C P PATEL AND F H SHAH COMMERCE (AUTONOMOUS) COLLEGE, ANAND
AFFILIATED TO SARDAR PATEL UNIVERSITY, VVNAGAR
AAA Reaccredited CGPA 3.56 - GRADE A+ KCG-Dept of Edu. Govt of Gujarat

NAAC Reaccredited - CGPA 3.30 - GRADE 'A+'UGC - MHRD, Govt of India

Bachelor of Vocation (Software Development) SEMESTER - II

COURSE STRUCTURE BASED ON UGC GUIDELINES & NEP – 2020

WITH EFFECT FROM DECEMBER – 2023

Subject		Course No.	Subject Title	Credit	Exam Duration	Marking Scheme		
						Int.	Ext.	Total
Discipline Specific Course Core(Major)	Core Course-1	BVS02MAC01	Problem Solving with Advanced Programming	4	2	50/18	50/18	100/36
	Practical of Core Course-1	BVS02MAC02	Problem Solving with Advanced Programming Practical Lab	4	2	50/18	50/18	100/36
Minor	Minor Course-1	BVS02MIC03	Web Application Development using HTML	2	1	25/09	25/09	50/18
	Practical of Minor Course-1	BVS02MIC04	Web Application Development using HTML Practical Lab	2	1	25/09	25/09	50/18
Multi - Disciplinary	Multi – Disciplinary Course-1	BVS02MDC05	Mathematics	2	1	25/09	25/09	50/18
	Practical of Multi – Disciplinary Course-1	BVS02MDC06	Mathematics Practical Lab	2	1	25/09	25/09	50/18
Ability Enhancement Course		BVS02AEC07	Business Communication - II	2	1	25/09	25/09	50/18
Skill Enhancement Course/Internship/ Dissertation		BVS02SEC08	Information Technology Fundamentals – II	2	1	25/09	25/09	50/18
IKS/Value Added Course(Any One)		BVS02VAC01	Environmental Studies	2	1	25/09	25/09	50/18
		BVS02VAC02	NCC-I	2	1	25/09	25/09	50/18
		BVS02VAC03	NSS-I	2	1	25/09	25/09	50/18
		BVS02VAC04	Yoga, Meditation & Happiness-I	2	1	25/09	25/09	50/18
Minimum Quantifying Credits				22				

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Syllabus as per NEP 2020 with Effect from December – 2023
Bachelor of Vocation (Software Development)
Semester - II

Course Code	BVS02MAC01	Title of the Course	**Problem Solving with Advanced Programming**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	To understand 1. Concepts of functions, structures and unions. 2. The fundamentals of pointers and file handling.

Course Content		
Unit	**Description**	**Weightage *(%)**
1.	**User-Defined Functions** – Introduction and need of user-defined functions – Components of user-defined functions – Methods of passing parameters to functions – Recursion	25%
2.	**Structures, Unions and Command-Line Arguments** – Introduction to structures – Structures and arrays – Structures within structures – Structures and functions – Unions – Command-Line Arguments	25%
3.	**Usage of Pointers** – Introduction, usage and understanding of pointers – Declaration and initialization of pointer variables – Accessing variables through pointers – Chain of Pointers (Pointer to Pointer) – Pointers and arrays – Pointers as function arguments – Pointers and structures – Dynamic memory allocation	25%

4.	**Usage of File Handling**
	   − Introduction to file handling
	   − File access modes
	   − Input Output operations on files
	   − Error handling during I/O operations
		25%

Teaching- Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern

Sr. No.	Details of the Evaluation	Weightage *(%)
1.	Internal Written/Practical Examination	50%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments.	
3.	External Examination	50%

Course Out comes: Having completed this course, the learner will be able to

1.	Implement programs based on the concepts of functions, structures and unions.
2.	Implement the programs based on pointers and work with files.

Suggested References:

Sr. No.	References
1.	Brian Kernighan and Dennis Ritchie : The C Programming Language
2.	Balaguru swami : Programming in ANSI C., Tata McGraw Hill Publication, 2019
3.	Kernighan B., Ritchie D.: The C Programming Language, Prentice Hall, 1988.
4.	Cooper H. & Mullish H: The Sprit of C, Jaico Publication House, New Delhi, 1988.

Course Code	**BVS02MAC02**	Title of the Course	**Problem Solving with Advanced Programming Practical Lab**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	1. To study the concepts of functions, structures and unions in C programming language. 2. To understand and the concepts of pointers and file handling.

Course Content		
Sr. No.	Description	**Weightage *(%)**
1.	Practical Based on Problem Solving with Advanced Programming (BVS02MAC01)	100%

Teaching – Learning Methodology	Project work in small groups, Hands on Training ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	**Weightage *(%)**
1.	Internal Written/Practical Examination	50%
2.	Internal Continuo us Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	
3.	External Examination	50%

Course Out comes : Having completed this course, the learner will be able to	
1.	Implement programs based on concepts of functions, structures and unions in C programming language.
2.	Implement programs based on concepts of pointers and file handling.

Course Code	**BVS02MIC03**	Title of the Course	**Web Application Development using HTML**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To learn the basic concepts of DHTML. 2. To study fundamentals of CSS and Scripting language.

Course Content		
Unit	**Description**	**Weightage *(%)**
1.	**DHTML & Cascading Style Sheet** – Introduction to DHTML, Applications of DHTML – Components of DHTML, – Introduction to Cascading Style Sheets (CSS) – Ways of specifying style – inline, internal, external – Basic Syntaxes, ID and CLASS selector, SPAN, DIV – Fonts, Color, Background, Text, Border, Lists, Layers, Margin, Links, Position.	50%
2.	**Introduction to Scripting** – Introduction to Scripting – Client Side Scripting vs. Server Side Scripting – How the Web works – Introduction to JavaScript – Applications and Advantages of JavaScript – Using JavaScript on a webpage	50%

Teaching - Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage *(%)
1.	Internal Written/Practical Examination	50%
2.	Internal Continuous Assessment in the form of Practical, Viva -voce, Quizzes, Seminars, Assignments, Attendance	
3.	External Examination	50%

Course Out comes : Having completed this course, the learner will be able to	
1.	Understand the basic concepts of DHTML, CSS and Scripting.
2.	Carry out web page development with the use of DHTML and CSS.

Suggested References:	
Sr. No.	References
1.	Ivan Bayross, "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI", BPB, 2004.
2.	Douglas E Comer: The Internet, PHI, Second Edition, May 2000.
3.	Wilton P., Jeremy McPeak: Beginning JavaScript, 4th Ed., Wiley Pub., 2010
4.	Danny Goodman, Machael Morrison: "JavaScript Bible", 6th Ed., Wiley Pub., 2010.
5.	Kogent Learning Solution Inc., "HTML5 Black Book", 2016.

Syllabus as per NEP 2020 with Effect from December – 2023
Bachelor of Vocation (Software Development)
SEM-II

Course Code	BVS02MIC04	Title of the Course	Web Application Development using HTML Practical Lab
Total Credits of the Course	2	Hours per Week	4

Course Objectives:	1. To study the basic concepts of scripting. 2. To acquire knowledge of CSS.

Course Content		
Sr. No.	Description	Weightage *(%)
1.	Practical Based on Web Application Development using HTML (BVS02MIC03)	50%

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage *(%)
1.	Internal Written/Practical Examination	50%
2.	Internal Continuous Assessment in the form of Practical, Viva -voce, Quizzes, Seminars, Assignments, Attendance	
3.	External Examination	50%

Course Out comes : Having completed this course, the learner will be able to
1.	Implement different concepts of scripting.
2.	Implement the knowledge of the fundamentals of DHTML,CSS.

Syllabus as per NEP 2020 with Effect from December – 2023
Bachelor of Vocation (Software Development)
SEM-II

Course Code	**BVS02MDC05**	Title of the Course	**Mathematics**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. Review the key Mathematics concepts that students should be familiar with in order to solve quantitative problems.
	2. To illustrate and to teach students the Mathematical functions and formulas that facilitates the application.

Course Content		
Unit	**Description**	**Weightage *(%)**
1	**Sets and Functions** − Set operations, algebra of sets, finite sets, power set, symmetric difference, Duality and applications. − Functions, composition of functions, one to one, onto and invertible functions, recursively defined functions - factorial and applications	50%
2	**Matrices and Data Analysis I** − Vectors in ∇n, dot product and norm on ∇n − Matrix - addition, multiplication, scalar multiplication, transpose, symmetric and skew symmetric matrices, upper and lower triangular matrices, and its applications upto order 3 − Construction of Frequency distribution − Measures of central tendency - mean, median, mode, geometric and harmonic means.	50%

Teaching-Learning Methodology	1. ICT Based Teaching Learning Approach 2. Blended Teaching Learning Approach for Calculation.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage *(%)
1.	Internal Written/Practical Examination	50%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	
3.	External Examination	50%

Course Out comes : Having completed this course, the learner will be able to	
1.	Students will be able to take us course of Calculus of multivariable functions.
2.	To study logical analysis in the field of computer science and data evaluation.
3.	To understand the concept of Matrix.

Suggested References :	
Sr. No.	References
1.	S. Lipschutz and M. l. Lipson, Discrete Mathematics, Schaum's Series (International Edition 1992).
2.	S. C Gupta, Fundamentals of Statistics, Himalaya Publishing House 2004.
3.	S. P Gupta, Statistical Methods, Sultan Chan and sons, 2004

Course Code	**BVS02MDC06**	Title of the Course	**Mathematics Practical Lab**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. Review the key Sets and Functions concepts that students should be familiar with in order to solve mathematical Problem. 2. To illustrate and to teach students the Matrices and Data Analysis.

Course Content		
Sr. No.	**Description**	**Weightage *(%)**
1.	Practical Based on Mathematics (BVS02MDC05)	50%

Teaching-Learning Methodology	1. ICT Based Teaching Learning Approach 2. Blended Teaching Learning Approach for Mathematical Calculation.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	**Weightage *(%)**
1.	Internal Written / Practical Examination	50%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	
3.	External Examination	50%

Course Out comes : Having completed this course, the learner will be able to	
1.	Students will be able to take us course of mathematical calculation.
2.	To study logical analysis in the field of computer science and data evaluation.
3.	To understand the concept of Matrix.

Course Code	**BVS02AEC07**	Title of the Course	**Business Communication - II**
Total Credits of the Course	**2**	Hours per Week	**4**

Course Objectives:	1. To understand and use notions and functions of language for communicative purpose.
	2. To prepare reports of various events.
	3. To draft e-mails efficiently.
	4. To prepare effective job application and resume and face interviews confidently.
	5. To make healthy discussion by actively participating in debates or group discussions.
	6. To prepare and make power point presentation on various occasions

Course Content		
Unit	**Description**	**Weightage *(%)**
1.	**Oral Communication Skills & Job Skills** − Effective presentation Skills; Putting the message across, Body Language, − Proxamics and Kinesics, dealing with Nearves, Using Visual Aids − Language of Meetings and participating in a seminar Telephone Techniques − Writing Job Application and CV − Interview Skills i.e., General Preparation for an Interview, Types of Questions generally asked in interviews, Types of interviews, Importance of non-verbal aspect. − Self-development Skills: i.e., Assertiveness, Stress Management, Time Management − Interpersonal Skills: Team Development Skills i.e., Team Talk Dynamics, Communication in Teams, Leadership Skills, Giving Feedback (Johari Window etc.)	50%

2	**Writing Skills and Individual Project**	
	− Issues in Writing Business Letters i.e., Structure and Types of Business	
	− Letters, Letters of Inquiry, Complaint, Adjustment and Regret	
	− Report Writing Skills i.e., Types of Reports, Characteristics of a Good Report, Preparing and Organizing a Report and Individual reports (a report about the need to computerize the activities of your department)	
	− Students can be made to work individually on detailed projects based on the following topics. However, the list given below is not exhaustive and thus any topic related to the areas of Communication and Personality Development can be worked upon in the interest of the students:	50%
	− Process of Communication	
	− Barriers of Communication	
	− Types of Communication	
	− Objectives of Communication	
	− Stress Management	
	− Time Management	
	− Leadership Quality	
	− Teamwork	
	− Body Language	
	− Presentation Skills	
	− Group Discussion Skills	
	− Personal Interview Skills	
	− Feedback Skills	

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	**Weightage *(%)**
1.	Internal Written/Practical Examination	50%
2.	InternalContinuousAssessmentintheformofPractical,Viva-voce,Quizzes,Seminars,Assignments,Attendance	
3.	External Examination	50%

Test Method:		
Division of Marks (External Exam)		
1.	Individual Presentation and Project	10 Marks
2.	Note Taking and Note Making	10 Marks
3.	Job Application and CV	10 Marks
4.	Business Letters	10 Marks
5.	Report Writing	10 Marks
	Total:	**50 Marks**

Note:

- The students will have to bring certified copy of his / her project manuscript to the centre of external examination for the perusal of examiners and respond to the queries and questions of examiners related to same. The topic for the project should be selected from the ones enlisted in syllabi of the First and Second Semesters.
- Individual Presentations will have to be done by the students orally on the topic of their project. The presentation should not exceed five minutes.
- On We Go (6 above) is to be used for Note-taking and Note-making exercises.

Course Out comes : Having completed this course, the learner will be able to	
1.	Understand and use notions and functions of language for communicative purpose.
2.	Prepare reports of various events.
3.	Draft e-mails efficiently.
4.	Prepare effective job application and resume and face interviews confidently.
5.	Make healthy discussion by actively participating in debates or group discussions.
6.	Prepare and make power point presentation on various occasions.

Suggested Referensces :	
Sr.No.	References
1.	Rajendra Pal and J S Korlahalli, essentials of Business Communication, Sultan Chand and sons www.britishcouncil.com
2.	Chrissie Wright, Communication Skills, Jaico Publication.
3.	Sunita Mishra and C. Murali Krishna, Communication Skills for Engineers Pearson Education.
4.	Meenakshi Raman and Sangita Sharma, Technical Communication; Principles and Practice, Oxford University Press.
5.	On We Go, BBC's Audio-Visual Course.

Course Code	**BVS02SEC08**	Title of the Course	**Information Technology Fundamentals – II**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To impart basic knowledge on Internet, web browsers, search engines and social networks 2. To learn different types of communication technologies 3. To study fundamental concepts related to computer networks

Course Content		
Unit	**Description**	**Weightage *(%)**
1	**Internet Usage for E-learning** − Introduction to Internet and Web Browsers − Basics of search engines and their functionalities, searching information, saving web pages, downloading files, etc. − Open learning sites- Wikipedia, Wikispaces, Wikieducator etc. − Open freewares − Introduction and examples − Advanced Social Networking	50 %
2	**Communication Technologies** − Different communication mechanisms − E-mail: Writing e-mails to single and multiple users, attaching a file, Marking CC and BCC, Creating exclusive communication groups − LCD Projectors: Using LCD projectors for making an audiovisual presentation − Tele/Video Conferencing − Blogging and chatting − Fax and Mobiles	50 %

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

Evaluation Pattern		
Sr. No.	Details of the Evaluation	**Weightage *(%)**
1	Internal Written/Practical Examination Internal Continuous Assessment in the form of Practical, Viva voce, Quizzes, Seminars, Assignments, Attendance	50%
2	External Examination	50%

Course Out comes : Having completed this course, the learner will be able to	
1	Understand the basics of Information and communication technology
2	Explore the applications of ICT in infrastructure

Suggested References :	
Sr. No.	References
1.	Online relevant references.
2.	Behrouz Forouzan, introduction to data communications and networking, Tata McGraw-Hill Publishing co. Ltd., New Delhi, 1998, 4th edition.
3.	Tanenbaum A. S., Computer Networks, 3rd Edition Prentice-Hall of India Pvt. Ltd., New Delhi, 1997.

Course Code	**BVS02VAC01**	Title of the Course	**Environmental Studies**
Total Credits Of the Course	**2**	Hours per Week	**2**

Course Objectives:	The course will enable the student teachers to 1. To aware the students about Environmental effects on human beings 2. Natural resources and its Impact 3. Provide Information on Renewable resources

Course Content		
Unit	**Description**	**Weightage* (%)**
1	**Introduction to Environmental studies, Ecosystems and Natural Resources** – Definition, Scope and importance of Environmental Studies – Multidisciplinary nature of environmental studies – Component of Environment: Atmosphere, Hydrosphere, Lithosphere, Biosphere – Biogeochemical cycles: Carbon cycle and Nitrogen cycle – Concept of sustainability and sustainable development. – Definition and Structure of ecosystem – Abiotic and Biotic components – (Producers, Consumers and Decomposers) – Functions of Ecosystem: Energy flow in an ecosystem, Food chains, Food webs with examples – Classification -Renewable & Non-renewable Resources and types	50 %
2	**Biotic Interactions** – Positive Interactions with suitable examples – A. Mutualism – B. Commensalism – C. Proto-cooperation – Negative Interactions with suitable examples – A. Exploitation – B. Competition – C. Antibiosis	50 %

Teaching-Learning Methodology	Lecture-cum-discussion, Group Discussion, Presentations, Seminars, tutorials, Research Exercises

Evaluation Pattern		
Sr. No.	Details of the Evaluation	**Weightage *(%)**
1.	Internal Written/Practical Examination	50%
2.	InternalContinuousAssessmentintheformofPractical,Viva-voce,Quizzes,Seminars,Assignments,Attendance	
3.	External Examination	50%

Course Out comes: Having completed this course, the learner will be able to	
1.	To know Equitable use of resources for sustainable lifestyles
2.	Significance of Environment
3.	Forest & Water Resources in India
4.	Role of Individual in conservation of Natural Resources

Suggested References:	
Sr. No.	References
1.	Social Learning in Environmental Management: Towards a Sustainable Future by Meg Keen, Valerie A. Brown, Rob Dyball
2.	Principles of Environmental Science by William P. Cunningham and Mary Ann Cunningham
3.	Principles of Environmental Science by William P. Cunningham and Mary Ann Cunningham
4.	Lad, V., & Frawley, D. (1986). The Yoga of Herbs: An Ayurvedic Guide to Herbal Medicine. Lotus Press.
5.	Environmental Studies From Crisis to Cure by R. Rajagopalan