

SAURASHTRA UNIVERSITY

RAJKOT – INDIA



**Re-Accredited
Grade B by NAAC
(CGPA 2.93)**

CURRICULAM FOR

UGC - B.Voc. under National Skills Qualification Framework(NSQF)

Bachelor of Vocational – Applied Computer Technology

(B.Voc.- ACTech.)

(Sanctioned to Shree Manibhai Virani & Smt. Navalben Virani Science College-Rajkot)

(Semester I and Semester II)

Effective From June – 2014

Bachelor of Vocational – Applied Computer Technology (Semester – I & II)
Saurashtra University
Effective from June - 2014

Bachelor of Vocational – Applied Computer Technology
(3 years – Six Semester Full Time Course)

Ordinance, Regulations and Examination Scheme :

O.S. B.Voc.-ACTech. – 1 :

Candidate for admission to the Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) must have passed standard 12th or equivalent examination from Gujarat higher secondary board or any other board.

Lateral Entry : Candidate seeking admission directly in third semester of Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) must have passed Examination of either Diploma in Engineering in Computer Engineering(CE) / Computer Science(CS) / Information Technology(IT) OR B.C.A./B.Sc.I.T. first year from any recognized university.

O.S. B.Voc.-ACTech. – 2 :

The duration of the course will be of three full time academic years. The examination for the Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) course will be divided into six semesters.

Multi-level Exit : Candidate will be eligible to receive Diploma after first 2 semesters and Advance Diploma after 4 semesters according to guidelines of UGC. No candidate will be allowed to join any other course or service simultaneously.

O.S. B.Voc.-ACTech. – 3 :

Candidate who have passed an equivalent examination from any other board or examining body and is seeking admission to the Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) course will be required to provide necessary eligibility certificate.

O.S. B.Voc.-ACTech. – 4 :

No candidate will be admitted to any semester examination for Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) unless a student has put on at least 85% of the total lecture periods and practical periods in each subject in each semester.

O.S. B.Voc.-ACTech. – 5 :

No candidate will be permitted to reappear at any semester examination, which he has already passed. The marks of successfully completed paper will be carrying forwarded for the award of class.

O.S. B.Voc.-ACTech. – 6 :

There shall be an examination at the end of each semester to be known as Pre Diploma (first semester) examination, Diploma (second semester) examination, Pre Advanced Diploma (third semester) examination, Advanced Diploma (forth semester) examination, Pre B.Voc. Degree (fifth semester) examination and B.Voc. Degree (sixth semester) examination. At which a student shall appear in that portion of theory papers, practical and viva – voice if any, for which he has kept the semester in accordance with the regulations in this behalf.

A candidate whose term is not granted for what so ever reason shall be required to keep attendance for that semester or term when the relevant papers are actually taken at the college.

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O.S. B.Voc.-ACTech. – 7 :

Guidelines to keep term of B.Voc. ACTech.;

A candidate will be permitted to continue his/her study up to the 4th semester examination without passing his/her previous semester examination.

A candidate can take admission to fifth (pen-ultimate) semester if he/she is failing in NOT more than two subjects of previous (1 to 4) semesters.

A candidate can take admission to Sixth (Ultimate Final) Semester if he/she is not failing in more than two subjects of 5th Semester. Provided he/she should have cleared all 1 to 4 semester.

R.S.B.Voc.-ACTech.

Standard of Passing

The standard of passing for Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) degree examination will be as under :

- 1) To pass any semester examination of the Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) degree, a candidate must obtain at least 40% marks in the university examination separately in each course of theory and practical.
- 2) Total marks of each theory paper are 100 (External examination 70 marks + Internal examination 30 marks)
- 3) Total marks of each practical and project-viva paper are 100. No internal examination marks in practical and project-viva papers.
- 4) Those of the successful candidates who obtain 50% or more marks in the aggregate of all the semester taken together will be placed in the **second class** and those who obtain 60% or more marks in the aggregate of all the semester taken together will be placed in the **first class**. The successful candidates who obtain 70% or more marks in the aggregate of all the semester taken together will be declared to have passed the examination in the **first class with distinction**.
- 5) A result of candidate who have obtained admission directly in Bachelor of Vocational – Applied Computer Technology (B.Voc.-ACTech.) semester – III will be declared by considering his marks of semester III to VI in aggregate and accordingly class will be awarded as per normal percentage of marks fixed for other candidate.

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UGC B.Voc.- Applied Computer Technology (Semester – I)

Sr. No.	Paper No.	Subject Name	Credit
1	1.1	Editorial Communication Skill	5
2	1.2	Building logic using C Language	5
3	1.3	Foundation of Speed Mathematics and Statistics	5
4	1.4	Fundamental of Computer (PC Software - MS Office & DOS)	5
5	1.5	Practical - I (Based on 1.2)	5
6	1.6	Practical - II (Based on 1.4)	5
Total Credits of Semester - I			30

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1.1 : Editorial Communication Skill				
Sr. No.	Topic	Detail	Marks	Min. Lect.
1	Grammar	<ol style="list-style-type: none"> 1. Determiners 2. Tenses <ul style="list-style-type: none"> • Defining a Verb • Chief forms of a Verb • Tense and Time • Further Division of Tenses <ul style="list-style-type: none"> ○ The Present Tense ○ The Past Tense ○ The Future Tense 3. Active – Passive Voice <ul style="list-style-type: none"> • Introduction • Defining the Voice • Some General rules regarding the change of voice 4. Modals & Auxiliaries <ul style="list-style-type: none"> • Introduction to Auxiliaries • The Primary Auxiliaries • Introduction to Modals • The Most Commonly used Modals • Important points about the Modals • Modals and Their Uses 5. Prepositions / Prepositional Phrases 	20	10
2	Writing Comprehension	<ol style="list-style-type: none"> 1. Business Letters : <ul style="list-style-type: none"> • Introduction • Functions of a Business Letter • Inward Structure / Layout of a Business Letter • Other Important Parts of Business Letter • Outward appearance of a business letter • Arrangement Styles • Salient Features of a Business Letter • Legal Aspects of a business Letters • Kinds of Business Letter <ul style="list-style-type: none"> Inquiry & Reply Order & Reply Cancellation of order Complaint / Adjustment Sales Letter 2. Report Writing : <ul style="list-style-type: none"> • Introduction • The Nature of a Report • The P's of an Effective Report • Functions of a Report • Preparing a Report • Types of Reports • Business report 	28	20

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		<ul style="list-style-type: none"> • Press report <p>3. Job Application / Resume Writing.</p> <ul style="list-style-type: none"> • Introduction • A Cover Letter • Curriculum Vitae / Resume <p>4. Letters of Appointment & Resignation.</p>		
3	Conversation Skills	<p>Conversations based on everyday situation / Dialogue Writing.</p> <ul style="list-style-type: none"> • Introduction • Nature of Conversations • Purpose of conversation • Guidelines for Effective Conversation Skills • Proverbs used in Everyday Conversation with their Meanings / Explanations • Comparisons used in Everyday Conversation • Practical Conversations 	14	10
4	Communication Skills	<p>(1) Communication – Meaning, Features & Process (2) Verbal & Non – Verbal comm.</p> <p>Verbal Oral Communication Written Communication</p> <p>Non – Verbal Body language Space Para language Others</p> <p>(3) Group discussion skills</p> <ul style="list-style-type: none"> • Meaning • Characteristic • Do's & Don'ts • Relevance • Moderating a group discussion <p>(4) Presentation skills</p> <ul style="list-style-type: none"> • Meaning • Planning a presentation skills • Preparing a presentation skills • Delivering a presentation skills • Presentation skills <p>(5) Public Speaking</p> <ul style="list-style-type: none"> • Meaning • Essential of effective public speaking <p>(6) Facing Interviews</p> <ul style="list-style-type: none"> • Importance • Do's & Don'ts 	38	20
Total			100	60

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Students seminar - 5 Lectures.
Expert Talk - 5 Lectures
Students Test - 5 Lectures.

Total Lectures 60 + 15 = 75

Reference Book

1. High School English Grammar and Composition By Wren & Martin
2. Communication Skills by Bharat & Company

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1.2 : Building Logic using C Language				
No.	Topics	Details	Marks	Min. Lec.
1	Pre Programming Techniques	Importance of preprogramming techniques Pre programming tools Algorithm Flow charts Dry Run (preparation of sample data set for testing of logic) Writing algorithms and development of flowcharts with dry run for the given list of problems	10	6
2	Getting started with C	C program structure C Character sets Constants, Variables and Keywords in C Various Data Types Type Casting Various Operators Hierarchy of Operations		6
3	Various Controls Structures	Decision if, if-else, Nested if-else, if-elseif Conditional (Ternary) operator Switch Case Loops for, while, do while, Nesting of loops Use of break and continue statements, goto with label		14
4	Header files & Library Functions	Importance of header files Introduction to some popular header files and its library functions: <stdio.h>: printf(),scanf(),fflush(),gets(),puts() <conio.h>: getch(),getche(),getchar(),clrscr(),gotoxy(), textcolor(),textbackground(), cprintf(), <math.h>: abs(),exp(),sqrt(),log(),ceil(),floor(),pow(), fmod(),fabs() <string.h>: strlen(),strcpy(),strcmp(),strcat(),strlwr(), strupr(),strrev() <ctype.h>: isalpha(),isdigit(),isalnum(),isspace(),isupper(), islower(),isprint(),toupper(),tolower()	90	5

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5	User defined functions	Different type of UDF Functions with no arguments, no return value Functions with no arguments, with return value Functions with arguments, no return value Functions with arguments, with return value Call by reference & Call by value Recursion Creation of your library Storage classes & scope of variables		5
6	Arrays	Concept of Single & Two dimensional arrays Initializations & working with array Passing array elements to function Sorting of numeric & string array String operations		6
7	Structures	How to define a structure Accessing structure elements Memory allocation Array of structure Array within structure Structures as a function argument Union		5
8	Pointer	Introduction of Pointers Pointer to Variables Pointer to Array Pointer within Array Pointer To Structure Pointers within structure Pointer to Pointer Use of pointers in Dynamic Programming Memory Allocation Functions malloc , realloc , calloc, free		6
9	Data file handling	Concept of data file and file structure Text file and binary file Opening and closing of data file (fopen(),fclose()) Write data/ Record to data file (fprintf(),fwrite(),fputs()) Reading from data file (fscanf(),fread(),fgets()) File handling functions(feof(),ferror(),fseek(), ftell(),rewind()) Command line arguments		5
10	Misc.	Typedef Symbolic Constants C Preprocessor #define, #include		2
Total			100	60

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Expert Talk – 5 Lectures
Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

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|--------------------------|---------------------------|
| 1. Programming in ANSI C | E.Balaguruswami |
| 2. Let Us C | Yashwant Kanetkar |
| 3. Working with C | Yashwant Kanetkar |
| 4. Programming in C | Schaum Series Publication |

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1.3 : Foundation of Speed Mathematics and Statistics				
Sr. No.	Topic	Detail	Mark	Lectures
1.	Set Theory	<ul style="list-style-type: none"> ➤ Introduction ➤ Methods of Representation of a Set ➤ Different Types of Sets ➤ Operations on Set and its Properties <ul style="list-style-type: none"> • Union of Sets • Intersection of Sets • Complement of Sets • Difference of Sets ➤ Cartesian Product of Sets ➤ Typical Examples 	20	12
2.	Matrix	<ul style="list-style-type: none"> ➤ Introduction ➤ Different Types of Matrices ➤ Addition and Subtraction of two Matrices ➤ Multiplication of two Matrices ➤ Adjoint of Matrix ➤ Determinant of Matrix ➤ Inverse of Matrix ➤ Typical Examples 	20	12
3.	Co-ordinate Geometry	<ul style="list-style-type: none"> ➤ Introduction ➤ Distance between two Points in R_2 ➤ Section Formula ➤ Area of Triangle ➤ Different Types of Equations of Lines ➤ Parallel Lines ➤ Perpendicular Lines ➤ Typical Examples 	20	12
4.	Number System	<ul style="list-style-type: none"> ➤ Types of Number System [Binary / Octal / Decimal / Hexadecimal] ➤ Conversions <ul style="list-style-type: none"> • Decimal to Binary / Octal / Hexadecimal • Binary to Decimal / Octal / Hexadecimal • Octal to Binary / Decimal / Hexadecimal • Hexadecimal to Binary / Octal / Decimal ➤ Complement 	20	12

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		<ul style="list-style-type: none"> • 1's Complement • 2's Complement ➤ Addition of Two Binary Numbers ➤ Subtraction of Two Binary Numbers Using 1's & 2's Complement 		
5	Mind Techniques	<ul style="list-style-type: none"> ➤ Positive Affirmations ➤ Creative Visualization ➤ Memory Techniques ➤ Visualization Techniques ➤ Meditation ➤ Observation ➤ Concentration ➤ Mind Relaxation ➤ Determination ➤ Mind Control 	20	12
Total			100	60

Student Seminar – 5 Lectures
 Expert Talk – 5 Lectures
 Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Theory of Matrices by Shantinakaran
2. Co-ordinate Geometry by A. K. Sharma
3. Basic Set Theory by Azriel Levy
4. Set Theory an Introduction by Robert L. Vaught
5. Computer Fundamentals – By P. K. Sinha.
6. Secretes of mind power by Harry lorayne
7. The essence of law of success by napoleon Hill

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1.4 : Fundamental of Computer (PC Software - MS Office & DOS)				
Unit	Topic	Detail	Marks	Min Lec.
1	Basics & Booting Procedure	Introduction to Computers, Characteristics, Data Processing Cycle History and Generations of Computers Classification of Computer by Processing Capabilities Micro, Mini, Mainframe and Super Computers Block diagram of computer, Layered Approach of Operating System, booting process Types of Operating Systems, Introduction to BIOS and CMOS What is software? Types of Software Types of Languages (Assembler / Compiler /Interpreter) Machine Level Language, Assembly Level Language	20	12
2	Hardware & Peripherals	What is hardware? Types of Input Devices, Output Device, Peripherals Types of Memory, Internal, External	10	6
3	Computer Assembly, Installation & Trouble Shooting	Identification of Components Assembling computer Operating System & Software Installation, Security Configuration of Printer and other Multimedia Devices , Updating Software, Hardware problems and their solutions Use of Multi-meter, soldering, line tester, etc	20	12
4	Word Processing Using Ms Word	Introduction to Word, Font, Paragraph, Style, Editing ,Pages, tables. Illustrations, bookmark, hyperlink, header footer, text, symbol , Page layout ribbon, Foot note End note, Caption, Mail merge, Spell check, comments, Document View, Show Hide, Zoom, Window and Office Button Options, Printing documents. Password Protection.	15	9
5	Spread Sheet Using Ms Excel	Sheet Introduction, Selecting row, column, cell, changing height, and Formula bar. Cell Referencing - Relative, Absolute, Mixed, Calculative Examples like salary sheet, mark sheet etc. Conditional formatting, inserting, deleting row or column, cell Changing height and width, Pivot table and Pivot chart, types of different chart, editing charts. What if Analysis.	25	15

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		Print Preview and Page Layout, Useful functions from Function Library. Data sorting and subtotaling, filter, Protecting sheet.		
6	Presentation Using Ms Power Point	Inserting new slide, different layout of slide, Inserting date, slide number, movie, sound, object, header footer, Designing slide theme and background, custom animation, slide transition Rehearse timings, slide show , Setup slide show, hide slide, different views of slide Use of slide master, Printing handout, slide, etc	10	6
Total			100	60

Student Seminar – 5 Lectures
Expert Talk – 5 Lectures
Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Pc Software For Windows Made Simple - R.K. Taxali
2. Introduction To Information Technology - V.Rajaraman
3. Computer Fundamentals – By P.K.Sinha.
3. Ibm Pc And Clones: Hardware, Troubleshooting And Maintenance - Govindarajalu

1.5 : Practical – I (Based on 1.2)	
Topics	Marks
1.2	100

1.6 : Practical – II (Based on 1.4)	
Topics	Marks
1.4	100

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Sr. No.	Paper No.	Subject	Credit
1	2.1	Web Designing & Internet (HTML ,CSS, JavaScript)	5
2	2.2	Fundamental of Networking	5
3	2.3	Object Oriented Programming using C++	5
4	2.4	Desk Top Publishing (Photoshop & Corel Draw)	5
5	2.5	Practical - I (Based on 2.1)	5
6	2.6	Practical - II (Based on 2.3 & 2.4)	5
Total Credits of Semester - II			30

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2.1 : Web Designing & Internet (HTML ,CSS, JavaScript)				
Sr. no	Topics	Details	Marks	Min Lec.
1	Internet	<ul style="list-style-type: none"> ➤ Introduction to Internet <ul style="list-style-type: none"> • What is Internet? • Use of Internet? ➤ Applications of Internet <ul style="list-style-type: none"> • World wide web(web page, web site, web client and web server) • Web browsers • Search engines • Email • Blogs and forums • Social media and chatting • E-commerce • FTP • Bookmarks ➤ Internet Search <ul style="list-style-type: none"> • Basic search • Tips and Tricks for search ➤ How to stay safe on internet? ➤ How to download and upload? ➤ IP addressing 	20	10
2	HTML	<ul style="list-style-type: none"> ➤ Introduction ➤ HTML Block Structure ➤ Basic tags: <ul style="list-style-type: none"> • Texts formatting tags • Line breaks • Link • Color • Image • List creation • Table • Frame • Form ➤ HTML multimedia <ul style="list-style-type: none"> • HTML Plug-in • HTML Audio • HTML Video ➤ Introduction to HTML 5 	25	20

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3		<ul style="list-style-type: none"> ➤ Basics of CSS ➤ Types of CSS ➤ Selectors of CSS (class and id) ➤ Properties: <ul style="list-style-type: none"> • Background property • Text property • Font property • Table property • Box modal property • Border property • Margin property • Padding property • Align property • Image property ➤ Page layouts <ul style="list-style-type: none"> • Using DIV and SPAN tag ➤ Introduction to DHTML 	20	12
4	Javascript	<ul style="list-style-type: none"> ➤ Introduction to Scripting Language ➤ JS syntax ➤ JS variables ➤ JS Operators ➤ JS control structures <ul style="list-style-type: none"> • Control statements • Looping statements • Sequential statements ➤ JS Dialog boxes ➤ User defined functions ➤ Built-in objects and properties <ul style="list-style-type: none"> • Number object • Date object • Math object • String object • Array object • History object • Navigator object ➤ User defined objects ➤ Built-in functions ➤ JS Events ➤ JS Timing Events ➤ JS DOM (Methods and property) ➤ Cookies ➤ JS Errors (throw and try catch block) 	35	18
Total			100	60

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Student Seminar – 5 Lectures
Expert Talk – 5 Lectures
Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Beginning Web Programming with HTML, XHTML, and CSS by Jon Duckett Wrox Publication.
2. Beginning JavaScript by Paul Wilton Wrox Publication.
3. Practical HTML 4.0 by Lee Philips
4. World wide web design with HTML by Cxavier
5. Internet The Complete Reference –Young
6. Internet For Every One -Leon
7. <http://www.w3schools.com>

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2.2 : Fundamentals of Networking				
Sr. No.	Topics	Details	Marks	Min Lec.
1.	Introduction of Networking	Network concepts <ul style="list-style-type: none"> • What is network • Use of network Network model <ul style="list-style-type: none"> • peer – to – peer • client – server Network Types <ul style="list-style-type: none"> • LAN • MAN • WAN Network Services <ul style="list-style-type: none"> • File service • Print service • Comm. service • Data base service • Security service, • Application service Client Server Configuration	10	5
2.	Basics of Networking	Network Access Methods <ul style="list-style-type: none"> • CSMA / CD & CSMA / CA • Token passing • Polling Network Topologies <ul style="list-style-type: none"> • Bus • Ring • Star • Mesh • Tree • Hybrid Advanced Network Topologies <ul style="list-style-type: none"> • Ethernet • CDDI • FDDI Communication Methods <ul style="list-style-type: none"> • Unicasting • Multicasting • Broadcasting 	10	5

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3.	Network Models	OSI reference model with 7 layers TCP/IP network model with 4 layers	10	5
4.	Transmission Media	Transmission Media Types of Transmission media <ul style="list-style-type: none"> • Guided media <ul style="list-style-type: none"> ○ Coaxial Cable, ○ Twisted Pair Cable, ○ Crimping of Twisted pair cable ○ Fiber Optic Cable • Unguided media <ul style="list-style-type: none"> ○ Infrared, Laser, Radio ○ Microwave ○ Bluetooth tech. 	10	6
5.	Multiplexing & Switching Concepts	Different Frequency Ranges Multiplexing & Demultiplexing Multiplexing Types <ul style="list-style-type: none"> • FDM • TDM • CDM • WDM Switching Tech. <ul style="list-style-type: none"> • Circuit Switching • Message Switching • Packet Switching 	5	4
6.	Network Devices	CABLE NETWORK DEVICES LAYER1 DEVICES <ul style="list-style-type: none"> • LAN CARD • MODEM • DSL & ADSL • HUB(Active, Passive, Smart hub) • REPEATER LAYER 2 DEVICES <ul style="list-style-type: none"> • SWITCH(Manageable, Nonmanagable) • BRIDGE(Source route, Transactional) LAYER 3 DEVICES <ul style="list-style-type: none"> • ROUTER • LAYER 3 SWITCH • BROUTER • GATEWAY • Network Printer Establishment of network, use of Cable and Connector Crimping Switch & Hub Configuration	15	9

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7.	Network Protocols	<p>Layer 1 Protocols</p> <ul style="list-style-type: none"> • USB • DSL <p>Layer 2 Protocols</p> <ul style="list-style-type: none"> • PPP <p>Layer 3 Protocols</p> <ul style="list-style-type: none"> • ARP • RARP • IP • EGP • IGRP • IGMP • ICMP • IPX • RIP • OSPF <p>Layer 4 Protocols</p> <ul style="list-style-type: none"> • TCP • UDP • SPX <p>Layer 7 Protocols</p> <ul style="list-style-type: none"> • DHCP • BGP • DNS • FTP • HTTP & HTTPS • SMTP • POP3 & IMAP • IRC • SNMP 	20	14
8.	IP Addressing	<p>What is IP address? Classes of IP Address Types of IP address IPv4</p> <ul style="list-style-type: none"> • Class structure • Subnetting • Supernetting • CIDR <p>IPv6</p> <ul style="list-style-type: none"> • Basic structure of ipv6 • Implementation of ipv6 	10	6

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9.	Internet connection & Sharing	Internet Terminology ISP Intranet & Extranet Technology related Internet <ul style="list-style-type: none"> • Dial up tech. • ISDN network tech. • Lease line tech. VPN <ul style="list-style-type: none"> • Types of VPN • Use of VPN • VPN protocols (PPTP, L2TP, IPsec.) Proxy server, Firewall	10	6
Total			100	60

Student Seminar – 5 Lectures
 Expert Talk – 5 Lectures
 Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. 1 Networking Essential by Glenn Berg Tech. Media
2. Data Communication & Networking – B A Forouzan
3. <http://compnetworking.about.com/>
4. <http://searchnetworking.techtargt.com/>

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2.3 : Object Oriented Programming using C++				
Sr. No	Topics	Details	Marks	Min Lec.
1	Principles of object oriented programming	Procedure – oriented programming Object oriented programming paradigm Basic concepts of object oriented Programming Benefits of object oriented programming Application of object oriented programming What is c++? Application of c++ Input/output operators Structure of c++ program	5	4
2	Tokens, expressions and control statements	Tokens : keywords, identifiers, basic data types, user defined types, derived data types, symbolic constants, type compatibility, declaration of variables, dynamic initialization of variables, reference variables. Operators in C++: Scope resolution operator, member referencing operator, memory management operator, manipulators, type cast operator. Expression : Expression and their types, special assignment operator, implicit conversions, operator precedence Control structures Conditional control structure:- simple if, if...else , nested if else, switch etc. Looping control structure:- for, while , do...while	10	7
3	Functions in C++	The main function Function prototype Call by reference Return by reference Inline function Default arguments Const arguments Functions overloading	10	6
4	Classes and Objects	C structures revisited Specifying a class Defining member functions nesting of Member functions	15	10

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		private member function making outside function inline Arrays within a class Memory allocation for objects Static data member Static member functions Arrays of objects Objects as function arguments Friendly functions Returning objects Const member function Pointer to members		
5	Constructor and Destructor	Characteristics of constructor Parameterized constructor Multiple constructor in a class Constructor with default argument Copy constructor Dynamic initialization of objects Constructing two dimensional array Dynamic constructor Destructors	10	5
6	Operator overloading and type conversion	Concept of operator overloading Over loading unary and binary operators Overloading of operators using friend Function Manipulation of string using operators Rules for operator overloading Type conversions.	10	6
7	Inheritance	Defining derived classes Types of inheritance (Single, Multiple, Multi-level, Hierarchical, Hybrid) Virtual base class & Abstract class Constructors in derived class Nesting of classes.	10	5
8	Pointer, Virtual functions and Polymorphism	Pointer to Object Pointer to derived class this pointer Rules for virtual function Virtual function and pure virtual function	10	5
9	Console I/O operations	C++ streams C++ stream classes Unformatted and formatted I/O operations Use of manipulators.	5	3
10	Working with Files	File stream classes Opening and closing a file Error handling	10	5

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		File modes File pointers Sequential I/O operations Updating a file (Random access) Command line arguments		
11	Templates and Exception handling	Introduction to templates Class templates Function templates Member function templates Overloading of template function Non-type Template argument	5	4
			100	60

Student Seminar – 5 Lectures
Expert Talk – 5 Lectures
Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

- | | |
|---------------------------------------|------------------------|
| 1. Object Oriented Programming in C++ | E.Balaguruswami, BPB |
| 2. Mastering C++ | Venugopal |
| 3. Object Oriented Programming in C++ | Robaret Laphore |
| 4. Let us C++ | Yashvant Kanitkar, BPB |

Bachelor of Vocational – Applied Computer Technology (Semester – I & II)
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2.4 : Desk Top Publishing (Photoshop & Corel Draw)				
Sr. No.	Topic	Detail	Marks	Min Lec
1	CorelDRAW Basics And Interface	Exploring the CorelDraw Screen, File Management, Moving Around and Viewing Drawings, Customizing Options, Setting File Backups	5	4
2	Objects- Creation and Manipulation Drawing and Shaping Objects	Drawing and Shaping Tools, Lines, Polylines, Curves, Rectangles, Circles, Selecting & Manipulating Objects, Transforming Objects, Outlining & Filling Objects, Arranging Objects, Using Layers	10	5
3	Working With Special Effects And Texts Special Effects	Drawing With the Artistic Media Tool, Shaping an Object with an Envelope, Working with Text, Working With Paragraph, Special Text Effects, Using Symbols and Clipart, Working With Bitmaps	15	8
4	Advanced Features Special Page Layouts	Page Exporting, Printing, Exporting Drawings, Using Styles and Templates, Custom Creation Tools, Using Corel Trace, Using Corel R.A.V.E.	15	10
5	Introduction to Photoshop	About Adobe Photoshop , Graphics Basics, Exploring Menus & Panels, Customizing Workspaces, Different file formats, Work area Using Rulers and Guides, Introduction to Colour	5	3

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6	Image Manipulation & Painting tools	The Photoshop Toolbox and Options bar Inserting Pictures and texts Cropping Images Image Magnification Resizing Images Adjusting Resolution Transforms Using Free transform, Move, Rotate, Scale, Skew Distort, Perspective, Flip-vertical, horizontal, Invert, Rotate 180°, Rotate 90° CW, Rotate 90° CCW Bitmap Images v/s Vector Images Making Selections & Using Pen tool Using Painting tools (Brush, Pencil, Paint Bucket, Gradient , Eraser, etc..) Undoing and History Palette	12	6
7	Working with Layers	Creating layers and Group layer, Layer Styles and Locking, Merging and Flattening Layers, Adjustment Layers and Fill Layers, Masking Layers (Blending Mode), Photoshop Channels	5	5
8	Image Post Production (Image Processing)	Color Management, Levels & Curves, Using Retouching tools Spot Healing Brush, Clone Stamp, Pattern Stamp, Red Eye, Eraser, Blur, Sharpen, Smudge, Dodge, Burn, Sponge Blurring and Sharpening Images, Color Replacement Tool, The Free Transform command	5	4
9	Working with Filters	Getting started with Photoshop Filters, Liquify Command, Exploring filters Blur, Distort, Noise, Pixelate, Render, Sharpen, Stylize Smart Filters,	8	5

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		Lens Correction		
10	Scripting	1. Action <ul style="list-style-type: none"> • Using the Action palette, Droplet • Recording, Playing, Editing Action 2. Adobe ImageReady <ul style="list-style-type: none"> • The Image Ready Interface • Image Maps • Image Slicing 	20	10
Total			100	60

Student Seminar – 5 Lectures
 Expert Talk – 5 Lectures
 Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Adobe Photoshop Classroom in a Book [CS]
2. <http://www.photoshop.com>

2.5 : Practical – I (Based on 2.1)	
Topics	Marks
2.1	100

2.6 : Practical – II (Based on 2.3 & 2.4)	
Topics	Marks
2.3	50
2.4	50

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UGC Bachelor of Vocational (Applied Computer Technology)

Semester – III

Sr. No.	Subject	Credit
3.1	Core Java	5
3.2	Web Development using PHP/MYSQL	5
3.3	RDBMS using MS SQL Server	5
3.4	Basic Animation using Flash	5
3.5	Practical - I (Based on 3.1 & 3.4)	5
3.6	Practical - II (Based on 3.2 & 3.3)	5
Total Credits of Semester - III		30

Semester - IV

Sr. No.	Subject	Credit
4.1	Value Education	5
4.2	Advance PHP (OOP, CMS, Wordpress)	5
4.3	Advance Web Designing (JQuery, CSS framework, AJAX, Responsive Layout)	5
4.4	Project Work - I	5
4.5	Practical - I (Based on 4.2)	5
4.6	Practical - II (Based on 4.3)	5
Total Credits of Semester - IV		30

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Semester – V

Sr. No.	Subject	Credit
5.1	Business Etiquettes & Interview Techniques	5
5.2	Programming with C#.NET	5
5.3	Mobile Computing with Android	5
5.4	Project Work - II	5
5.5	Practical - I (Based on 5.2)	5
5.6	Practical - II (Based on 5.3)	5
Total Credits of Semester - V		30

Semester – VI

Sr. No.	Subject	Credit
6.1	Graphics and Multimedia	5
6.2	Web Programming with ASP.NET	5
6.3	Mobile Computing with IOS	5
6.4	Project Work - III	5
6.5	Practical - I (Based on 6.1 & 6.3)	5
6.6	Practical - II (Based on 6.2)	5
Total Credits of Semester - VI		30

SAURASHTRA UNIVERSITY

RAJKOT – INDIA



**Re-Accredited
Grade B by NAAC
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CURRICULAM FOR

UGC - B.Voc. under National Skills Qualification Framework(NSQF)

Bachelor of Vocation – Applied Computer Technology

(B.Voc.- ACTech.)

(Sanctioned to Shree Manibhai Virani & Smt. Navalben Virani Science College-Rajkot)

(Semester III and Semester IV)

Effective From June – 2015

Bachelor of Vocation – Applied Computer Technology (Semester – III & IV)
Saurashtra University
Effective from June - 2015

UGC B.Voc.- Applied Computer Technology (Semester – III)

Sr. No.	Paper No.	Subject	Credit
1	ACTECH 3.1	Core Java	5
2	ACTECH 3.2	Web Development using PHP/MYSQL	5
3	ACTECH 3.3	RDBMS using MS SQL Server	5
4	ACTECH 3.4	Basic Animation using Flash	5
5	ACTECH 3.5	Practical - I (Based on 3.1 & 3.4)	5
6	ACTECH 3.6	Practical - II (Based on 3.2 & 3.3)	5
Total Credits of Semester - III			30

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ACTECH 3.1 : Core Java				
Sr. No.	Topics	Details	Marks	Lec.
1	Introduction and Basic	History of Java Basic concepts of OOP Java Features/Buzzword of Java JDK and its components Byte code and JVM Java Tokens Data Types Type Conversion and type casting Garbage Collection Array (One Dimensional, Rectangular and Jagged Array) Conditional Statements (if, switch) Looping Statement (while, for, do-while) Command Line Arguments	10	5
2	Classes and Objects	Defining a class Creating Objects Concept of Constructor Overloading of methods and constructors Static members Finalize() method Nested class Access specifiers : public, private and protected Modifiers : final, abstract, static, synchronized, native, volatile, transient	10	5
3	Inheritance	Types of Inheritance (Single, Multilevel, Hierarchical) Constructor in inheritance (super and this keyword) Method Overriding Abstract method and class Final keyword (Final variable, method and class) Defining Interface Implementing and extending interface	5	5
4	Java Packages	Introduction of Java API User defined package (Creating and using package) System defined packages : Java.lang Java.util Java.io Java.net Java.applet	10	10

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		Java.awt Java.awt.event Javax.swing Java.lang (Object, Math, String, StringBuffer, Wrapper classes) Java.util (Date, Random, Calendar, GragorianCalendar, Vector, Enumeration interface, Stack, Hashtable)		
5	Exception Handling	Introduction to Exception Handling Types of Exception Exception handling using try, catch, finally, throw and throws Creating user defined exception class	5	3
6	Threading	Concept of Thread Life Cycle of Thread Creating Thread (Thread class and Runnable Interface) Various Thread methods Thread Priority, Synchronization and Deadlock	5	2
7	Input/Output Operation	Concept of streams Difference between CharacterStreams and ByteStreams CharacterStreams (Reader, Writer, BufferedReader, InputStreamReader, FileReader, BufferedWriter, OutputStreamReader, FileWriter, PrintWriter) ByteStreams (InputStream, FileInputStream, FilterInputStream, BufferedInputStream, DataInputStream, OutputStream , FileOutputStream, FilterOutputStream, BufferedOutputStrem, DataOutputStream, PrintStream) Other Classes (RandomAccessFile, StreamTokenizer, File)	10	6
8	Applet Basic	What is an Applet Applet Lifecycle Applet class, passing parameters to applet Use of Graphics, Color and Font class and its various methods	10	4
9	AWT Controls and Event Handling	AWT Controls(Label, Button, Checkbox, Choice, List, TextField, TextArea, Scrollbar) Event Delegation Model or Event Class Hierarchy All classes and interfaces of Event	10	7

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		Delegation. Concept of Adapter Class, Inner Class and Anonymous Inner Class Programmers related to event handling		
10	Layout Managers	What is Layout Managers FlowLayout BorderLayout GridLayout GridBagLayout CardLayout	5	3
11	GUI using Swing	What is swing, Swing Vs. AWT Container class Swing Components (JLabel, JButton, JCheckBox, JCheckboxgroup, JChoice, JPasswordField, JTextArea, JList, JScrollbar, JPanel, JFrame, JMenu, JMenuBar, JMenuItem, JPasswordField, JRadioButton)	20	10
		Total	100	60

Student Seminar – 5 Lectures
Expert Talk – 5 Lectures
Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Complete JAVA2 Certification
2. JAVA2 Black Book
3. A Programmer Guide to JAVA Certification by Khalid A. Mughal
4. Programming in JAVA - E Balaguruswamy
5. Programming with JAVA – Bharat & Co.
6. Programming with JAVA – C Jamanadas

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ACTECH 3.2 : Web Development using PHP/MYSQL				
Sr. No.	Topics	Details	Marks	Lec.
1	Introduction	Intro. Webpage, Website Static and Dynamic Web Client side & Server Side Scripting Introduction to other server side languages Web server (IIS & Apache) HTTP & HTTPS protocol FTP ISP and its Services Web Hosting, Virtual Host, Multi-Homing Distributed Web Server Overview, Document Root	10	5
2	PHP Basic	Introduction to PHP PHP configuration in IIS & Apache Web server Understanding of PHP.INI and PHP.htaccess file PHP Variable Static & global variable GET & POST method PHP Operator Conditional Structure & Looping Structure Array User Defined Functions: argument function default arument variable function return function Variable Length Argument Function Func_num_args func_get_arg, func_get_args Variable Function Gettype, settype, isset, unset, strval, floatval, intval, print_r String Function Chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim trim, substr, strcmp, strcasecmp, strpos, strrpos, strstr, strstr, str_replace, strrev, echo, print, explode(), implode(), join(), md5(), str_split(), str_shuffle(), strcspn(), strpbrk(), substr_compare(), substr_count(), ucfirst(), ucwords()	55	34

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		<p>Math Function : Abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand, cos(), acos(), sin(), asin(), tan(), atan(), bindec(), decbin(), hexdec(), dechex(), is_finite(), is_infinite(), log(), base_convert(), deg2rad()</p> <p>Date Function Date, getdate, setdate, Checkdate, time, mktime, date_add(), date_create(), date_format(), gmdate(), localtime(), strftime(), strtotime(), strtotime(), gettimeofday(),</p> <p>Array Function Count, list, in_array, current, next, previous, end, each, sort, rsort, assort, arsort, array_merge, array_reverse, array_diff(), array_merge_recursive(), array_shift(), array_slice(), array_unique(), array_unshift(), array_keys(), array_key_exists(), array_push(), array_pop(), array_multisort(), array_search()</p> <p>Miscellaneous Function define, constant, include, require, header, die, exit</p> <p>File handling Function fopen, fread, fwrite, fclose, file_exists, is_readable, is_writable, fgets, fgetc, file, file_get_contents, fputs, file_putcontents, ftell, fseek, rewind, copy, unlink, rename, move_upload_file</p>		
3	Handling Form & Session tracking	Handling form with GET & POST Cookies Session Server variable	5	3
4	PHP Components	PHP GD Library PHP Regular expression Sending mail using mail() Sending mail using smtp() Using php mailer function Pdf creation using php	5	3

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5	Interacting with MySQL	<p>Working with MySQL using PhpMyAdmin PHP-MySQL Connectivity</p> <p>PHP-MySQL Functions mysql_connect, mysql_close, mysql_error, mysql_errno, mysql_select_db, mysql_query, mysql_fetch_array, mysql_num_Rows, mysql_affected_Rows, mysql_fetch_assoc, mysql_fetch_field , mysql_fetch_object, mysql_fetch_row ,mysql_insert_id ,mysql_num_fields ,mysql_result, mysql_tablename ,mysql_list_tables, mysql_list_fields, mysql_field_type ,mysql_db_name , mysql_db_query , mysql_data_seek</p> <p>Advanced mysql : Import and Export database Create and Drop database Use of group by order by Create trigger stored procedure</p>	25	15
			100	60

Student Seminar – 5 Lectures
Expert Talk – 5 Lectures
Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Beginning PHP5 by Wankyu Choi, Allan Kent, Chris Lea, Ganesh Prasad, Chris Ullman - WROX
2. PHP Bible, 2nd Edition by Tim Converse, Joyce Park – Wiley Publication
3. Beginning PHP, Apache, MySQL Web Development by Michael K. Glass, Yann Le Scouarnec, Elizabeth Naramore, Gary Mailer, Jeremy Stolz, Jason Gerner - WROX
4. Beginning MySQL by Robert Sheldon, Geoff Moes – WROX
5. Web Development using PHP/MYSQL - Bharat & Co.
6. Web : www.w3schools.com

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ACTECH 3.3 : RDBMS using MS SQL Server				
Sr. No.	Topics	Details	Marks	Lec.
1	RDBMS Basics	What is RDBMS? Importance of E-R diagram in Relational World E.F Codd's Rules Normalization	10	8
2	Introduction to SQL Server	Overview of SQL Server 2008 Features & Components SQL Server Installation & Configuration SQL Server Editions	5	5
3	SQL Server Database	Database Architecture Understanding SQL Server Database(System) Files & Filegroups Architecture Creating and Managing User Database SQL Server Data Types Creating and Managing Tables Import and Export Database	15	10
4	Accessing and Modifying Data	Data Accessing using SELECT Statement with WHERE Clause, GROUP BY Clause, ORDER BY Clause, HAVING Clause, DISTINCT Operator Joins Subqueries	20	14
5	Data Integrity	Types of Data Integrity PRIMARY KEY Constraint FOREIGN KEY Constraint UNIQUE KEY Constraint NOT NULL CHECK Constraint	15	5
6	Data Access Control and Transaction Control Commands	Grant and Revoke Concept of Transaction Commit Rollback SavePoint	5	3
7	Managing and Manipulating data	What is PL/SQL? SQL v/s PL/SQL Block Structure of PL/SQL and its Examples Control Structures Conditional Statement Looping Statement Sequential Statement Cursor (Implicit & Explicit)	15	10

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8	Other Database Object	Implementation of Objects like View Sequence Index Procedures Triggers	15	5
		Total	100	60

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Total Lectures 60 + 15 = 75

Reference Books:

1. Beginning Microsoft SQL Server 2008 Administration
By Chris Leiter, Dan Wood, Michael Cierkowski, Albert Boettger
2. Professional Microsoft SQL Server 2008 Programming - By Robert Vieira
3. Microsoft SQL Server 2008 For Dummies

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ACTECH 3.4 : Basic Animation using Flash				
Sr. No.	Topics	Details	Marks	Lec.
1	Flash Environment	Flash 8 Interface Menu Bar Timeline Layers Work Area Views or Zooms Panels	5	3
2	Text & Sound	Properties of the Texts Text Effects Importing Sounds Sound Properties Inserting a Sound	5	3
3	Working Layers with Objects	Working with Layers. Layer Type The Objects. Initiation Object Property and Selection Info Panel Groups	10	6
4	Symbols, Graphics & Vector	The Libraries Graphics types What are the Symbols How to create symbols Symbol Effects : Filters & Blends Creating graphics and its properties Exporting a Flash object as bitmap	10	10
5	Animation	What is Animation? Type of Animation <ul style="list-style-type: none"> • Frame by Frame Animation • Motion Tween Animation • Shape Tween How to run Animation File? <ul style="list-style-type: none"> • Scrubbing • Playing • Test Movie Animated Masks and Filters Effect of Animation <ul style="list-style-type: none"> • Brightness • Tint • Alpha Advanced Animation Techniques	30	13
6	File Types	Publishing Animation Animation File Types <ul style="list-style-type: none"> • Bitmaps in Flash • Video 	20	11

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		<ul style="list-style-type: none"> • Web Page in Flash Movie Clip properties Creating a new Movie Clip Importing and Exporting Movie Clips 		
7	Action Script	What is Action Script? Button <ul style="list-style-type: none"> • Creating a Buttons Shapes • Text Buttons • Including Clip in a Button • Bitmaps and buttons • Actions in Buttons • Including a sound in a Button Actions Panel Operators Actions Objects Properties	20	14
		Total	100	60

Student Seminar – 5 Lectures
 Expert Talk – 5 Lectures
 Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Macromedia Flash 8 On Demand Paperback – by Andy Anderson, Steve Johnson
2. Sams Teach Yourself Macromedia Flash 8 in 24 Hours Paperback
3. Macromedia Flash 8 For Dummies Paperback
4. <http://www.teacherclick.com/flash8>

ACTECH 3.5 : Practical - I (Based on ACTECH 3.1 & ACTECH 3.4)	
Topics	Marks
ACTECH 3.1	50
ACTECH 3.4	50

ACTECH 3.6 : Practical – II (Based on ACTECH 3.2 & ACTECH 3.3)	
Topics	Marks
ACTECH 3.2	50
ACTECH 3.3	50

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UGC B.Voc.- Applied Computer Technology (Semester – IV)

Sr. No.	Paper No.	Subject	Credit
1	ACTECH 4.1	Value Education	5
2	ACTECH 4.2	Advance PHP (OOP, CMS, Wordpress)	5
3	ACTECH 4.3	Advance Web Designing (JQuery, CSS framework, AJAX, Responsive Layout)	5
4	ACTECH 4.4	Project Work - I	5
5	ACTECH 4.5	Practical - I (Based on ACTECH 4.2)	5
6	ACTECH 4.6	Practical - II (Based on ACTECH 4.3)	5
		Total Credits of Semester - IV	30

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ACTECH 4.1 : Value Education				
Sr. No.	Topics	Details	Marks	Lec.
1	Introduction to Value Education	<ul style="list-style-type: none"> • understanding the need, basic guidelines content and process for Value Education • Self-exploration – its content and process; ‘Natural Acceptance’ and Experiential Validation – as the mechanism for self-exploration • Continuous Happiness and Prosperity – A look at basic human aspirations • Right understanding, Relationship and Physical Facilities – The basic requirements for fulfillment of aspirations of every human being • Understanding Happiness and Prosperity aspirations: Understanding and living in harmony at various levels • Method to fulfill the above human aspirations: Understanding and living in harmony at various levels 	20	12
2	Harmony in the Human Being	<ul style="list-style-type: none"> • Understanding human being as a co-existence of the sentient ‘I’ and the material ‘Body’ • Understanding the needs of Self(‘I’) and ‘Body’ – <i>sukh</i> and <i>savidha</i> • Understanding the Body as an instrument of ‘I’ (I being the doer, seer and enjoyer) • Understanding the characteristics and activities of ‘I’ and harmony in ‘I’ • Understanding the harmony of ‘I’ with the Body: <i>Sanyam</i> and <i>Swasthya</i>; correct appraisal of physical needs, meaning of prosperity in detail • Program to ensure <i>Sanyam</i> and <i>Swasthya</i> 	20	12

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3	Harmony in the Family and Society	<ul style="list-style-type: none"> • Understanding harmony in the Family – the basic unit of human interaction • Understanding values in human-human relationship; meaning of <i>Nyaya</i> and program for its fulfillment to ensure <i>Ubhay – tripti</i>; Trust (<i>Vishwas</i>) and Respect (<i>Samman</i>) as the foundational value of relationship • Understanding the meaning of <i>Vishwas</i>; Difference between intention and competence • Understanding the meaning of <i>Samman</i>, Difference between respect and differentiation; the other salient values in relationship • Understanding the harmony in the society (society being an extension of family): <i>Samadhan, Samridhi, Abhay, Sah-astitva</i> as comprehensive Human Goals • Visualizing a universal harmonious order in society – Undivided Society (<i>Akhand samaj</i>), Universal Order (<i>Sarvabhaum Vyavastha</i>) from family to world family. 	20	12
4	Harmony in the Nature (Existence)	<ul style="list-style-type: none"> • Understanding the harmony in the Nature • Interconnectedness and mutual fulfillment among the four orders of nature – recyclability and self-regulations in nature • Understanding existence as co-existence (<i>Sah-astitva</i>) of mutually interacting units in all-pervasive space • Holistic perception of harmony at all levels of existence 	20	12

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5	Implications of the Holistic Understanding – A Look at Professional ethics	<ul style="list-style-type: none"> • Natural acceptance of human values • Definitiveness of Ethical Human Conduct • Basis for Humanistic Education, Humanistic Constitution and Universal Human Order • Competence in Professional Ethics: <ul style="list-style-type: none"> ○ Ability to utilize the professional competence for augmenting universal human order, ○ Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies and management models • Case studies of typical holistic technologies, management models and production systems • Strategy for transition from the present state to Universal Human Order: <ul style="list-style-type: none"> ○ At the level of individual: as socially and ecologically responsible engineers, technologist and managers ○ At the level of society: as mutually enriching institutions and organizations 	20	12
		Total	100	60

Student Seminar – 5 Lectures
Expert Talk – 5 Lectures
Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Reference Books:

1. Human Values and Professional ethics – Teacher’s Manual By R.R. Gaur, R Sangal G.P. Bagaria - Excel Books
2. Human Values and Professional ethics By R.R. Gaur, R Sangal G.P. Bagaria - Excel Books

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ACTECH 4.2 : Advance PHP (OOP, CMS, Wordpress)				
Sr. No.	Topics	Details	Marks	Lec.
1	OOP with PHP	<p>PHP with OOPS Class, constructor, inheritance, serialize objects Database Handling with OOPS Defining Class Properties and methods</p> <p>Visibility In PHP (Public, Private and Protected) Inheritance in PHP Abstract class, function overriding, static method, interface, Auto load, Final keyword, object iteration, magic methods Insert, update, delete, listing and searching with the oops</p>	15	10
2	Web Services	<p>SOAP</p> <p>PHP Web Services, Web service Technology Stack, SOAP Soup, Web services with PHP, Installing NuSOAP, Building a SOAP SERVER, Consuming a Web service, Generating WSDL Dynamically, Understanding Generated WSDL, WSDL and SOAP Proxies</p> <p><u>Json</u></p> <p>Introduction of json, Uses of JSON, JSON - Comparison with XML, JSON – Syntax, JSON – DataTypes, JSON – Objects, JSON with PHP, json_encode, json_decode json webservice</p>	12	6
3	Introduction to CMS	<p>What is a Content Management System (CMS)? Introduction to CMS WordPress, Joomla and drupal etc..... FIRST POST What Is WordPress? Popularity of WordPress Current State Intersecting the Community WordPress and the GPL</p>	8	5

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		<p>Content and Conversation WordPress as a Content Management System Creating Conversation Getting Started Hosting Options Tools for Component Administration Getting Your Development Stack Adding WordPress to the Local Install Finishing Up First-Time Administration</p>		
4	The core of Wordpress	<p>Using the Core as a Reference Inline Documentation Finding Functions Exploring the Core Deprecated Functions WordPress Codex and Resources What Is the Codex? Using the Codex Function Reference WordPress APIs Codex Controversy Don't Hack the Core! Why Not? Alternatives to Hacking the Core</p>	6	2
5	Working with Wordpress	<p>Downloading Download Locations Available Formats Release Archive Directory and File Structure WordPress Configuration Managing the Web Server Document Tree Enabling Debug Information wp-config.php File Handling Local and Production Database Advanced wp-config.php Options .htaccess The .maintenance File wp-content User Playground Plugins Themes Creating Virtual Local Server Names Uploads and Media Directory Upgrade Directory Custom Directories Creating simple website</p>	15	10

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6	The Loop	Understanding the Loop From Query Parameters to SQL Understanding Content in WordPress Putting the Loop in Context Flow of the Loop Customizing the Loop Using the WP_Query Object Building a Custom Query Adding Paging to a Loop Using query_posts() Using get_posts() Resetting a Query Global Variables Post Data, Author Data, User Data, Environmental Data, Global Variables or Template Tags Working Outside the Loop	6	3
7	Data Management	Database Schema Table Details WordPress Content Tables WordPress Taxonomy Tables WordPress Database Class Simple Database Queries Complex Database Operations Dealing with Errors Direct Database Manipulation	5	2
8	Custom Post Types, Custom Taxonomies and Metadata	Understanding Data in WordPress What Is a Custom Post Type? Register Custom Post Types Setting Post Type Labels Working with Custom Post Types Custom Post Type Template Files Special Post Type Functions WordPress Taxonomy Default Taxonomies Taxonomy Table Structure Understanding Taxonomy Relationships Building Your Own Taxonomies Custom Taxonomy Overview Creating Custom Taxonomies Setting Custom Taxonomy Labels Using Your Custom Taxonomy Metadata What Is Metadata? Adding Metadata Updating Metadata Deleting Metadata Retrieving Metadata	15	10

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9	Plugin Development	Plugin Packaging Creating a Plugin File Creating the Plugin Header Plugin License Activating and Deactivating Functions Internationalization Determining Paths Plugin Security Data Validation and Sanitization Know Your Hooks: Actions and Filters Actions and Filters Popular Filter Hooks Popular Action Hooks Plugin Settings Saving Plugin Options Array of Options Creating a Menu and Submenus Creating an Options Page WordPress Integration Creating a Meta Box Creating a Widget Creating a Dashboard Widget Creating Custom Tables Uninstalling Your Plugin Creating a Plugin Example Publishing to the Plugin Directory Restrictions Submitting Your Plugin Creating a readme.txt File Setting Up SVN Publishing to the Plugin Directory Releasing a New Version	15	10
10	User Roles	Subscriber Role, Contributor Role Author Role, Editor Role, Administrator Role, Super Admin Role, Role Overview, Extending Roles	3	2
		Total	100	60

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 Expert Talk – 5 Lectures
 Student Test – 5 Lectures

Total Lectures 60 + 15 = 75

Bachelor of Vocation – Applied Computer Technology (Semester – III & IV)
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Reference Books:

1. Head First Wordpress 1st Edition
2. WordPress Complete - Packt Publishing
3. Professional WordPress: Design and Development -
By Hal Stern, David Damstra, Brad Williams
4. Beginning WordPress 3 (Expert's Voice in Web Development) Paperback –
By Stephanie Leary
5. Professional WordPress Plugin Development by Brad Williams, Ozh Richard, Justin Tadlock
6. Web : www.wordpress.org

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ACTECH 4.3 : Advance Web Designing (JQuery, AJAX, CSS framework, Responsive Layout)				
Sr. No.	Topics	Details	Marks	Lec.
1	jQuery	What is jQuery ? Need and purpose of JQuery? jQuery and JavaScript, jQuery Install, jQuery Syntax	7	5
2	jQuery Selectors	Identifying DOM elements, Constructing jQuery Selectors The element Selector, The #id Selector, The .class Selector.	10	6
3	jQuery Events	Binding event handlers, Removing event handlers, User Interface/ Mouse events, Event Manipulation, Methods, \$(document).ready(),click(), blclick(), mouseenter(), mouseleave(), mousedown(), mouseup(), hover(), focus(), blur()	12	6
4	jQuery Effects	jQuery Hide/Show, jQuery Fade, jQuery Slide, jQuery Animate, jQuery stop(), jQuery Callback, jQuery Chaining.	10	7
5	jQuery HTML	jQuery Get, jQuery Set, jQuery Add, jQuery Remove, jQuery CSS Classes, jQuery css().jQuery and AJAX calls Using the ajax() API, Ajax events,Loading data with GET & POST,Working with JSON data.	10	7
6	AJAX	PHP with AJAX What is AJAX. How AJAX Works with PHP Working With Ajax as Background Process	6	4
7	Bootstrap Overview	What is Twitter Bootstrap? History Why use Bootstrap? What Bootstrap Package Includes? Bootstrap Environment Setup Download Bootstrap File structure PRECOMPILED BOOTSTRAP HTML Template	5	3
8	Bootstrap Grid System	What is a Grid? What is Bootstrap Grid System? Mobile first strategy Working of Bootstrap Grid System Media Queries	10	5

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		Grid options Bootstrap Grid System Example: Stacked-to-horizontal, Medium and Large Device, Mobile, Tablet, Desktops		
9	Bootstrap CSS Overview	HTML5 doctype Mobile First Responsive images Typography and links, Normalize Containers Bootstrap Typography Headings Lead Body Copy Emphasis Abbreviations, Abbreviations, Abbreviations, Lists	10	5
10	Bootstrap Tables	Basic table, striped table Bordered table, hover table, condensed table Form Layout Vertical and basic forms, Form Control Sizing Supported Form Controls like inputs, textarea, checkboxes and radios Static control, Form Control States, input focus, disabled inputs, validation state	10	6
11	Bootstrap Buttons and Bootstrap Button Groups	Button Tags, Button Size, Button State Basic Button Group, Button Toolbar, Button Size, Nesting.	5	3
12	Bootstrap Navbar	Default navbar Responsive navbar, Static top, Inverted navbar Forms in navbar, Buttons in navbar, Text in navbar, Non-nav links Component alignment, Fixed to top, Fixed to bottom	5	3
Total			100	60

Student Seminar – 5 Lectures
Expert Talk – 5 Lectures
Student Test – 5 Lectures
Total Lectures 60 + 15 = 75

Reference Books:

1. jQuery for Dummies
2. jQuery Pocket Reference Paperback - by David Flanagan
3. JQuery in Action Paperback – by Bear Bibeault, Yehuda Katz
4. Ajax Black Book Paperback – by Kogent Solutions Inc.
5. Head First Ajax Paperback – by Riordan
6. Bootstrap Paperback - by Jake Spurlock
7. web : <http://www.w3schools.com>

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ACTECH 4.4 : Project Work - I	
Topics	Marks
ACTECH 4.4	100

ACTECH 4.5 : Practical - I (Based on ACTECH 4.2)	
Topics	Marks
ACTECH 4.2	100

ACTECH 4.6 : Practical – II (Based on ACTECH 4.3)	
Topics	Marks
ACTECH 4.3	100