



Re-Accredited B++ 2.86 CGPA by NAAC

VEER NARMAD SOUTH GUJARAT UNIVERSITY

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વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

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

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-: પરિપત્ર :-

વિજ્ઞાન વિદ્યાશાખા હેઠળની સંલગ્ન તમામ કોલેજોનાં આચાર્યશ્રીઓને જણાવવાનું કે, NEP-2020 અંતર્ગત શૈક્ષણિક વર્ષ ૨૦૨૩-૨૪ થી અમલમાં આવનાર B.Sc.(Electronics) Sem.-1 & 2 Minor અને SEC નો અભ્યાસક્રમ ભૌતિકશાસ્ત્ર વિષયની અભ્યાસ સમિતિની તા.૧૪/૧૨/૨૦૨૩ ની સભાના ઠરાવ ક્રમાંક:૩ અન્વયે કરેલ ભલામણ વિજ્ઞાન વિદ્યાશાખાના અધ્યક્ષશ્રીએ વિદ્યાશાખાની મંજૂરીની અપેક્ષાએ વિદ્યાશાખાવતી મંજૂર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણ એકેડેમિક કાઉન્સિલની તા.૦૭/૦૮/૨૦૨૩ની સભાના ઠરાવ ક્રમાંક: ૯૯ અન્વયે માન.કુલપતિશ્રીને આપેલ સત્તા અંતર્ગત માનનીય કુલપતિશ્રી દ્વારા મંજૂર કરેલ છે. જેનો અમલ કરવા આથી જાણ કરવામાં આવે છે.

ભૌતિકશાસ્ત્ર વિષયની અભ્યાસ સમિતિની તા.૧૪/૧૨/૨૦૨૩ ની સભાના ઠરાવ ક્રમાંક:૩

:: આથી ઠરાવવામાં આવે છે કે, NEP-2020 અંતર્ગત B.Sc.(Electronics) Sem.- 1 & 2 નો Minor અને SEC નો અભ્યાસક્રમ મંજૂર કરી વિજ્ઞાન વિદ્યાશાખાને ભલામણ કરવામાં આવે છે.

(બિડાણ: ઉપર મુજબ)

ક્રમાંક : એસ./સાયન્સ/પરિપત્ર/૬૯૯/૨૦૨૪

તા.૦૫-૦૧-૨૦૨૪

Wifera
કુલસચિવ

પ્રતિ,

૧) વિજ્ઞાન વિદ્યાશાખા હેઠળની સંલગ્ન તમામ કોલેજોનાં આચાર્યશ્રીઓ.

..... આપશ્રીની કોલેજના સંબંધિત શિક્ષકોને જાણ કરી અમલ કરવા સારું.

૨) અધ્યક્ષશ્રી, વિજ્ઞાન વિદ્યાશાખા.

૩) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.

.....તરફ જાણ તેમજ અમલ સારું.

Veer Narmad South Gujarat University, Surat

NEP-2020 : Syllabus for F Y B Sc Skill Development/Enhancement Course Semester-I
(With Effect From June 2023)

Title of the Paper Skill Development/Enhancement Course: Basic Computer Hardware
(Total Credits2 : Theory-02, Practicals-00 i.e. 2 hours per week)

Unit – I

Introduction to Computer Hardware, Overview of computer hardware and its role in computing systems, Historical development of computer hardware, Basic computer architecture and organization, Hardware vs. software,

Central Processing Unit (CPU), Role and functions of the CPU, CPU architecture and components, Instruction execution cycle, CPU performance and benchmarks,

Memory Systems, Types of memory: RAM, ROM, cache memory, Memory hierarchy and levels of cache, Virtual memory and paging, Memory management techniques,

Storage Devices, Hard disk drives (HDD) and solid-state drives (SSD), Optical storage devices (CDs, DVDs, Blu-ray), Flash memory and USB drives, RAID (Redundant Array of Independent Disks),

Input and Output Devices, Keyboard, mouse, and pointing devices, Monitors and displays, Printers and scanners, Audio input and output devices

Unit – II

Motherboard and Expansion Cards, Motherboard components and architecture, Expansion slots and cards (graphics cards, network cards, sound cards), BIOS and UEFI, CMOS battery and settings,

Power Supply and Cooling Systems, Power supply unit (PSU) and voltage regulation, Cooling systems (fans, heat sinks, liquid cooling), Power management and energy efficiency, Troubleshooting power and cooling issues

Peripheral Devices, USB, FireWire, and Thunderbolt interfaces, External storage devices, Input devices for specialized applications (e.g. gaming, graphic design), Wireless devices (Bluetooth, Wi-Fi)

Troubleshooting and Maintenance, Common hardware issues and diagnostics, Hardware maintenance and cleaning, Software tools for hardware monitoring and diagnostics, Upgrading and replacing hardware components

Recommended Books:

- 1) Fundamental of Computers Rajaraman & Neeharika Adabala.
- 2) Introduction to Computer:4th Edition Peter Norton.
- 3) Computer Fundamental's by PK Sinha and Priti Sinha.
- 4) Computer Fundamental By Anita Goel Pearson.

5) Upgrading and Repairing PCs 22nd Edition by Scott Mueller.

6) Computer Hardware: Installation, Interfacing, Troubleshooting and Maintenance by K.L.James.

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NEP-2020 : Syllabus for F Y B Sc Skill Development/Enhancement Course Semester-2
(With Effect From June 2023)

Title of the Paper Skill Development/Enhancement Course: Basics Computer Soft Skill
(Total Credits2 : Theory-01, Practicals-01 i.e. 2 hours per week)

Unit – I

Basics of Operating System:

Operating system, Basics of popular operating system (LINUX, WINDOWS); The User Interface: Task Bar, Icons, Start Menu, Running an Application; Operating System Simple Setting: Changing System Date And Time, Changing Display Properties, To Add Or Remove A Windows Component, Changing Mouse Properties, Adding and removing Printers; File and Directory Management: Types of files, What is a file, Naming conventions, File Extensions, File Pathway, Windows Explorer window, Viewing files, File property dialogue box, Explain file size (bytes, kilo, mega, giga, tera) and abbreviations used, Create a Folder, Move a file (multiple files) into a folder, Delete files and folders, Recovering deleted files, Renaming files, Searching for files, Creating and deleting shortcuts on desktop, How programs may save files in specific location by default. How to find where file is being saved; Desktop: exploring the desktop, cleaning the desktop; Keep Software updated: how to set automatic updates for windows operating system.

Unit – II

Word Processing: Word Processing Basics: Opening Word Processing Package, Menu Bar, Using The Help, Using The Icons Below Menu Bar; Opening and closing Documents: Opening Documents, Save and Save as, Page Setup, Print Preview, Printing of Documents; Text Creation and manipulation: Document Creation, Editing Text, Text Selection, Cut, Copy and Paste, Spell check, Thesaurus; Formatting the Text: Font and Size selection, Alignment of Text, Paragraph Indenting, Bullets and Numbering, Changing case; Formatting a document: Set page margin, paragraphs and sections within a document, Adjust indents and hanging indents; Table Manipulation: Draw Table, Changing cell width and height, Alignment of Text in cell, Delete / Insertion of row and column Border and shading, Table Formula; Inserting Graphic Elements: Insert a clip art picture, insert symbols and special characters, adding a watermark; Using word art; adding a drop cap; Mail Merge: Using mail merge; printing mailing labels; merging for sending emails using outlook. Macros, Use of local language

Recommended Books:

1) Operating system H.M Deitel.

2) Operating System Design and Implementation Andrew S.Tancinbaumand and Albert S.woodhull.

- 3) Operating System Flynn and MC Hoes.
- 4) Microsoft word 2010 Simplified Elaine Marmel.
- 5) Microsoft Word 365 Tech Demystified.

Experiments/ Laboratory work :

There will be two hours of laboratory/practical per week. There will be ten students per batch for laboratory/practical work.

List of Experiments/Practical:

- 1) Explain MS-word interface part.
- 2) Explain Insert tab, page layout tab and home tab.
- 3) Insert a image into shape.
- 4) Use smart art .
- 5) Draw a table.
 - Inserting a rows and columns.
 - Change the table fonts and size.
 - insert page number and align will be center.
 - display column header with different font color.
- 6) Prepare a document with inserting a picture, shape and chart.
- 7) Create a document and add watermark to document.

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NEP-2020 : Syllabus for F Y B Sc Skill Development/Enhancement Course Semester-2
(With Effect From June 2023)

Title of the Paper Skill Development/Enhancement Course: Data Management & Cyber
Security

(Total Credits2 : Theory-01, Practicals-01 i.e. 2 hours per week)

Unit – I

Database Management System: Introduction to the concepts of database management system; Creating a database; Creating a Table: Concepts of field, field types; entering data in a table, preview and print a table, changing row and column height; closing and opening of table, sorting of table, finding and replacing texts; using queries wizard; creating report from tables / queries from report wizard, modifying a report, printing of report; creating a form using wizard, entry in the forms; basic of formatting of forms and reports. After completing this chapter, you will be able to acquire skills in creating and developing forms, queries and reports

Unit – II

Cyber Security: Basic concepts of threats, vulnerabilities, controls; risk; confidentiality, integrity, availability; security policies; security mechanisms; Data Security and protection: concept, creating strong passwords; how to stay safe when surfing on internet: “In private Browsing”, identifying secure website, clear cookies; Know how to identify a secure web site: https, lock symbol; Security Considerations: Know about security threats from web sites like: viruses, worms, Trojan horses, spyware. Understand the term malware; Netiquettes; Netiquettes; Security Considerations: Be aware of the possibility of receiving fraudulent and unsolicited e-mail; phishing, Recognize attempted phishing; Basics of Software Licensing Overview and understanding of IT Act 2000.

Recommended Books:

- 1) Database Management and Design, Hansen & Hansen – PHI.
- 2) Database Management Systems, Narang – PHI .
- 3) Data Base Concepts - Henry Korth.
- 4) SAMS Tech yourself Microsoft Access 2000 Paul Cassel & Pamela Palmer.
- 5) Cyber Crime in India Dr. m Dassupta.
- 6) Cyber Law and Crimes Barkhau and Rama mohan.
- 7) Cyber Laws Law Dr Sarla Gupta.
- 8) Email Hacking Ankit Fadia.

Experiments/ Laboratory work :

There will be two hours of laboratory/practical per week. There will be ten students per batch for laboratory/practical work.

List of Experiments/Practical:

- 1) Create a Database.
- 2) Create a table.
- 3) Inserting a data in table.
- 4) Sorting the table.
- 5) Create a Form using wizard.
- 6) Making a data input forms using the Form Wizards.

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NEP-2020 : Syllabus for F Y B Sc Minor Semester-2
(With Effect From June 2023)

Title of the Paper Electronics (Minor Course) : Fundamentals of Logic Circuits Design
(Credits: Theory-02, Practicals-02 i.e. 4 hours per week)

Unit – I Combinational Logic Circuits Design:

Standard representation of logic functions, Canonical form of Boolean Expression, Concept of Boolean Expression to Logic circuits and vice-versa, Implementation of Boolean Expression using basic logic gates, Conversion of basic logic gate circuit to universal logic gate circuit, Importance of simplification of Boolean expression, Limitation of Boolean expression simplification using Boolean Laws, Concept of K-map in Boolean expression simplification, K Maps & its application in Circuits Design, Min term and Max term (SOP & POS) in Boolean expression, introduction of K map, drawing k map for 3 variable and 4 variable expressions, pairs, quads, octet in K map, reduction of Boolean expression using K map, Don't care problems and concept of redundant groups, various design examples (Half adder, full adder, half subtractor, full subtractor, Code Converter: Gray-to-Binary & Binary-to-Gray, BCD Adder, BCD to Seven segment display design)

Unit – II Sequential Logic Design:

Latches and Flip flops, Counters and Registers, Flip-flop as memory element, concept of timing-clock in flip-flop, design construction and operation of RS, Clocked RS, D, JK, T, and Master-Slave JK flip-flops, various triggering methods of flip-flop, application of flip-flop to counters, synchronous asynchronous counters, various types of counters (Binary, ripple, up, down, ring, Decade, modulus) Registers, various types of shift registers and its operations (SISO, SIPO, PIPO, PISO, Left-shift register Universal Shift register), concept of various memory chips, types of semiconductor memory (RAM, ROM, EPROM DRAM, SRAM etc.), basic concept of memory organization, address lines and data lines of memory, concept of data read/write in memory, memory chip select-enable and its functions. Introductions to memory address decoding and mapping.

RECOMMENDED BOOKS :

- 1) Digital Logic and Computer Design, M Mano, PHI, New Delhi.
- 2) Fundamentals of Digital Circuits, A Anand Kumar, PHI, New Delhi.
- 3) Digital Principles and Application, Malvino Leach, TMH, New Delhi.
- 4) Principles of Digital Electronics by K Meena, PHI, New Delhi.
- 5) Digital Systems: Principles and Application, by Tocci and Widmer, PHI

Experiments/ Laboratory work :

There will be two hours of laboratory/practical per week. There will be ten students per batch for laboratory/practical work.

List of Experiments/Practical:

- 1) Study of D Flip-flop
- 2) Study of RS flip-flop.
- 3) Study of JK flip-flop.
- 4) Study of 4-bit up/down counter
- 5) Design, built and test Binary to Gray Code Converter Circuit.
- 6) Design, built and test Gray to Binary Code Converter Circuit.
- 7) Design, build and test Half adder
- 8) Design, build and test Fulladder.
- 9) Design, build and test Half subtractor
- 10) Design, build and test Full subtractor circuits.