University of Pune

1. **The Title** : The Degree shall be titled as Master of Commerce (E- Com)

2. **Objectives of the Programme**

   A) To prepare students competent enough to take up to employment and self employment opportunities in E- Commerce and M.-Commerce fields.
   B) To provide adequate knowledge and understanding about E- Com practices to the students.
   C) To provide adequate exposure for the students to environment and operations in the field of E- Commerce
   D) To inculcate amongst the students training and practical approach by exposing them to modern technology in Commercial Operations.

3. **Eligibility:**
   A candidate for being held eligible held for admission to the Master of Commerce (E- Com/IT) Degree programme shall have passed B.Com., BCA, BBA, BBM(IB) Examination of this University or any other University recognized by AIU .

4. **Duration of the Programme and Related Information:**
   A) M.Com (E- Com/IT) Programme shall be a full time, Having 2 years duration divided into four Semesters.

   B) Number of students per batch shall not be more than 40 students.

   C) The programme shall consist of 28 Courses of studies carrying 100 marks and having weightage of 4 credits each.

   D) Two kinds of courses offered are Core courses and Elective courses. Core courses are offered by the department conducting the programme. Elective courses are offered either by the department conducting the programme or by any other department

5. **Evaluation Pattern**

   5.1 Each course will carry 100 marks.
   5.2 There will be continuous assessment(CA) and University Evaluation(UE) mechanism for each course and carry 50 Marks each.

5.3 50 marks of the course towards CA will be based on tests (minimum 2). In addition a teacher may consider one or more of the following evaluation systems as CA.
a) Home assignments
b. Seminar /Presentation by the student
c. Lab Assignment

6. Award of credits

6.1 Each course will be of 4 credits.
6.2 Each regular student will have to appear for all the 28 credits of the respective semester.
6.3 Students can appear for maximum 32 credits in all semester.

7. Completion of Degree Program:-

7.1 As soon as student obtains 112 credits the student will be deemed to have completed the require means of the M.Com(Ecommerce) degree programme.
7.2 The policies and procedures determined by University will be followed for the conduct of Examinations and declaration of the result of a candidate.

8. Question Paper Pattern

8.1 Theory paper-
      Question 1. 14Marks
      Question 2. 12 Marks
      Question 3. 12 Marks
      Question 4. 12 Marks

8.2 Practical Paper-
      Question 1. 10 Marks
      Question 2   15 Marks
      Question 3. 20 Marks
      Viva   05Marks

9. Medium of Instruction

Medium of Instruction will be English

The structure of M.Com (E- Com/I.T) Programme shall be as given below:
M.Com (E-Com/ I.T.)
Programme Stucture

Year/Semester	Subject	Paper	Title of Paper	Hours/Week	Credit	Marks		
						CA	UE	Total
I Year Sem-I	Core	101	Fundamental of Information technology	4	4	50	50	100
	Core	102	Statistical Methods & Analysis	4	4	50	50	100
	Core	103	Financial and Investment Analysis using Tally	4	4	50	50	100
	Core	104	System Analysis and Design	4	4	50	50	100
	Core	105	Practicals	4	4	50	50	100
	Elective	106	Business Communication	4	4	50	50	100
	Elective	107	Perspectives of Commercial and business growth	4	4	50	50	100
	Elective	108	Management Information system	4	4	50	50	100
	Elective	109	Business Application software	4	4	50	50	100

Minimum Credit : 28. Maximum credit:32. Core Subject is compulsory. From elective courses student can select two courses for minimum credit and three for maximum credit. CA – Continuous Assessment. UE – University Examination.

Year/Semester	Subject	Paper	Title of Paper	Hours/Week	Credit	Marks		
						CA	UE	Total
I Year Sem-II	Core	201	Business Process and Practices	4	4	50	50	100
	Core	202	Financial and Management Accounting Methods	4	4	50	50	100
	Core	203	Database Management System	4	4	50	50	100
	Core	204	Programming in C	4	4	50	50	100
	Core	205	Practicals	4	4	50	50	100
	Elective	206	Human Resource Management	4	4	50	50	100
	Elective	207	Introduction to Operating system	4	4	50	50	100
	Elective	208	Cyber law	4	4	50	50	100
	Elective	209	Information System Security	4	4	50	50	100

Minimum Credit : 28.Maximum credit:32. Core Subject is compulsory. From elective courses student can select two courses for minimum credit and three for maximum credit. CA – Continuous Assessment. UE – University Examination.

Year/Semester	Subject	Paper	Title of Paper	Hours/Week	Credit	Marks		
						CA	UE	Total
II Year Sem-III	Core	301	Business models for E-Commerce	4	4	50	50	100
	Core	302	E- Banking and Financial Services	4	4	50	50	100
	Core	303	Management Information System	4	4	50	50	100
	Core	304	Data Centre Technology	4	4	50	50	100
	Core	305	Practicals	4	4	50	50	100
	Elective	306	Software Testing	4	4	50	50	100
	Elective	307	Bussiness and Professional Skills	4	4	50	50	100
	Elective	308	Information System Audit	4	4	50	50	100
	Elective	309	Project	4	4	50	50	100

Minimum Credit : 28 Maximum Credit : 32. Core Subject is compulsory. From elective courses student can select two courses for minimum credit and three for maximum credit. CA – Continuous Assessment. UE – University Examination.

Marks	Grade	Grade Point
100 to 75	O : Outstanding	06
74 to 65	A : Very Good	05
64 to 55	B : Good	04
54 to 50	C : Average	03
49 to 45	D : Satisfactory	02
44 to 40	E : Pass	01
39 to 0	F : Fail	00

(C) GPA	Grade
05.00 – 6.00	O
04.50 – 04.99	A
03.50 – 04.49	B
02.50 – 03.49	C
01.50 – 02.49	D
00.50 – 01.49	E
00.00 – 00.49	F

Year/Semester	Subject	Paper	Title of Paper	Hours/Week	Credit	Marks		
						CA	UE	Total
II Year Sem-IV	Core	401	Internet & Web Designing	4	4	50	50	100
	Core	402	Accounting Information System	4	4	50	50	100
	Core	403	Business Research & Analytics	4	4	50	50	100
	Core	404	M-Commerce	4	4	50	50	100
	Core	405	Practicals	4	4	50	50	100
	Elective	406	ERP (Enterprise Resource Planning)	4	4	50	50	100
	Elective	407	Multimedia Systems	4	4	50	50	100
	Elective	408	Content Management System	4	4	50	50	100
	Elective	409	Project	4	4	50	50	100

Minimum Credit : 28 Maximum Credit : 32. Core Subject is compulsory. From elective courses student can select two courses for minimum credit and three for maximum credit. CA – Continuous Assessment. UE – University Examination.

M.Com. (e-commerce) Part I, Semester II
Subject Name -: Database Management System
Course Code -: 203

Sr. No.	Chapter No.	Name of Chapter and Contents	No. of Lect.	Reference

1	1	**Database Management System**
		1.1 Data
		1.2 Information
		1.3 Data Vs Information
		1.4 Data Warehouse
		1.5 Data Dictionary
		1.6 Data Items or fields
		1.7 Records and Files
		1.8 Database
		1.9 Database System Applications
		1.10 View of data
		1.11 Database Languages
		1.12 Data Model
		1.13 Database architecture
		1.14 Entity relationship model
		  1.14.1 Basic Concepts
		  1.14.2 Constraints
		  1.14.3 Keys
		  1.14.4 Strong Entity sets
		  1.14.5 Weak Entity sets
		1.15 Entity relationship diagrams
		1.16 Extended E-R features
		  1.16.1 Specialization
		  1.16.2 Generalization
			12	1,2

2	2	**Relational Model and Relational Database Design**
		2.1 Introduction
		2.2 Fundamental Relational Algebra operation
		2.3Overview of relational database design process
		2.4 Anomalies of Un normalized Database
		2.5 Normalization
		  1 NF
		  2 NF
		  3 NF
		2.6 Functional Dependency
		2.7 Decomposition using functional dependencies
			7	1,2

3	3	**SQL** 3.1 Background 3.2 Basic structure of SQL queries 3.3 Aggregate Functions 3.4 Null values	14	3

		3.5 Nested sub-queries 3.6 Views 3.7 Integrity constraints 3.8 Authorization		
4	4	**Transaction Management** 4.1 Transaction concept 4.2 Transaction state 4.3 Transaction properties 4.4 Concurrent Execution 4.5 Serializability 4.6 Testing for Serializability 4.7 Recoverability	8	
5	5	**Concurrency Control** 5.1 Introduction 5.2 Lock based protocols 5.3 Timestamp based protocols 5.4 Validation based protocols 5.5 Deadlock Prevention 5.6 Deadlock Handling 5.7 Deadlock Recovery	8	

Recommended Books:
1. Database System Concepts :- Silberschatz , Korth , Tata McGraw-Hill Publication
2. Database Management System :-Raghu Ramkrishnan, Tata McGraw-Hill Publication
3. SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication.
4. Database Systems Concepts , Designs and Application by Shio Kumar Singh , Pearson
5. Introduction to SQL by Reck F. van der Lans by Pearson
6. Modern Database Management by Jeffery A Hoffer , V.Ramesh, Heikki Topi , Pearson
7. Database Management Systems by Debabrata Sahoo ,Tata Macgraw Hill

M.Com. (e-commerce) Part I, Semester II
Subject Name -: C Programming
Course Code -: 204

Chapter No.	Topics	No. of Lectures	Ref. Book

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
		4	Book 1, 2

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()
		4	Book 1, 2

3	**Decision Making and looping**
	3.1 Introduction
	3.2 Decision making structure
	      3.2.1 If statement
	      3.2.2 If-else statement
	      3.2.3 Nested if-else statement
	      3.2.4 Conditional operator
	      3.2.5 Switch statement
	3.3 Loop control structures
	      3.3.1 while loop
	      3.3.2 Do-while loop
	      3.3.3 For loop
	      3.3.4 Nested for loop
	3.4 Jump statements
	      3.4.1 break
	      3.4.2 continue
	      3.4.3 goto
	      3.4.4 exit
		10	Book 1, 2

4	**Functions and pointers**
	4.1 Introduction
	      4.1.1 Purpose of function
	      4.1.2 Function definition
	      4.1.3 Function declaration
		14	Book 1, 2,3

	4.1.4 Function call
	4.2 Types of functions
	4.3 Call by value and call by reference
	4.4 Introduction to pointer
	   4.4.1 Definition
	   4.4 2 Declaration
	   4.4.3 Initialization
	4.5 Indirection operator and address of operator
	4.6 Pointer arithmetic
	4.7 Dynamic memory allocation		

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
	5.3 Arrays and functions
	5.4 Introduction to two-dimensional Array
	   5.4.1 Definition
	   5.4.2 Declaration
	   5.4.3 Initialization
	5.5 Accessing and displaying array elements
	5.6 Introductions to Strings
	   5.6.1 Definition
	   5.6.2 Declaration
	   5.6.3 Initialization
	5.7 Standard library functions
		10	Book 1, 2

6	**Structures and union**
	6.1 Introduction to structure
	   6.1.1 Definition
	   6.1.2 Declaration
	   6.1.3 Accessing members
	6.2 Structure operations
		6	Book 1, 2

	Total	**48**	

Reference Book :-
1) Let us C –Yashwant Kanetkar, BPB publication.
2) Programming in C - Balguruswamy, Tata McGraw-Hill publication.
3) Pointers in C - Yashwant Kanetkar, BPB publication.
4) C programming by Dr.Vishal Lichade dreamtech press

M.Com. (e-commerce) Part I, Semester II
Subject Name -: Human Resource Management
Course Code -: 206

Chapter no.	Topic	No. of lectures	Reference book
1	**Introduction of HRM** Definition & concept of HRM Difference between HRM & personnel management Importance , Function, limitation of HRM Challenges of HRM **HRD**-Meaning,definition,scope ,importance	08	
2	**Human Resources Planning** Definition, objective & process of HRP Factor influencing estimation of Human Resource, Human Resource Information System **Job analysis**-concept ,purpose, steps in job analysis, method	08	
3	**Recruitment & selection** Concept, goal, sources, alternatives of recruitment. **selection**-concept, selection process ,limitation of selection process, transfer policy	08	
4	**Training & development** Meaning,definition,need,objective,importance of training ,training method Employee development-concept, method Organization development- process, methods International training & development issue	08	
5	**Performance appraisal** Concept,objective,process,uses & limitation Performance management system-concept,purpose,challenges of Performance management system	08	
6	**Labour union& Collective bargaining** Concept of union, reasons of joining union, union organizing process, critical issue for union today's scenario meaning,objective,scope,process of collective bargaining	08	
	Total period	48	

Reference books-
1. David A.Decenzo & Stephen P. Robbins- Human Resource Management , Wiley India
2. Sharad D.Geet & Mrs Asmita A. Deshpande- Human Resource Management
3. A. M. Sharma - Personnel and Human Resource Management.
4. S. K. Bhatia - Personnel Management and Nirmal Sing - Human Resource Management.
5. Human Resource Management & Human Relations
6. P. C. Pardeshi - Human Resource Management.
7. C. B. Mamoria - Personnel Management

M.Com. (e-commerce) Part I, Semester II
Subject Name -: Introduction of Operating System
Course Code -: 207

Chapter No.	Topics	No. Of Lectures	References

Chapter 1	**Introduction to operating system**
	1. What is an operating system.
	2. Types of operating system.
	   a) Multiprogramming system
	   b) Parallel system
	   c) Distributed System
	   d) Real time System
	3. Services provided by an operating system.
		2	B1

Chapter 2	**Introduction** 1. Introduction of DOS OS 2. Introduction of Windows OS 3. Introduction of Linux OS 4. Difference between DOS ,Windows and Linux	3	B2

Chapter 3	**Computer System component**
	1. Hardware(Basic computing resources)
	   a) CPU
	   b) Memory
	   c) I/O device
	2. User View
	3. System View
	4. Computer System operation
		4	B1

Chapter 4	**System Software** 1. Operating system 2. I/O Manager 3. Compiler 4. Assembler 5. Linker 6. Loader	3	B3

Chapter 5	**Operating System structure**
	1. General system architecture
	   a) Single processor system
	   b) Multiprocessor system
	   c) Clustered system
	2. I/O Structure
	3. Storage Structure
	4. System calls and implementation
		7	B1

	a) Process or job control b) File management c) Device Management 5. System Program			

Chapter 6	**Process management**
	1. Process concept
	  a) Process States
	  b) Process Control Blocks
	  c) Process scheduling
	2. Interaction between process and OS
	3. Context switching
	4. Operation on process
		5	B3	

Chapter 7	**CPU Scheduling**
	1. Scheduling concept
	2. Types of scheduling
	3. Scheduling criteria
	4. Scheduling Algorithms
	  a) FCFS
	  b) SJF(preemptive and non preemptive)
	  c) Priority Scheduling
	  d) Round Robin
		7	B1	

Chapter 8	**File System** 1. File concept 2. File System structure 3. File Access methods 4. File Allocation methods 5. Directory structure 6. File Protection	5	B1	
Chapter 9	**I/O Systems** 1. I/O hardware 2. Application I/O interface 3. Kernel I/O Subsystem	4	B1	

Recommended Books:

B1:- Operating System Concept- Gilberschatz, Galvin ,Addison wisely Newyork

B2:- System Programming and operating system – D M Dhamdhere, Tata McGraw-Hill Publication

M.Com. (e-commerce) Part I, Semester II
Subject Name -: Cyber Law
Course Code -: 208

Chapter No.	Topics	No. of Lectures	References

Chapter 1	**Introduction**
	 1. Evaluation law in cyber space
	 2. Cyberspace and criminal Behavior
	 3. Traditional problems associated with computer crime
	  a) Physical and Jurisdictional concerns
	  b) Lack of resources
	  c) Lack of reporting
	 4. Insurance and Internet
	 5. At least two case study on each
		8	B1

Chapter 2	**Computer Terminology**
	 1. A brief History of computer
	 2. A brief History of Internet
	 3. Categorizing Internet Communication
	  a) WWW
	  b) Newsgroup/Bulletin Boards(Usenet groups)
	  c) Internet Rely Chat
	  d) Cyber contacts
	  e) E-mail
	  f) Validity of electronic transaction
	  g) Contracts electronic data exchange
		11	B1

Chapter 3	**Hackers and theft of components**
	 1. Introduction
	 2. Recognizing and defining computer crime
	 3. Hacking
	  a) Defining Hacking
	  b) Evolution in the Hacking community
	  c) Contemporary Motivation
	  d) Hierarchy of Contemporary Cyber Criminals
	 4. Thefts of Intellectual property
	  a) Software
	  b) Film piracy
		10	B2

Chapter 4	**Information technology Act 2000** 1. Digital Signature 2. Electronic Governance 3. Attribution, acknowledgement and Dispatch of electronic record 4. Secure electronic records and secure digital signature 5. Regulation of certifying authority 6. Duties of subscriber 7. At least two case study 8.	10	B3

Chapter 5	**Cyber Stalking**
	1. A real problem in virtual world
	2. Victim of stalking
	3. Cyber stalking
	4. Cyber stalking in India
	5. What is online Harassment?
	6. Extent of cyber stalking
	7. The nature of cyber stalking
	   a) E-mail stalking
	   b) Chat stalking
	   c) Bulletins Board System
	   d) Computer Stalking
	   e) United state and other countries
	8. The communication Act of 1996 section 23
	9. Case study on each topic
		6	B2

Chapter 6	**Cyber Crime** 1. Classification of Cyber Crime 2. Computer as a target of Crime 3. Computer as a Instrument of Crime 4. Computer as a Incidental to Crime 5. Target of Computer Crime 6. Challenges of Cyber Crime 7. Indian Scheme of offence & punishment 8. Computer Virus 9. User Datagram Protocol (UDP) Attack 10. Internet Control Message Protocol(ICMP) Attack	5	B2

Recommended Books

1) **B1**:-Computer Forensics and Cyber Crime-Marjie T. Britz(Published by Person)
2) **B2**:-Cyber Law in India – Dr. Farooq Ahmad (Published by Pioneer Books)
3) **B3**:-Guide to Cyberlaws – Rodney D. Ryder(Published by Wadhwa Nagpur)
4) Law relating to computers, Internet & E-Commerce by Nandan Kamath (Published by – Universal Law)

M.Com. (e-commerce) Part I, Semester II
Subject Name -: Information Security System
Course Code -: 208

Chapter No.	Topics	No. Of Lectures	References

Chapter 1	Introduction to security
	   1. The need for security
	   2. Security approaches
	   3. Principles of security
	   4. Types of attack
		5	B2

Chapter 2	Overview of computer Security
	   1. The Basic Components
	     a) Confidentiality
	     b) Integrity
	     c) Availability
	   2. Threats
	   3. Policy and Mechanism
	     a) Goals of Security
	   4. Protection state
	   5. Access Control Matrix Model
	   6. Assurance
	     a) Specification
	     b) Design
	     c) Implementation
	   7. Operational Issues
	     a) Cost Befit analysis
	     b) Risk Analysis
	     c) Laws and Customs
	   8. Human Issues
	     a) Organizational Problems
	     b) People Problems
		8	B1

Chapter 3	Information and Network Security Policies
	   1. Security Policies
	     a) Definitions
	     b) Types of security Policies
	     c) The Role of Trust
	     d) Type of Access control
	     e) Example Academic Computer Security Policy
	   2. Confidentiality Policies
	     a) Goal of Confidentiality policies
	     b) The Bell-LaPadula Model
	   3. Integrity Policies
	     a) Goals
	     b) Biba Intgrity Model
	     c) Clark-Wilson Integrity Model
		12	B1

	4. Hybrid Policies
	   a) Chinese Wall Model
	   b) Clinical Information Systems Security
	   c) Originator Controlled Access Control
	   d) Role Based Access Control		

Chapter 4	Cryptography
	  1. What is cryptography?
	  2. What is Cipher?
	  3. Classical cryptosystem
	   a) Transposition cipher
	   b) Substitution cipher
	  4. Encryption
	   a) Mathematical Basis of encryption
	   b) Symmetric and shared key encryption
	   c) Data encryption standards
	     i) Tripule DES
	     ii) skipjack
	   d) Data Integrity
	   e) Advantages of public key encryption
		8	B2

Chapter 5	Authentication
	  1. Authentication Basic
	  2. Passwords
	   a) Attacking a password system
	   b) Countering Password system
	  3. Biometrics
	   a) Fingerprints
	   b) Voicess
	   c) Eyes
	   d) Faces
	   e) Keystrokes
	   f) Combination
	   g) caution
		6	B1

Chapter 6	System and Application Security
	  1. Mail security
	  2. File system security
	  3. Program and security
	  4. Memory security
		6	B3

Books Recommended
B1:- Introduction to computer Security – Matt Bishop (Published by Pearson)
B2:- Cryptography and Network Security Second Edition –Atul Kahate
B3:- Computer security , Dicter gouman, John Wiley & sons