MAHARSHIDAYANANDSARASWATI UNIVERSITYAJMER

DEPARTMENT OF COMPUTER SCIENCE

Syllabus

Vocational Computer Applications (VCA)

VCAPart-I (Session- 2023-24)
Semester- I & II

MaharshiDayanandSaraswatiUniversity
Ajmer

TEACHING AND EXAMINATION SCHEME
Vocational Computer Applications
W.E.F. 2023-2024 (CBCS)
Semester I

Category	Type	Code	Paper Name (Theory)	Lec	Max Marks		Credits (L+T)
					Sessional	Semester	
CC	DCC	VCA-101	Computer Fundamentals & Multimedia	3	30	70	4

Category	Type	Code	Paper Name (Practical)	Prac Hrs.	Max Marks	Credits (L+T)
AE	SEC	VCA-102	Lab-Multimedia	3	50	2

Semester II

Category	Type	Code	Paper Name (Theory)	Lec			Credits (L+T)
CC	DCC	VCA-201	C Programming	3	30	70	4

Category	Type	Code	Paper Name (Theory)	Lec	Max Marks		Credits (L+T)
					Sessional	Semester	
CC	DCC	VCA-201	C Programming	3	30	70	4

Category	Type	Code	Paper Name (Practical)	Prac Hrs.	Max Marks	Credits (L+T)
AE	SEC	VCA-202	Lab-C Programming	3	50	2

VCA-101Computer Fundamentals & Multimedia
Unit 1
Introduction to Computer: Definition, Characteristics, Classification of Computers, Analog Computers, Digital Computers, Hybrid Computers, Classifications of computer on the basis of size and speed, Different type of computers Generations of Computers.

Computer keyboard, Pointing Devices, Mouse, track ball, Touch pad, joysticks, Touch–Sensitive Screens, Pen–based systems, Digitizer, Data Scanning Devices, Optical Recognition Systems, Bar Code Readers, Optical Mark Readers, Optical Scanners, Drum scanners, Hand scanner, Flatbed scanner, Web Camera, game pad, Digital Camera

Printer, Impact Printers, Daisy Wheel, Dot Matrix Printer, Line printer, Chain printers, Comb printers, Non impact printers, DeskJet, Inkjet printers, Laser printer, Thermal transfer printer, Barcode printers

Unit 2
Memory, Classifications, Random-access memory, volatile memory, Non-volatile memory, Flash memory, Read-only memory, Secondary Memory: The Cache Memory, Auxiliary Storage Memory, Memory Hierarchy, Storage Devices, Magnetic Tape, Magnetic Disk, Floppy Disk, Hard Disks, CD, DVD, Magneto-optical

Number system, Binary, octal, hexadecimal, addition, subtraction, multiplications, Computer Code: BCD, ASCII, EBCDIC Code, Excess-3 code, Gray Code, Software: User Interface, System software, Programming software, Application software Logic Gates: Logic gates and Boolean algebra representation and simplifications by k Map,.

Unit 3
Photoshop: Introduction, terms: layer, intensity, resolution, opacity, its features ,Opening and Importing images, Creating Documents with different sizes (default, international, custom), Editing images, Marquee, Move tool, Selection Tools: magic wand tool, quick selection tool, lasso tool: polygonal lasso tool, magnetic lasso tool ,Crop tool, slice tool, eyedropper tool, ruler tool: Brush tool: Spot healing brush tool, healing brush tool, patch tool, red eye tool, brush tool, Color: color replacement tool, Pen tool, Text tool: horizontal type tool, vertical type tool, Path selection tool, direct selection tool, invert selection Working with layers & layer styles, duplicate layer, merge layer, set layer visibility, group layers, Free Transformations, Perspective, Eraser tool, background eraser tool magic eraser, gradient tool paint bucket too, curve tools .

VCA-201C Programming
Unit 1
Overview of C Language: History of C, Character set, C tokens, Identifiers, Keywords, Data types, Variables, Constants, Symbolic Constants , Operators in C, Hierarchy of Operators, Expressions, Type Conversions and Library Functions.

Managing Input and Output Operation: Formatted and Unformatted I/O Functions, Decision making, branching and looping: Decision Making Statements - if Statement, if–else statement, nesting of if-else statements, else–if ladder, switch statement, ?: operator

Unit 2
Looping - while, do-while, for loop, Nested loop, break, continue, and goto statements. Functions: Function Definition, prototyping, types of functions, passing arguments to functions, Nested Functions, Recursive functions.

Arrays: Declaring and Initializing, One Dimensional Arrays, Two Dimensional Arrays, Multi-Dimensional Arrays - Passing arrays to functions. Strings: Declaring and Initializing strings, Operations on strings, Arrays of strings, passing strings to functions. Storage Classes - Automatic, External, Static and Register Variables

Unit 3
Structures-Declaring and Initializing, Nested structure, Array of Structure, Passing Structures to functions, Unions, typedef, enum, Bit fields. Pointers – Declarations, Pointer arithmetic, Pointers and functions, Call by value, Call by reference, Pointers and Arrays, Arrays of Pointers, Pointers and Structures. Meaning of static and dynamic memory allocation, Memory allocation functions.