Veer Narmad South Gujarat University, Surat

Program Structure: F. Y. B. Sc. (I. T.) / M. Sc. (I .T.) (SEM – 1 and SEM – 2)

(w.e.f. Academic Year June, 2023-2024)

Bachelor of Science in Information Technology (B. Sc. (I. T.)) – Three Year Program

Bachelor of Science in Information Technology (B.Sc. (I.T.) (Hon.)) – Four Year Integrated Program

Master of Science in Information Technology (M.Sc. (I.T.)) – Five Year Integrated Program

SEMESTER – 1

Course Code	Course Title	Course Category	Level of Course	Course Credits	Teaching Hours/week		University Exam Type	Exam Duration	External Marks	Internal Marks	Total Marks
				Th. + Pra.	Theory	Practical/ Fieldwork /Project/ Internship					
101	Communication Skills in English	Ability Enhancement Course	100-199 Foundation/ Introductory	2	2	0	Theory/ Written	2 Hrs	25	25	50
102	Mathematics - 1	Multi-Disciplinary Course	100-199 Foundation/ Introductory	4	4	0	Theory/ Written	2 Hrs & 30 Min	50	50	100
103	Fundamentals of Computer	Minor Course	100-199 Foundation/ Introductory	4	4	0	Theory/ Written	2 Hrs & 30 Min	50	50	100
104	Fundamentals of Programming using C -1	Major Course	100-199 Foundation/ Introductory	4	4	0	Theory/ Written	2 Hrs & 30 Min	50	50	100
105	Practical – 1	Major Course	100-199 Foundation/ Introductory	4	0	8	Practical	2 Hrs	50	50	100
106	Skill Enhancement Course – I	Skill Enhancement Course	---------	2	2	0	As per need of the course	2 Hrs	25	25	50*
107	Value Added Course – I	Value Added Course	---------	2	2	0	As per need of the course	2 Hrs	25	25	50*
Total				**22**	**18**	**8**					**550**

P. V Desai

Veer Narmad South Gujarat University, Surat

Program Structure: F. Y. B. Sc. (I. T.) / M. Sc. (I .T.) (SEM – 1 and SEM – 2)

(w.e.f. Academic Year June, 2023-2024)

Bachelor of Science in Information Technology (B. Sc. (I. T.)) – Three Year Program

Bachelor of Science in Information Technology (B.Sc. (I.T.) (Hon.)) – Four Year Integrated Program

Master of Science in Information Technology (M.Sc. (I.T.)) – Five Year Integrated Program

SEMESTER – 2

Course Code	Course Title	Course Category	Level of Course	Course Credits	Teaching Hours/week		University Exam Type	Exam Duration	External Marks	Internal Marks	Total Marks
				Th. + Pra.	Theory	Practical/ Fieldwork /Project/ Internship					
201	Business Communication Skills in English	Ability Enhancement Course	100-199 Foundation/ Introductory	2	2	0	Theory/ Written	2 Hrs	25	25	50
202	Mathematics – 2	Multi- Disciplinary Course	200-299 Intermediate Level Course	4	4	0	Theory/ Written	2 Hrs & 30 Min	50	50	100
203	Fundamentals of Programming using C -2	Major Course	200-299 Intermediate Level Course	4	4	0	Theory/ Written	2 Hrs & 30 Min	50	50	100
204	Introduction to DBMS	Minor Course	100-199 Foundation/ Introductory	4	4	0	Theory/ Written	2 Hrs & 30 Min	50	50	100
205	Practical - 2	Major Course	200-299 Intermediate Level Course	4	0	8	Practical	2 Hrs	50	50	100
206	Skill Enhancement Course – II	Skill Enhancement Course	---	2	2	0	As per need of the course	2 Hrs	25	25	50*
207	Value Added Course – II	Value Added Course	---	2	2	0	As per need of the course	2 Hrs	25	25	50*
Total				**22**	**18**	**8**					**550**
208	Summer Internship	Applicable only to student seeking exit after first year	---	4	---	---	---	---	--	---	--

Veer Narmad South Gujarat University, Surat

Program Structure: F. Y. B. Sc. (I. T.) / M. Sc. (I .T.) (SEM – 1 and SEM – 2)

(w.e.f. Academic Year June, 2023-2024)

Bachelor of Science in Information Technology (B. Sc. (I. T.)) – Three Year Program

Bachelor of Science in Information Technology (B.Sc. (I.T.) (Hon.)) – Four Year Integrated Program

Master of Science in Information Technology (M.Sc. (I.T.)) – Five Year Integrated Program

Practical:

- Batch Size – 30 Maximum (Desirable). Maximum 45 students can be accommodated in a batch. Separate batches should be considered if the student strength exceeds 45 numbers.
- The journal should be certified by the concerned faculty and by the Head of the Department, failing which the student should not be allowed to appear for External Practical Examination.

Summer Internship: A student who wishes to exit after successfully completion of first year (Semester-1 and Semester-2) without any backlog is required to obtain 4 credits at the end of the year through the 2 months summer internship. For summer training, the Institute/college will grant the permission and evaluate the training outcomes. Based on satisfactory completion of the summer training, the Institute head will recommend to the university to grant four credits for summer training.

Skill Enhancement Course: As per NEP (National Education Policy-2020), it is mandatory for students to select a 2 credit skill enhancement course out of the choices given by the college/institute. It will be mandatory for the student to opt minimum one 2-credit Skill enhancement course out of offered courses recognized by University during semester-1 to semester-3.

Value Added Course: As per NEP (National Education Policy-2020), it is mandatory for students to select a 2 credit Value Added Course out of the choices given by the college/institute. It will be mandatory for the student to opt minimum one 2-credit Value Added Course out of offered courses recognized by the University during semester-1 to semester-4.

* There will be only internal evaluation for all SEC and VAC courses and the marks will not be counted for calculation of SGPA or CGPA. However, internal marks will be reflected in student's marksheet.

P. M Desai

Veer Narmad South Gujarat University, Surat

Program Structure: F. Y. B. Sc. (I. T.) / M. Sc. (I .T.) (SEM – 1 and SEM – 2)

(w.e.f. Academic Year June, 2023-2024)

Bachelor of Science in Information Technology (B. Sc. (I. T.)) – Three Year Program

Bachelor of Science in Information Technology (B.Sc. (I.T.) (Hon.)) – Four Year Integrated Program

Master of Science in Information Technology (M.Sc. (I.T.)) – Five Year Integrated Program

Name of Program	Master of Science (Information Technology)
Abbreviation	M.Sc. (I.T.)
Eligibility	H S C / Equivalent Examination from Science Stream (A / B / AB Group) or Vocational Stream or General Stream (Commerce) with English as one of the subject.
Objective of Program	The objective of the program is to transform students into I.T. professionals by providing them advanced technical knowledge and outstanding placement in reputed I.T. companies.
Program Outcome	**PO1 : Fundamental Knowledge Enrichment** Program trains students with the core computer science and Information Technology (IT) knowledge domains. It also makes students capable of using core concepts in the conceptualization of domain specific application development. **PO2 : Critical Thinking Development** The program develops the skills of critical thinking, problem solving, evaluative learning of various techniques, and understanding the essence of the problem. **PO3 : Advanced Emerging Technology Awareness** The program trains students with the latest technologies that is being used in the industry. The continuous syllabi review adds value to the program for the outgoing students and make them ready to face challenging demands of the industry. **PO4 : Advanced Tools Usage** The program teaches the students to apply the advanced tools to solve real world problems. **PO5 : Nurturing Project Planning and Management Capabilities** The program trains students for designing and conceptualizing the software architecture, planning and managing the product development process of complex and live software projects. It also makes students understand the decision making for selection of an appropriate project management capabilities. **PO6 : Real World Problem / Project Development** Real world project provides the candidates exposure to work in the challenging and demanding environment of the industry. The project development training makes students employable and industry ready. **PO7 : Team Work and Leadership Development** Trains students to work in a team and also to take leadership of the of the project management team.
Program Specific Outcomes	**PSO1**: Students will learn to develop and strengthen the fundamental concepts that are required to solve complex programming problems. **PSO2**: Students will develop the ability to identify, formulate and design solutions to face computational challenges. **PSO3**: Students will be able to apply software engineering concepts to solve real world problems. **PSO4**: Students will be able to learn emerging technologies and apply them for the development of Web applications, Mobile application, Desktop application, etc. **PSO5**: Students will develop necessary Entrepreneur and Technical skills to start their own business in I.T domain.
Mapping between POs and PSOs	

	PSO1	PSO2	PSO3	PSO4	PSO5
PO1					
PO2					
PO3					
PO4					
PO5					
PO6					
PO7					

Medium of Instruction	English
Program Passing Rules	**As per University rules**

Veer Narmad South Gujarat University

Department of ICT

B.Sc.IT, Semester -1

Credits : 02

Paper No: 101

Communication Skills in English (AEC)

Objectives:

1. To enhance language proficiency by providing adequate exposure to communication skills.
2. To orient the students towards functional aspects of language.
3. To enable students to convert the conceptual understanding of communication into everyday practice.
4. To enhance learners communication skills in both social and Professional Context.

Outcomes:

After the completion of the course:

1. Students will able to use language in Functional context.
2. Students' proficiency in 4 language skills will be developed.
3. Students will be well versed at using language in professional setting.

Unit 1.The Fundamentals of Communication:(Theory)

1. Communication: An Overview
2. Need and Importance for effective communication
3. The Seven Cs of Effective Communication
5. Types of Communication
6. Role of creative and critical thinking in Effective Communication
7. Role of Emotions in Communication
8. Role of Interpersonal communication
9. Communication across Culture
10. Barriers to Effective Communication
11. Non-verbal Communication and Body Language

Unit 2.Listening Skills (Theory)

1. Distinguishing between Hearing and Listening

3. Process of Listening
4. Types of Listening
5. Advantages of Listening

Unit 3. Speaking Skills (Theory)
1. Characteristics of an Effective Communicator
3. Important Public speaking skills for Workplace success
4. Principles of good conversationalist

Unit 4: Reading Skills (Theory)
1.Developing Efficient Reading skills & its benefits
2. Interpreting Job Advertisements
3. Interpreting graphics and Data
4. Comprehending News

Unit 5. Writing Skills
1. Importance of Writing
2. Formal and Informal Writing
4. Paragraph writing
5. E-Mail writing
6. Interpreting Brochures and advertisements

Reference Books:

1. Basic Communication Skills For Technology, 2nd Edition,Pearson,Andrea J. Rutherfoord
2. English for Successful Communication,Oxford University Press,RajeevanKaral, Aruna Koneru, Sabina Pillai & Philip Sunil Solomon
3. Communication Skills:For University of Mumbai,Oxford University Press,Meenakshi Raman & Sangeeta Sharma
4. Communication Skills,Oxford University Press, Sanjay Kumar &PushpLata
5. Basics of Communication in English,Macmillan Publishers, Francis Soundaraj.
6. The quick and Easy way to Effective Communication, Mahavir Book House, Dale Carnegie.2018.
7. Communicating for Results4th Edition,Oxford,Carolyn Meyer and N.Bringi Dev, Oxford University Press, 2021.
8. Communicative English Resource book, Renu Anand and Neena Kaul, Oxford University Press, 2018.

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

SYLLABUS FOR M.Sc. (I.T.) (UG)

SEMESTER-1

Course : 102 : Mathematics-1

Effective from June- 2021

(4 Hours/Week, Credits : 4)

Minimum weeks per semester: 15 (Including class work, examination, preparation, holidays etc)

Purpose of course : Students will be able to explain and apply the basic methods of mathematics.

Course objective : To develop logical sequence in the design and analysis of algorithm, computability theory, software engineering and computer systems.

Pre-requisite : Basics of Mathematics

Course Outcome : Students will be equipped with logic to develop design and analysis of algorithm, computability theory, software engineering and computer systems.

Teaching Methodology : Lectures, Discussion, Independent Study, Seminars and Assignments.

Evaluation Method : 30% Internal assessment and 70% External assessment.

Course Content :

Unit 1 : Relations, functions, sequence and series:

1.1 Cartesian Product of Sets
1.2 Relations as Sets of ordered Pairs
1.3 Types of relations
1.3.1 Symmetric Relation
1.3.2 Anti-symmetric Relation
1.3.3 Reflexive Relation
1.3.4 Irreflexive Relation
1.3.5 Transitive Relation
1.4 Properties of relations
1.5 Congruence relations
1.6 Equivalent classes
1.7 Composition of relations
1.8 Algebra of relations
1.9 Functions as sets of ordered pairs
1.10 One–One function, Onto function, Many–One function.
1:11 Countable sets
1.12 Equality of functions
1.13 Algebra of functions
1.14 Compositions of two functions
1.15 Inverse functions, Characteristics functions
1.16 Convergent and Divergent Sequence and Series

Unit 2 : Theory of Matrices:

2.1 Matrices
2.2 Types of matrices

2.3 Equality of matrices
2.4 Operations on matrices
2.5 Properties of Operations, Singular Matrices
2.6 Inverse of Matrices, Adjoint of Matrix
2.7 Rank of Matrices
2.8 Elementary Row / Column transformations
2.9 Row/Column equivalent canonical forms
2.10 Inverse using elementary transformations
2.11 Solution of a system of Homogeneous and Non –Homogeneous linear equations by using elementary transformations.

Unit 3 : Basic Statistics:
3.1 Introductions: Definitions, Merits and Demerits
3.2 Frequency distribution and frequency charts
3.3 Measures of Central Tendency
3.3.1 Arithmetic mean
3.3.2 Geometric mean
3.3.3 Harmonic mean
3.4 Median
3.5 Mode
3.6 Quartiles, Deciles and Percentiles
3.7 Measures of Dispersion
3.7.1 Range
3.7.2 Quartile deviation
3.7.3 Mean deviation
3.7.4 Standard deviation
3.7.5 Skewness and Kurtosis

Unit 4 : Probability Theory
4.1 Definitions
4.2 Sample spaces
4.3 Events
4.3.1 Types of events
4.3.2 Algebra of events
4.4 Conditional Probability
4.6 Baye's theorem

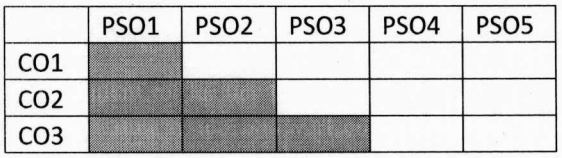
Unit 5 : Random variables and distributions:
5.1 Discrete and Continuous Random variables
5.2 Mathematical expectations and Variance
5.3 Discrete Probability Distributions
5.3.1 Binomial Distribution
5.3.1.1 Density function
5.3.1.2 Mean and Variance of the Distributions Properties and uses
5.3.2 Poisson Distribution
5.3.2.1 Density function
5.3.2.2 Mean and Variance of the distribution
5.3.2.3 Properties and uses

Reference Books :

1. C.L. Liu, D.P. Mohapatra : Elements of Discrete Mathematics, McGraw Hill, 2008.
2. B.S. Vatsa : Discrete Mathematics, Vishwa Prakashan, 3rd Edition, 2000.
3. Suddhendu Biswas : A text Book of Matrix Algebra, New age International Publishers, New Delhi, 3rd Edition, 2004.
4. Robert A. Beezer : A first Course in Linear Algebra, University of Puget Sound, 3rd edition.
5. J.J. Gareth, Mark Lemmon : Mathematics for Computer Scientists, bookboon.cpm, 2nd Edition, ISBN: 978-87-7681-426-7
6 .J.P. Tremblay and R. Manohar : Discrete mathematical Structures with Applications to Computer Science, McGraw Hill Book Co., 1999.

B.Sc. (I.T.) / M.Sc. (I.T.) 1st Semester

Course : 103 : Fundamentals of Computer

Course Code	103
Course Title	Fundamentals of Computer
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	June 2023
Purpose of Course	This course helps students to understand basics of computer and office tools
Course Objective	The students would be able to understand the basic uses and applications of computer, to know different components of computer, to get familiar with various computer codes, basics of operating system and commands. The student would also learn open-source office tools.
Course Out comes	CO1 : Student will be able to learn about computer hardware components and its working CO2 : Students will be able to work with different types of number systems ,and able to perform numerical of Binary, Octal and Hexadecimal numbers CO3 : Student will be able to learn various type of operating system, working of Linux operating system and work on features of OpenOffice open source software
Mapping between COs with PSOs	
Pre-requisite	NIL
Course Outcome	Students will be able to understand better use of computer and its operations
Course Content	**Unit : 1 : Introduction to Computers and its components** 1.1 Computer 1.1.1 Introduction to Computer 1.1.2 The Components of Computer 1.1.3 Advantages and Disadvantages of Computer 1.1.4 Generations of Computer 1.1.5 Computer Software 1.1.6 Categories of Computers 1.1.6.1 Personal Computers 1.1.6.2 Mobile Computers 1.1.6.3 Servers 1.1.6.4 Mainframes 1.1.6.5 Super Computers 1.1.6.6 ATM 1.1.6.7 POS 1.1.7 Usage and Applications of Computer in Society

Re-Accredited 'B++' 2.86 CGPA by NAAC
VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
Tel : +91 - 261 - 2227141 to 2227146, Toll Free : 1800 2333 011, Digital Helpline No.- 0261 2388888
E-mail : info@vnsgu.ac.in, Website : www.vnsgu.ac.in

ક્રમાંકઃ પીજી/ પ્રવેશ/ ૧૧૭૦૧/ ૨૦૨૩
તા.: ૧૯/૦૫/૨૦૨૩

પ્રતિ,
કો–ઓર્ડિનેટરશ્રી,
એમ.એસસી. (આઈ.ટી/આઈ.સી.ટી) પ્રોગ્રામ,
જે.પી. દાવર ઈન્સ્ટિટયૂટ ઓફ ઈન્ફોર્મેશન સાયન્સ એન્ડ ટેકનોલોજી,
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી, સુરત.

વિષયઃ ENVIRONMENTAL STUDIES, DISASTER MANAGEMENT AND PREPAREDNESS, (3) INTERNET AND WEB TECHNOLOGY, E BUSINESS AND CYBER LAWS **નામના સર્ટિફિકટ કોર્ષ શરૂ કરવા બાબત.**

સંદર્ભઃ આપશ્રીનો તા. ૦૨–૦૫–૨૦૨૩ના પત્રાંકઃ એમ.એસસી. (આઈ.ટી) પ્રોગ્રામ/ ૩૪૭૮/૨૦૨૩

મહાશય,

ઉપરોકત વિષય તથા સંદર્ભ પરત્વે આદેશાનુસાર જણાવવાનું કે, આપના વિભાગ ખાતે (1) ENVIRONMENTAL STUDIES, (2) DISASTER MANAGEMENT AND PREPAREDNESS, (3) INTERNET AND WEB TECHNOLOGY, (4) E BUSINESS AND CYBER LAWS **સર્ટિફિકટ** કોર્ષ શરૂ કરવા અંગે કરેલ વિનંતી સંદર્ભે એકેડેમિક કાઉન્સિલે તેની તા.૧૭–૦૫–૨૦૨૩ની સભાના ઠરાવ ક્રમાંકઃ (૧૨) થી મંજૂર કરી નીચે મુજબ ઠરાવેલ હોય, તદનુસાર આગળની ઘટતી કાર્યવાહી કરવાની જાણ કરવામાં આવે છે.

Sr No	Name of Certificate course	Credit	Course duration	Intake	Fees
1	ENVIRONMENTAL STUDIES	2	30 Hours	260	--
2	DISASTER MANAGEMENT AND PREPAREDNESS	2	30 Hours	264	--
3	INTERNET AND WEB TECHNOLOGY	3	30 Hours	264	--
4	E BUSINESS AND CYBER LAWS	3	30 Hours	264	--

એકેડેમિક કાઉન્સિલની તા. ૧૭–૦૫–૨૦૨૩ની સભાનો ઠરાવ ક્રમાંકઃ (૧૨)

:: **આથી ઠરાવવામાં આવે છે કે,** યુનિવર્સિટી પરીસર ખાતેના ડિપાર્ટમેન્ટ ઓફ આઈ.ટી.સી. વિભાગ ખાતતે (1) ENVIRONMENTAL STUDIES, (2) DISASTER MANAGEMENT AND PREPAREDNESS,(3) INTERNET AND WEB TECHNOLOGY, (4) E BUSINESS AND CYBER LAWS નામના સર્ટિફિકેટ કોર્ષ શરૂ કરવા **ઓર્ડિનન્સ–188 નું પરિપાલન કરવાની શરતે મંજૂરી આપવામાં આવે છે.**

વધુમાં સદર સર્ટિફિકેટ અભ્યાસક્રમ માટે વિભાગ દ્વારા કોઈ ફી લેવાની દરખાસ્ત ન હોય SOP **મુજબ વિદ્યાર્થી દીઠ લઘુતમ ફી લેવાની રહેશે.**

વધુમાં જણાવવાનું કે સદરહું કોર્સ સંબધિત નીચેની માહિતી યુનિવર્સિટી પોર્ટલ પર અપલોડ કરવાની હોવાથી દિન–૧૦ માં Excel Sheet માં ભરી યુનિવર્સિટી કાર્યાલયના અનુસ્નાતક વિભાગના ઈમેલ (pg@vnsgu.ac.in.) પર મોકલવાની જાણ કરવામાં આવે છે.

course code/sr.no	vnsgu department/ college	offered by(name of Collage/ Department	Course Title	Course Content	Course types (Certificate/ Diploma/ Advance Diploma)	Category (faculty/multidisci plinary)	Addmission Eligibility	intake	Course Credit	Course Duration	Course Fees	Contact Person name	Contact Number	Email id

ભ વ દી ય,

કુલસચિવ વતી

D:\Admission 2023-24\LETTER PG 2023.docx

VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007.

RECEIPT

Receipt No. : 2527 Date: 5/2/2023

Received from : DEPARTMENT OF I.C.T VNSGU

Particulars : ENVIRONMENTAL STUDIES

No.	Description	Amount (Rs.)
1	.(Certificate Course Processing Fee)	250.0
	Total (Rs.)	250.0

Rupees Two hundred Fifty only

Mode of Payment: Cash

Cashier pragati

VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007.

RECEIPT

Receipt No. : 2528 Date: 5/2/2023

Received from : DEPARTMENT OF I.C.T VNSGU

Particulars : DISASTER MANAGEMENT & PREPAREDNESS

No.	Description	Amount (Rs.)
1	.(Certificate Course Processing Fee)	250.0
	Total (Rs.)	250.0

Rupees Two hundred Fifty only

Mode of Payment: Cash

VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007.

RECEIPT

Date: 5/2/2023

Receipt No. : 2529
Received from : DEPARTMENT OF I.C.T VNSGU
Particulars : INTERNET & WEB TECHNOLOGY

No.	Description	Amount (Rs.)
1	.(Certificate Course Processing Fee)	250.0
	Total (Rs.)	250.0

Rupees Two hundred Fifty only

Mode of Payment: Cash

Cashier pragati

VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007.

RECEIPT

Date: 5/2/2023

Receipt No. : 2530
Received from : DEPARTMENT OF I.C.T VNSGU
Particulars : E- BUSINESS & CYBER LAWS

No.	Description	Amount (Rs.)
1	.(Certificate Course Processing Fee)	250.0
	Total (Rs.)	250.0

Rupees Two hundred Fifty only

Mode of Payment: Cash

Re-Accredited 'B++' 2.86 CGPA by NAAC
VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
Tel : +91 - 261 - 2227141 to 2227146, Toll Free : 1800 2333 011, Digital Helpline No.- 0261 2388888
E-mail : info@vnsgu.ac.in, Website : www.vnsgu.ac.in

OIC

એમ.એસસી (આઈ.ટી) પ્રોગ્રામ/૩૪૭૪
તા. ૨/૫/૨૦૨૩.

પ્રતિ,
કુલસચિવશ્રી
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
સુરત.

ધ્યાન :– એકેડેમિક વિભાગ

સંદર્ભ :– ક્રમાંક : એકે/પરિપત્ર/૧૫૭૧૫/૨૦૨૧, તા. ૧૨/૧૦/૨૦૨૧.

મહાશય,

સવિનય ઉપરોકત સંદર્ભ અન્વયેનાં પત્ર અન્વયે જણાવવાનું કે વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટીનાં ડીપાર્ટમેન્ટ ઓફ આઈ.સી.ટી. ખાતે શૈક્ષણિક વર્ષ ૨૦૨૩ થી Environmnetal Studies નામનો value added course, Disaster Management and Preparedness નામનો value added course, Internet and Web Technology નામનો Skill Enhancement Course અને E Business and Cyber Laws નામનો Skill Enhancement Course ચાલુ કરવા અંગે યોગ્ય ઘટતું થવા વિનંતી છે. આ સાથે સદર કોર્ષ અંગેની માહિતી મોકલવામાં આવે છે. જે આપશ્રીની જાણ માટે.

<u>નોંધ :– આ અગાઉ વિભાગ દ્વારા મોકલવામાં આવેલ તા. ૨૫/૪/૨૦૨૩ નો પત્ર ધ્યાને લેવો નહીં.</u>

બિડાણ :– ઉપરોકત ૪ સર્ટીફીકેટ કોર્ષની વિગતવાર દરખાસ્ત.

P. Y. Desai

ડૉ. પુષ્પલ દેસાઈ
હેડ
ડીપાર્ટમેન્ટ ઓફ આઈ.સી.ટી.

Re-Accredited 'B++' 2.86 CGPA by NAAC
VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
Tel : +91 - 261 - 2227141 to 2227146, Toll Free : 1800 2333 011, Digital Helpline No.- 0261 2388888
E-mail : info@vnsgu.ac.in, Website : www.vnsgu.ac.in

એમ.એસસી (આઈ.ટી) પ્રોગ્રામ/
તા. ૨૫/૪/૨૦૨૩.

OIC

પ્રતિ,
કુલસચિવશ્રી
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
સુરત.

ધ્યાન :– એકેડેમિક વિભાગ

સંદર્ભ :– ક્રમાંક : એકે/પરિપત્ર/૧૫૭૧૫/૨૦૨૧, તા. ૧૨/૧૦/૨૦૨૧.

મહાશય,

સવિનય ઉપરોકત સંદર્ભ અન્વયેનાં પત્ર અન્વયે જણાવવાનું કે વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટીનાં ડીપાર્ટમેન્ટ ઓફ આઈ.સી.ટી. ખાતે શૈક્ષણિક વર્ષ ૨૦૨૩ થી Environmnetal Studies નામનો value added course અને Introduction to Linux નામનો Skill Enhancement Course ચાલુ કરવા અંગે યોગ્ય ઘટતું થવા વિનંતી છે. આ સાથે સદર કોર્ષ અંગેની માહિતી મોકલવામાં આવે છે. જે આપશ્રીની જાણ માટે.

ડૉ. પુષ્પલ દેસાઈ
હેડ
ડીપાર્ટમેન્ટ ઓફ આઈ.સી.ટી.

1.2 Components of Computer

1.2.1 Block Diagram of Computer

1.2.2 The System Unit

1.2.3 Processor

1.2.4 Motherboard

1.2.5 Memory - Register, RAM, ROM

1.2.6 Expansion Slots and Adaptor Cards

1.2.7 Ports and Connectors

1.2.8 Buses

1.2.9 Power Supply

1.2.10 Input Output Systems

1.2.11 Storage Systems

1.2.12 BIOS

1.2.13 Interrupt

1.2.14 Device Driver

Unit : 2 : Computer Codes and Conversions

2.1 Computer Codes

2.1.1 Introduction to Computer Codes

2.1.2 Decimal System

2.1.3 Binary System

2.1.4 Hexadecimal System

2.1.5 Octal System

2.1.6 4-bit BCD System

2.1.7 8-bit BCD System

2.1.8 ASCII code

2.1.9 16-bit Unicode

2.2 Conversion of Numbers (from one Number System to another - includes fixed and fractional numbers)

Unit : 3 : Operating System and Usage

3.1 Types of OS

3.1.1 Single User

3.1.2 Multi - User

3.1.3 Uni - Processor

3.1.4 Multi - Processor

3.1.5 Batch Processing

3.1.6 Time - Sharing

3.1.7 Real Time

3.2 Booting Process of Computer

3.7 Need of OS

3.6 Functions of OS

3.3 Types of File System - FAT, NTFS, APFS, EXT

3.4 Partition of Disk

3.5 Installation of OS

	Unit : 4 : Introduction to Open Source OS : Linux 4.1 Features and Components of Linux 4.2 Components of Linux 4.3 Installation and Configuration of Open Source Software 4.3 Basic Commands – cat, cmp, diff, wc, sort, mkdir, rmdir, cd, ls, cp, mv, pwd, passwd, who, whoami, chmod, date, more, sudo, apt-get, install, update, upgrade. **Unit : 5 : Open Office** 5.1 Open Office – Writer 5.1.1 Working with Documents 5.1.2 Formatting Documents 5.1.3 Setting Page style 5.1.4 Creating Tables 5.1.5 Drawing- Tools 5.1.6 Printing Documents 5.2 Open Office – Calc 5.2.1 Introduction to Spreadsheets 5.2.2 Overview of a Worksheet 5.2.3 Creating Worksheet & Workbooks 5.2.4 Organizing files, Managing files & workbooks 5.2.5 Functions & Formulas 5.2.6 Working with Multiple sheets 5.2.7 Creating Charts & Printing Charts 5.3 Open Office – Impress 5.3.1 Creating Presentation, Saving Presentation Files 5.3.2 Master Templates & Re-usability 5.3.3 Slide Transition 5.3.4 Making Presentation CDs 5.3.5 Printing Handouts
Reference Book	1. Fundamentals of Computer : E Balagurusamy - McGraw-Hill 2. Computer Fundamentals : P.K. Sinha - BPB Publications 3. OpenOffice.org for Dummies : Gurdy Leete - Wiley-India 4. Computer Fundamentals : Anita Goel - Pearson 5. Fundamentals of Computer : Rajaraman V. - PHI 6. Fundamentals of Computers : Reema Thareja - Oxford University Press
Teaching Methodology	Class Room Teaching, Discussion and Assignment

B.Sc. (I.T.) / M.Sc. (I.T.) 1st Semester

Course : 104 : Fundamentals of Programming Using C – I

<table>
<tr><td>Course Code</td><td>104</td></tr>
<tr><td>Course Title</td><td>Fundamental of Programming using C-I</td></tr>
<tr><td>Credit</td><td>4</td></tr>
<tr><td>Teaching per Week</td><td>4 Hrs</td></tr>
<tr><td>Minimum weeks per Semester</td><td>15 (Including Class work, examination, preparation, holidays etc.)</td></tr>
<tr><td>Last Review / Revision</td><td>June 2023</td></tr>
<tr><td>Purpose of Course</td><td>To provide fundamental knowledge of programming using C language.</td></tr>
<tr><td>Course Objective</td><td>To impart knowledge of basic programming concepts using C language.</td></tr>
<tr><td>Course Out comes</td><td>CO1: Students will be able to learn various Problem-solving techniques

CO2 : Students will be able to learn basics of c programming language and perform practical programs

CO3 : students will be able to do string manipulation and array task</td></tr>
<tr><td>Mapping between COs with PSOs</td><td><table><tr><td></td><td>PSO1</td><td>PSO2</td><td>PSO3</td><td>PSO4</td><td>PSO5</td></tr><tr><td>CO1</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CO2</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CO3</td><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Pre-requisite</td><td>NIL</td></tr>
<tr><td>Course Outcome</td><td>Students will be able to write simple programs using C language</td></tr>
<tr><td>Course Content</td><td>Unit : 1 : Phases of Problem Solving Methodology
1.1 Problem Analysis
Gathering available data, identifying relevant facts, Defining the problem, generating alternative methods of solution, Selecting the optimum approach
1.2 Problem solving techniques
Simplification, Divide and conquer: break down a large, complex problem into smaller solvable problems, Constraint examination
1.3 Algorithm
1.4 Flowchart

Unit : 2 : Introduction to Computer Programming
2.1 Introduction to Computer Programming Language and Program
2.2 Programming languages and Levels
2.3 Language Translators
2.3.1 Compiler
2.3.2 Interpreter
2.3.3 Assembler
2.4 Program Verification
2.4.1 Program Correctness
2.4.2 Program Bugs & Testing

Unit : 3 : Introduction to C language
3.1 Overview of C
3.2 Constants, Variables and Data types
3.3 Operators and expressions
3.4 Simple Assignment statement
3.5 Basic Input/Output Statements</td></tr>
</table>

P. M Desai

	3.6 Decision Making Statements 3.7 Looping 3.8 Nested Control Structures **Unit : 4 : Array** 4.1 One dimensional Array 4.2 Declaration & Initialization of Array 4.3 Two dimensional array 4.3.1 Declaration 4.3.2 Accessing Matrix Elements 4.3.3 Operations on matrix elements and entire matrices 4.4 Array manipulation 4.4.1 Searching 4.4.2 Insertion 4.4.3 Deletion 4.4.4 Modification 4.4.5 Sorting 4. 5 Multidimensional Array **Unit : 5 : Character Array & String** 5.1 Declaration & Initialization of String 5.2 Input/Output functions for String 5.3 Arithmetic operations on String 5.4 In built Functions for handling String 5.5 Array of String
Reference Book	1. Programming in ANSI C : E. Balagurusamy - Tata McGraw Hill 2. Let us C : Yashwant Kanetkar - BPB Publications 3. Programming with C : R S Bichkar - Universities Press 4. The complete Reference C : Herbert Schildt - McGrawHill 5. Schaums outline of Theory and Problems of programming with C : Byron Gottfried - McGrawHill 6. C Programming Language : Karnighan & Ritchie - TMH
Teaching Methodology	Discussion, Independent Study, Seminars and Assignment

P. Y Desai

B.Sc. (I.T.) / M.Sc. (I.T.) 1st Semester

Course : 105 : Practical 1

Course Code	105
Course Title	Practical 1
Credit	4
Teaching Per Week	8 Hrs
Minimum Weeks Per Semester	15 (Including Practical Work, Examination, Preparation, Holidays etc.)
Last Review/Revision	June 2023
Purpose of Course	To impart practical knowledge of programming
Course Objective	To give practical knowledge of C programming
Prerequisite	Nil
Course Out comes	CO1 : Students will be able to learn basic programming concepts using C language. CO2 : Students will be able to solve and program complex problem using C language. CO3 : Students will be able to use C language features for basic application development.
Mapping between COs with PSOs	
Course Outcome	Students will be able to solve practical problems using C language.
Course Content	Practical based on Paper No. 104 - Fundamentals of Programming using C-I
Reference Books	NIL
Teaching Methodology	Lab Work

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1					
CO2					
CO3					