV) degree programme under the Faculty of Commerce & Management as per National Education Policy, 2020 (NEP 2.0)

Reference : शिवाजी वि.जा.क. संलग्नता/टी-2/1567 दिनांक 31 मे, 2024

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the University authorities have accepted and granted approval to the syllabi of **B.Com. (Computer Application) Part-II (Sem. III & IV)** under the Faculty of Commerce & Management as per National Education Policy, 2020 **(NEP 2.0)**

This syllabi shall be implemented from the academic **year 2025-2026** onwards subject to the approval from the government. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in (Online Syllabus).

The question paper on the pre-revised syllabi of above mentioned course will be set for the examinations to be held in October/November 2025 & March/ April, 2026. These chances are available for repeater students, if any.

You are therefore, requested to bring this to the notice of all Students and Teachers concerned.

Thanking you,

Yours faithfully,

(Dr. S. M. Kubal)
Dy. Registrar

Encl: As above

for Information and necessary action

Copy to:

1	Dean, Faculty of Commerce & Management	6	Appointment Section A & B
2	Director, Board of Examinations and Evaluation	7	I.T.Cell /Computer Centre
3	Chairman, Respective Board of Studies	8	Eligibility Section
4	B. Com. Section	9	Affiliation Section (T.1) (T.2)
5	Internal Quality Assurance Cell (IQAC Cell)	10	P.G. Seminar Section

SHIVAJI UNIVERSITY, KOLHAPUR.

Estd. 1962

NAAC "A++" Grade

Faculty of Commerce and Management

Syllabus For

B.COM (COMPUTER APPLICATIONS) (CBCS)
Part-II Sem-III and Sem-IV
Syllabus as per National Education Policy (NEP) 2020

(To be implemented from June 2025 Onwards)

(Subject to the modifications that will be made from time to time)

Faculty of Commerce and Management

Structure: Four Year Multidisciplinary **Under Graduate B. Com. Computer Application** Degree Programme (Honors and Research)

Credit Distribution Structure with Multiple Entry and Exit Options

Year and Level	Semester	Major		Minor DSM	OE	VSC, SEC, VSEC	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cumulative Credit Per Semester	Degree Per Cumulative Credit
2 5.0	III	DSC7: (2) Programming with C++ DSC8: (4) Computer Networking DSC9:(2) Lab on DSC7	--	DSM2: (4) Introduction to Accounting with Tally	OE3: (2) Co-operative Development/ Rural Development / Agricultural Economics	VSC3: (2) Web Designing	AEC3: (2) Communication and Soft Skills P-I	FP1: (2) Field Project CC3: (2) (NSS/NCC/Sports / Culture/Health Wellness/Fitness/ Yoga /Etc.	22	UG Diploma 88
	IV	DSC10: (2) DBMS DSC11: (4) System Analysis and Design DSC12:(2) Lab on DSC10	--	DSM3: (4) Fundamentals of Mathematics DSM4:(2) Digital Marketing		SEC3: (2) Web Technology using PHP	AEC4: (2) Communication and Soft Skills P-II	CEP1: (2) Community Engagement Project CC4: (2) (NSS/NCC/Sports / Culture/Health Wellness/Fitness/ Yoga/Etc.	22	
	Cum. Cr	32	--	12	6	12	14	12	88	
Exit Option : Award of UG Diploma in Major with 88 credits and an additional 4 credits core NSQF course/Internship or Continue with Major and Minor										

Abbreviations:

DEC - Discipline Specific Core (Major).DSE - Discipline Specific Elective (Major).DSM - Discipline Specific Minor (Minor). GE/OE- Generic/Other Elective. VSC- Vocational Skill Course.SEC - SkillEnhancement Course.VSEC - Vocational Skill and Skill Enhancement Course.AEC - Ability Enhancement Course.MIL - Modern Indian Languages.ISK - Indian Knowledge System.VEC- Value Education Course.CEP - Community Engagement and Service.CC - Co-Curricular Course.FP - Field Project.OJT - On the Job Training (Internship/Apprenticeship).RP- Research Project/Dissertation.RM - Research Methodology.

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III

DSC7	Programming with C++	Credit: 02
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50		
Course Outcome	After completion of this course students will able to - 1) Understand basics of object-oriented programming using C++ 2) Apply the concepts of inheritance and polymorphism through C++	
Unit I	**Introduction to C++** Basic Concepts of OOP, Benefits & Features of OOP, Structure of C++ Program, Data types, Keywords and Operators, this pointer, Control Structure – Conditional and Looping statement. Class Declaration, Declaration and Definition of a Constructor & Destructor, Function Declaration and Definition (Inside class and outside the class using scope Resolution Operator), Calling Functions, Inline Functions, Friend Function.	**15**
Unit II	**Inheritance and Polymorphism** Concept of Inheritance: Base Class & Derived Class, Types of Inheritance (Single, Multiple, Hierarchical, Multilevel, Hybrid Inheritance) Concept of Polymorphism: Static Polymorphism and Dynamic Polymorphism, Function overloading and overriding, Virtual Functions and Pure Virtual Function	**15**

Books Recommended:

1) The C++ Programming Language, 4th Edition by Bjarne Stroustrup
2) Object Oriented Programming with C++ by E. Balagurusamy
3) Let Us C++ by Yashavant P. Kanetkar
4) C++: The Complete Reference by Herbert Schildt

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III

DSC8	Computer Networking	Credit: 04
Marks: Semester End: 80 Internal Assessment: 20 Total Marks: 100		
Course Outcome	After completion of this course student should be able to- 1. Understand the concept of computer network. 2. Understand the process of Data communication over computer network. 3. Recognize the different functionalities of network. 4. Identify different models required to build layered network.	
Unit I	**Introduction to Computer Network:** Definition of a Computer Network, Concept of Network, Need of a computer network, Components of computer networks-Client, Server and Workstation. Network architecture: Client-Server and Peer to Peer, Network devices-hub, repeater, bridge, router, gateway. Classification of computer network-geographical spread (LAN, WAN, MAN). Network topologies-Bus, Ring, Star, Mesh and Tree	**15**
Unit II	**Data Transmission:** Data transmission methods-serial and parallel transmission. Data communication types- analog and digital transmission. Transmission Modes: Simplex, Half duplex & Full duplex, Transmission Medias- Guided media - twisted pair, coaxial cable, optical fibers. Unguided media-radio waves, microwaves, infrared.	**15**
Unit III	**Functionalities of Network** Concept of Error detection & control code. Flow control- Stop and Wait protocol, sliding window protocol. Routing and Switching techniques - Circuit, Packet & Message switching, Multiplexing techniques, Connection oriented and connectionless services.	**15**
Unit IV	**Network Model** **OSI Model**-Introduction, Working and Functions of – Physical layer, Data Link Layer, Network Layer, Transport Layer, Session Layer, Presentation Layer, Application Layer. **TCP/IP Model**- Introduction, Working and Functions of Process/Application layer, Host to Host/Transport layer, Internet layer, Network access/Link layer.	**15**
Books Recommended: 1. Computer Networks Andrew Tanenbaum, Pearson Education 2. Data Communication and Networks, James Irvin, David Harle, Wiley 3. Computer Networks protocols, Standards and Interface Black C. Prentice Hall of India 4. Computer Communication Networks William Stalling Prentice Hall of India 5. Computer Networks Edition-01by Dave, Cengage Publication		

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III

DSC9	Lab on DSC7	Credit: 02
Marks: Semester End: 50 Total Marks: 50		
Course Outcome	After completion of this course students will be are able to - 1) Apply the concepts of object-oriented programming using C++ 2) Implement the concept of inheritance and polymorphism using C++	
List of Practical's:		
1. Use of operators in C++. 2. Illustrate Control Structures. 3. Create a class and creating an object. 4. Create constructors – default, parameterized, copy. 5. Demonstrate declaration and definition of function. 6. Illustrate different Access Specifiers. 7. Illustrate inline function. 8. Define Member function-outside the class using Scope Resolution Operator. 9. Illustrate friend function. 10. Illustrate Inheritance – single, multiple and multilevel. 11. Perform static and dynamic polymorphism. 12. Demonstrate virtual & pure virtual function.		

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III

DSM2	Accounting with Tally	Credit: 04
Marks: Semester End: 80 Internal Assessment: 20 Total Marks: 100		
Course Outcome	After completion of this course students will able to – 1. Use basic accounting procedures for maintaining financial records. 2. Understand the significance of financial statements 3. Learn to create company and enter accounting voucher entries in Tally 4. Demonstrate reports for different financial statements in Tally.	
Unit I	**Introduction to Financial Accounting** Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information, Accounting Terminologies, Accounting Concepts and Conventions, Double entry system, Types of Accounts and Golden rules of accounting. Books of Prime Entry, Subsidiary Books and Ledger Creation.	**15**
Unit II	**Preparation of Financial Statements** Trial Balance – Meaning, Definition, purpose and features, preparation of Trial Balance. Final Accounts – Introduction, Objectives of Final Accounts, Preparation of Trading Account, Profit and Loss Account, Balance Sheet.	**15**
Unit III	**Introduction to Tally** Tally History and Journey, Difference between manual accounting v/s computerized accounting, Tally features, Tally Fundamentals – Company Data – Gateway of Tally, Creating and Maintaining a Company, Loading a Company, Ledger creation and Voucher Entry	**15**
Unit IV	**Report Generation in Tally** Printing Configuration for vouchers, Printing reports – Day Book, Profit and Loss A/C, Balance Sheet, etc. Data Management – Backup & restore, Split a Company, Import and Export of Data	**15**

Books Recommended:

1. Anthony, R. N. and Reece. J. S.: Accounting Principles: Richard Irwin Inc.
2. Gupta. R. L. and Radhaswamy. M: Financial Accounting; Sultan Chand and Sons
3. Shukla. M.C., Grewal T.S., and Gupta, S.C.: Advanced Accounts: S. Chand & Co.
4. Advance Accountancy:- Maheshwari
5. Advance Accountancy:- R. L. Gupta
6. Computerized Financial Accounting Using Tally - Rajan Chougale

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III
OE3 Co-operative Development Credits: 2
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50

Course Outcome	After completion of this course students will able to - 1. To identify the structure of different co-operative institutions. 2. To understand the audit system and co-operatives Act.	
Unit I	**Introduction to Co-operation:** A) Meaning & significance of Co-operation. B) Principles of Co-operation with Recent Development C) Role of Co-operation in Economic Development. D) Role of National Agencies and organizations in the Development co-operative movement: E) Agricultural and Non Agricultural Co-operatives in India:	**15**
Unit II	Co-Operatives Audit A) Objectives of Co-Operatives –Audit –kinds of Audit B) Role and functions of Auditor C) Role and functions of Registrar D) Defects in Audit system. E) Maharashtra Co-Operatives Act	**15**

Books Recommended:

1- Co-Operation in India, H. R. Mukhi, New Heights-Publishres, New Delhi.
2. Theory, History and Practice of Co-Operation R. D. Bedi, Loyal Book Depot, Meerut
3-Law and Management of Co-Operatives, Dr. B. S. Mathur, Sahitya Bhavan, Agra B. B. Trivedi
4-Agricultural Co-Operation in India-John Mathur-Reliance Publishing House, New Delhi.
5. Fundamentals of Co-Operation- Dr. Krishna Swami, S. Chand and Campany Ltd, New Delhi

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III
OE3 Rural Development-I Credits :2
Marks: Semester End: 40 Internal Assessment:10 Total Marks: 50
Introduced from June 2025

COURSE OUTCOMES:

After studying this course, students will be able to…

1. Understand the importance of rural development.
2. Analyze the process of rural community development.

Unit No.	Contents	No. of Hours
1	Rural Development:- Concept, Objectives, Importance, Nature and Scope; Characteristics of Rural Economy; Concept of Development, Distinction between Development and Growth, Indicators of Development; Prerequisites for Rural Development; Main Obstacles to Rural Development; Factors Governing Rural Development.	15
2	Rural Community Development: Concept of Community, Functions of the Community, Community profile: Process and tool, Concept of community development, Characteristics, Principles and Scope, Panchayati Raj and community development in India	15

References:

1. K. Lekhi, The Economics of Development and Planning, Kalyani Publishers, New Delhi.
2. Desai, Vasant. Fundamentals of Rural Development. New Delhi: Rawat Publications, 1991
3. SatyaSundaram, I., Rural Development. Mumbai: Himalaya, 2002.
4. Prasad, B.K. Rural Development: Concept, Approach and Strategy. New Delhi: Sarup & Sons, 2003.
5. Rural Development: Principles, Policies and Management – Katar Singh, (Sage Texts) 3rd Edition

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III
OE3 Agricultural Economics-I Credits :2
Marks: Semester End:40 Internal Assessment:10 Total Marks: 50

COURSE OUTCOMES:

After studying this course, students will be able to…

1. Understand the issues related with agricultural and economic development
2. Analyze the economics of agricultural production.

Unit No.	Contents	No. of Hours
1	**Agricultural Economics and Theories of Agricultural Development:** **1.1:** Introduction to Agricultural Economics: Nature & scope of agricultural economics - utility of agricultural economics, role and importance of agriculture in economic development. **1.2:** Demand and supply behaviour in Agriculture: Elasticity of Demand – Approaches to study supply response- factors affecting supply response. **1.3:** Theories of agricultural development: (Schultz, Mellor, Hayami and Ruttan) **1.4:** Practical and applications: Contemporary Relevance of above theories	**15**
2	**Economics of Agricultural Production: (15 Periods)** **2.1:** Basic concepts in agricultural Production: Agricultural production visà-vis industrial production – Features of modern agricultural production. **2.2:** Factor- Product Relationship: Meaning & uses of agricultural production function- Agro-technology & production function production function with one variable factor (traditional & modern approach). **2.3:** Factor-Factor Relationship: Optimum factor combination- Effects of changes in factor price on factor usage - Product-Product Relationship: Optimum Product Combination – Types of Enterprises Combinations- Isocline. **2.4:** Practical and applications: Case studies on Agricultural Production Function	**15**

References:

1. Desai R G (2001): Agricultural Economics - Models Problems and Policy Issues, Himalaya Publishing House, Mumbai.
2. Kumar K N R (2015): Agricultural Production Economics, Volume-I, Daya Publishing House, A Division of Astral International Pvt. Ltd, New Delhi.
3. Lekhi R K & Singh Jogindar (2013): Agricultural Economics, Kalyani Publisher, New Delhi.
4. Reddy, Ram, Sastry & Devi (2010): Agricultural Economics Oxford & IBH publishing Co. Pvt. Ltd, New Delhi.

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III

VSC3	Web Technology	Credit: 02
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50		
Course Outcome	After completion of this course student should be able to- 1. Understand the basics of website and web development life cycle. 2. Design website using different tags of HTML and their attributes	
Unit I	**Introduction to Internet & Website** 1.1 Basics of Internet 1.2 Introduction to Web Browser and Web Server 1.3 Introduction to World Wide Web (WWW) 1.3 HTTP, DNS, IP Address 1.4 Types of Websites (Static and Dynamic Websites) 1.5 Web Development lifecycle	**15**
Unit II	**Introduction to HTML** 2.1 Introduction to HTML, History, Features 2.2. HTML tags & attributes 2.3 HTML Form elements 2.4. HTML Frameset 2.5. Limitations of HTML	**15**
Books Recommended: 1. Complete HTML-Thomas Powell 2. HTML Black Book- Steven Holzner		

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – III
AEC3 Communication and Soft Skills P-I Credits: 2
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50

Course Objectives

After learning this course students will be able -

- To introduce students to the business letters
- To make students aware of how to write application letters
- To enable students develop their C.V.
- To acquaint students with the skills and sub-skills of Interview.

Course Outcomes

After completion of this course -

- Students become familiar with the concepts related to business correspondence
- Students are able to write their own C.V.
- Students become well acquainted with writing application letters
- Students know how to face the interview

	Ability Enhancement Course (AEC)			
Unit No.	**Title of the Unit**	**Subtitles of the Unit**	**Hours**	**Marks**
		Semester III		
I	Business Correspondence: Inquiry and Reply	1. Putting an Order & its reply 2. Making an inquiry & its reply 3. Customer Complaint & its reply	15	20
II	Writing Application Letter, C.V. and Interview Techniques	1. Characteristics of Application Letter 2. Do's & Don'ts of Interview	15	20
	Total		30	40
	Internal Evaluation for 10 Marks			

Total Teaching Hours: 15 X 2 = 30 hours

QUESTION PAPER PATTERN

Ability Enhancement Course (AEC) (For 40 Marks)

Semester III

Q.1-A: Multiple Choice Questions (4 questions) 4 marks

B: Answer in one word/phrase /sentence (4 questions) 4 marks

Q2. A. Question to be set on Business Correspondence: Inquiry and Reply – 8 Marks

B. Question to be set on Business Correspondence: Inquiry and Reply – 8 Marks

Q3. A. Question to be set on Writing Application Letter, C.V. and Interview Techniques – 8 Marks

B. Question to be set on Writing Application Letter, C.V. and Interview Techniques – 8 Marks

Internal Assessment: 10 Marks

Reference Books

- Seely, John. Oxford guide to effective writing and speaking, Oxford University Press, 2013
- Rai, Urmila and S.M. Effective Communication, Himalaya Publication
- Rayudu,C.S. Communication, Himalaya Publication,2012
- Hammond, Lisa. Dream Big, Jalco Publishing House, Mumbai 2005

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – IV

Course Code: FP1	**Field Project**	**Credit :02**	**Marks:50**
Course Outcomes	After completion of this course student should be able to- 1. Understand domain knowledge of Computer Networking 2. Identify the features of computer networking used in business.		
Guidelines for Project	1. A group of maximum **two to four** students prepare a Field project under the guidance of internal teacher. 2. Students should adopt Field Visit approach 3. **Students should visit any organization and collect the information about different features of Computer Networking by the organization** 4. **Number of Copies**: The student should submit **one Spiral copy** of the Field Project Report to College /University & also **prepare one individually spiral copy.** 5. The Field project report is duly signed by Principal or Head of Department, Project Guide and Student.		
Guidelines for submission of the Project Report.	**a. Paper:** The Report shall be typed on white paper, A4 size, for the final submission. The report to be submitted must be original and subsequent copies may be photocopied on any paper. **b. Typing**: The typing shall be of standard letter size, 1.5 spaced and on ***both side of the paper***. (Normal text should have Times New Roman, Font size 12. Headings can have bigger size) **c. Margins**: The typing must be done in the following margins: Left 1.5 inch, Right ----- 1 inch Top ----- 1 inch, Bottom 1 inch **d. Front Cover:** The front cover should contain the following details: TOP : The title in block capitals of 6mm to 15mm letters. CENTRE: Full name in block capitals of 6mm to 10mm letters. BOTTOM: Name of the University, Course, Year of submission -all in block capitals of 6mm to 10mm letters on separate lines with proper spacing with center alignment.		
Documentation Format	a) Cover Page b) Institute/College Recommendation c) Guide Certificate d) Declaration e) Acknowledgement f) Index g) Chapter Scheme 1) Organization Profile 2) Objectives of Computer Networking 3) Scope of Computer Networking 4) Network Configuration 5) Features of Computer Networking 6) Advantages and Disadvantages of Computer Networking 7) Conclusion		

Field Project Evaluation

Total Marks - 50

S. No.	NORMS	MARKS
1.	Project Report	20
2.	Project Presentation	15
3.	Question/ Answer	15
	TOTAL	**50**

Field Project Examination should be conducted by the University appointed examiner panel

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – IV

DSC10	DBMS	Credit: 02
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50		
Course Outcome	After completion of this course students will be able to - 1) Describe the basic concepts of DBMS and real life applications of DBMS 2) Learn MS-Access and SQL for database creation and handling transactions.	
Unit I	**Introduction to DBMS** Definition of DBMS, Features of DBMS, advantages and disadvantages of DBMS, Structure of DBMS, Architecture of database system, Data models: Hierarchical Model, Network Model, Relational Model and Entity Relationship Model. Concept of Keys**:** Primary key, foreign key, candidate key, super key, unique key. Concept of normalization, First NF, Second NF, Third NF, advantages of normalizations.	**15**
Unit II	**Database Management through SQL and Ms-Access** SQL: Introduction of SQL, features, SQL data types, DDL commands, DML commands, select command, aggregate functions, order by clause. MS-access: Introduction of Ms-Access, features, database creation, table creation, insert records, queries, forms and report creation through wizards.	**15**

Books Recommended:

1) Database System Concept – Henry korth and A. Silberschatz
2) Fundamentals of Database System- Ramez Elmasri, Shamkant B. Navathe(Pearson)
3) Database Management System- Raghu Ramkrishnan, Gehrke (McGraw Hill)
4) SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication
5) Introduction to SQL by Reck F. van der Lans by Pearson
6) Database Management System- R. Panneerselvam
7) Ms-Office Complete reference

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – IV

DSC11	System Analysis and Design	Credit: 04
Marks: Semester End: 80 Internal Assessment: 20 Total Marks: 100		
Course Outcome	After completion of this course students will able to – 1. To understand Processes Models in Software Engineering. 2. To analyze Software requirements using different analysis tools. 3. To identify the objectives of input and output design for software. 4. To understand the coding process in Software Engineering.	
Unit I	1.1 Introduction to Software Engineering 1.1.1 Definition, need for Software Engineering 1.1.2 Software Engineering Problem 1.1.3 Software Engineering approach 1.1.4 Software Development Life Cycle 1.2 Process Models 1.2.1 Water fall model- Classical, Iterative 1.2.2 Prototyping Model 1.2.3 Spiral Model 1.2.4 Rapid Application Development (RAD)	**15**
Unit II	2.1 Requirements Anticipation and Investigation 2.2 Fact finding methods 2.3 Software requirement Specification (SRS) Concept, Need, Characteristics, Components, Structure of SRS 2.4 Decision Analysis Tools: Decision Tree, Decision Table 2.5 Data Flow Diagrams 2.6 Entity Relationship Diagram	**15**
Unit III	3.1 Design of input & Control 3.2 Objectives of Input Design 3.3 Input Validations, 3.4 Design of output: Objectives of Output, Design Types of Output, 3.5 User Interface design: Elements and issues of good design, features of modern GUI	**15**
Unit IV	4.1 Coding 4.1.1 Programming principles and guide lines 4.1.2 Coding process 4.2 Case Studies: 4.2.1 Tours & Travels management System 4.2.2 Sales & Purchase Management System 4.2.3 Library Management System 4.2.4 Hospital Management System	**15**

Books Recommended:

Text Book-

1. System Analysis and design and Introduction to Software Engineering by Parthsarathi, B.W. Khalkar, Everest Publishing House

Reference Books-

1. An Integrated Approach to Software Engineering by Pankaj Jalote, Tata McGraw-Hill
2. Fundamentals of Software Engineering by Rajib Mall, PHI Learning
3. Software Engineering by R.S. Pressman, Tata McGraw-Hill
4. Software Engineering by Martin Shooman, McGraw-Hill

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – IV

DSC12	Lab on DSC10	Credit: 02
Marks: Semester End: 50 Total Marks: 50		
Course Outcome	After completion of this course student should be able to- 1. Perform SQL queries on database using DDL and DML commands. 2. Use MS-Access to design database and perform transactions for different systems.	

List of Practical's:

1. Implement DDL commands (create, describe, alter, drop) using SQL
2. Implement DML commands (insert, delete, update) using SQL
3. Implement select command using SQL
4. Implement select command using aggregate functions and order by clause using SQL (Perform exercises using Open-Source Software like MySQL)
5. Solve following Case Studies using MS-Access
   a) Library system:
   b) HR Management System
   c) Inventory Management System
   For each case study:
   Design at least 5 tables with appropriate constraints.
   Design forms and insert at least 5 records in each table,
   Create different queries using query wizard.
   Create at least 3 reports using report wizard

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – IV
DSM3 Fundamentals of Mathematics Credits :4
Marks: Semester End: 80 Internal Assessment:20 Total Marks: 100

COURSE OUTCOMES:

After studying this course, students will be able to…

1) Basic knowledge of set theory, functions and relations concepts, and matrix needed for designing and solving problems.
2) Construct simple mathematical proofs and possess the ability to verify them.
3) Write an argument using logical notation and determine if the argument is valid or is not valid.
4) Use graph algorithms to solve problems.

Unit No.	Contents	No. of Hours
I	**I SETS** 1.1 Introduction. 1.2 Methods of describing of a set: Tabular form, Set builder form. 1.3 Finite set, Infinite set, Empty set, Subset, Universal set, Equal sets, Disjoint sets, Complementary set. 1.4 Operation on Sets: Union of sets, Intersection of sets, Difference of sets, Examples. 1.5 De Morgan's Laws (without proof). 1.6 Venn diagram, Examples.	**15**
II	**Logic** 2.1 Introduction. 2.2 Definition: Statement (Proposition). 2.3 Types of Statements: Simple and compound statements. 2.4 Truth values of a statement. 2.5 Truth Tables and construction of truth tables. 2.6 Logical Operations: Negation, Conjunction, Disjunction, Implication, Double Implication. 2.7 Equivalence of Logical statements. 2.8 Converse, Inverse and Contra positive. 2.9 Statement forms: Tautology, Contradiction, and Contingency. 2.10 Duality, Laws of logic: Idempotent laws, Commutative laws, Associative laws, Identity laws, Involution laws, Distributive laws, Complement laws, De Morgan's laws. 2.11 Argument: Valid and Invalid arguments. 2.12 Examples based on above.	**15**
III	**Matrices** 3.1 Introduction. 3.2 Types of matrices: Row matrix, Column matrix, Null matrix, Unit matrix, Square Matrix, Diagonal matrix, Scalar matrix, Symmetric matrix, Skew - symmetric matrix, Transpose of a matrix, 3.3 Definition of Determinants of order 2nd & 3rd and their expansions 3.4 Singular and Non-Singular Matrices 3.5 Algebra of Matrices: Equality of matrices, Scalar Multiplication of matrix, Addition, Subtraction and Multiplication of matrices. 3.6 Elementary Row & Column Transformations 3.7 Inverse of Matrix (Using Elementary Transformations)	**15**

IV	**Graphs** 4.1 Introduction 4.2 Simple graph, Multi graph, Pseudo Graph 4.3 Digraph 4.4 Weighted Graph 4.5 Degree of Vertex, Isolated Vertex, Pendant Vertex. 4.6 Walk, Path, Cycle. 4.7 Types of Graph: Complete, Regular, Bi-Partite, Complete Bi-partite. 4.8 Matrix Representation of Graph: Adjacency and Incidence Matrix. 4.9 Operation on Graph: Union, Intersection, Complement. 4.10 Examples based on above.	**15**

Reference Books:

1. Discrete Mathematics & Structures by Satinder Bal Gupta, University Science Press
2. Fundamental Approach to Discrete Mathematics by D. P. Acharjya, Sreekumar, New Age International Publishers
3. Discrete Mathematical Structures by Kolman, Busby, Ross, Pearson Education Asia
4. Matrices by Shantinarayan, S. Chand & Co. New Delhi
5. Discrete Mathematics by Schaum Series
6. Discrete Mathematics by K D Joshi
7. David Makinson, “Sets, Logic and Maths for Computing”, Springer Indian Reprint, 2011.
8. Kenneth H. Rosen, “Discrete Mathematics and Its Applications”, Tata McGraw Hill, 4th Edition, 2002.
9. Trembley, J.P. and Manohar, R, "Discrete Mathematical Structures with Applications to Computer Science", Tata McGraw Hill, New Delhi, 2007.

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – IV

DSM4	Digital Marketing	Credit: 02
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50		
Course Outcome	After completion of this course student should be able to- 1. Analyze the different digital marketing avenues. 2. Examine the digital marketing tools.	
Unit I	**Digital Marketing**: Introduction, Definition, Meaning and Scope, Advantages of digital Medium over other media, **Types of Digital Marketing** **1.Mobile Marketing**: Different kinds of mobile marketing ,mobile marketing ecosystem **2. Social Media Marketing**: Different social Media Channels, Social media for various businesses B2C& B2B, **3. Content Marketing**: story telling in Social media **4. E-Mail Marketing**: The basics of Email marketing 5. **Display Marketing**: Different Kinds of Display marketing	**15**
Unit II	**Search Marketing :**Introduction, Meaning, Types ,Basics of Search marketing, SEO-Working, Search Engine marketing (SEM) :Introduction, Meaning, Types of SEM, Difference between SEO and SEM, Overview of Google Ad words, Keywords research and analysis, Tracking the success of SEM Search Engine	**15**

Books Recommended:

1. Gupta Seema.-Digital Marketing, McGraw Hill Education(India) Pvt. Ltd.
2. Ahuja Vandana-Digital Marketing, Oxford University Press, 2015.
3. Mohammed R.,—InternetMarketing,McGrawHill,NewYork,Vol.4,2001
4. Krishnamurthy,S.&Singh,N.(2005),TheInternationalE-MarketingFramework(IEMF)

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B. Com. Computer Application SEMESTER – IV

SEC3	Web Technology using PHP	Credit: 02
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50		
Course Outcome	After completion of this course student should be able to- 1. Understand the basics of PHP programming language and its role in web development. 2. Design web page for processing user input using PHP and MySQL	
Unit I	**Introduction to PHP:** Setting up a PHP development environment, Basics of web development **PHP Syntax and Variables:** PHP tags and delimiters, PHP data types and variables, Variable scope, Constants and Magic constants **Operators and Expressions:** Arithmetic, assignment, comparison and logical operators, String and array operators, Precedence and associativity of operators, Type juggling and type casting, **Control Structures:** Conditional statements: if, else, elseif, switch, Looping statements: for, while, do-while, foreach Break and continue statements. Error handling and exceptions	**15**
Unit II	**Working with Forms and User Input:** HTML forms and form elements, Retrieving user input with $_GET and $_POST, Form validation and sanitization, Handling file uploads **Working with Database-MySQL:** Introduction to databases and MySQL, Connecting to a MySQL database, SQL queries: SELECT, INSERT, UPDATE, DELETE, Prepared statements and preventing SQL injection, Retrieving and displaying data from a database	**15**
Books Recommended: 1. "PHP and MySQL Web Development" by Luke Welling and Laura Thomson 2. "Learning PHP, MySQL & JavaScript" by Robin Nixon 3. "Programming PHP" by Rasmus Lerdorf, Kevin Tatroe		

Faculty of Commerce and Management
Syllabus as per National Education Policy(NEP) 2020
B.Com. IT Major SEMESTER – III
AEC4 Communication and Soft Skills P-II Credits: 2
Marks: Semester End: 40 Internal Assessment: 10 Total Marks: 50

Course Objectives

After learning this course students will be able -

- To introduce themselves with the marketing skills
- To acquaint with advertising and promotion of products
- To learn human values

Course Outcomes

After completion of this course -

- Students know the marketing skills
- Students get acquainted with advertising and promotion of products
- Students learn human values

	Semester IV			
Unit No.	**Title of the Unit**	**Subtitles of the Unit**	**Hours**	**Marks**
III	English for Marketing	A. Writing Advertisements B. Promotion of a Product	15	20
IV	A. Dream Big- Lisa Hammond B. If you are Wrong Admit It- Dale Carnegie	-	15	20
	Total		30	40
	Internal Evaluation for 10 Marks			

QUESTION PAPER PATTERN
Ability Enhancement Course (AEC) (For 40 Marks)
Semester IV

Q.1-A: Multiple Choice Questions (based on Module I and II-4 questions) 4 marks B: Answer in one word/phrase /sentence (4 questions) 4 marks

Q2. A. Question to be set on English for Marketing – 8 marks
B. Question to be set on English for Marketing – 8 Marks

Q 3 A. Answer the following question briefly (any 2 out of 3) – 8 Marks
B. Write short notes on (any 2 out of 3) – 8 Marks

Internal Assessment: 10 Marks

Reference Books

- Seely, John. Oxford guide to effective writing and speaking, Oxford University Press, 2013
- Rai, Urmila and S.M. Effective Communication, Himalaya Publication
- Rayudu,C.S. Communication, Himalaya Publication,2012
- Hammond, Lisa. Dream Big, Jalco Publishing House, Mumbai 2005

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दूरध्वनी - इपीबीएक्स - २०६०९०००, अभ्यासमंडळे विभाग : ०२३१- २६०९०९४, २६०९४८७
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Estd. 1962
"A++" Accredited by NAAC (2021)
With CGPA 3.52

संदर्भ क्र. : शिवाजी वि./अ.म./400 दिनांक : 15/07/2024

प्रति,

1. मा. प्राचार्य/संचालक,
   सर्व संलग्नित महाविद्यालये/मान्यताप्राप्त संस्था,
   शिवाजी विद्यापीठ, कोल्हापूर

2. मा. अधिविभाग प्रमुख,
   सर्व अधिविभाग,
   शिवाजी विद्यापीठ, कोल्हापूर

विषय : राष्ट्रीय शैक्षणिक धोरण, 2020 (NEP 2.0) नुसार CEP, CC अभ्यासक्रमाबाबत.

महोदय/महोदया,

उपरोक्त संदर्भिय विषयास अनुसरुन आपणास आदेशान्वये कळविण्यात येते की, राष्ट्रीय शैक्षणिक धोरण २०२० (NEP 2.0) नुसार शैक्षणिक वर्ष २०२४–२५ पासून लागू करण्यात आलेल्या सर्व पदवी कोर्सला लागू असणा–या **Community Engagement Programme (CEP), Co-Curricular Courses (CC)** अभ्यासक्रम/त्याची नियमावली सोबत पाठवित आहे.

सदर **Community Engagement Programme (CEP), Co-Curricular Courses (CC)** अभ्यासक्रमाच्या प्रती जोडल्या आहेत. तसेच विद्यापीठाच्या www.unishivaji.ac.in/NEP-2020@suk (Online Syllabus) या संकेतस्थळावर ठेवण्यात आल्या आहेत.

सदर अभ्यासक्रम/त्याची नियमावलीची सर्व संबंधित विद्यार्थी व शिक्षकांच्या निदर्शनास आणून द्यावेत ही विनंती.

कळावे,

आपला विश्वासू,

(डॉ. एस. एम. कुबल)
उपकुलसचिव

सोबत : अभ्यासक्रमाची प्रत.

प्रत : माहितीसाठी व पुढील योग्यत्या कार्यवाहीसाठी.

अधिष्ठाता, सर्व विद्याशाखा	पात्रता विभागास
अध्यक्ष, सर्व अभ्यास व अस्थायी मंडळे	पी.जी. सेमिनार विभागास
संचालक, परीक्षा व मुल्यमापन मंडळ कार्यालयास	पी.जी. प्रवेश विभागास
परिक्षक नियुक्ती ए व बी विभागास	संलग्नता टी. १ व टी २ विभागास
दूरस्थ व ऑनलाईन शिक्षण विभागास	नॅक विभागास
संगणक केंद्र/आय. टी. सेल विभागास	सर्व ऑन परीक्षा विभागास

SHIVAJI UNIVERSITY, KOLHAPUR

Established: 1962

A^{++} Accredited by NAAC (2021) With CGPA 3.52

New Syllabus For

Community Engagement Programme (CEP)

All Bachelor Degree Programme

STRUCTURE AND SYLLABUS IN ACCORDANCE WITH

NATIONAL EDUCATION POLICY - 2020

HAVING CHOICE BASED CREDIT SYSTEM

WITH MULTIPLE ENTRY AND MULTIPLE EXIT OPTIONS

(TO BE IMPLEMENTED FROM ACADEMIC YEAR 2024-25 ONWARDS)

Community Engagement Programme (CEP):

1. INTRODUCTION:

New generation of students are increasingly unaware of local rural and peri-urban realities surrounding their HEIs, as rapid urbanization has been occurring in India. A large percentage of Indian population continues to live and work in rural and peri-urban areas of the country. While various schemes and programs of community service have been undertaken by HEIs, there is no singular provision of a well- designed community engagement course that provides opportunities for immersion in rural realities. Such a course will enable students to learn about challenges faced by vulnerable households and develop an understanding of local wisdom and lifestyle in a respectful manner

2. OBJECTIVES:

- To promote a respect for rural culture, lifestyle, and wisdom among students.
- To learn about the present status of agricultural and development initiatives.
- Identify and address the root causes of distress and poverty among vulnerable households.
- Improve learning outcomes by applying classroom knowledge to real-world situations.

To achieve the objectives of the socio-economic development of New India, HEIs can play an important role through active community engagement. This approach will also contribute to improve the quality of both teaching and research in HEIs in India. India is a signatory to the global commitment for achieving Sustainable Development Goals (SDGs) by 2030. Achieving these 17 SDG goals requires generating locally appropriate solutions. Community engagement should not be limited to a few social science disciplines alone. It should be practiced across all disciplines and faculties of HEIs. These can take the forms of enumerations, surveys, awareness camps and campaigns, training, learning manuals/films, maps, study reports, public hearings, policy briefs, cleanliness and hygiene teachings, legal aid clinics, etc. For example, students of chemistry can conduct water and soil testing in local areas and share the results with the local community. Students of science and engineering can undertake research in partnership with the community on solid and liquid waste disposal Therefore, students are being encouraged to foster social responsibility and community engagement in their teaching and research.

3. LEARNING OUTCOMES:

After completing this course, students will be able to

- Gain an understanding of rural life, Indian culture, and social realities.
- Develop empathy and bonds of mutuality with the local community.
- Appreciate the significant contributions of local communities to Indian society and economy.
- Learn to Value local knowledge and wisdom.
- Identify opportunities to contribute to the community's socioeconomic improvement.

4. **Credits:** Two credit Course; Students are expected to complete 60 hours of participation

5. COURSE STRUCTURE:

Sr.	Module Title	Module Content	Teaching/Learning/Methodology
1	Appreciation of Rural Society	Rural lifestyle, rural society, joint family, caste and gender relations, rural values with respect to community, rural culture nature and public resources, ponds and fisheries, elaboration of soul of India lies in villages' rural infrastructure,	Classroom discussionsField visit Individual /Group conference Report/journal submission & VIVA
2	Understanding rural and local economy and livelihood	Agriculture, farming, land ownership, water management, animal husbandry, non-farm livelihood and artisan's rural entrepreneurs, rural markets, migrant labour, social innovation projects	Classroom discussionsField visit Individual /Group conference Report/journal submission & VIVA
3	Rural and local Institution	Traditional rural and community organization, self-help groups, decentralized planning, panchayat raj institutions Gram panchayat, Nagarpalika and Municipalities, local Civil Society, Local administration, National rural, Livelihood Mission [NRLM], Mahatma Gandhi National Rural Employment. Guarantee [MGNREGA].	Classroom discussionsField visit Individual /Group conference Report/journal submission & VIVA
4	Rural and National development programmers	History of rural development and current National Programms in India: Sarva shiksha Abhiyan, Beti Bachao-Beti Padhao, Ayushman Bharat, eShram Swachh Bharat, PM Awas yojana, Skill India, Digital India, Start-Up India, Stand-Up India, Scheme of Fund for Regeneration of Traditional Industries (SFURTI), Jal Jeevan Mission, Mission Antyodaya, ATMANIRBHAR Bharat, etc..	Classroom discussionsField visit Individual /Group conference Report/journal submission & VIVA

Note: Faculty can make addition in the list of activities as per domain content:

Recommended field-based activities (Tentative):

- Participate in Gram Sabha meetings, and study community participation;
- Visit to Swachh Bharat Mission project sites, conduct analysis and initiate problem solvingmeasures;
- Interaction with Self Help Groups (SHGs) women members, and study their functions and challenges; planning for their skill-building and livelihood activities;
- Visit Mahatma Gandhi National. Rural Employment Guarantee Act 2005 (MGNREGS) project sites, interact with beneficiaries and interview functionaries at the work site;
- surveys on Mission Antyodaya to support under Gram Panchayat Development Plan
- Visit Rural Schools/mid-day meal centres, study academic and infrastructural resources, digital divide and gaps;
- Associate with Social audit exercises at the Gram Panchayat level, and interact with programme beneficiaries;
- Visit to local Nagarpalika office and review schemes for urban informal workers and migrants;
- Attend Parent Teacher Association meetings, and interview school drop outs;
- Visit local Anganwadi and observe the services being provided;
- Visit local NGOs, civil society organisations and interact with their staff and beneficiaries;
- Organize awareness programmes, health camps, Disability camps and cleanliness camps;
- Conduct soil health test, drinking water analysis, energy use and fuel efficiency surveys and building solar powered village;
- Understanding of people's impacts of climate change, building up community's disaster preparedness;
    - Organise orientation programmes for farmers regarding organic cultivation, rational use of irrigation and fertilizers, promotion of traditional species of crops and plants and awareness against stubble burning;
    - Formation of committees for common property resource management, village pond maintenance and fishing;
    - Identifying the small business ideas (handloom, handicaraft, khadi, food products, etc.) for rural areas to make the people self-reliant.
    - Interactive with local leaders, panchayat functionaries, grass-root officials and local institutions regarding village development plan preparation and resource mobilization;

- Financial Literacy Awareness Programme
- Digital Literacy Awareness Programme
- Education Loan Awareness Programme
- Entrepreneurship Awareness Programme
- Awareness Programmes on Government Schemes
- Products Market Awareness
- Services Market Awareness
- Consumer Awareness Programme
- Accounting Awareness Programme for Farmers
- Accounting Awareness Programme for Street Vendors etc.

6. IMPORTANT RULES AND REGULATIONS FOR CEP:

Concurrent Fieldwork:

Students must conduct comprehensive studies on various challenges that they face in their chosen field. Every work relevant to the subject matter should be compiled and documented.

Students should keep separate fieldwork diary or maintain journal in order to record their fieldwork experiences i.e. reading, e- contents, tasks, planning and work hours have to be recorded in the diary. Detailed work records report on students' fieldwork experiences and activities to be submitted and should be presented. The fieldwork conference is part of the timetable and is mandatory. Faculty should hold a fieldwork conference FOREIGHTNIGHTLY for all students.

In addition to the principal curriculum, the students engage in a variety of community development- related activities. They are encouraged to plan and carry out programs, processions, and events for social causes. These activities seek to enhance students' personal and professional skills as well as foster self- development. "Rural Camp" should be embedded in the curriculum for first-year students to be held in the backward and neglected areas of District's

Concurrent Fieldwork is the core curriculum activity in the CEP course. Hence, 100% attendance of the students is mandatory in case of absence on any student, supplementary fieldwork must be arranged and accomplished with the approval of the faculty supervisor.

7. EVALUATION/ASSESSMENT SCHEME:

Students should keep a Field Diary / journal to record, content, readings and field visit planning. The assessment pattern is internal and external i.e. 40+10.

Internal continuous Assessment: Participation in concurrent field visits 40%; individual/group field project conference, report/journal submission 40%.

External Assessment: Presentation of field project findings (VIVA) should be assigned 20%.