KAKATIYA UNIVERSITY
B.SC I YEAR SEMESTER-I - CBCS
<u>Ability Enhancement Compulsory Course (AECC)</u>

ENVIRONMENTAL STUDIES

(2 hrs./week)   Credits – 2

UNIT - I : Ecosystem, Biodiversity & Natural Resources   (15 hrs.)

1. Definition, Scope & Importance of Environmental Studies.
2. Structure of Ecosystem – Abiotic & Biotic components Producers, Consumers, Decomposers, Food chains, Food webs, Ecological pyramids)
3. Function of an Ecosystem :Energy flow in the Ecosystem (Single channel energy flow model)
4. Definition of Biodiversity , Genetic,Species & Ecosystem diversity , Hot-spots of Biodiversity, Threats to Biodiversity , Conservation of Biodiversity (Insitu & Exsitu)
5. Renewable & Non – renewable resources, Brief account of Forest , Mineral & Energy (Solar Energy & Geothermal Energy) resources
6. Water Conservation , Rain water harvesting & Watershed management.

UNIT – II: Environmental Pollution , Global Issues & Legislation   (15 hrs.)

1. Causes, Effects & Control measures of Air Pollution, Water Pollution
2. Solid Waste Management
3. Global Warming & Ozone layer depletion.
4. Ill – effects of Fire- works
5. Disaster management – floods, earthquakes & cyclones
6. Environmental legislation :-
(a) Wild life Protection Act (b) Forest Act (c) Water Act (d) Air Act
7. Human Rights
8. Women and Child welfare
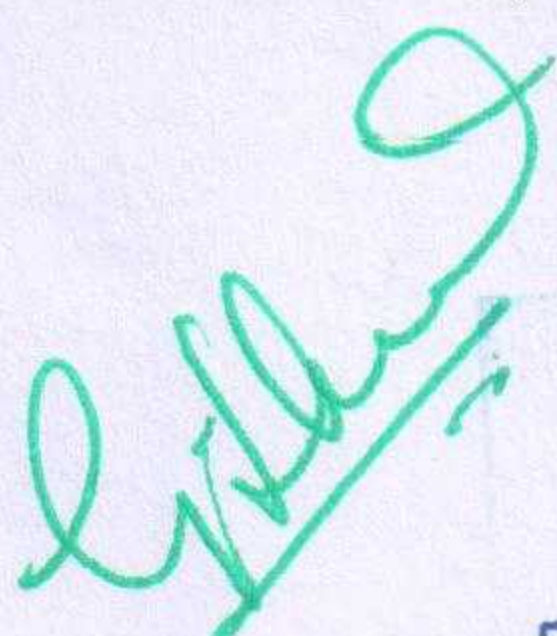9. Role of Information technology in environment and human health

❖ **Field Study:**   **(5 hours)**
- Pond Ecosystem
- Forest Ecosystem

REFERENCES:

- Environmental Studies - from crisis to cure – by R. Rajagopalan (Third edition) Oxford University Press.
- Text book of Environmental Studies for undergraduate courses (second edition) by Erach Bharucha
- A text book of Environmental Studies by Dr.D.K.Asthana and Dr. Meera Asthana

Dr. G. SHAMITHA
Chairperson
Board of Studies
Department of Zoology & Sericulture Unit
KAKATIYA UNIVERSITY - WGL-506009 (T.S)

KAKATIYA UNIVERSITY
B.Sc. I YEAR SEMESTER-II
Ability Enhancement Compulsory Course (AECC)
Basic Computer Skills

FUNDAMENTALS OF COMPUTERS

Unit-I:

Introduction to Computers: what is a computer, characteristics of Computers, Generations of Computers, Classifications of Computers, Basic Computer organization, Applications of Computers. Input and Output Devices: Input devices, Output devices, Softcopy devices, Hard copy devices. Computer Memory and Processors: Introduction, Memory Hierarchy, Processor, Registers, Cache memory, primary memory, secondary storage devices, magnetic tapes, floppy disks, hard disks, optical drives, USB flash drivers, Memory cards, Mass storage devices, Basic processors architecture.

Unit-II:

Number System and Computer Codes: Binary number system, working with binary numbers, octal number system, hexadecimal number system, working with fractions, signed number representation in binary form, BCD code, and other codes. Boolean algebra and logic gates: Boolean algebra, Venn diagrams, representation of Boolean functions, logic gates, logic diagrams and Boolean expressions using karnaugh map. Computer Software: Introduction to computer software, classification of computer software, system software, application software, firmware, middleware, acquiring computer software, design and implementation of correct, efficient and maintainable programs.

Text: ReemaThareja, Fundamentals of Computers.

References

1. V.Rajaraman, 6th Edition Fundamentals of Computers, NeeharikaAdabala.
2. Anita Goel, Computer Fundamentals.

KAKATIYA UNIVERSITY WARANGAL 506 009
Scheme under Choice Based Credit System
With Effect from the Academic Year 2019-2020
B.A. PROGRAMME

FIRST YEAR

SEMESTER - I

Code	Course category	Title of the Paper *	No. of Credits	HPW	Max. Marks		Total Marks
					I.A	End Exam	
B A 101	AECC-1	**Basic Computer Skills**	2	2	10	40	50
B A 102	FL-1 A	**ENGLISH**	4	4	20	80	100
B A 103	SL-1 B	**SECOND LANGUAGE**	4	4	20	80	100
B A 104	DSC-1 A	**OPTIONAL - I**	5	5	20	80	100
B A 105	DSC-2 A	**OPTIONAL – II**	5	5	20	80	100
B A 106	DSC-3 A	**OPTIONAL – III**	5	5	20	80	100
		Summary of Credits	**25**	**25**	**-**	**-**	**550**

SEMESTER - II

Code	Course category	Title of the Paper *	No. of Credits	HPW	Max. Marks		Total Marks
					I.A	End Exam	
B A 201	AECC-2	Environmental Studies	2	2	10	40	50
B A 202	FL-2 A	**ENGLISH**	4	4	20	80	100
B A 203	SL-2 B	**SECOND LANGUAGE**	4	4	20	80	100
B A 204	DSC-1B	**OPTIONAL - I**	5	5	20	80	100
B A 205	DSC-2B	**OPTIONAL – II**	5	5	20	80	100
B A 206	DSC-3B	**OPTIONAL – III**	5	5	20	80	100
		Summary of Credits	**25**	**25**	**-**	**-**	**550**

* If a particular optional is having practical lab, the No. of credits may be considered as 4 = 1 (Theory + Lab Practical)

KAKATIYA UNIVERSITY WARANGAL 506 009
Scheme under Choice Based Credit System
With Effect from the Academic Year 2020-2021
B.A. PROGRAMME

SECOND YEAR

SEMESTER - III

Code	Course category	Title of the Paper *	No. of Credits	HPW	Max. Marks		Total Marks
					I.A	End Exam	
BA 301	SEC-1	Project Planning and Report Writing	2	2	10	40	50
BA 302	SEC-2	Entrepreneurship and Development	2	2	10	40	50
BA 303	FL-3 A	ENGLISH	3	3	15	60	75
BA 304	SL-3 B	SECOND LANGUAGE	3	3	15	60	75
BA 305	DSC-1 C	OPTIONAL - I	5	5	20	80	100
BA 306	DSC-2 C	OPTIONAL – II	5	5	20	80	100
BA 307	DSC-3 C	OPTIONAL – III	5	5	20	80	100
		Summary of Credits	25	25	110	440	550

SEMESTER - IV

Code	Course category	Title of the Paper *	No. of Credits	HPW	Max. Marks		Total Marks
					I.A	End Exam	
BA 401	SEC-3	Forms of Journalistic Writing	2	2	10	40	50
BA 402	SEC-4	Rural Politics and Leadership	2	2	10	40	50
BA 403	FL- 4 A	ENGLISH	3	3	15	60	75
BA 404	SL- 4 B	SECOND LANGUAGE	3	3	15	60	75
BA 405	DSC-1 D	OPTIONAL - I	5	5	20	80	100
BA 406	DSC-2 D	OPTIONAL – II	5	5	20	80	100
BA 407	DSC-3 D	OPTIONAL – III	5	5	20	80	100
		Summary of Credits	25	25	110	440	550

- If a particular optional is having practical lab, the No. of credits may be considered as 4 = 1 (Theory + Lab Practical)

KAKATIYA UNIVERSITY WARANGAL 506 009
Scheme under Choice Based Credit System
With Effect from the Academic Year 2021- 2022
B.A. PROGRAMME
FINAL YEAR

SEMESTER - V

Code	Course category	Title of the Paper *	No. of Credits	HPW	Max. Marks		Total Marks
					I.A	End Exam	
BA 501	FL-5 A	ENGLISH	3	3	15	60	75
BA 502	SL-5 B	SECOND LANGUAGE	3	3	15	60	75
BA 503	GE	Good Governance	4	4	20	80	100
BA 504	DSE-1 E	OPTIONAL – I	5	5	20	80	100
BA 505	DSE-2 E	OPTIONAL – II	5	5	20	80	100
BA 506	DSE-3 E	OPTIONAL – III	5	5	20	80	100
		Summary of Credits	25	25	110	440	550

SEMESTER - VI

Code	Course category	Title of the Paper *	No. of Credits	HPW	Max. Marks		Total Marks
					I.A	End Exam	
BA 601	FL-6 A	ENGLISH	3	3	15	60	75
BA 602	SL-6 B	SECOND LANGUAGE	3	3	15	60	75
BA 603	PW - / Optional	Cultural Tourism in India	4	4	20	80	100
BA 606	DSE-1 F	OPTIONAL – I	5	5	20	80	100
BA 607	DSE-2 F	OPTIONAL – II	5	5	20	80	100
BA 608	DSE-3 F	OPTIONAL – III	5	5	20	80	100
		Summary of Credits	25	25	110	440	550

NSS/NCC/ Sports/Extra Curricular	Credits under Non – CGPA 6	Up to 6 (2 in each Year)	Up to 6 (2 in each Year)	Up to 6 (2 in each Year)
Summer internship	4	Up to 4 (2 in each, after I & II years	Up to 4 (2 in each, after I & II years	Up to 4 (2 in each, after I & II years

FL-: First Language;

SL-: Second Language;

AECC: Ability Enhancement Compulsory Course;

SEC: Skill Enhancement Course;

DSC: Discipline Specific Course;

DSE: Discipline Specific Effective;

GE: Generic Elective;

PW: Project Work;

B.Com.

(Computer Applications)

(CBCS)

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FACULTY OF COMMERCE & BUSINESS MANAGEMENT
KAKATIYA UNIVERSITY
Vidyaranyapuri, Warangal

2019-2020

Faculty of Commerce & Business Management, Kakatiya University, Warangal.

B.COM (Computer Applications)

CBCS COURSE STRUCTURE

Sl.No.	Code	Course Title	HPW	Credits	Exam Hrs	Marks
(1)	(2)	(3)	(5)	(6)	(7)	(8)
		I Year I Semester				
1.	ELS1	English (First Language)	4	4		
2.	SLS1	Second Language	4	4		
3.	AECC1	**a)**Environmental Science/ **b)**Basic Computer Skills	2	2	1 ½ hrs	40U+10I
4.	DSC101	Financial Accounting–I	5	5	3 hrs	80U+20I
5.	DSC102	Business Organization and Management	5	5	3 hrs	80U+20I
6.	DSC103	Fundamentals of Information Technology	3T+4P	5	1 ½ hrs	50T+35P+15I
		Total	**27**	**25**		
		I Year II Semester				
7.	ELS2	English (First Language)	4	4		
8.	SLS2	Second Language	4	4		
9.	AECC2	**a)**Basic Computer Skills/ **b)**Environmental Science	2	2	1 ½ hrs	40U+10I
10.	DSC201	Financial Accounting–II	5	5	3 hrs	80U+20I
11.	DSC202	Business Laws	5	5	3 hrs	80U+20I
12.	DSC203	Programming with C & C++	3T+4P	5	1 ½ hrs	50T+35P+15I
		Total	**27**	**25**		
		II Year I Semester				
13.	ELS3	English (First Language)	3	3		
14.	SLS3	Second Language	3	3		
15.	SEC1	**a)**Principles of Insurance/ **b)**Foundation of Digital Marketing/ **c)**Fundamentals of Business Analytics	2	2	1 ½ hrs	40U+10I
16.	SEC2	**a)**Practice of Life Insurance/ **b)**Web Design & Analytics/ **c)**Application of Business Analytics	2	2	1 ½ hrs	40U+10I
17.	DSC301	Advanced Accounting	5	5	3 hrs	80U+20I
18.	DSC302	Business Statistics-I	5	5	3 hrs	80U+20I
19.	DSC303	Relational Database Management System	3T+4P	5	1 ½ hrs	50T+35P+15I
		Total	**27**	**25**		

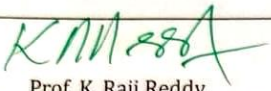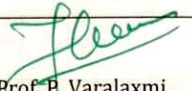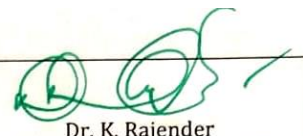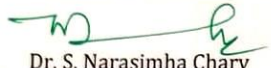# Faculty of Commerce & Business Management, Kakatiya University, Warangal.
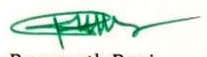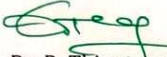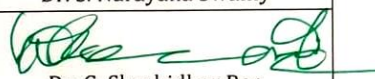
No.	Code	Course				
		II Year II Semester				
20.	ELS4	English (First Language)	3	3		
21.	SLS4	Second Language	3	3		
22.	SEC3	**a)**Practice of General Insurance/ **b)**Social Media Marketing **c)**Business Intelligence	2	2	1 ½ hrs	40U+10I
23.	SEC4	**a)**Regulation of Insurance Business/ **b)**Search Engine Optimization & Online Advertising c)Data Visualisation & Storytelling	2	2	1 ½ hrs	40U+10I
24.	DSC401	Income Tax/Excel Foundation	5	5	3 hrs	80U+20I
25.	DSC402	Business Statistics-II	5	5	3 hrs	80U+20I
26.	DSC403	Web Technologies	3T+4P	5	1 ½ hrs	50T+35P+ 15I
		Total	**27**	**25**		
		III Year I Semester				
27.	ELS5	English (First Language)	3	3		
28.	SLS5	Second Language	3	3		
29.	GE	a)Business Economics / b) Advanced Aspects of Income Tax	4	4	3 hrs	80U+20I
30.	DSE501	**a)** Cost Accounting/ **b)** Financial Planning & Performance/ **c)** International Financial Reporting-I	5	5	3 hrs	80U+20I
31.	DSE502	**a)** Computerized Accounting/ **b)** Financial Decision Making-I/ **c)** International Tax &Regulation	3T+4P/ 5	5	3 hrs	50T+35P+ 15I/ 80U+20I
32.	DSE503	**a)** Management Information Systems/ **b)** Ecommerce/**c)** Mobile Applications	3T+4P	5	1 ½ hrs	50T+35P+ 15I
		Total	**29/27**	**25**		
		III Year II Semester				
33.	ELS6	English (First Language)	3	3		
34.	SLS6	Second Language	3	3		
35.	PR	Research Methodology and Project Report	2T+4R	4	1 ½ hrs	40U+10I 35R+15VV
36.	DSE601	**a)** Cost Control and Management Accounting/ **b)** Financial control/ **c)** International Financial Reporting-II	5	5	3 hrs	80U+20I
37.	DSE602	**a)** Theory and Practice of GST/ **b)** Financial Decision Making-II / **c)** International Auditing	3T+4P/ 5	5	3 hrs	50T+35P+ 15I/ 80U+20I
38.	DSE603	**a)** Multimedia Systems/ **b)** Cyber Security/**c)** Data Analytics	3T+4P	5	1 ½ hrs	50T+35P+ 15I
		Total	**31/29**	**25**		
		GRAND TOTAL	**168/164**	**150**		

ELS: English Language Skill**; SLS**: Second Language Skill; **AEC: A**bility **E**nhancement **C**ompulsory **C**ourse; *SEC: Skill Enhancement Course; DSC: Discipline Specific Course; DSE: Discipline Specific Elective; GE: Generic Elective; T: Theory; P: Practical; I: Internal Exam U: University Exam: PR: Project Report; VV: Viva- Voce Examination.*
Note: If a student should opt for "a" in SEC in III semester, the student has to opt for "a" only in IV semester and so is the case with "b" and "c". In the case of DSE also the rule applies.

Faculty of Commerce & Business Management, Kakatiya University, Warangal.

SUMMARY OF CREDITS

Sl. No.	Course Category	No. of Courses	Credits Per Course	Credits
1	English Language	6	4/3	20
2	Second Language	6	4/3	20
3	AECC	2	2	4
4	**SEC**	**4**	**2**	**8**
5	**GE**	**1**	**4**	**4**
6	**Project Report**	**1**	**4**	**4**
7	**DSC**	**12**	**5**	**60**
8	**DSE**	**6**	**5**	**30**
	TOTAL	**40**		**150**
	Commerce	**24**		**106**
CREDITS UNDER NON-CGPA	**NSS/NCC/Sports/ Extra Curricular**		**Up to 6 (2 in each year)**	
	Summer Internship		**Up to 4 (2 in each after I & II years)**	

Prof. K. Raji Reddy	Prof. P. Varalaxmi	Dr. K. Rajender
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Dr. Ramavath Ravi	Dr. D. Thiruvengala Chary	Dr. G. Shashidhar Rao

Paper DSC 101: FINANCIAL ACCOUNTING – I

Objective: To acquire conceptual knowledge of basics of Accounting and preparation of final accounts of sole trader.

UNIT-I: ACCOUNTING PROCESS:

Financial Accounting: Introduction – Definition – Evolution – Functions - Advantages and Limitations – Users of Accounting Information - Branches of Accounting – Accounting Principles: Concepts and Conventions - Accounting Standards – Meaning – Importance – List of Accounting Standards issued by ASB - Accounting System - Types of Accounts – Accounting Cycle – Journal - Ledger and Trial Balance (Including problems)

UNIT-II: SUBSIDIARY BOOKS:

Meaning –Types: Purchases Book - Purchases Returns Book - Sales Book - Sales Returns Book - Bills Receivable Book - Bills Payable Book – Cash Book: Single Column, Two Column, Three Column and Petty Cash Book - Journal Proper (Including problems)

UNIT-III: BANK RECONCILIATION STATEMENT:

Meaning - Need - Reasons for differences between cash book and pass book balances – Favourable and over draft balances – Ascertainment of correct cash book balance (Amended Cash Book) - Preparation of Bank Reconciliation Statement (Including problems)

UNIT-IV: RECTIFICATION OF ERRORS AND DEPRECIATION:

Capital and Revenue Expenditure – Capital and Revenue Receipts: Meaning and Differences - Differed Revenue Expenditure. Errors and their Rectification: Types of Errors - Suspense Account – Effect of Errors on Profit (Including problems)
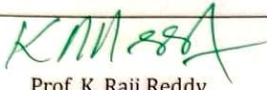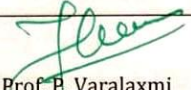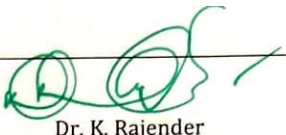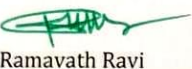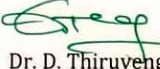
Depreciation (AS-6): Meaning – Causes – Difference between Depreciation, Amortization and Depletion - Objectives of providing for depreciation – Factors affecting depreciation – Accounting Treatment – Methods of depreciation: Straight Line Method - Diminishing Balance Method (Including problems)

UNIT-V: FINAL ACCOUNTS:

Final Accounts of Sole Trader: Meaning - Uses - Preparation of Manufacturing, Trading and Profit & Loss Account and Balance Sheet – Adjustments – Closing Entries (Including problems)

SUGGESTED READINGS:

1. Accountancy-I: Haneef and Mukherjee, Tata McGraw Hill Company.
2. Principles & Practice of Accounting: R.L.Gupta&V.K.Gupta, Sultan Chand.
3. Accountancy-I: S.P. Jain & K.L Narang, Kalyani Publishers.
4. Accountancy–I: Tulasian, Tata McGraw Hill Co.
5. Advanced Accountancy-I: S.N.Maheshwari& V.L.Maheswari, Vikas.
6. Financial Accounting: Jawahar Lal, Himalaya Publishing House.

Prof. K. Raji Reddy	Prof. P. Varalaxmi	Dr. K. Rajender
Dr. S. Narasimha Chary	Mr. M. Somaiah	Dr. S. Narayana Swamy
Dr. Ramavath Ravi	Dr. D. Thiruvengala Chary	Dr. G. Shashidhar Rao

Paper DSC 102: BUSINESS ORGANISATION AND MANAGEMENT

Objective: *To acquaint the students with the basics of Commerce and Business concepts and functions, forms of Business Organization and functions of Management.*

UNIT-I: INTRODUCTION AND FORMS OF BUSINESS ORGANISATIONS:

Concepts of Business, Trade, Industry and Commerce - Objectives and Functions of Business - Social Responsibility of a Business - Forms of Business Organization - Meaning, Characteristics, Advantages and Disadvantages of Sole Proprietorship – Meaning, Characteristics, Advantages and Disadvantages of Partnership - Kinds of Partners - Partnership Deed - Concept of Limited Liability Partnership – Meaning, Characteristics, Advantages and Disadvantages of Hindu Undivided Family – Meaning, Advantages and Disadvantages of Co-Operative Organization

UNIT-II: JOINT STOCK COMPANY:

Joint Stock Company - Meaning - Definition - Characteristics - Advantages and Disadvantages - Kinds of Companies - Promotion - Stages of Promotion - Promoter - Characteristics - Kinds - Preparation of Important Documents - Memorandum of Association - Clauses - Articles of Association - Contents – Prospectus - Contents – Red herring Prospectus- Statement in lieu of Prospectus (As per Companies Act, 2013)

UNIT-III: INTRODUCTION TO FUNCTIONS OF MANAGEMENT:

Management - Meaning - Characteristics - Functions of Management - Levels of Management – Skills of Management- Scientific Management - Meaning - Definition - Objectives - Criticism – Fayol's 14 Principles of Management
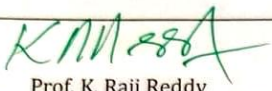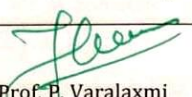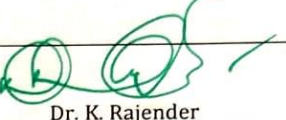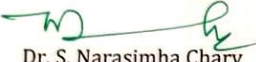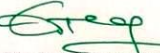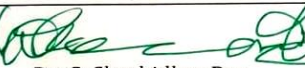
UNIT-IV: PLANNING AND ORGANISING: Meaning - Definition - Characteristics - Types of Plans - Advantages and Disadvantages – Approaches to Planning - Management by Objectives (MBO) - Steps in MBO - Benefits – Weaknesses - Definition of Organizing – Organization - Process of Organizing - Principles of Organization - Formal and Informal Organizations - Line, Staff Organizations - Line and Staff Conflicts - Functional Organization - Span of Management - Meaning - Determining Span - Factors influencing the Span of Supervision

UNIT-V: AUTHORITY, COORDINATION AND CONTROL:

Meaning of Authority, Power, responsibility and accountability - Delegation of Authority - Decentralization of Authority - Definition, importance, process, and principles of Coordination - techniques of Effective Coordination - Control - Meaning - Definition – Relationship between planning and control - Steps in Control - Types (post, current and pre-control) - Requirements for effective control

SUGGESTED READINGS:

1. Business Organization & Management: Sharma Shashi K. Gupta, Kalyani Publishers
2. Business Organisation& Management: Patrick Anthony, Himalaya Publishing House
3. Business Organization & Management: Dr. Manish Gupta, PBP.
4. Modern Business Organization: S.A. Sherlekar, V.S. Sherlekar, Himalaya Publishing House
5. Business Organization & Management: C.R. Basu, Tata McGraw Hill
6. Organizational Behaviour Text & Cases: V.S.P. Rao, Himalaya Publishing House
7. Business Organization & Management: Uma Shekaram, Tata McGraw Hill
8. Business Organization & Management: Niranjan Reddy & Surya Prakash, Vaagdevi publishers
9. Business Organisation and Management, Dr. NeeruVasihth, Tax Mann Publications.

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Dr. Ramavath Ravi	Dr. D. Thiruvengala Chary	Dr. G. Shashidhar Rao

Paper DSC 103: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Hours Per Week: 6 (4T+2P)   **Credits**: 5
Exam Hours: 1 ½   **Marks:** 50U+35P+15I

*Objective: To u*nderstand the basic concepts and terminology of informationtechnology and to identify issues related to informationsecurity.

UNIT-I: INTRODUCTION TO COMPUTERS:

Introduction,Definition,Characteristicsofcomputer,EvolutionofComputer,BlockDiagramOf a computer, Generations of Computer, Classification Of Computers, Applications of Computer, Capabilities and limitations ofcomputer.

Role of I/O devices in a computer system.**Input Units:** Keyboard, Terminals and its types. Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System, Touch Screen, **Output Units:** Monitors and its types. Printers: Impact Printers and its types. Non-Impact Printers and its types, Plotters, types of plotters, Sound cards,Speakers.

UNIT -II: COMPUTER ARITHMETIC & STORAGE FUNDAMENTALS:

Binary,Binary Arithmetic, Number System: Positional & Non Positional, Binary,Octal, Decimal, Hexadecimal, Converting from one number system to another.

Primary Vs Secondary Storage, Data storage & retrieval methods.**Primary Storage:** RAM

ROM, PROM, EPROM, EEPROM. **Secondary Storage:** Magnetic Tapes, Magnetic Disks.

Cartridge tape, hard disks, Floppy disks Optical Disks, Compact Disks, Zip Drive, Flash Drives.

UNIT-III: SOFTWARE:

Software and its needs, Types of S/W. **System Software**: Operating System, Utility Programs - Programming Language: Machine Language, Assembly Language, High Level Language their advantages & disadvantages. **Application S/W** and its types: Word Processing, Spread Sheets Presentation, Graphics, DBMS s/w.
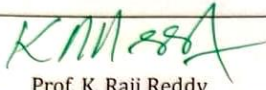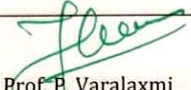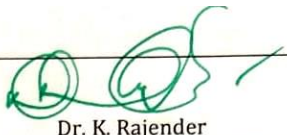
UNIT-IV: OPERATING SYSTEM:
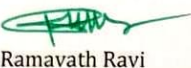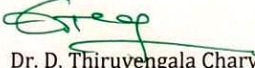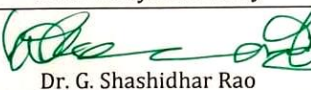
Functions, Measuring System Performance, Assemblers, Compilers and Interpreters.

Batch Processing, Multiprogramming, Multi Tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux.

UNIT-V: DATA COMMUNICATION:

Data, Communication, Basic Networking Devices, Communication Process, Data Transmission speed, Communication Types(modes), Data Transmission Medias, Modem and its working, characteristics, Typesof Networks, LAN Topologies, Computer Protocols, Concepts relating to networking.

SUGGESTED READINGS:

Computer Fundamentals : P.K.Sinha

Prof. K. Raji Reddy	Prof. P. Varalaxmi	Dr. K. Rajender
Dr. S. Narasimha Chary	Mr. M. Somaiah	Dr. S. Narayana Swamy
Dr. Ramavath Ravi	Dr. D. Thiruvengala Chary	Dr. G. Shashidhar Rao

KAKATIYA UNIVERSITY - WARANGAL - TELANGANA
B.Sc. Programme under CBCS
With effect from the A.Y: 2019
Optional Paper
(Common to all Science Courses)
III Year SEMESTER – VI

PUBLIC HEALTH AND HYGIENE

UNIT-I: Nutrition, Environment and Health

1.1 Classification of foods – Carbohydrates, Proteins, Lipids and Minerals.
1.2 Nutritional deficiencies and disorders of Carbohydrates, Proteins, Lipids and Minerals.
1.3 Concept, Steps and Applications of Environment and Health Impact Assessment.
1.4 Industrial, Agricultural and Urban Health. Environmental Pollution and Associated Health Hazards.

UNIT-II : Communicable and Non-Communicable Diseases

2.1 Causes, symptoms, diagnosis, treatment and prevention of Communicable Diseases (Malaria, Filaria, Tuberculosis and AIDS).
2.2 Causes, symptoms, diagnosis, treatment and prevention of Non-Communicable Diseases (Hypertension, Coronary Heart Diseases, Diabetes and Obesity).
2.3 Symptoms, treatment and prevention measures of Water Borne Diseases (Diarrhea, Typhoid, Hepatitis and Amebiasis).
2.4 Symptoms, treatment and prevention measures Air Borne Diseases (COVID-19, Influenza, Whooping couph and Chickenpox).

UNIT-III :Food and Diet Systems

3.1 Definition of Food, Types of foods (Texturized foods, Novel foods and Organic foods).
3.2 Food safety system and issues; Physical, chemical and microbiological contaminants; The significance of foodborne diseases.
3.3 Principles of diet in diseases, Classification of diets according to nutrients.
3.4 Etiology, Symptom and Dietary Management in Obesity, Underweight, Hypertension, Diabetes Mellitus, Atherosclerosis.

UNIT-IV : Personal Hygiene and Sanitation

4.1 Definition of Hygiene and Sanitation, Personal Hygiene of food handler, Techniques of Washing Hands, Pest control and Garbage Disposal.
4.2 Definition of Public Health, Hygiene, Social and Preventive Medicine, Basic aspects of Personal Hygiene and Disposal of Waste.
4.3 The Hygiene Practices of the different categories of family members (children, parents and aged members)
4.4 Definition of Sanitation, Environmental Sanitation, Sanitation of Food Serving Institution, The importance of proper sanitation practices.

Suggested Readings:

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KAKATIYA UNIVERSITY, WARANGAL-506 009
B.Sc. Under CBCS System wef A.Y: 2021-22
Third Year : : Semester - V
GENERIC ELECTIVE (Common to all students)

WATER RESOURCES MANAGEMENT

(4 hrs/week) (Taught by ant Science Dept)   (Credits:4)   (Marks:100)

UNIT-I:

Introduction to water resources management, different types of water resources, water resources and its importance, Global distribution of water. Hydrological cycle, Conservation of water, recycling of water.

Unit-II:

Rain water harvesting, methods of roof top rain water harvesting in urban setting: Direct method - Storing rain water in tanks for direct use; indirect methods - Recharge pits, bore wells/dug wells, Recharge trenches. Over use of surface and ground water and control measures.

UNIT-III:

Importance of water shed and water shed management, Rain water harvesting in rural setting: Check dams, percolation tanks, gabion structure, continuous contour trenches, staggered contour trenches, farm ponds. Surface water and ground water pollution, control measures.

UNIT-IV :

Mission Bhagiratha: Telangana government water grid project for drinking water supply - aims and objectives and method of implementation.Mission Kakatiya: Telangana government project for the restoration of minor irrigation tanks, aims and objectives and method of implementation.

Text books:

1) Water Resources, Conservation and Management by Chatterjee, S.N.
2) Groundwater hydrology by Todd
3) Watershed management by J.V.S.Murthy
4) Applied Hydrogeology by Fetter.

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Skill Enhancement Course- I
II Year
(Common to all Science Courses)
SEMESTER – III

FUNDAMENTALS OF NANO TECHNOLOGY

Theory: **2 Hours/Week;** **Credits: 2** **Marks: 50 (Internal: 10; External: 40)**

UNIT I:
Background to Nanotechnology:
Scientific revolution, molecular and atomic size, emergence of Nanotechnology,
Challenges in Nanotechnology, Carbon age :(new forms of carbon graphene sheet to CNT)

Nucleation:
Macroscopic to microscopic crystals and nanocrystals, large surface to volume ratio, top-down and bottom-up approaches, self-assembly process, grain bounda volume in nanocrystals, defects in nanocrystals, surface effects on the properties.

UNIT- II:
Nano materials and properties:
Types of Nanostructure: one dimensional (ID), two dimensional (2D), three dimensional (3D) Nanostructured materials, Quantum dots, Quantum wire, Quantum sheet structures.

Carbon nanotubes (CNT), Metals (Au, Ag), Metal oxides(TiO_2,Zno), semiconductors (Si, Ge, CdS, ZnSe), Ceramics and composites, Biological system, DNA, RNA, Lipids, Size dependent properties, mechanical, physical and chemical properties.

Applications of Nanomaterials:
Molecular electronics and nano electronics, Quantum electronic devices, CNT based transistor and Field emission Display, biological applications, Biochemical sensor, Membrane based water purification.

Reference books:
1. Nanotechnology: Basic science and emerging technologies, M.Wilson, K.Kannangara, G. Smith, Overseas Press India PVT.LTD,NEW DELHI:
2. The chemistry of Nanomaterials: Synthesis, properties & applications. C.N.R.Rao, A.Muller, Wiley
3. Nano structures and Nano materials: Synthesis, properties and applications by Guozhong Cao, Imperial College press.
4. Hari Singh Nalwa, Handbook of nanostructured materials &nanotechnology optical properties.
5. Nano fabrication towards biomedical applications, C.S.S.R.Kumar, Wiley-VCH Verlag GmbH & Co, Weinheim.

Mrs. G. Manjula, Chairperson, BoS   Prof. B. Venkatram Reddy, HoD

BS-302 / SEC-2: BIO STATISTICS

[2 HPW, #Credits: 2, Marks: 50 (Internal:10, External:40)]

Unit-I

Descriptive and Relational Statistics: Data collection and tabulation, Graphical representation of data, Measures of central tendency (Mean, Median and Mode) with simple applications, Measures of dispersion (Range, Quartile Deviation, Mean Deviation, Standard Deviation, Standard error and Coefficient of variation) with simple applications, Concept of Skewness and Kurtosis.

Concept of correlation, computation of Karl-Pearson correlation coefficient, Spearman' s rank correlation coefficient and Simple linear regression with simple applications,

Unit-II

Probability and Inferential Statistics: Basic concepts and Basic terms of probability, Mathematical, Statistical and Axiomatic definitions of probability Conditional probability and independence of events, Addition and multiplication theorems (Statements only) with simple applications. Statements and applications of Binomial, Poisson and Normal distributions.

Concepts of Population, Sample, Parameter, Statistic, Null and Alternative hypotheses, Critical region, two types of errors, Level of significance. Tests of significance based on goodness of fit, means, variances using χ^2 test, t-test, F-test and analysis of variance (ANOVA).

References:

1. Irfan Ali Khan and Atiya Khanum: Fundamentals of Bio Statistics, Ukaaz Publications, HYD.

2. V. K. Kapoor and S. C. Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.

3. V. K. Kapoor and S. C. Gupta: Statistical Methods, Sultan Chand & Sons, New Delhi.

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