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VEER NARMAD SOUTH GUJARAT UNIVERSITY

University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.

વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

યુનિવર્સિટી કેમ્પસ, ઉદ્ધના-મગદલા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.

Tel : +91 - 261 - 2227141 to 2227146, Toll Free : 1800 2333 011, Fax : +91 - 261 - 2227312

E-mail : info@vnsgu.ac.in, Website : www.vnsgu.ac.in

-: પરિપત્ર :-

બી.એસસી. (કોમ્પ્યુટર સાયન્સ) નો અભ્યાસક્રમ ચલાવતી સંલગ્ન કોલેજોના આચાર્યશ્રીઓને જણાવવાનું કે, શૈક્ષણિક વર્ષ-૨૦૨૦-૨૧ થી અમલમાં આવતા બી.એસસી. (કોમ્પ્યુટર સાયન્સ) સેમેસ્ટર - ૧ અને ૨ અભ્યાસક્રમ અને Teaching Scheme બાબતે ચર્ચા કરતા કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસસમિતિની તા.૧૯/૧૧/૨૦૧૯ની સભાનાં ઠરાવ ક્રમાંક: ૪ અન્વયે નીમેલ પેટાસમિતિએ તૈયાર કરેલ અભ્યાસક્રમ અને ટીચિંગ સ્કીમ અભ્યાસસમિતિનાં ચેરમેનશ્રીએ અભ્યાસસમિતિવતી મંજૂર કરી ફેકલ્ટીને કરેલ ભલામણ કોમ્પ્યુટર સાયન્સ એન્ડ ઈન્ફોર્મેશન ટેકનોલોજી વિદ્યાશાખાનાં અધ્યક્ષશ્રીએ વિદ્યાશાખાવતી મંજૂર કરી એકેડેમિક કાઉન્સિલન કરેલ ભલામણ એકેડેમિક કાઉન્સિલે તેની તા. ૩૦/૦૬/૨૦૨૦ ની સભાના ઠરાવ ક્રમાંક : ૧૦૧ અન્વયે મંજૂર કરેલ છે. તેની જાણ સંબંધકર્તા શિક્ષકો અને વિદ્યાર્થીઓને કરવી, તદ્દુપરાંત તેનો અમલ કરવો.

એકેડેમિક કાઉન્સિલની તા.૩૦/૦૬/૨૦૨૦ ની સભાનાં ઠરાવ ક્રમાંક: ૧૦૧

:: આથી ઠરાવવામાં આવે છે કે, કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસસમિતિએ તેની તા.૧૯/૧૧/૨૦૧૯ની સભાનાં ઠરાવ ક્રમાંક: ૪ અન્વયે નીમેલ પેટાસમિતિએ તૈયાર કરેલ તેમજ કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસસમિતિનાં ચેરમેનશ્રીએ અભ્યાસસમિતિવતી અને કોમ્પ્યુટર સાયન્સ એન્ડ ઈન્ફોર્મેશન ટેકનોલોજી વિદ્યાશાખાનાં અધ્યક્ષશ્રીએ વિદ્યાશાખાવતી મંજૂર કરેલ શૈક્ષણિક વર્ષ ૨૦૨૦-૨૧ થી અમલમાં આવતા બી.એસસી. (કોમ્પ્યુટર સાયન્સ) સેમેસ્ટર - ૧ અને ૨ અભ્યાસક્રમ અને Teaching and Evaluation Scheme મંજૂર કરવામાં આવે છે.

બિડાણ: ઉપર મુજબ

ક્રમાંક : એકે./પરિપત્ર/૫૮૩૫/૨૦૨૦

તા.૧૬/૦૭/૨૦૨૦

R. B. L. J.
T. E. J. M.
ઈ.યા.કુલસચિવ

પ્રતિ,

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

.....તરફ જાણ તેમજ અમલ સારૂ.

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
F Y B. Sc. (Computer Science)
Syllabus for F. Y. B. Sc. Semester - I
Effective From: June 2020
Course: Fundamentals of Computers and Web Designing

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| Course Code | 101 |
| Course Title | Fundamentals of Computers and WebDesigning |
| 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 | 2017 |
| Purpose of Course | This course is designed for introduction to computers and internet, World Wide Web and Web Designing. |
| Course Objective | To make understand the student for: ★ Computer Fundamentals and Organization ★ Internet Fundamentals ★ Web pages creation for desktop and mobile through html 5 ★ Use of java script and CSS |
| Prerequisite | None |
| Course Out come | At the end of course student understand the basic of computer systems, Internet and web page creation |
| | 1 Computer Fundamentals 1.1 Computer System – IPO system 1.2 Central Processing Unit – ALU, Register, Control Unit 1.3 Memory Unit : Primary Memory, Secondary Memory, Cache Memory, Main memory organization and Storage Evaluation criteria 1.4 Microprocessor, Instruction Cycle, Working of Buses 1.5 Secondary Storage – Sequential and Direct Access, Disk storage Organization, storage capacity, Access mechanism and Access time. 2 Internet Fundamentals & Web page designing with HTML5 2.1 Computer Network- Importance, Types, Internet and Intranet 2.2 World Wide Web (WWW), 2.3 Website Basics - WebPages(static and dynamic); Hyper Text, Web browser, Web Servers; Web Hosting, Web Portal, Domain name server, Overview of Client & Server Side Scripting, Applications of Internet 2.4 Design and develop web pages using HTML tags (HTML5) 2.4.1 Structure 2.4.2 Text Formatting Tags 2.4.3 Block Formatting Tags 2.4.4 Headings 2.4.5 Lists 2.4.6 Links 2.4.7 Tables 2.4.8 Forms 2.4.9 Frames 2.4.10 Image Maps 2.4.11 Audio & Video Tags |

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| | <p>3. Interactive web design using CSS3 and Javascript</p> <p>3.1 Introduction to CSS (What is CSS? & Use ofCSS)</p> <p>3.2 Benefits of Cascading StyleSheets</p> <p>3.3 Applying a style sheet to adocument</p> <ul style="list-style-type: none"> • External StyleSheet • Importing StyleSheet • Embedding stylesheet • InlineStyle <p>3.3.2 Properties : Font, Text, Margin, Border, List, Color & Background,Box</p> <p>3.4 DHTML- DHTMLEvents</p> <p>3.4.1 Window, Form, Keyboard,Mouse</p> <p>3.5 JavaScript</p> <p>3.5.1 Structure ofJavaScript</p> <p>3.5.2 Data Types andVariables</p> <p>3.5.3 Operators : Arithmetic Operator, AssignmentOperator, Comparison Operator, Logical Operator, Conditional Operator</p> <p>3.5.4 Control Structure : If...Else, While, Do...While,For, Functions</p> |
| <p>Reference Books:</p> | <ol style="list-style-type: none"> 1. Computer Fundamentals By PK Sinha amdPriti Sinha 2. Computer Fundamentals By Anita Goel, Pearson 3. Fundamentals of Computers 5th Edition - V Rajaraman,PHI 4. Introduction to Computers : 4th Edition – PeterNorton 5. Inside IBM PC - Peter Norton,PHI 6. HTML5 and CSS# made simple By Ivan Byross, BPB 7. Programming HTML5 with Javascript and CSS3 Training Guide By Johnson G, PHI 8. HTML in 21 days - SAMSpublishation 9. How to Create Web Pages Using HTML - K Laudon,TMH 10. Web Enabled Commercial Application DevelopmentUsing HTML, DHTML - Ivan Byross,BPB 11. Java Script Create functions for the web in easy steps by Mike McGrath 5th Edition McGrawHill Profession ISBN-13-978-93- 5134-687-9 |

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
F Y B. Sc. (Computer Science)
Syllabus for F. Y. B. Sc. Semester-I
Effective From: June 2020
Course: Programming in C - I

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| 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 | 2017 |
| 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. Fundamentals of Programming and Basics of “C”</p> <p>1.1 Algorithm & Flowchart</p> <p>1.2 Programming Languages & Structured Programming</p> <p>1.2.1 Structured Programming</p> <p>1.2.2 Levels of Programming languages</p> <p>1.2.3 Concepts of Compiler / Interpreter, Editor</p> <p>1.3 Fundamentals of “C”</p> <p>1.3.1. The Basics of “C”: Identifiers, key words, data types, declaration, reserved, words</p> <p>1.3.2. concept of expression, statement and block</p> <p>1.3.3. Arithmetic Operators</p> <p>1.3.4. Unary Operators</p> <p>1.3.5. Relational Operators</p> <p>1.3.6. Assignment Operators</p> <p>1.3.7. Conditional Operators</p> <p>2. Control Statements</p> <p>2.1 various forms of <i>if</i> Statement</p> <p>2.2 <i>while</i> Loop</p> <p>2.3 <i>do-while</i> Loop</p> <p>2.4 <i>for</i> Loop</p> <p>2.5 <i>switch</i> Statement</p> <p>2.6 <i>break</i> and <i>continue</i> Statements</p> <p>2.7 Nesting of control statements</p> <p>3. Functions</p> <p>3.1. Library Functions</p> <p>3.1.1 Arithmetic Functions</p> |

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| | <p>3.1.2 String Functions 3.1.3 Conversion Functions 3.2. User Defined Functions (UDFs) 3.2.1 Function Prototype 3.2.2 Types of UDFs- With and without parameters and return values 3.2. Defining and Calling a Function 3.2.3 Passing Arguments to a Function 3.2.4 Specifying Argument Data Type 3.2.5 Returning a value 3.3 Recursion</p> |
| Reference Books: | <ol style="list-style-type: none"> 1. "C Language Programming", By Gottfried, Tata McGraw Hill 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 2020
Course: Fundamentals of Computer and Database Management

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|-----------------------------------|---|
| Course Code | 201 |
| Course Title | Fundamentals of Computer and Database Management |
| 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 | 2017 |
| 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 Data Representation</p> <p>1.1 Number Systems - Decimal, Binary, Octal, Hexadecimal, Conversion, Binary addition and subtraction</p> <p>1.2 Logic Gates with their truth tables – AND, OR, NOT, NOR, NAND, XOR</p> <p>2. Fundamentals of Operating system</p> <p>2.1 Objectives, Types, Functions</p> <p>2.2 Overview of Process Management – types of Schedulers</p> <p>2.3 Overview Memory Management</p> <p>2.3.1 Uniprogramming memory model</p> <p>2.3.2 Multiprogramming memory model</p> <p>2.3.3 Virtual Memory</p> <p>Unit 3: Database Management</p> <p>3.1 Concept of Database, Table, Record, Field, Datatypes, Primary key, Foreign key</p> <p>3.2 Creating Tables, Inserting, Updating and Deleting data</p> <p>3.3 Simple search queries with SQL with <i>where</i> clause only.</p> <p>3.4 Various operators with <i>where</i> clause - arithmetic operators, logical operators, LIKE, IN, BETWEEN</p> <p>3.5 Functions in SQL query –</p> <p>3.5.1 Min, Max, Count, Avg, Sum.</p> <p>3.5.2 String functions - concat, lcase,ucase, ltrim , rtrim , trim, str, substr</p> |
| Reference Books: | <ol style="list-style-type: none"> 1. Computer Fundamentals By PK Sinha amd Priti Sinha 2. Computer Fundamentals by Arpita Goel, Peroson 3. Fundamentals of Computers 5th Edition - V Rajaraman, PHI 4. Inside IBM PC - Peter Norton, PHI 5. MySql Bible By Steaven Suehring John, Wiley 6. The Complete Reference – MySQL By Vikram Vasvani, McGrawHill 7. Database Management and Design, Hansen & Hansen – PHI 8. Database Management Systems, Narang – PHI 9. Data Base Concepts - Henry Korth |

VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT
F Y B. Sc. (Computer Science)
Syllabus for F. Y. B. Sc. Semester-II
Effective From: June 2020
Course: Programming in C - II

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| 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 | 2017 |
| 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. |

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| | <p>1. Array, Structure and Union</p> <p>1.1. Array introduction, definition, fundamental of array</p> <p>1.2. Processing an array</p> <p>1.3. Passing array to function</p> <p>1.4 Multidimensional array</p> <p>1.5 Defining Structure</p> <p>1.6 Processing a Structure</p> <p>1.7 User Defined Data Type (typedef)</p> <p>1.8 Passing Structure to a function</p> <p>1.9 Union</p> <p>2. Pointers and arrays</p> <p>2.1 Pointer Fundamentals</p> <p>2.2 Pointer Declaration</p> <p>2.3 Passing Pointers to a Function</p> <p>2.4 Pointers and One Dimensional Array</p> <p>2.5 Pointers and Multidimensional Array</p> <p>2.6 Array of Pointer</p> <p>2.7 Structure and Pointer</p> <p>2.8 Pointer to Structure</p> <p>3. Files Handling and Miscellaneous</p> <p>3.1 Opening a file & Closing a file</p> <p>3.2 Reading from a file & Writing to a file</p> <p>3.3 Reading & Writing Structures</p> <p>3.4 Random Accessing a file</p> <p>3.5 Command line arguments</p> <p>3.6 Preprocessing</p> <p> 3.6.1 Preprocessor directives</p> <p> 3.6.2 Defining Macro</p> |
| Reference Books: | <p>1. “C Language Programming”, By Gottfried, Tata McGraw Hill</p> <p>2. Let Us C - Yashwant Kenetkar</p> <p>3. C Programming Language – Kernighan & Ritchie - TMH</p> <p>4. ‘C’ Odyssey (6 volumes) – Vijay Mukhi – PHI</p> <p>5. C: How to Program, 6th Edition, Deitel & Deitel, PHI</p> <p>6. Magnifying C, Arpita Gopal – PHI</p> <p>7. Problem Solving with C, Somashekara - PHI</p> <p>8. Programming in ‘C’ --- Stephan Kochan - CBS</p> <p>9. Mastering Turbo C --- Kelly & Bootle - BPB</p> <p>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 and Web Designing | 2 | 2 | 0 |
| 102 | Programming in C – I | 2 | 2 | 0 |
| 201 | Fundamentals of Computer and Database Management | 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.