KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Examination for Undergraduate Programme (Interdisciplinary)
B.Com. Vocational (Computer Applications) (Scheme- D)
as per NEP-2020 Curriculum Framework
(Multiple Entry-Exit, Internships and Choice Based Credit System LOCF) w.e.f. the session 2023-2024 (in phased manner)

Semester	Course Type	Course Code	Nomenclature of Course	Credits				Contact Hours L: Lecture T: Tutorial P: Practical				Internal Assessment Marks		End Term Examinations Marks		Total Marks	Examination Hours	
				Total	Theory (T)	Tutorial (T)	Practical (P)		T	P	Total	T	P	T	P		T	P
FIRST YEAR SCHEME																		
I	CC-1	B23-COM-101	Financial Accounting	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-2	B23-COM-102	Business Laws	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-3	B23-COM-103	Business Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-M1	B23-COM-104	Business Mathematics-I	2	1	1	0	1	1	0	2	15	-	35	-	50	3	-
	MDC-1	B23-COM-105	Personal Finance	3	2	1	0	2	1	0	3	25	-	50	-	75	3	-
	AEC-1	Select one course from the pool of Ability Enhancement Courses (AEC)																
	SEC-1	Select one course from the pool of Skill Enhancement Courses (SEC)																
	VAC-1	Select one course from the pool of Value Added Courses (VAC)																

II	CC-4	B23-COM-201	Computerized Accounting System *	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3
	CC-5	B23-COM-202	Company Law	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-6	B23-COM-203	Principles of Marketing	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-M2	B23-COM-204	Business Mathematics-II	2	1	1	0	1	1	0	2	15	-	35	-	50	3	-
	MDC-2	B23-COM-205	Fundamentals of Banking and Insurance	3	2	1	0	2	1	0	3	25	-	50	-	75	3	-
	AEC-2	Select one course from the pool of Ability Enhancement Courses (AEC)																
	SEC-2	Select one course from the pool of Skill Enhancement Courses (SEC)																
	VAC-2	Select one course from the pool of Value Added Courses (VAC)																
Internship of 4 credits of 4-6 weeks duration after 2nd semester																		
SECOND YEAR SCHEME																		
III	CC-7	B23-COM-301	Corporate Accounting-I	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-8	B23-COM-302	Income Tax Law-I	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-9	B23-COM-303	Banking and Insurance	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-M3	B23-COM-304	Business Economics	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	MDC-3	B23-COM-305	Fundamentals of Indian Capital Markets	3	2	1	0	2	1	0	3	25	-	50	-	75	3	-
	AEC-3	Select one course from the pool of Ability Enhancement Courses (AEC)																
	SEC-3	Select one course from the pool of Skill Enhancement Courses (SEC)																

IV	CC-10	B23-COM-401	Corporate Accounting-II	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-11	B23-COM-402	Income Tax Law-II	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-12	B23-COM-403	Entrepreneurship Development	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-M4(V)	B23-VOC-230	Programming for Problem Solving	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3
	AEC-4	Select one course from the pool of Ability Enhancement Courses (AEC)																
	VAC-3	Select one course from the pool of Value Added Courses (VAC)																
Internship of 4 credits of 4-6 weeks duration after 4th semester																		
THIRD YEAR SCHEME																		
V	CC-13	B23-COM-501	Cost Accounting	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-14	B23-COM-502	Goods & Services Tax*	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3
	CC-15	B23-COM-503	Industrial & Labour Laws	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-M5(V)	B23-VOC-129	Database Management System	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3
VI	CC-16	B23-COM-601	Management Accounting	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-17	B23-COM-602	Auditing	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-18	B23-COM-603	Business Statistics	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-M6	B23-COM-604	Business Environment of Haryana	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-M7(V)	B23-VOC-329	Networking and ERP	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3

***Practical Course**

FOURTH YEAR SCHEME D - BACHELOR OF COMMERCE (HONOURS)																			
VII	CC-H1	B23-COM-701	Organizational Behaviour	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-H2	B23-COM-702	Financial Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-H3	B23-COM-703	Indian Business Environment	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	DSE-H1 (any one)	B23-COM-704	Business Valuation	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
		B23-COM-705	Strategic Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	PC-H1	B23-COM-706	Business Research Methods *	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3
	CC-HM1	B23-COM-707	Retailing	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
VIII	CC-H4	B23-COM-801	Human Resource Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-H5	B23-COM-802	Fraud Investigation and Forensic Accounting	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-H6	B23-COM-803	International Business	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	DSE-H2 (any one)	B23-COM-804	Corporate Governance & Sustainability	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
		B23-COM-805	Advertising & Personal Selling	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	PC-H2	B23-COM-806	Stock Market Operations*	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3
	CC-HM2	B23-COM-807	Supply Chain Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-

FOURTH YEAR SCHEME D - BACHELOR OF COMMERCE (HONOURS WITH RESEARCH)																		
VII	CC-H1	B23-COM-701	Organizational Behaviour	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-H2	B23-COM-702	Financial Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-H3	B23-COM-703	Indian Business Environment	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	DSE-H1 (any one)	B23-COM-704	Business Valuation	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
		B23-COM-705	Strategic Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	PC-H1	B23-COM-706	Business Research Methods *	4	3	0	1	3	0	2	5	20	10	50	20	100	3	3
	CC-HM1	B23-COM-707	Retailing	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
VIII	CC-H4	B23-COM-801	Human Resource Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-H5	B23-COM-802	Fraud Investigation and Forensic Accounting	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
	CC-HM2	B23-COM-807	Supply Chain Management	4	3	1	0	3	1	0	4	30	-	70	-	100	3	-
		B23-COM-808	Project/Dissertation Report	12	-	-	-	-	-	-	-	-	-	300	-	300	-	-

***Practical Course**

NOTE: SCHEME AND SYLLABI OF B.COM. AND B.COM. (VOCATIONAL)-COMPUTER APPLICATIONS ARE SAME EXCEPT VOCATIONAL COURSES IN 4TH, 5TH & 6TH SEMESTER.

Session:2023-24			
Part A-Introduction			
Subject	B.Com. Vocational (Computer Applications)		
Semester	IV		
Name of the Course	Programming for Problem Solving		
Course Code	B23-VOC-230		
Course Type:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VOC		
Level of the course (As per annexure -I	200 - 299		
Pre-requisite for the course (if any)	Nil		
Course Learning Outcomes (CLO):	**After completing this course, the learner will be able to:** 1. Understand the basics of C program, data types and input/output statements. 2. Understand different types of operators, their hierarchies and also control statements of C. 3. Implement programs using arrays and strings. 4. Get familiar with advanced concepts like structures, union etc. in C language. 5*Implement the programs based on various concepts of C.		
Credits	**Theory**	**Practical**	**Total**
	3	1	4
Contact Hours	3	2	5
Internal Assessment Marks	20	10	30
End-Term Exam Marks	50	20	70
Exam Time	3 Hrs.	3 Hrs.	--

Part B-Contents of the Course

Instructions for Paper-Setter

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of 5 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	Overview of C: Concept, history, importance; Structure of C program: Character set, constants and variables; Identifiers and Keywords; Data types; Assignment Statement; Symbolic Constant; Input/output: Formatted I/O Function- Input Functions viz. scanf(), getch(),getche(),getchar(),gets(),output functions viz. printf(),putch(), putchar(), puts()	12
II	Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators; Operator hierarchy; Arithmetic expressions, evaluation of arithmetic expression, type Casting and Conversion: Decision making with if statement, if- else statement, nested if statement, else-if ladder, switch and break statement, go to statement; Looping Statements: for, while, and do- while loop, jumps in loops.	11
III	Arrays: One dimensional arrays - Declaration, initialization and memory representation; Two dimensional arrays-declaration, Initialization and memory representation; Functions: definition, prototype, function call; Passing arguments to a Function: Call by value; Call by reference, recursive functions; Strings: Declaration and Initialization, string I/O, array of strings; String Manipulation Functions: String length, copy, compare, concatenate etc., search for a substring.	11
IV	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers and Arrays; User defined data types: Structures - definition, advantages of structure, declaring structure variables, accessing structure members; Structure members initialization, Array of Structures; Unions – Union Definition; Difference between structure and union.	11
V*	Practicum: Students are advised to do laboratory/practical practice not limited to, but including the following types of problems: • To read radius of a circle and to find area and circumference. • To read three numbers and find the biggest of three. • To check whether the number is prime or not. • To read a number, find the sum of the digits, reverse the number and check it for palindrome. • To read numbers from keyboard continuously till the user presses 999 and to find the sum of only positive numbers. • To read percentage of marks and to display appropriate message (Demonstration of else-if ladder). • To find the roots of quadratic equation. • To read marks scored by n students and find the average of marks (Demonstration of single dimensional array).	30

	• To remove Duplicate Element in a single dimensional Array. • To perform addition and subtraction of Matrices. • To find factorial of a number. • To generate Fibonacci series. • To remove Duplicate Element in a single dimensional Array. • To find the length of a string without using built in function. • To demonstrate string functions. • To read, display and add two m x n matrices using functions. • To read a string and to find the number of alphabets, digits, vowels, consonants, spaces and special characters. • To swap Two Numbers using Pointers. • To demonstrate student structure to read & display records of students. • To demonstrate the difference between structure & union.	

Suggested Evaluation Methods

Internal Assessment:		**End Term Exam:**
➢ **Theory 20**		Theory: 50
• Class Participation:	05	Practicum: 20
• Seminar/presentation/assignment/quiz/class test etc.:	05	
• Mid-Term Exam:	10	
➢ **Practicum 10**		
• Class Participation:	NA	
• Seminar/Demonstration/Viva-voce/Lab records etc.:	10	
• Mid-Term Exam:	NA	

Part C-Learning Resources

Recommended Books/e-resources/LMS:

- Balagurusamy, E., Programming in ANSI C, Tata McGraw-Hill.
- Gottfried, Byron S., Programming with C, Tata McGraw Hill.
- Jeri R. Hanly & Elliot P. Koffman, Problem Solving and Program Design in C, Addison Wesley
- Rajaraman, V., Computer Programming in C, PHI.
- Yashwant Kanetker, Let us C, BPB.
- Yashwant Kanetker, Working with C, BPB.

*Applicable for courses having practical component.

Session:2023-24			
Part A-Introduction			
Subject	B.Com. Vocational (Computer Applications)		
Semester	V		
Name of the Course	Database Management System		
Course Code	B23-VOC-129		
Course Type:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VOC		
Level of the course (As per Annexure-I	300-399		
Pre-requisite for the course(if any)	Nil		
Course Learning Outcomes(CLO):	**After completing this course, the learner will be able to:** 1. Learn basics of database systems. 2. Learn about data models and ER diagrams. 3. Learn querying the database management system. 4. Learn relation model and normalization. 5*.To learn about data storage and retrieval from database.		
Credits	**Theory**	**Practical**	**Total**
	3	1	4
Contact Hours	3	2	5
Internal Assessment Marks	20	10	30
End-Term Exam Marks	50	20	70
Exam Time	3 Hrs.	3 Hrs.	--

Part B-Contents of the Course

Instructions for Paper-Setter

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of 5 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks.

Unit	Topics	Contact Hours

I	Database Management System (DBMS): Concept, data, information, records, files, schema and instance etc; Limitations of File-based approach; Characteristics of database approach; DBMS: Components, functions, database interfaces, advantages and disadvantages; Database Users: Data; Database administrator: Role and responsibilities; Database Designers, application developers etc.; Database System Architecture – 1-Tier, 2-Tier & three levels of architecture; External, conceptual and internal levels, schemas, mappings and instances, data independence – logical and physical data independence.	12
II	Data Models: Hierarchical, network; Relational data models: Entity-Relationship Model: entity, entity sets, entity type; Attributes: Type of attributes, keys; Integrity constraints; Designing of ER Diagram; Symbolic notations for designing; ER Diagram.	11
III	SQL: Meaning, purpose and need of SQL; Data Types; SQL Components: DDL, DML, DCL and DQL, basic queries, join operations and sub-queries; Views; Specifying Indexes; Constraints and its implementation in SQL; Relational Algebra: Basic operations: select, project, join, union, intersection, difference and Cartesian product etc; Relational Calculus: Tuple Relational and Domain Relational Calculus. Relational Algebra v/s Relational Calculus.	11
IV	Relational Model: Functional dependency- characteristics, inference rules and types; Normalization: benefits and need, normal forms; Based on Primary Keys - (1NF, 2NF, 3NF, BCNF), Multi-valued Dependencies, 4NF, join dependencies, 5NF, domain key normal form.	11
V*	Practicum: Students are advised to do laboratory/practical practice not limited to, but including the following types of problems: • Performing various SQL statement. Creating various tables. and performing all possible queries based on syllabus. • Understanding relational model concepts. • Understanding normalization. • Understanding various concepts of databases.	30

Suggested Evaluation Methods		
Internal Assessment:		**End Term Exam.**
➢ **Theory 20**		Theory: 50
• Class Participation:	05	Practicum: 20
• Seminar/presentation/assignment/quiz/class test etc.:	05	
• Mid-Term Exam:	10	
➢ **Practicum 10**		
• Class Participation:	NA	
• Seminar/Demonstration/Viva-voce/Lab records etc.:	10	
• Mid-Term Exam:	NA	

Part C-Learning Resources

Recommended Books/e-resources/LMS:

- Date, C. J., An Introduction to Database Systems, Addison Wesley.
- Elmasri & Navathe, Fundamentals of Database Systems, Pearson Education.
- Silberschatz ,A., H Korth, S Sudarshan, Database System and Concepts, McGraw-Hill.
- Thomas Connolly Carolyn Begg, Database Systems, Pearson Education.

*Applicable for courses having practical components.

Session:2023-24			
Part A-Introduction			
Subject	B.Com. Vocational (Computer Applications)		
Semester	VI		
Name of the Course	Networking and ERP		
Course Code	B23-VOC-329		
Course Type:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VOC		
Level of the course (As per Annexure-I	300-399		
Pre-requisite for the course(if any)	Nil		
Course Learning Outcomes (CLO):	**After completing this course, the learner will be able to:** 1. Understand of networking concepts and basic terminology along with its hardware components. 2. Understand and characterize various types of computer networks. 3. Conceptualize the various design issues related to Network Architecture. 4. Understand the concept of ERP system. 5*. Implement and understand various network algorithms		
Credits	**Theory**	**Practical**	**Total**
	3	1	4
Contact Hours	3	2	5
Internal Assessment Marks	20	10	30
End-Term Exam Marks	50	20	70
Exam Time	3 Hrs.	3 Hrs.	--

Part B-Contents of the Course

Instructions for Paper-Setter

Note: The examiner will set 9 questions asking two questions from each unit and one compulsory question by taking course learning outcomes (CLOs) into consideration. The compulsory question (Question No. 1) will consist of 5 parts covering entire syllabus. The examinee will be required to attempt 5 questions, selecting one question from each unit and the compulsory question. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	Computer Networks: Concept, goals applications, types of computer networks and their topologies; Network Design: Issues and protocols; Computer communications and networking models; Communication service methods and data transmission modes; OSI reference model, OSI service types, functions of layers of OSI model.	12
II	Physical layer: Analog and digital communication concepts; Copper media; Fiber-optic media; Wireless communications; Satellite communication: Speed and capacity of a communication channel; Multiplexing; Switching; Data link layer: The IEEE and the data link layer, framing techniques; Flow control; MAC.	11
III	Network H/W: Connectors, transceiver, repeater, Hub bridge, Switches, Routers gateway; Network hardware components; Network layer: Overview, internetworking concepts; Routers and switches; Routing protocol concepts; Routing algorithms: Flooding, shortest path routing; Encryption method; Network security issue, Security threats.	11
IV	Enterprise: Concept and functions; Process approach to business; Types of information in business; Systems approach to information management; Integrated data model; ERP: Concept, origin, need, reasons of growth, ERP technologies- Management information system; Decision support system; Executive information system; Supply chain management system; ERP modules, implementing ERP solutions.	11
V*	Practicum: Students are advised to do laboratory/practical practice not limited to, but including the following types of problems: • Performing various network commands based on syllabus. • Understanding network models concepts. • Understanding routing. • Understanding various concepts of network topologies.	30

Suggested Evaluation Methods

Internal Assessment:		**End Term Exam:**
➢ **Theory 20**		Theory: 50
• Class Participation:	05	Practicum: 20
• Seminar/presentation/assignment/quiz/class test etc.	05	
• Mid-Term Exam:	10	
➢ **Practicum 10**		
• Class Participation	NA	
• Seminar/Demonstration/Viva-voce/Lab records etc.	10	
• Mid-Term Exam	NA	

Part C-Learning Resources
Recommended Books/e-resources/LMS: • Andrew S. Tanenbaum, Computer Networks, PHI. • Behrouz A Forouzan, Data Communications and Networking, Mc-Graw Hill. • Bret Wagner, Ellen Monk Enterprise Resource Planning, Cengage Learning. • Michael A. Gallo, William M. Hancock, Computer Communications and Networking Technologies, CENGAGE learning. • Vinod Kumar Garg, N.K. Venkitakrishnan, Enterprise Resource Planning: Concepts and Practice, Prentice Hall of India Pvt. Ltd. • William Stallings, Data and Computer Communications, PHI.

*Applicable for courses having practical component.