



Re-Accredited by NAAC with 'A' Grade

VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Dahna-Magdalla Road, SURAT - 395 007, Gujarat, India.

વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

યુનિવર્સિટી કેમ્પસ, ડાહના-મગદલા રોડ, સુરત - ૩૯૫૦૦૭, ગુજરાત, ભારત.

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-: પરિપત્ર :-

બી.એસસી. કોમ્પ્યુટર સાયન્સ વિષયનો અભ્યાસક્રમ ચલાવતી સંલગ્ન કોલેજોના આચાર્યશ્રીઓને જણાવવાનું કે, શૈક્ષણિક વર્ષ ૨૦૧૭-૧૮ થી અમલમાં આવનાર B.Sc. Computer Science 1st & 2nd semester નો અભ્યાસક્રમ કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસસમિતિ અને કોમ્પ્યુટર સાયન્સ એન્ડ ઈન્ફોર્મેશન ટેકનોલોજી વિદ્યાશાખાની સંયુક્ત સભાએ તેની તા. ૧૦/૦૪/૨૦૧૭ ની સભાના ઠરાવ ક્રમાંક : ૩ અન્વયે કરેલી નીચેની ભલામણ એકેડેમિક કાઉન્સિલે તેની તા. ૨૮/૦૪/૨૦૧૭ ની સભાના ઠરાવ ક્રમાંક : ૧૮૪ અન્વયે મંજૂર કરેલ છે, તેની જાણ સંબંધકર્તા શિક્ષકો અને વિદ્યાર્થીઓને કરવી, તદ્દઉપરાંત તેનો અમલ કરવો.

કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસસમિતિ અને કોમ્પ્યુટર સાયન્સ એન્ડ ઈન્ફોર્મેશન ટેકનોલોજી વિદ્યાશાખાની સંયુક્ત સભાની તા. ૧૦/૦૪/૨૦૧૭ ની સભાની ભલામણ

ક્રમાંક : ૩

:: આથી ઠરાવવામાં આવે છે કે, શૈક્ષણિક વર્ષ ૨૦૧૭-૧૮ થી અમલમાં આવનાર B.Sc. Computer Science 1st & 2nd semester નો અભ્યાસક્રમ વિસ્તૃત ચર્ચા કરી સ્વીકારવામાં આવે છે અને તે મંજૂર કરવા એકેડેમિક કાઉન્સિલને ભલામણ કરવામાં આવે છે.


વધુમાં ઠરાવવામાં આવે છે કે, હાલમાં બી.એસસી. કોમ્પ્યુટર સાયન્સના મેથેમેટીક્સ ફોર કોમ્પ્યુટર સાયન્સના પેપરનું નામાભિધારણ મેથેમેટીક્સ (કોમ્પ્યુટર સાયન્સ) કરવું અને આ પેપરને અન્ય પસંદગીના પેપરો સાથે એક વધારાનું પેપર ગણવું.

એકેડેમિક કાઉન્સિલની તા. ૨૮/૦૪/૨૦૧૭ ની સભાનો ઠરાવ ક્રમાંક : ૧૮૪

:: આથી ઠરાવવામાં આવે છે કે, કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસસમિતિ અને કોમ્પ્યુટર સાયન્સ એન્ડ ઈન્ફોર્મેશન ટેકનોલોજી વિદ્યાશાખાની સંયુક્ત સભાની તા. ૧૦/૦૪/૨૦૧૭ ની સભાના ઠરાવ ક્રમાંક : ૩ અન્વયે કરેલ ભલામણ સ્વીકારી તે મંજૂર કરવામાં આવે છે.

બિડાણ: ઉપર મુજબ

ક્રમાંક : એકે./પરિપત્ર/૭૮૨૬/૧૭
તા.૦૩/૦૫/૨૦૧૭


ઈ.ચા.કુલસચિવ

પ્રતિ,

- ૧) બી.એસસી. કોમ્પ્યુટર સાયન્સ વિષયનો અભ્યાસક્રમ ચલાવતી સંલગ્ન કોલેજોના આચાર્યશ્રીઓ.
- ૨) ડીનશ્રી, કોમ્પ્યુટર સાયન્સ એન્ડ ઈન્ફોર્મેશન ટેકનોલોજી વિદ્યાશાખા
- ૩) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી, સુરત.

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
F Y B. Sc. (Computer Science)
Syllabus for F. Y. B. Sc. Semester - I
Effective From: June 2017
Course: Fundamentals of Computer - I

Course Code	101
Course Title	Fundamentals of Computer - I
Credit	2 per Course
Teaching per Week	(2 Hrs Theory + 2 Hrs Practical)
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	2014
Purpose of Course	This course is designed for introduction to computers, Web design, Operating System and Database Management Systems.
Course Objective	To make understand the student for: <ul style="list-style-type: none"> ● Computers fundamentals ● Web pages are created and maintained
Prerequisite	None
Course Out come	At the end of course student understand the basic usage of computers and Database Management Systems.
	<p>1. Computer Fundamentals</p> <p>1.1. History, Characteristics and Generation of Computers.</p> <p>1.2. Classification of Hardware and Software.</p> <p>1.3. Basic Knowledge about CPU, Control Unit, ALU</p> <p>1.4. Memory: Primary memory, Secondary memory.</p> <p>2. Introduction to HTML and CSS</p> <p>2.1. Design and develop web pages using HTML tags</p> <p style="margin-left: 20px;">2.1.1. Structure</p> <p style="margin-left: 20px;">2.1.2. Text Formatting Tags</p> <p style="margin-left: 20px;">2.1.3. Block Formatting Tags</p> <p style="margin-left: 20px;">2.1.4. Headings</p> <p style="margin-left: 20px;">2.1.5. Lists</p> <p style="margin-left: 20px;">2.1.6. Links</p> <p style="margin-left: 20px;">2.1.7. Tables</p> <p style="margin-left: 20px;">2.1.8. Forms</p> <p style="margin-left: 20px;">2.1.9. Frames</p> <p style="margin-left: 20px;">2.1.10. Image Maps</p> <p style="margin-left: 20px;">2.1.11. Audio & Video Tags</p> <p>2.2. Design and develop web pages using CSS</p> <p style="margin-left: 20px;">2.2.1. Introduction to CSS (What is CSS? & Use of CSS)</p> <p style="margin-left: 20px;">2.2.2. Benefits of Cascading Style Sheets</p> <p style="margin-left: 20px;">2.2.3. Applying a style sheet to a document</p> <p style="margin-left: 40px;">2.2.3.1. External Style Sheet</p> <p style="margin-left: 40px;">2.2.3.2. Importing Style Sheet</p> <p style="margin-left: 40px;">2.2.3.3. Embedding style sheet</p> <p style="margin-left: 40px;">2.2.3.4. Inline Style</p> <p style="margin-left: 20px;">2.2.4. Properties : Font, Text, Margin, Border, List, Color & Background, Box</p>

	<p>Unit 3. DHTML & Java Script</p> <p>3.1. Static, Dynamic and Active Page</p> <p>3.2. DHTML Events</p> <p> 3.2.1. Window, Form, Keyboard, Mouse</p> <p>3.3. Java Script</p> <p> 3.3.1. Overview of Client & Server Side Scripting</p> <p> 3.3.2. Structure of JavaScript</p>
	<p> 3.3.3. Data Types and Variables</p> <p> 3.3.4. Operators : Arithmetic Operator, Assignme_____</p> <p> Comparison Operator, Logical Operator, C_____</p> <p> Operator</p> <p> 3.3.5. Control Structure : If...Else, While, Do...W_____</p> <p> 3.3.6. Functions</p>
<p>Reference Books:</p>	<p>1. Fundamentals of Computers 5th Edition - V Rajara_____</p> <p>2. Introduction to Computers : 4th Edition – Peter No_____</p> <p>3. Inside IBM PC - Peter Norton, PHI</p> <p>4. Computer System Architecture - Morris Mano</p> <p>5. HTML in 21 days - SAMS publication</p> <p>6. How to Create Web Pages Using HTML - K Laud_____</p> <p>7. Web Enabled Commercial Application Developme_____</p> <p> HTML, DHTML - Ivan Byross, BPB</p> <p>8. Java Script Create functions for the web in easy ste_____e</p> <p> McGrath 5th Edition McGrawHill Profession ISBN _____ 3-</p> <p> 5134-687-9</p>

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
F Y B. Sc. (Computer Science)
Syllabus for F. Y. B. Sc. Semester - II
Effective From: June 2017
Course: Fundamentals of Computer - II

Course Code	201
Course Title	Fundamentals of Computer - II
Credit	2 per Course
Teaching per Week	(2 Hrs Theory + 2 Hrs Practical)
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	2014
Purpose of Course	This course is designed for introduction to computers, Web design, Operating System and Database Management Systems.
Course Objective	To make understand the student for: <ul style="list-style-type: none"> ● Various functions of Operating Systems ● Basic of Database Management System
Prerequisite	None
Course Out come	At the end of course student understand the basic usage of computers and Database Management Systems.
	<p>1 Introduction of Operating System</p> <p>1.1 Types of Operating System</p> <p>1.1.1 Single and multi tasking</p> <p>1.1.2 Single and multi user</p> <p>1.1.3 Distributed</p> <p>1.1.4 Templated</p> <p>1.1.5 Embedded</p> <p>1.1.6 Real time.</p> <p>1.2 Features of Operating Systems</p> <p>1.2.1 Unix and Unix-like operating systems (Ubuntu / Linux / Cent OS)</p> <p>1.2.2 Microsoft Windows</p> <p>1.3 Comparisons of Operating System</p> <p>2. Database and its concepts</p> <p>2.1 Concept of Field, Record, Table and Database, Keys – Primary key, Foreign key, Super key and Candidate key</p> <p>3. Working with DBMS (MS-Access / Base / DB2 / Postgre Sql)</p> <p>3.1 Basic data types</p> <p>3.2 Working with database & tables</p> <p>3.3 Using SQL Queries (Simple)</p> <p>3.4 DML commands (Insert, Update, Delete)</p> <p>3.5 Managing Constraints & Relationships</p> <p>3.6 Create Forms and Reports</p> <p>4. Inbuilt Functions (Scalar and aggregate)</p> <p>4.1 Numeric functions</p> <p>4.2 String functions</p> <p>4.3 Date functions</p> <p>4.4 Conversion functions</p> <p>4.5 Aggregate / group functions</p>

Reference Books:	<ol style="list-style-type: none">1. Fundamentals of Computers 5th Edition - V Rajaraman, PHI2. Inside IBM PC - Peter Norton, PHI3. Advanced MS DOS - Rayduncon, McGraw Hill4. Computer System Architecture - Morris Mano5. Ms Access in 21 days - SAMS Publication6. Database Management and Design, 2nd Edition, Hansen & H7. Database Management Systems, Narang - PHI8. Data Base Concepts - Henry Korih
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VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
F Y B. Sc. (Computer Science)
Syllabus for F. Y. B. Sc. Semester-I
Effective From: June 2017
Course: Programming in C - I

Course Code	102
Course Title	Programming in C - I
Credit	2 per Course
Teaching per Week	(2 Hrs Theory + 2 Hrs Practical)
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	2014
Purpose of Course	The aim of this course is to introduce to the students the rudiments of structured programming using C language. Students will become familiar with problem solving techniques and algorithm development.
Course Objective.	To make student understand: <ul style="list-style-type: none"> ● Use of problem solving tools ● Paradigm of programming ● Structured Programming approach to problem solving using C language. ● Various construct of C programming language.
Prerequisite	None
Course Out come	This course introduce the Problem Solving techniques using Algorithms, Computer, Programming Paradigm and various constructs of Programming Language.
	<p>1. Algorithm & Flowchart</p> <p>2. Programming Languages & Structured Programming</p> <p>2.1. Structured Programming</p> <p>2.2. Levels of Programming languages</p> <p>2.3. Concepts of Compiler / Interpreter, Editor</p> <p>3. Fundamentals of “C”</p> <p>3.1. The Basics of “C”: Identifiers, key words, data types, declaration, reserved words</p> <p>3.2. Operators and Expression</p> <p>3.3. Arithmetic Operators</p> <p>3.4. Unary Operators</p> <p>3.5. Relational Operators</p> <p>3.6. Assignment Operators</p> <p>3.7. Conditional Operators</p> <p>4. Control Statements</p> <p>4.1 various forms of <i>if</i> Statement</p> <p>4.2 <i>while</i> Loop</p> <p>4.3 <i>do-while</i> Loop</p> <p>4.4 <i>for</i> Loop</p> <p>4.5 <i>switch</i> Statement</p> <p>4.6 <i>break</i> and <i>continue</i> Statements</p>

	<p>5. Functions</p> <p>5.1. Library Functions</p> <p>5.1.1 Arithmetic Functions</p> <p>5.1.2 String Functions</p> <p>5.1.3 Conversion Functions</p> <p>5.2. User Defined Functions (UDFs)</p> <p>5.2.1 Defining and Accessing a Function</p> <p>5.2.2 Passing Arguments to a Function</p>
	<p>5.2.3 Specifying Argument Data Type</p> <p>5.2.4 Function Prototype</p> <p>5.2.5 Recursion</p> <p>6. Array</p> <p>6.1. Array introduction, definition, fundamental of array</p> <p>6.2. Processing an array</p> <p>6.3. Passing array to function</p>
Reference Books:	<ol style="list-style-type: none"> 1. "C Language Programming", By Gottfried, Tata McGraw H 2. Let Us C - Yashwant Kenetkar 3. C Programming Language – Kernighan & Ritchie - TMH 4. 'C' Odyssey (6 volumes) – Vijay Mukhi – PHI 5. C: How to Program, 6th Edition, Deitel & Deitel, PHI 6. Magnifying C, Arpita Gopal – PHI 7. Problem Solving with C, Somashekara - PHI 8. Programming in 'C' -- Stephan Kochan - CBS 9. Mastering Turbo C --- Kelly & Bootle - BPB 10. Mastering Turbo C --- Stan Kelly – BPB

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
F Y B. Sc. (Computer Science)
Syllabus for F. Y. B. Sc. Semester-II
Effective From: June 2017
Course: Programming in C - II

Course Code	202
Course Title	Programming in C - II
Credit	2 per Course
Teaching per Week	(2 Hrs Theory + 2 Hrs Practical)
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	2014
Purpose of Course	The aim of this course is to introduce to the students the rudiments of structured programming using C language. Students will become familiar with problem solving techniques and algorithm development.
Course Objective	To make student understand: <ul style="list-style-type: none"> ● Composite data types and file handing in C language. ● Address accessing techniques using pointers.
Prerequisite	None
Course Out come	At the completion of this course student should be able to work with composite data types and files using C programming.

	<p>1. Multidimensional array, Structure and Union</p> <p>1.1 Multidimensional array 1.2 Defining Structure 1.3 Processing a Structure 1.4 User Defined Data Type (typedef) 1.5 Passing Structure to a function 1.6 Union</p> <p>2. Pointers and arrays</p> <p>2.1 Pointer Fundamentals 2.2 Pointer Declaration 2.3 Passing Pointers to a Function 2.4 Pointers and One Dimensional Array 2.5 Pointers and Multidimensional Array 2.6 Array of Pointer 2.7 Structure and Pointer 2.8 Pointer to Structure</p> <p>3. Files Handling</p> <p>3.1 Opening a file & Closing a file 3.2 Reading from a file & Writing to a file 3.3 Reading & Writing Structures 3.4 Random Accessing a file</p> <p>4 Miscellaneous</p> <p>4.1 Command line arguments 4.2 Preprocessing 4.2.1 Preprocessor directives 4.2.2 Defining macro</p>
Reference Books:	<p>1. "C Language Programming", By Gottfried, Tata McGraw H 2. Let Us C - Yashwant Kenetkar 3. C Programming Language – Kernighan & Ritchie - TMH 4. 'C' Odyssey (6 volumes) – Vijay Mukhi – PHI 5. C: How to Program, 6th Edition, Deitel & Deitel, PHI 6. Magnifying C, Arpita Gopal – PHI 7. Problem Solving with C, Somashekara - PHI 8. Programming in 'C' --- Stephan Kochan - CBS 9. Mastering Turbo C --- Kelly & Bootle - BPB 10. Mastering Turbo C --- Stan Kelly – BPB</p>

**Teaching Scheme: First Year B.Sc.(Computer Science)
Semester I - II**

Course Code	Course Title	Teaching Schedule (Per Week)		
		Theory (Hrs.)	Practical (Hrs.)	Tutorial (Hrs.)
101	Fundamentals of Computers - I	2	2	0
102	Programming in C - I	2	2	0
201	Fundamentals of Computers - II	2	2	0
202	Programming in C - II	2	2	0

Note:

1. Batch Size -- 30 Maximum
2. The journal should be certified by the concerned faculty and also by the Head of the Department, failing which the student should not be allowed to appear for External Practical Examination.