



BACHELOR OF SCIENCE - INFORMATION TECHNOLOGY (B.Sc.(IT))

Semester-II (FY)

COURSE NO.	COURSE TYPE	SUBJECT	CREDIT
B.Sc.(IT)-EC-201	ELECTIVE	Environmental Science – II	02
B.Sc.(IT)-FC-201	FOUNDATION	Introduction to English Language and Literature - II	02
B.Sc.(IT)-CC-201	CORE	Principles of Digital Electronics	03
B.Sc.(IT)-CC-202	CORE	Advanced C Programming	03
B.Sc.(IT)-CC-203	CORE	Internet and Web Technology	03
B.Sc.(IT)-CC-204	CORE	Network Management & Information Security	03
B.Sc.(IT)-CC-205	CORE	Practical (Based on B.Sc.(IT)-CC-202) (Based on B.Sc.(IT)-CC-203)	12
TOTAL			28

Internal Continuous Evaluation:

1. There will be Internal Continuous Evaluation in Theory papers of Core Course.
2. There will be 30 marks for Assignments in Course No: B.Sc.(IT)-CC-201, B.Sc.(IT)-CC-202, B.Sc.(IT)-CC-203, B.Sc.(IT)-CC-204



MAHARAJA KRISHNAKUMARSINHJI BHAVNAGAR UNIVERSITY
NAAC Accreditation Grade "B"
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B.Sc.(IT)	Course: Environmental Science - II	Course No: B.Sc.(IT)-EC-201
Semester: 02	Type of Course: Elective Course	
Marking Scheme: External Examination: 100 + Internal Examination: 00 = 100 Marks		
Credits: 02	Theory Sessions per Week: 02	Teaching Hours: 30 Hours

Unit	Detailed Syllabus	Teaching Hours	Marks/Weight
Unit-1	Climate change	06	20
	<ul style="list-style-type: none">– Global warming– Case study of globalwarming– Acid rain and Case study of Acid rain– Ozon layer depletion and Case study of Ozon layer depletion		
Unit-2	Pollution	06	20
	<ul style="list-style-type: none">– Air pollution, Water pollution, Noise pollution– Pollution case study– Minamata disease– Ground water pollution, Pesticides pollution, River pollution in India.		
Unit-3	Disaster Management	06	20
	<ul style="list-style-type: none">– Floods, Earthquake, Cyclones, Landslide		
Unit-4	Social issues and the environment	06	20
	<ul style="list-style-type: none">– Unsustainable to sustainable development– Water conservation :– Rain water harvesting– Water shed management– The air (prevention and control of pollution) Act– The water (prevention and control of pollution) Act– The wildlife (protection) Act– Using an environmental calender of activities		
Unit-5	Population Growth and the Environment	06	20
	<ul style="list-style-type: none">– Population growth variation among nation– Population explosion : family welfare programme– Methods of sterilisation– Urbanization– Urban poverty and environment– Environment and human health– Bhopal gas incident– Climate and health– Infectious disease– Globalization and Infectious disease– Water born disease– Water scarecity diseases– Diarrhea– Cancer and the environment		

Reference book: Paryavaran Adhyayan – University Grants Commission Oriental longman private limited.



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B.Sc.(IT)	Course: Introduction to English Language and Literature - II	Course No: B.Sc.(IT)-FC-201
Semester: 02	Type of Course: Foundation Course	
Marking Scheme: External Examination: 100 + Internal Examination: 00 = 100 Marks		
Credits: 02	Theory Sessions per Week: 02	Teaching Hours: 30 Hours

Unit	Detailed Syllabus	Teaching Hours	Marks/Weight
Unit-1	Study Poems and Prose	06	20
	Daybreak – Henry Longfellow Beautiful Things – Ellen P. Allerton The Sun and the Planets – C. Jones (Short notes 2/3 each in 500 words approximately)		
Unit-2	Study Poems and Prose	06	20
	Climbing Everest – B. Mathur Gold Frame – R. K. Narayan The Tiger Smiled – Jim Corbet (Short notes 2/3 each in 500 words approximately)		
Unit-3	Improve Business English	06	20
	Use of Internet Chapter 1 only from 50 Ways to Improve Business English Using the Internet Introduction of email		
Unit-4	Professionalism	06	20
	personal and Food Etiquette Professions and occupations		
Unit-5	Grammar	06	20
	Introduction of Verb Forms Introduction of Modal Auxiliary Verbs		

Reference Books

1. Practical English Prose and Verse (Ed) G. E. B. Coe, Orient Longman, 1981
2. Learning English, A Rama Krishna Rao, Orient Blackswan, 2008
3. Hundred Poems, Lok Milap Publication, Bhavnagar, 1994
4. Palgrave, F. T., 'The Golden Treasury', Rupa & Co, 2001
5. Modern Short Stories, (Ed) Khan, M. Q., OUP, 1999
6. Green, David, 'Contemporary English Grammar Structures and Composition', Mac Millan, 1971
7. Issac, Anish, 'Amazing English', Anish Issac's Publishing House, Kerala, 2006
8. Poetry for Pleasure, (Ed)Maung Kaung, OUP, New Delhi, 2005



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B.Sc.(IT)	Course: Principal of Digital Electronics	Course No: B.Sc.(IT)-CC-201
Semester: 02	Type of Course: Core Course	
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks		
Credits: 03	Theory Sessions per Week: 03	Teaching Hours: 45 Hours

Unit	Detailed Syllabus	Teaching Hours	Marks/Weight
Unit-1	Gates and Boolean Algebra	09	14
	Introduction to Gates Boolean Algebra (Basic Theorem and Properties) and Truth Table Laws of Boolean Algebra Preparing Circuit from Boolean Function De – Morgan's Theorem		
Unit-2	Logic Simplification and Basic Digital Circuits	09	14
	Simplification of Boolean Algebra and Gate Minimization Preparing truth table from circuit Preparing circuit for given truth table(SOP and POS) Universal Gates [NAND and NOR Gate] Circuit implementation using Universal gates		
Unit-3	Combinational Circuits	09	14
	Integrated Circuit Encoder and Decoder Multiplexer De Multiplexer Comparator		
Unit-4	Arithmetic Circuits	09	14
	Adders : Half Adder and Full Adder Subtractors : Half Subtractor and Full Subtractor Binary Adder Binary Adder/Subtractor Shifter		
Unit-5	Registers and Counters	09	14
	Latches Flip Flop : RS Flip Flop, D Flip Flop, JK Flip Flop , T Flip Flop Registers : Buffer Register and Shift Register Counters : Asynchronous Counter (Ripple), Synchronous Counter		

Reference Books

1. Digital Computer Electronics – Albert Paul Malvino
2. Digital Logic and Computer Design – M. Morris Mano



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B.Sc.(IT)	Course: Advanced C Programming	Course No: B.Sc.(IT)-CC-202
Semester: 02	Type of Course: Core Course	
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks		
Credits: 03	Theory Sessions per Week: 03	Teaching Hours: 45 Hours

Unit	Detailed Syllabus	Teaching Hours	Marks/Weight
Unit-1	Structure and Union	09	14
	Structure Declaration and initialization Creating variable and accessing data members Array within structure and array of structure Structure within structure Union Passing structure and union as function argument		
Unit-2	Pointer	09	14
	Declaration, initialization and arithmetic of pointers Pointer to array and structures Pointers and strings Pointers as function arguments Functions returning pointers		
Unit-3	Dynamic memory allocation and introduction to linked list	09	14
	Introduction to dynamic memory allocation, malloc() and calloc() functions, Introduction to linked list, comparison with array, Creation of singly linked list Various operations on singly linked list Singly circular linked list		
Unit-4	File Management	09	14
	Introduction to files and its significance File pointer, declaring file pointer Opening and closing a file - fopen(), fclose() Modes to open a text file "w", "r", "a", "w+", "r+", "a+". I/O operations on files, I/O functions : fread(), fwrite(), fscanf(), fprintf(), fgetc(), fputc(), fgets(), fputs(), fseek(), ftell()		
Unit-5	Pre-processors and Bit-wise operators	09	14
	Introduction to pre-processors : #define, #include Bit-wise operators Applications of bit-wise operators		

Reference Books

1. Programming In ANSI C By E. Balagurusamy, TMH Publication.
2. Understanding Pointers in C By Yashwant Kanitkar, BPB Publication
3. Programming with C, Schaums Series, TMH Publication.



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B.Sc.(IT)	Course: Internet and Web Technology	Course No: B.Sc.(IT)-CC-203
Semester: 02	Type of Course: Core Course	
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks		
Credits: 03	Theory Sessions per Week: 03	Teaching Hours: 45 Hours

Unit	Detailed Syllabus	Teaching Hours	Marks/Weight
Unit-1	Fundamentals of Internet	09	14
	Introduction to Internet, Intranet, Extranet Introduction to Internet Connection : Dial up connection, Direct Connection, Broadband Connection Introduction to Internet address, URL, ISP Email and its protocol: SMTP, POP3, IMAP		
Unit-2	Introduction to HTML	09	14
	Basics of HTML HTML document structure tags HTML comments Text formatting tags Inserting special characters Hyperlink and its types Lists and its types Working with image		
Unit-3	Advanced HTML	09	14
	Creating Tables Developing Forms Working with frames and floating frames (iframe) Meta tags Embedded multimedia		
Unit-4	Design and Develop web pages using CSS	09	14
	Introduction to DHTML Difference between HTML and DHTML Introduction to CSS Applying stylesheet to a document : Inline stylesheet, External stylesheet, Importing stylesheet, Embedding stylesheet CSS Properties: Font, Text, Margin, Padding, Color, Border, List, Background		
Unit-5	Application of Internet	09	14
	WWW, Search Engine, Newsgroup, Audio and Video conferencing, Web Chat, IRC, FTP, Remote Login, DNS Introduction to eCommerce, eLearning, eBanking Introduction to social networking- Twitter, Facebook		

Reference Books

1. Douglas Comer:- Internet - An Introduction Prentice-Hall of India Pvt. Ltd
2. Ivan Bayross:- WEB enabled Comm. Appli. Develop. using HTML, DHTML, JAVASCRIPT
3. Thomas A. Powell:- The Complete reference HTML and CSS



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B.Sc.(IT)	Course: Network Management & Information Security	Course No: B.Sc. (IT)-CC-204
Semester: 02	Type of Course: Core Course	
Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks		
Credits: 03	Theory Sessions per Week: 03	Teaching Hours: 45 Hours

Unit	Detailed Syllabus	Teaching Hours	Marks/Weight
Unit-1	Introduction to Information Security	09	14
	Attributes of Information Security: Confidentiality, Integrity, and Availability. Threats & Vulnerabilities: Unauthorized Access, Impersonation, Denial of Service, Malicious Software; Trap Doors, Logic Bomb, Trojan Horses; Viruses, Worms & Bacteria; Security Strategies & Processes; Importance of Security Policies and Audits.		
Unit-2	Network Security -I	09	14
	OSI Model, Maximum Transfer Unit, IP, TCP, UDP, ICMP; ARP, RARP and DNS; Ping, Traceroute. Security Services : Message Confidentiality, Integrity, Authentication, nonrepudiation Message Confidentiality : confidentiality with symmetric key & Asymmetric key		
Unit-3	Network Security - II	09	14
	Network Attacks: Buffer Overflow, IP Spoofing, TCP Session Hijacking, Sequence Guessing, Network Scanning: ICMP, TCP sweeps, Basic Port Scans; Denial of Service Attacks: SYN Flood, Teardrop attacks, land, Smurf Attacks. Virtual Private Network Technology: Tunneling, IPSEC: Traffic Protocols: Authentication Headers, ESP Internet Key Exchange (IKE), Security Association PPTP, L2TP.		
Unit-4	Identification & Authentication	09	14
	Definitions, Types of authentication, Password Authentication, Password Vulnerabilities & Attacks: Brute Force & Dictionary Attacks. Password Policy & Discipline, Single Signon - Kerberos, Alternate Approaches: Biometrics: Types of Biometric Techniques: False Rejection, False Acceptance, Cross Over Error Rates..		
Unit-5	Internet Security	09	14
	. Proxy Servers, Firewalls, , Smurf Attacks on ISP : How Virus works on Internet, How Cookies, Passports and Web Tracking Work, , Privacy and Digital Certificates, Parental Controls on the Internet		

Reference Books

1. William Stallings, "Network Security Essentials"
2. Behrouz A Forouzan " Data Communication And Networking"
3. Professional Reference, "Internet Security"
4. Gollmann, Dieter, "Computer Security"



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B.Sc.(IT)	Course: Practical (Based on B.Sc.(IT)-CC-202)	Course No: B.Sc.(IT)-CC-205
Semester: 02	Type of Course: Core Course	
Marking Scheme: External Examination: 100 + Internal Examination: 00 = 100 Marks		
Credits: 12	Practical Sessions per Week: 12	Teaching Hours: 180 Hours

Unit	Detailed Syllabus	Marks/ Weight
Unit-1	Practical Problem from B.Sc.(IT)-CC-202	50
Unit-2	Practical Problem from B.Sc.(IT)-CC-203	50