પરિપત્ર:

ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટીની સાયન્સ વિદ્યાશાખાનાં અભ્યાસક્રમ ચલાવતી તમામ સંલગ્ન કોલેજોનાં આચાર્યશ્રીઓને સવિનય જણાવવાનું કે સાયન્સ વિદ્યાશાખા હેઠળનો NEP-૨૦૨૦ અંતર્ગતનો બેચલર ઓફ કોમ્પ્યુટર સાયન્સ વિષયનો (કોમ્પ્યુટર સાયન્સ વિથ ઓનર્સ) નો સેમેસ્ટર-૨ નો અભ્યાસક્રમ આ સાથે સામેલ છે.

માનનીય કુલપતિશ્રીની મંજુરી અનુસાર સદર અભ્યાસક્રમ શૈક્ષણિક વર્ષ જુન,૨૦૨૩થી અમલવારી કરવાની રહે છે. સાયન્સ વિદ્યાશાખાનાં અભ્યાસક્રમ ચલાવતી તમામ સંલગ્ન કોલેજો ધ્વારા તેની અમલવારી કરવા જણાવવામાં આવે છે.

૨૧/૧૨/૨૦૨૩

ખાસ ફરજ પરના અધિકારી
(એકેડેમિક)

ક્રમાંક/બીકેએનએમયુ/એકેડેમિક/૨૧૩૧/૨૦૨૩-૨૦૨૪
ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટી,
સરકારી પોલીટેકનિક કેમ્પસ,
ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટી રોડ,
ખડીયા, જૂનાગઢ-૩૬૨૨૬૩
તા.૨૧/૧૨/૨૦૨૩

પ્રતિ,

- ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટી સંલગ્ન સાયન્સ વિદ્યાશાખાનાં અભ્યાસક્રમો ચલાવતી તમામ કોલેજોના આચાર્યશ્રીઓ તરફ....

નકલ સાદર રવાનાઃ-

- માન.કુલપતિશ્રી/કુલસચિવશ્રીનાં અંગત સચિવશ્રી.
- પરીક્ષા નિયામકશ્રી, ભક્તકવિ નરસિંહ મહેતા યુનિવર્સિટી, જુનાગઢ

નકલ રવાના જાણ તથા યોગ્ય કાર્યવાહી અર્થેઃ

- સીસ્ટમ મેનેજરશ્રી, આઇ.ટી.સેલ વિભાગ (વેબસાઇટ ઉપર પ્રસિદ્ધ થવા અર્થે.)

Bhakta Kavi Narsinh Mehta University
Junagadh

BOARD OF BACHELOR OF COMPUTER SCIENCE STUDIES

FACULTY OF SCIENCE

SYLLABUS FOR

BACHELOR OF COMPUTER SCIENCE

(HONOURS) PROGRAMME

(SEMESTER- II)

EFFECTIVE FROM JUNE, 2023

Programme Structure of B.C.A.-1 & 2

Program name	code	Course name	CREDIT		
BCA-1	Minor		THEORY	PRACTI	TOTAL
LEVEL 4.5	MAJOR-1	PROBLEM SOLVING METHODOLOGIES AND PROGRAMMING IN C (Theory)	4	0	4
	MAJOR-2	PROBLEM SOLVING METHODOLOGIES AND PROGRAMMING IN C (Practical)	0	4	4
	MINOR-1	BASICS OF WEB PAGE DEVELOPMENT	3	1	4
	MDC-1	COMPUTER FUNDAMENTALS AND EMERGING TECHNOLOGY	4	0	4
	AEC-1	ENGLISH/HINDI/GUJARATI/SANSKRIT	2	0	2
	SEC-1	OFFICE AUTOMATION	1	1	2
	VAC-1	IKS	2	0	2
	OJT/RP	----------	---------		
BCA-2					
LEVEL 4.5	MAJOR-3	Data Structure using C (Theory)	4	0	4
	MAJOR-4	Data Structure using C (Practical)	0	4	4
	MINOR-2	Web Programming using PHP	3	1	4
	MDC-2	Computer Organization and Architecture	4	0	4
	AEC-2	ENGLISH/HINDI/GUJARATI/SANSKRIT	2	0	2
	SEC-2	Basic concepts of Networking and Internet	2	0	2
	VAC-2	The student has to select any one from the basket which is given separately on university website	2	0	2
	OJT/RP	----------	---------		

B.C.A. SEMESTER-2

Evaluation Scheme, Distribution of marks and Passing Standards : Annexure-1, Annexure-2, Annexure-3 attached at the end of this syllabus

Major – 3: Data Structure using C(Theory)

Name of Program	Name of course	Course Code	Total Teaching Hours	Weekly Credits		Total Credits
B.C.A.	Data Structure using C (Theory)	Major-3	Theory-60 Practical-0	Theory 4	Practical Credit 0	4

Objectives:

- To understand various data structures
- To understand internal and external data storage mechanism
- To learn how to program different data storage structures
- To understand dynamic allocation and usage of memory

Outcomes:

- Learning various data management concept

- Gaining knowledge about various data storage and manipulation techniques
- Having ability to implement various data structures using programs

UNIT		Hours
1	**Introduction to Data structure** • Data Management concepts • Foundation terms of a data structure : Interface and Implementation • Characteristics of a Data Structure : Correctness, Time Complexity & Space Complexity • Need for Data Structure : Data Search, Processor speed and Multiple requests • Basic Terminology of data structure : Data, Data Item, Group Items, Elementary Items, Attributeand Entity, Entity Set, Field, Record, File • Data types – primitive and non-primitive • Types of Data Structures- Linear & Non Linear Data Structures. **Array** o Representation of arrays o Applications of arrays **Pointers** o Declaring and initializing pointers o Pointer arithmetic **Structure** o Declaring and using structure **Sorting & Searching** o Sorting ▪ Bubble Sort ▪ Selection Sort ▪ Quick Sort ▪ Merge Sort o Searching ▪ Linear Search ▪ Binary Search	12
2	**Stack and Queue** • Stack o Stack-Definitions & Concepts o Operations On Stacks o Applications of Stacks o Polish Expression o Reverse Polish Expression and their Compilation • Queue o Representation Of Queue o Operations On Queue o Circular Queue o Priority Queue o o Array representation of Priority Queue	12

	○ o Double Ended Queue ○ o Applications of Queue	
3	**Dynamic Memory allocation:** • What is Dynamic memory allocation? • malloc( ), calloc( ), realloc( ) and free( ) function **Linked List:** ▪ Singly Linked List: ○ Building a linked list ○ Traversing a linked list ○ Insertion in a linked list ▪ As a first node ▪ As a last node ▪ At specific location ○ Deletion of a node ▪ First node ▪ Last node ▪ Specific node ○ Searching of linked lists ○ Sorting of linked list ○ Merging linked list ▪ Doubly Linked list (traversing, insertion and deletion) ▪ Linked list implementation of Stack ▪ Linked list implementation of Queue ▪ Applications of linked list.	12
4	**Non linear Data Sstructure** ▪ Tree ○ Definitions and Concepts ○ Representation of binary tree ○ Binary tree traversal (inorder, postorder, preorder) ▪ Graph o Basic concepts and definitions o Elementary Graph operations ○ Breadth First Search ○ Depth First Search ○ Spanning Trees ○ Shortest path	12
5	▪ File Structures Basic concepts of File and file systems File system services Disk space allocation MS_DOS FATfile system File allocation table tree-structured directory system	12

Evaluation Scheme, Distribution of marks and Passing Stnadard : Annexure-1, Annexure-2, Annexure-3 attached at the end of this syllabus

Reference Books	Name	Author / Publication
1	Data Structures through C	Yashwant Kanetkar (BPB)
2	Expert Data Structure with C	R B Patel (Khanna Publication).
3	Data Structure through C/C++	Tennaunbuam
4	Pointer in C	Yashwant Kanetkar
5	Let us C	Yashwant Kanetkar

Web site References:

- https://www.tutorialspoint.com/data_structures_algorithms/data_structure_overview.htm
- https://www.geeksforgeeks.org/data-structures/
- https://www.includehelp.com/c-programming-data-structure-examples.aspx
- https://www.sitesbay.com/data-structure/c-data-structure

Major – 4:Data Structure using C (Practical)

Name of Program	Name of course	Course Code	Total Teaching Hours	Weekly Credits		Total Credits
B.C.A.	Data Structure using C (Practical)	Major-4	Theory-0 Practical-120	Theory 0	Practical Credit 4	4

Objectives:

- To understand various data structures
- To understand internal and external data storage mechanism
- To learn how to program different data storage structures
- To understand dynamic allocation and usage of memory

Outcomes:

- Learning various data management concept
- Gaining knowledge about various data storage and manipulation techniques
- Having ability to implement various data structures using programs

UNIT		Hours
1	**Introduction to Data structure** • Data Management concepts • Foundation terms of a data structure : Interface and Implementation • Characteristics of a Data Structure : Correctness, Time Complexity & Space Complexity • Need for Data Structure : Data Search, Processor speed and Multiple requests • Basic Terminology of data structure : Data, Data Item, Group Items,	24

	Elementary Items, Attributeand Entity, Entity Set, Field, Record, File • Data types – primitive and non-primitive • Types of Data Structures- Linear & Non Linear Data Structures. **Array** o Representation of arrays o Applications of arrays **Pointers** o Declaring and initializing pointers o Pointer arithmetic **Structure** o Declaring and using structure **Sorting & Searching** o Sorting ▪ Bubble Sort ▪ Selection Sort ▪ Quick Sort ▪ Merge Sort o Searching ▪ Linear Search ▪ Binary Search	
2	**Stack and Queue** • Stack o Stack-Definitions & Concepts o Operations On Stacks o Applications of Stacks o Polish Expression o Reverse Polish Expression and their Compilation • Queue o Representation Of Queue o Operations On Queue o Circular Queue o Priority Queue o o Array representation of Priority Queue o o Double Ended Queue o o Applications of Queue	24
3	**Dynamic Memory allocation:** • What is Dynamic memory allocation? • malloc( ), calloc( ), realloc( ) and free( ) function **Linked List:** ▪ Singly Linked List: o Building a linked list o Traversing a linked list o Insertion in a linked list ▪ As a first node ▪ As a last node	24

	▪ At specific location o Deletion of a node ▪ First node ▪ Last node ▪ Specific node o Searching of linked lists o Sorting of linked list o Merging linked list ▪ Doubly Linked list (traversing, insertion and deletion) ▪ Linked list implementation of Stack ▪ Linked list implementation of Queue ▪ Applications of linked list.	
4	**Non linear Data Sstructure** ▪ Tree o Definitions and Concepts o Representation of binary tree o Binary tree traversal (inorder, postorder, preorder) ▪ Graph o Basic concepts and definitions o Elementary Graph operations o Breadth First Search o Depth First Search o Spanning Trees o Shortest path	24
5	▪ File Structures o Basic concepts of File and file systems o File system services o Disk space allocation o MS_DOS FATfile system o File allocation table o tree-structured directory system	24

Evaluation Scheme, Distribution of marks and Passing Stnadard : Annexure-1, Annexure-2, Annexure-3 attached at the end of this syllabus

Reference Books:	**Name**	**Author / Publication**
1	Data Structures through C	Yashwant Kanetkar (BPB)
2	Expert Data Structure with C	R B Patel (Khanna Publication).
3	Data Structure through C/C++	Tennaunbuam
4	Pointer in C	Yashwant Kanetkar
5	Let us C	Yashwant Kanetkar

Web site References:

- https://www.tutorialspoint.com/data_structures_algorithms/data_structure_overview.htm
- https://www.geeksforgeeks.org/data-structures/
- https://www.includehelp.com/c-programming-data-structure-examples.aspx
- https://www.sitesbay.com/data-structure/c-data-structure

Minor – 2 :Web Programming using PHP

Name of Program	Name of course	Course Code	Total Teaching Hours	Weekly Credits		Total Credits
B.C.A.	Web Programming using PHP	Minor-2	Theory- 45 Practical-30	Theory credit 3	Practical credit 1	4

Objectives:

- To understand the basics of web programming
- To learn various building blocks of PHP for web programming
- To understand how to use AJAX with PHP
- To learn how to use PHP to query the affiliated data from database

Outcomes:

- To be able to understand the requirements of proposed web site designing
- Having the ability to design and develop web site for any domain
- Gaining skill to interact and manipulate various database related operations

UNIT	Discription	Hours
1	• **Web Programming** o Static and Dynamic Web o Client side &Server side Scripting o Introduction to other Server side languages o Webserver (IIS & Apache) o Web Hosting, Virtual Host, Multi-Homing o Distributed Web Server Overview • **PHP Basic** o Introduction to PHP o PHP configuration in IIS & Apache Web server o Understanding of PHP.INI file o Understanding of PHP .htaccess file o PHP variable o Static & Global variables o GET & POST method o PHP Operators o Conditional Structure & Looping Structure o Array • **PHP Function** o **User Defined Functions:** argument function default argument function variable function return function o **Variable Length Argument Functions:**	12

	func_num_args, func_get_arg, func_get_args ○ **Variable Functions:** gettype, settype, isset, unset, strval, floatval, intval, print_r ○ **String Functions:** chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim trim, substr, strcmp, strcasecmp,strpos, strrpos, strstr, stristr, str_replace, strrev, echo, print, explode, implode, join,md5, str_split, str_shuffle, ucfirst, ucwords. ○ **Math Functions:** abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand, bindec, decbin, hexdec, dechex,is_finite, is_infinite ○ **Date Functions:** date, getdate, setdate, checkdate, time, mktime, date_add, date_create, date_format,gmdate, localtime, strftime ○ **Array Functions:** count, list, in_array, current, next, previous, end, each, sort, rsort, assort, arsort,array_merge, array_reverse, array_diff, array_unique, array_key_exists, array_push,array_pop, array_search ○ **Miscellaneous Functions:** define, constant, include, require, header, die, exit ○ **File Handling Functions:** fopen, fread, fwrite, fclose, file_exists, is_readable, is_writable, fgets, fgetc, file,file_get_contents, fputs, file_put_contents, ftell, fseek, rewind, copy, unlink, rename,move_uploaded_file	
2	• **Handling Form, Session Tracking & PHP Components** ○ Handling form with GET & POST ○ Cookie ○ Session ○ Server Variable ○ PHP Components: PHP GD Library PHP Regular expression Uploading file Sending mail using mail() Sending mail using smtp() • **AJAX** ○ What is AJAX ○ PHP with AJAX ○ How AJAX works with PHP ○ Working with AJAX as background process ○ Using JQuery with PHP JQuery AJAX with PHP	11
3	• **Introduction of SQL, MySQL Functions** ○ Working with MySQL using PhpMyAdmin	11

	○ SQL DML Statement (Insert, Update, Select, Delete) Command ○ MySQLi Functions: ○ mysqli_connect,mysqli_select_db, mysqli_query, mysqli_affected_rows,mysqli_num_rows, mysqli_autocommit, mysqli_commit, mysqli_fetch_array,mysqli_fetch_assoc, mysqli_fetch_object, mysqli_fetch_row, mysqli_prepare	
4	• **Web Services** ○ XML and JSON ○ Introduction to JSON ○ Installation & Configuration ○ Resource Types ○ JsonSerializable ○ JSON Functions: json_decode, json_encode • **jQuery** ○ What is jQuery? ○ Query Syntax ○ jQuery Selector: Element Selector Class Selector ID Selector ○ jQuery Events: click, dbclick, keypress, keydown, keyup, submit, change, focus, blur, load, resize, scroll,unload ○ jQuery Effects: hide show, fade, slide	11
5	• **Practical**	30

Evaluation Scheme, Distribution of marks and Passing Stnadard : Annexure-1, Annexure-2, Annexure-3 attached at the end of this syllabus

Reference Books: No.	**Name**	**Author / Publication**
1	Modern PHP: New Features and Good Practices	Josh Lockhart(ORELLY)
2	PHP Cookbook: Solutions & Examples for PHP Programmers	David Skylar and Adam Trachtenberg (ORELLY)
3	Programming PHP	Kevin Tatroe and Peter MacIntyre ORELLY)
4	PHP for the Web: Visual QuickStart Guide (4th Edition)	Larry Ullman (Peachpit Press).

Web site References:

- http://php.net/manual/en/book.mysqli.php
- https://www.w3schools.com/php/php_ref_mysqli.asp
- https://www.tutorialspoint.com/index.htm

MDC - 2 : Computer Organization and Architecture

Name of Program	Name of course	Course Code	Total Teaching Hours	Weekly Credits	Total Credits
B.C.A.	Computer Organization and Architecture	MDC-2	Theory-60	Theory4 credit	4

Objective:

- To understand about basic physical components of computer
- To understand digital components of computer
- To learn digital aspects of processing
- To understand how digital logic circuits work

Outcomes:

- Gaining understanding about physical and logical components of computer
- To be able to draw and analyse various digital circuits
- Having understanding about CPU, Input output peripherals and memory organization

UNIT		Hours

1	**Digital Logic Circuits**
	• Block diagram of Digital Computers
	• Logic Gates
	  ○ AND
	  ○ OR
	  ○ INVERTER
	  ○ BUFFER
	  ○ NAND
	  ○ NOR
	  ○ XOR
	  ○ XNOR
	  ○ Above gates with graphic symbol, algebraic function and truth table
	• Boolean Algebra
	Boolean Function, truth table, logic diagram, Boolean expression, Basic identities ofBoolean algebra, DeMorgans Theorem, Complement of a function, simplification ofBoolean expression using Boolean algebra
	• Map Simplification
	minterms, adjacent squares, two, three and four variable function simplification,product of sum simplification, NAND and NOR
		12

	implementation, Don't care conditions,example of map simplification using two, three and four variable, sum of productconcept	

2	**Combinational circuits, Flip flop and Sequential circuits**
	• Combinational Circuit
	  o Block diagram of Combinational Circuit
	  o analysis and design of combinational circuit like Half Adder and Full Adder
	• Flip Flops
	  o Concept of Clock pulse
	  o SR Flip-flop
	  o D Flip-flop
	  o JK Flip-flop
	  o T Flip-flop
	  o Edge-Triggered
	  o Master-slave Flip-flop
	  o Excitation table of Flip-flop
	• Sequential Circuit
	  o Concept and meaning of Sequential circuit
	  o Flip-flop Input equation
	  o State table
	  o State diagram
	  o example of Designing of different sequential circuit
		12

3	**Digital Components** • Integrated circuits Concept of IC, SSI, MSI, LSI, VLSI, TTL, ECL, MOS, CMOS • Decoders Concept of decoder, 2 to 4 line decoder, 3 to 8 line decoder, decoder with enable input,NAND gate decoder, Decoder expansion • Encoders Concept of encoder, Octal to binary encoder • Multiplexer Concept of Multiplexer, 2 to 1 line multiplexer, 4 to 1 line multiplexer, quadruple 2 to 1line multiplexer • De-multiplexer: Concept of De-Multiplexer: 1 to 4 line de-multiplexer • Register Concept of Register, loading of register, 4-bit register, register with parallel load, shiftregister, bidirectional shift register with parallel load, • Counter Concept of Binary counter, 4-bit synchronous binary counter, 4-bit binary counter withparallel load	12
4	**Central Processing Unit:** • Introduction of CPU • Major components of CPU • Concept of different Computer register	12

	• Registers for the Basic Computer (DR, AR, AC, IR, PC, TR, INPR, OUTR)
	• Register symbol, name, number of bits and function is brief
	• General Register Organization
	  o Control word
	• Stack Organization:
	  o Register stack
	  o Memory stack
	  o Polish Notation
	• Reverse Polish Notation	

5	**Input-Output Organization and Memory Organization:**
	Input-Output Organization
	• IO Interface
	  o Concept of I/O interface
	  o I/O Bus and Interface modules
	• I/O versus Memory Bus, example of I/O interface unit
	• DMA
	  o Concept of DMA
	  ▪ bus request
	  ▪ bus grant
	  ▪ burst transfer
	  ▪ cycle stealing
	  o DMA Controller
	  o DMA transfer
	• IOP
	  o Concept of IOP
	  o I/O processing
	  o block diagram of computer with I/O processor
	Memory Organization
	• Memory Hierarchy
	  o Memory hierarchy in a computer system
	• Only brief concept of
	  o Auxiliary memory
	  o cache memory
	  o Main Memory
	  o Bootstrap loader
	  o computer start-up
	• RAM and Rom Chips
	• Typical RAM chip block diagram and function table
	• Typical ROM chip block diagram
		12

Evaluation Scheme, Distribution of marks and Passing Stnadard : Annexure-1, Annexure-2, Annexure-3 attached at the end of this syllabus

Reference Books:

No.	Name	Author / Publication
1	Computer System Architecture	By M. Morris Mano
2	Digital Logic And Computer Design	By M. Morris Mano
3	Digital Computer Electronics	By Malvino And Leach

Website References

- https://www.tutorialspoint.com/computer_organization/index.asp
- https://www.techtud.com/computer-science-and-informationtechnology/computer-organization-and-architecture
- https://www.studytonight.com/computerarchitecture/architecture-of-computer-system

SEC-2 : Basic concepts of Networking and Internet

Name of Program	Name of Course	Course Code	Total Teaching Hours	Weekly Credits	Total Credits
B.C.A.	Basic concepts of Networking and Internet	SEC - 2	Theory-30	Theory 2 Credits	2

Course Objectives:

- To understand basic terms of computer networks and Internet
- To gain insight into the usage of internet technology

Course Outcomes:

- Gaining understanding on how computer network works and how it is implemented
- Gaining understanding on how internet works and how it is useful in today's scenario

Units	Title of the Unit and the Topics	No. of Lectures
Unit 1	**Introduction to Computer Network** • Basics of Computers • Computer Network • Type of Computer Network • Network Topology • OSI Reference Model (Introduction) • TCP/IP • Internet Terminology • ISP (Internet Service Provider) • Intranet • VSAT (very small aperture terminal)URL	10

Unit 2	**Basics of Internet**
	• Evolution of World Wide Web (WWW)
	• Types and uses of various Search Engines
	• Remote Communication
	  o Login
	  o Applications
	  o advantages
	  o disadvantages
	• Electronic Mail (Email)
	• Concept and use of :
	  o E-Commerce
	  o E-Business
	  o E-Governance
	  o Mobile Commerce
	• **Website Basics**
	WebPages, Hyper Text Transfer, URL , Domain Names, Domain name server, Internet Protocol, File Transfer Protocol, Protocol Address, Website(Static, Dynamic, Responsive), Web browser, Web Servers, Web Hosting, web portal
		10

Unit 3	• **Network Security Concepts:**
	  o Cyber Law
	  o Firewall
	  o Cookies
	  o Hackers and Crackers
	• **Types of Payment System:**
	  o Digital Cash
	  o Electronic Cheque
	  o Smart Card
	  o Debit/Credit Card
	  o Net banking
	  o UPI
		10

Evaluation Scheme, Distribution of marks and Passing Stnadard : Annexure-1, Annexure-2, Annexure-3 attached at the end of this syllabus

References:

Reference Books: No.	**Name**	**Author / Publication**
1	Internet The Complete Reference	Young.
2	Internet for Every One	Leon.

Web site References:

- https://www.geeksforgeeks.org/basics-computer-networking/
- https://www.tutorialspoint.com/basics_of_computer_science/basics_of_computer_science_internet.htm

Annexure-1

Course Structure, Question Paper Structure & Assessment Schemes for B.C.A. / B.Sc. (IT)

Sr.no.	Course Category	Course Credits	Weekly Theory Hours	Weekly Practical Hours	Weekly Total Hours	Weekly Theory Credit	Weekly Practical Credit	Weekly Total Credit	External Theory Exam Time
1	Theory Plus Practical	4	3	2	5	3	1	4	2:00 Hrs
2	Only Theory	4	4	0	4	4	0	4	2:00 Hrs
3	Only Practical	4	0	8	8	0	4	4	
4	Only Project	4	0	8	8	0	4	4	
5	Theory Plus Practical	2	1	2	3	1	1	2	1:00 Hrs
6	Only Theory	2	2	0	2	2	0	2	1:00 Hrs
7	Only Practical	2	0	4	4	0	2	2	
8	Only Project	2	0	4	4	0	2	2	
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit									

SEMESTER END EVALUATION (SEE) :…….…… 50%
CONTINUOUS & COMPREHENSIVE EVALUATION (CCE) : ……..50%

Passing Standard : Minimum 36% Marks in External Assessment & Minimum 36% Marks in Internal Assessment

Internal Evaluation Schemes: (1). Four Credit Subjects Annexure-2
(2). Two Credit Subjects Annexure-3

1. Four Credit Theory Plus Practical Course

SR.NO.	CREDIT	COURSE CATEGARY
1	4	THEORY + PRACTICAL
4 Credit Theory Plus Practical Course:		

Syllabus Structure				
Unit	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Theory-1	12	45	75
2	Theory-2	11		
3	Theory-3	11		
4	Theory-4	11		
5	Practical	30	30	
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	50	2:00 Hrs

EXTERNAL THEORY Q.1. Questions from Unit-1 (Any Two Out Of Four) (Marks 10) Q.2. Questions from Unit-2 (Any Two Out Of Four) (Marks 10) Q.3. Questions from Unit-3 (Any Two Out Of Four) (Marks 10) Q.4. Questions from Unit-4 (Any Two Out Of Four) (Marks 10) Q.5. Questions from Unit-1 to 4 (Any Two Out Of Four) (Marks 10)		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	50	
Internal (1) Practical Examination…….....(Marks 25) (2) Any 5 Components each of 5 Marks as par Annexure-2 (Marks 25)		

2. Four Credit Only Theory Course

SR.NO.	CREDIT	COURSE CATEGARY
2	4	THEORY
4 Credit Only Theory Course:		

Syllabus Structure				
Unit	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Theory-1	12	60	60
2	Theory-2	12		
3	Theory-3	12		
4	Theory-4	12		
5	Theory-5	12		
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	50	2:00 Hrs
EXTERNAL Q.1. Questions from Unit-1 (Any Two Out Of Four) (Marks 10) Q.2. Questions from Unit-2 (Any Two Out Of Four) (Marks 10) Q.3. Questions from Unit-3 (Any Two Out Of Four) (Marks 10) Q.4. Questions from Unit-4 (Any Two Out Of Four) (Marks 10) Q.5. Questions from Unit-5 (Any Two Out Of Four) (Marks 10)		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	50	
Internal (1) Mid term Examination…….....(Marks 25) (2) Any 5 Components each of 5 Marks as par Annexure-2 (Marks 25)		

3. Four Credit Only Practical Course

SR.NO.	CREDIT	COURSE CATEGARY
3	4	PRACTICAL
4 Credit Only Practical Course:		

Syllabus Structure				
Unit	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Practical -1	24	120	120
2	Practical -2	24		
3	Practical -3	24		
4	Practical -4	24		
5	Practical -5	24		
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	50	2:00 Hrs
EXTERNAL Practical ➔ EXTERNAL Practical (Unit 1 to 5)		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	50	
Internal Practical (1) Internal Practical …….…..... ……(Marks 25) (2) Any 5 Components each of 5 Marks as par Annexure-2 (Marks 25)		

4. Four Credit Only Project Course

SR.NO.	CREDIT	COURSE CATEGARY
4	4	Project
4 Credit Only Project Course:		

Syllabus Structure				
Unit	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Project	120	120	120
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	50	2:00 Hrs
EXTERNAL ➔ EXTERNAL Project Evauation		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	50	
Internal (1) Internal Project Evaluation ……....(Marks 25) (2) Any 5 Components each of 5 Marks as par Annexure-2.(Marks 25)		

5. Two Credit Theory Plus Practical Course

SR.NO.	CREDIT	COURSE CATEGARY
5	2	THEORY + PRACTICAL
2 Credit Theory Plus Practical Course:		

Syllabus Structure				
Unit	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Theory-1	8	45	45
2	Theory-2	7		
3	Practical	30		
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	25	1:00 Hrs
EXTERNAL THEORY Q.1. Questions from Unit-1 (Any Two Out Of Four) (Marks 10)		

Q.2. Questions from Unit-2 (Any Two Out Of Four) (Marks 10) Q.3. Questions from Unit-1 to 2 (Any one Out Of Two) (Marks 05)		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	25	
Internal (1) Practical Examination…….....(Marks 13) (2) Any 4 Components each of 3 Marks as par Annexure-3.(Marks 12)		

6. Two Credit Only Theory Course

SR.NO.	CREDIT	COURSE CATEGARY
6	2	THEORY
2 Credit Only Theory Course:		

Syllabus Structure				
Unit.	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Theory-1	10	30	30
2	Theory-2	10		
3	Theory-3	10		
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	25	1:00 Hrs
EXTERNAL Q.1. Questions from Unit-1 (Any Two Out Of Four) (Marks 10) Q.2. Questions from Unit-2 (Any Two Out Of Four) (Marks 10) Q.3. Questions from Unit-3 (Any one Out Of Two) (Marks 05)		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	25	
Internal (1) Mid term Examination…….....(Marks 13) (2) Any 4 Components each of 3 Marks as par Annexure-3.(Marks 12)		

7. Two Credit Only Practical Course

SR.NO.	CREDIT	COURSE CATEGARY
7	2	Practical
2 Credit Only Practical Course:		

Syllabus Structure				
Unit	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Practical -1	20	60	60
2	Practical -2	20		
3	Practical -3	20		
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	25	1:00 Hrs
EXTERNAL Practical ➔ EXTERNAL Practical (unit 1 to 3)		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	25	
Internal (1) Practical Evaluation ……...…….(Marks 13) (2) Any 4 Components each of 3 Marks as par Annexure-3.(Marks 12)		

8. Two Credit Only project Course

SR.NO.	CREDIT	COURSE CATEGARY
8	2	Project
2 Credit Only Project Course:		

Syllabus Structure				
Unit	Detail	No.of Teaching Hours	Total Hours	Total Course Hours
1	Project	60	60	60
1 Hour Theory = 1 Credit / 2 Hours Practical = 1 Credit				

Assessment Schemes	Marks	Exam.Time
Semester End Evaluation (SEE) **External Assessment**	25	1:00 Hrs
EXTERNAL Project Evaluation ➔ EXTERNAL Project Evaluation		
Continuous & Comprehensive Evaluation (CCE) **Internal Assessment**	25	
Internal (1) Internal Project Evaluation ……...…….(Marks 13) (2) Any 4 Components each of 3 Marks as par Annexure-3(Marks 12)		

Annexure-2

Scheme for Internal Assessment (As per SOP by the Government)
For 4 (Four) Credit and 100-marks Course

Internal Evaluation Schemes

Particular		Marks
Mid-Semester Examination		25
Any Five Components from the following List		
1.	Class Test	5
2.	Open book exam/test	5
3.	Open note exam/test	5
4.	Self-test/ Online test	5
5.	Essay/Article writing	5
6.	Quizzes/Objective test	5
7.	Class assignment	5
8.	Home assignment	5
9.	Reports Writing	5
10.	Research/Dissertation	5
11.	Case Studies	5
12.	Viva/Oral exam	5
13.	Group Discussion	5
14.	Role Play	5
15.	Paper presentation/Seminar	5
16.	Language Lab work	5
17.	Interview	5
18.	Craft work	5
19.	Co-curricular work	5
20.	Field Assignment	5
21.	Poster Presentation	5
22.	Attendance	5
	Total	50

Note: The student has to obtain 18 marks (36% marks out of total 50 marks) for passing the Internal Examination

Annexure-3

Scheme for Internal Assessment (As per SOP by the Government)
For 2 (Two) Credit and 50-marks Course

Internal Evaluation Schemes

Particular		Marks
Mid-Semester Examination		12
Any Four Components from the following List		
1.	Class Test	3
2.	Open book exam/test	3
3.	Open note exam/test	3
4.	Self-test/ Online test	3
5.	Essay/Article writing	3
6.	Quizzes/Objective test	3
7.	Class assignment	3
8.	Home assignment	3
9.	Reports Writing	3
10.	Research/Dissertation	3
11.	Case Studies	3
12.	Viva/Oral exam	3
13.	Group Discussion	3
14.	Role Play	3
15.	Paper presentation/Seminar	3
16.	Language Lab work	3
17.	Interview	3
18.	Craft work	3
19.	Co-curricular work	3
20.	Field Assignment	3
21.	Poster Presentation	3
22.	Attendance	3
	Total	50

Note: The student has to obtain 09 marks (36% marks out of total 25 marks) for passing the Internal Examination