

**Ahmednagar Jilha Maratha Vidya Prasarak Samaj's
New Arts, Commerce, and Science College, Ahmednagar
(Autonomous)
(Affiliated to Savitribai Phule Pune University, Pune)**



**National Education Policy (NEP)
Choice Based Credit System (CBCS)**

**Programme Skeleton and Syllabus of
B. Com. Computer Application (Minor)-Year-II**

Implemented from

Academic Year 2024-25

Ahmednagar Jilha Maratha Vidya Prasarak Samaj's
**New Arts, Commerce and Science College, Ahmednagar
(Autonomous)**

Board of Studies in Commerce and Management

Sr. No.	Name	Designation
1.	Dr. S. B. Kalamkar	Chairman
2.	Dr. B. N. Murtadak	Member
3.	Dr. M.P. Waghmare	Member
4.	Dr. N. B. Goyal	Member
5.	Dr. V. R. Humbe	Academic Council Nominee
6.	Dr. M. M. Deshmukh	Academic Council Nominee
7.	Dr. P. V. Sahte	Vice- Chancellor Nominee
8.	Prof. M. N. Tapkire	Alumni
9.	Mrs. Vanita Shripat	Industry Expert
10.	Prof. S. A. Tarte	Member(co-opt)
11.	Prof. S.D. Bankar	Member(co-opt)
12.	Dr. N. L. Vikhe	Member(co-opt)
13.	Prof. S. S. Nimbalkar	Member(co-opt)
14.	Prof. G. V. Manik	Member(co-opt)
15.	Prof. V B Patare	Member(co-opt)

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Board of Studies in Costing, Accounting, Taxation and Law

Sr. No.	Name	Designation
1.	Dr. B. N. Murtadak	Chairman
2.	Dr. S. B. Kalamkar	Member
3.	Dr. M.P. Waghmare	Member
4.	Dr. N. B. Goyal	Member
5.	Dr. H. B. Goyal	Academic Council Nominee
6.	Dr. S. D. Talekar	Academic Council Nominee
7.	Dr. M.D. Sayyed	Vice-Chancellor Nominee
8.	Mr. Tejas A. Joshi	Alumni
9.	CA Prasad Puranik	Industry Expert
10.	Dr. A. V. Adsure	Member(co-opt)
11.	Prof. P. V. Kale	Member(co-opt)
12.	Prof. S.A. Kasabe	Member(co-opt)
13.	Prof. K. B. Take	Member(co-opt)
14.	Prof. V. R. Sumbe	Member(co-opt)

1. Prologue/ Introduction of the programme:

The Bachelor of Commerce (B.Com) Program is a three-year degree program offered by the college with a view to impart in-depth knowledge and a broad understanding of commerce. The objective of the program is to produce graduates equipped with the knowledge, skills, and attitude to meet the challenges of modern-day business organizations. In this global era, it has become inevitable to prepare minds for the future by providing quality higher education. Though quality may be viewed through different lenses, B.Com. The program is designed to enable and empower students to acquire knowledge, skills, and abilities to analyze and synthesize the contemporary realities pertaining to the domain of business. This course not only provides for maintaining and sustaining existing businesses in

the face of violent winds of change and competition but also a desperately needed perspective of sustainable growth. This program aims at instilling conceptual understanding to equip students to deal with the business realities of today and prepares them to drive and face the challenge of tomorrow. It also exposes the students to the world of technology and digitization in the relevant field as envisaged by scholars and policymakers. This course is designed to help cultivate an entrepreneurial mindset and skills.

Commerce education is entirely different from other disciplines. Hence, it must charter course routes to service the aspirations of the nation. To meet the growing needs of the business society, there is greater demand for sound development of commerce education. The relevance of commerce education has become more imperative, this means a marked change in the way commerce and management education is perceived in India. Commerce education is dedicated to developing tomorrow's leaders, managers, and professionals.

The Bachelor of Commerce program is a progressive program that caters to the needs of commerce aspirants who desire to build their professional competence on a higher position with specialized knowledge in the field of Commerce. The three-year B.Com degree program is divided into six semesters and is designed as per the Choice Based Credit System (CBCS) model curriculum prescribed by UGC. It includes core papers, discipline-specific electives, generic electives, and skill enhancement courses. Students are required to complete practical and add-on courses. The aspirants can select their specialization in the subject of Cost and Works Accounting or Marketing Management as per their choice.

2. Programme Outcomes (POs)

1. The students will be able to develop academic expertise in a global context in the discipline.
2. This program could provide Industries, Banking Sectors, Insurance Companies, Financing companies, Transport Agencies, Warehousing, etc., well trained professionals to meet their requirements.
3. The capability of the students to make decisions at personal & professional levels will increase after completion of this course.
4. The knowledge of different specializations in Accounting, costing, banking, and finance with practical exposure helps the students to stand in the organization.
5. This degree course intends to inculcate attitudes and character that will help students evolve into sensitive and technically sound future business leaders and aims at enhancing the employability options of the students.
6. The curriculum helps instill learnability among students for upskilling and reskilling even in the later part of life.
7. It will develop the critical thinking abilities of the students along with ethical values.
8. The course will nurture skills to contribute effectively to society

Credit Distribution for B.Com. including Major, Minor and OE and other courses.

	Type of Courses	III Yr	IV Yrs (Honours)	IV Yrs Research
Major Marathi	Discipline-Specific Courses (DSC)	46	74	66
	Discipline Specific Elective (DSE)	08	16	16
	Skill Enhancement Courses (SEC)	06	06	06
	Vocational Skill Courses (VSC)	08	08	08
	On-Job Training (OJT)	04	08	04
	Field Project (FP)	04	04	04
	Community Engagement and Service (CEP)	02	02	02
	Research project	00	00	12
	Research Methodology	00	04	04
	Total (I, II and III Year)	78	122	122
Minor	Minor	20	20	20
Other Courses	Open Elective (OE)/ Multidisciplinary Courses	12	12	12
	Indian Knowledge System	02	02	02
	Co-Curricular Courses	08	08	08
	Ability Enhancement Courses	08	08	08
	Value Education Courses	04	04	04
	Total	132	176	176

B.Com. Programme Framework: Credit Distribution

			D S C	D S E	SEC	V S C	FP/ OJT /IN/CEP	I K S							
I	I	4.5	06	-	02	-	-		03	03		02	02	02	22
I	II	4.5	06	-	02	02	-	02	03	03	-	02	02	02	22
Exit Option: Award of UG Certificate in Major with 44 credits and an additional 4 credit core NSQF course /Internship or Continue with Major and Minor															
II	III	5.0	08	-	02	-	FP-02		03	03	-	02	02	-	22
II	IV	5.0	08	-	00	02	CEP-02		03	03	-	02	02	-	22
Exit Option: Award of UG Diploma in Major with 88 credits and an additional 4 credit core NSQF course /Internship or Continue with Major and Minor															
III	V	5.5	10	04	-	02	FP-02		04	-	-	-	-	-	22
III	VI	5.5	08	04	-	02	OJT-04		04	-	-	-	-	-	22
Exit Option: Award of 3-Yr UG Degree in Major and Minor with 132 credits or continue with Major for a 4-year Degree															

IV	VII	6.0	14	04	RM:04	-	-	-	-	-	-	-	-	22
IV	VII I	6.0	14	04	-	-	OJT-04	-	-	-	-	-	-	22
4-Yr UG Degree (Honours) with Major and Minor with 176 credits														
IV	VII	6.0	10	04	RM:04	-	RP-04	-	-	-	-	-	-	22
IV	VII I	6.0	10	04	-	-	RP-08	-	-	-	-	-	-	22
4-Yr UG Degree (Honours with Research) with Major and Minor with 176 credits														

B.Com. Programme Framework: Course Distribution

Y e a r	Se m e s t e r	L e v e l	Major						M i n o r	O E C	A E C	V E C	T o t a l	
			D S C	D S E	SEC	V S C	FP /O JT /IN/C EP	I K S						
I	I	4.5	02	-	01	-	-	01	01	01	01	01	09	
I	II	4.5	02	-	01	01	-	-	01	01	01	01	09	
Exit Option: Award of UG Certificate in Major with 44 credits and an additional 4 credit core NSQF Course /Internship or Continue with Major and Minor														
II	III	5.0	03	-	01	-	01	-	01	01	01	01	09	
II	IV	5.0	03	-	-	01	01	-	01	01	01	01	09	
Exit Option: Award of UG Diploma in Major with 88 credits and an additional 4 credit core NSQF Course /Internship or Continue with Major and Minor														
III	V	5.5	03	01	-	01	01	-	01	-	-	-	07	
III	VI	5.5	02	01	-	01	01	-	01	-	-	-	06	
Exit Option: Award of 3-Yr UG Degree in Major and Minor with 132 credits or continue with Major for a 4-year Degree														
IV	VII	6.0	04	01	RM:01	-	-	-	-	-	-	-	06	
IV	VIII	6.0	04	01	-	-	01	-	-	-	-	-	06	
4-Yr UG Degree (Honours) with Major with 176 credits														
IV	VII	6.0	03	01	RM:01	-	01	-	-	-	-	-	06	
IV	VIII	6.0	03	01	-	-	01	-	-	-	-	-	05	
4-Yr UG Degree (Honours with Research) with Major with 176 credits														

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Syllabus**

B. Com. Computer Application (Minor)

Title of the Course: Database Management System								
Year: II				Semester: III				
Course Type	Course Code	Credit Distribution		Credits	Allotted Hours	Allotted Marks		
		Theory	Practical			CIE	ESE	Total
MNR-3	BCOM-CO301T	02	01	03	45	35	70	100

Course Outcomes (Cos)

- i) To understand the concept of data, field, record, files, database
- ii) To understand the retrieval of data from the database.
- iii) To study the different types of data models.
- iv) Study of designing, creating the relationship of database.

Unit I: File Structure and Organization

(04)

- 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 File Organization
 - 1.4.1 Field and Record structure in file- Record Types
 - 1.4.2 Types of file organization -Sequential, Indexed

Unit II: Database Management System

(08)

- 2.1 Introduction
- 2.2 Basic Concept and Definitions
 - 2.2.1 Data and Information
 - 2.2.2 Data Dictionary
 - 2.2.3 Data Item or Field
 - 2.2.4 Record
- 2.3 Definition of DBMS
- 2.4 Applications of DBMS
- 2.5 Advantages and Disadvantages of DBMS
- 2.6 Views of Data
- 2.7 Data Models
 - 2.9.1 Object Based Logical Model
 - 2.9.1.1. Object Oriented Data Model
 - 2.9.1.2. 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)

Unit III: Relational Model (5)

3.1 Introduction

3.2 Terms

1. Relation
2. Tuple
3. Attribute
4. Cardinality
5. Degree of relationship set
6. Domain

3.3 Keys

3.3.1 Super Key

3.3.2 Candidate Key

3.3.3 Primary Key

3.3.4 Foreign Key

Unit IV: SQL (Structured Query Language) (8)

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 Aggregate Functions

4.8. String Functions

4.9. Date Functions

Unit V: Relational Database Design (05)

5.1 Introduction

5.2 Normalization

5.3 Normal Form

5.3.1 1 NF

5.3.2 2 NF

5.3.3 3 NF

5.3.3.4 BCNF

Unit VI: Practicals (15)

- 1.DDL COMMANDS- CREATE TABLE (Create table and insert record in the table)
- 2.Alter table command -With ADD and MODI options
- 3.Drop Command,Rename Command,Truncate Command
- 4.DML COMMAND - Select Command,Insert Command,
- 5.Update Command,Delete Command
- 6.TCL Command,Grant, Revoke, Commit, Rollback
7. Functions : Aggregate Function,String Function,Date Function
8. Group by and having clause,Order by clause

- 9. Operators -AND, OR, NOT, IN, NOT IN, BETWEEN, LIKE, DISTINCT, ALIAS
- 10. CONSTRAINTS- Primary Key, check, not null, Foreign Key
- 11. JOIN QUERY, SUBQUERY
- 12.1 – 1 Relationship Assignment
- 13.1 – M Relationship Assignment
- 14.M – 1 Relationship Assignment
- 15.M – M Relationship Assignment

Suggested Readings:

- 1) Database System Concepts By Henry korth and A. Silberschatz
- 2) SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication.
- 3) Database Systems Concepts, Designs and Application by Shio Kumar Singh, Pearson
- 4) Introduction to SQL by Reck F. van der Lans by Pearson
- 5) Modern Database Management by Jeffery A Hoffer , V.Ramesh, Heikki Topi ,Pearson
- 6) Database Management Systems by Debabrata Sahoo ,Tata MacgrawHill
- 7) Understanding of DBMS – B.W. Khalakr, Parthsarthi

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Syllabus

B. Com. Computer Application (Minor)

Title of the Course: Software Engineering								
Year: II				Semester: III				
Course Type	Course Code	Credit Distribution		Credits	Allotted Hours	Allotted Marks		
		Theory	Practical			CIE	ESE	Total
MNR-4	BCOM-CO401T	03	00	03	45	30	70	100

Course Outcomes:

1. To understand System concepts.
2. To understand Software Engineering concepts.
3. To understand the applications of Software Engineering concepts and Design in Software development.

Unit I: Introduction to System Concepts

(05)

1. Definition & Characteristic of System
2. Basic Components of the System
3. Types of System

Unit II: Introduction to Software Engineering

(05)

1. Definition & Characteristics of Software
2. Definition of Software Engineering
3. Need for Software Engineering
4. Mc Call's Quality factors
5. Software Product and Process
6. V&V Model

Unit III: Software Development Life Cycle

(10)

1. Introduction
2. Activities of SDLC
3. SDLC
4. Waterfall Model
5. Incremental Process Models
6. Prototyping Model
7. Spiral Model

Unit IV: Requirement Engineering

(10)

1. Introduction
2. Requirement Elicitation
3. Requirement Elaboration
4. Requirement Gathering
5. Feasibility study

6. Fact Finding Techniques
7. SRS Format

Unit V: Analysis And Design Tools

(10)

1. Decision Tree and Decision Table
2. Data Flow Diagrams (DFD) (Up to 2nd level)
3. Data Dictionary
4. Input and Output Design
5. Structured Design Concepts
6. Structure Chart
7. Coupling and Cohesion
8. Three Case Studies on above topics

Unit VI: Software Maintenance and Software Re-Engineering (05)

1. Maintenance definition and types
1. Software reengineering
2. Reverse Engineering
3. Restructuring and forward Engineering.

Suggested Readings:

1. Software Engineering: A Practitioner's Approach- Roger S. Pressman, McGraw Hill International Editions 2010(Seventh Edition)
2. System Analysis, Design and Introduction to Software Engineering (SADSE) - S. Parthasarthy, Khalkar
3. Analysis and Design of Information Systems(Second Edition) - James A. Senn, McGraw Hill
4. System Analysis and Design- Elias Awad, Galgotia Publication, Second Edition