

# **MOHAN BABU UNIVERSITY**

Sree Sainath Nagar, Tirupati – 517 102



**MBU**  
**MOHAN BABU**  
**UNIVERSITY**

DREAM. BELIEVE. ACHIEVE

## **SCHOOL OF PARAMEDICAL AND HEALTH SCIENCES**

**B.Sc. Optometry**

**B.Sc. Radiology and Imaging Technology**

**B.Sc. Emergency Medicine and Critical Care Technology**

**B.Sc. Anesthesia and Operation Theatre Technology**

**B.Sc. Cardio Vascular Technology**

**B.Sc. Dialysis Technology**

**B.Sc. Respiratory Therapy**

**B.Sc. Medical Lab Technology**

### **CURRICULUM AND SYLLABUS**

*(For 2022-23 Admitted Students)*

**FULLY FLEXIBLE CHOICE BASED CREDIT SYSTEM (FFCBCS)**



**MBU**  
MOHAN BABU  
UNIVERSITY

# **MOHAN BABU UNIVERSITY**

## **Vision**

To be a globally respected institution with an innovative and entrepreneurial culture that offers transformative education to advance sustainability and societal good.

## **Mission**

- ❖ Develop industry-focused professionals with a global perspective.
- ❖ Offer academic programs that provide transformative learning experiences founded on the spirit of curiosity, innovation, and integrity.
- ❖ Create confluence of research, innovation, and ideation to bring about sustainable and socially relevant enterprises.
- ❖ Uphold high standards of professional ethics leading to harmonious relationship with environment and society.

## **SCHOOL OF PARAMEDICAL AND HEALTH SCIENCES**

### **Vision**

To be the global center of excellence for paramedical and allied health science education, research, innovation, incubation, consultancy and public service.

### **Mission**

- ❖ Inspire the experts of paramedical and allied health sciences of tomorrow to take on the public health challenges of our society.
- ❖ Train the students with fundamental knowledge of paramedical and allied health sciences, skills set and positive attitude for creating innovative solutions to serve industry and community through congenial learning environment with contemporary academic programs, state of the art infrastructure facilities and community health programs.
- ❖ Facilitate budding paramedical and allied health science experts with the best research-innovation-incubation-start-up ecosystem to realize their fullest potential for sustainable businesses.
- ❖ Encourage faculty and staff to excel in their respective domains of expertise and demonstrate the best of their abilities by way of continuing education, research support and consultancy.

## SCHOOL OF PARAMEDICAL AND HEALTH SCIENCES

### PROGRAM OUTCOMES

On successful completion of the Programs, the graduates of B.Sc. programs in Paramedical & Health Sciences will be able to:

- P01. Knowledge:** Study and apply concepts, theories, and practices of health care system to gain fundamental knowledge.
- P02. Analysis:** To identify, analyze and evaluate various experiences and perspectives using knowledge of paramedical & Allied Health sciences for substantiated conclusions.
- P03. Development;** Individual or teamwork skills to support shared goals with the interdisciplinary healthcare team to improve societal health
- P04. Tools & Techniques:** To create, select, and apply appropriate techniques, resources and modern tools with an understanding of the limitations in Health care system.
- P05. Environment and Sustainability:** Understand the impact of Health care professionals in environmental contexts and demonstrate the knowledge for sustainable development.
- P06. Ethics and Society:** Apply the ethical principles of health care practices for sustainable development of society
- P07. Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, to manage projects and finance in multidisciplinary settings.
- P08. Effective Communication:** Communicate effectively on Paramedical & allied Health care activities with the treating patient, community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- P09. Entrepreneurship:** Entrepreneur and leadership skills to practice independently as well as in collaboration with the interdisciplinary healthcare team.
- P010. Life-long learning:** Adapt to the changes and advancements in technology and engage in independent and lifelong learning

### **Basket Wise - Credit Distribution**

<b>S. No.</b>	<b>Basket</b>	<b>Credits (Min. - Max.)</b>
1	SCHOOL CORE	50-60
2	PROGRAM CORE	60-75
3	PROGRAM ELECTIVE	36-54
4	UNIVERSITY ELECTIVE	9-12
<b>TOTAL CREDITS</b>		<b>Min. 190</b>

## School Core (50-60 Credits)

Course Code.	Title of the Course	Lecture	Tutorial	Practical	Project based Learning	Credits	Pre-requisite
		L	T	P	S	C	
22DF102001	Medical Terminology and Record Keeping	4	1	2	-	6	-
22DF102002	Introduction to quality and Patient Safety	4	1	2	-	6	-
22LG101406	Professional English	2	-	-	-	2	-
22MG101006	Principles of Management	3	-	-	-	3	-
22CS102402	Basic Computers and Information Sciences	3	-	2	-	4	-
22DF105001	Biomedical Waste Management	-	1	2	-	2	-
<b>Mandatory Courses (Min. 8 Credits to be earned, Earned Credits will not be considered for CGPA )</b>							
22CE107601	Environmental Science	2	-	-	-	2	-

## SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
<b>22DF102001</b>	<b>MEDICAL TERMINOLOGY AND RECORD KEEPING</b>	4	1	2	-	6

**Pre-Requisite** -

**Anti-Requisite** -

**Co-Requisite** -

**COURSE DESCRIPTION:** This course provides a detailed discussion on word roots, prefixes, suffixes basic medical terms, medical abbreviations to human body systems and record-keeping methods in health care and medical ethics and law.

**COURSE OUTCOMES:** After successful completion of the course, students will be able to:

- CO1.** Demonstrate basic knowledge on roots, prefixes and suffixes to form medical terms in health care system
- CO2.** Use procedural terms and medical abbreviations to human body for improving communication and reporting between health care providers effectively
- CO3.** Apply advanced tools and techniques to maintain patient health details in medical system.
- CO4.** Design a standard protocol by applying medical law and ethics apply to avoid sentinel events.
- CO5.** Work individually or in teams to solve problems with effective communication

### CO-PO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	3	-	-	-	-	3	1	-	-	-
<b>CO2</b>	3	1	-	-	-	-	-	-	3	-
<b>CO3</b>	3	1	3	-	-	-	-	-	-	1
<b>CO4</b>	2	1								1
<b>CO5</b>	-	-	-	-	-	-	3	3	-	-
<b>Course Correlation Mapping</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>1</b>

*Correlation Levels: 3: High; 2: Medium; 1: Low*

## **COURSE CONTENT**

### **Module 1: INTRODUCTION OF MEDICAL TERMINOLOGY (12 Periods)**

Derivation of medical terms, Define word roots, prefixes, and suffixes, Conventions for combined morphemes and the formation of plurals, Basic medical terms, Form medical terms utilizing roots, suffixes, prefixes, and combining roots.

### **Module 2: INTRODUCTION OF MEDICAL TERMINOLOGY-1 (12 Periods)**

Interpret basic medical abbreviations/symbols, Utilize diagnostic, surgical, and procedural terms and abbreviations related to the integumentary system and musculoskeletal system

### **Module 3: INTRODUCTION OF MEDICAL TERMINOLOGY-2 (12 Periods)**

Interpret basic medical abbreviations/symbols, Utilize diagnostic, surgical, and procedural terms and abbreviations related to the Respiratory system, cardiovascular system, nervous system, and endocrine system.

### **Module 4: RECORD KEEPING (12 Periods)**

Standard procedures in record keeping, Interpret medical orders/reports, Data entry and management on electronic health record system, Advanced tools to maintain records in Health care.

### **Module 5: MEDICAL ETHICS AND LAW (12 Periods)**

Medical ethics – Definition, Basic principles of medical ethics – Confidentiality, Malpractice and negligence – Rational and irrational drug therapy, Autonomy and informed consent – Right of patients, Care of the terminally ill- Euthanasia, Development of a standardized protocol to avoid neamissesss or sentinel events

**Total Periods: 60**

## **EXPERIENTIAL LEARNING**

### **LIST OF EXPERIMENTS:**

1. Demonstration of role of paramedic in health care system
2. Demonstration of Central Sterile Supply Department (CSSD)
3. Observation and understanding of incinerator complex
4. Demonstration of Immunization section
5. Demonstration of working respective department in health care.

## **RESOURCES**

### **TEXT BOOKS:**

1. Adam Brown "Medical Terminology Easy Guide for Beginners" CreateSpace Independent Publishing Platform, Edition 1, 2016.
2. GD Mogli "Medical records organization and management" Jaypee Brothers Medical Publishers, Edition2, 2016.

**REFERENCE BOOKS:**

1. Stedmans "Stedmans pocket Medical Dictionary" Wolters Kluwer India Pvt. Ltd, Edition 1, 2009.
2. Rampi Gupta "CM Francis Medical Ethics" Jaypee Brothers Medical Publishers, Edition 4, 2020.

**VIDEO LECTURES:**

1. [https://www.youtube.com/watch?v=\\_bDatJxhfkQ](https://www.youtube.com/watch?v=_bDatJxhfkQ)
2. <https://www.youtube.com/watch?v=9iMhc2OU-go>
3. <https://www.youtube.com/watch?v=sQTrPIwtWaw>

**Web Resources:**

1. <https://blog.ipleaders.in/medical-laws-conflict-ethic>
2. <https://www.gponline.com/medico-legal-importance-good-records/article/89>
3. <https://openmd.com/guide/medical-terminology>



## SCHOOL CORE

<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>S</b>	<b>C</b>
<b>22DF102002</b>	<b>INTRODUCTION TO QUALITY AND PATIENT SAFETY</b>	4	1	2	-	6
<b>Pre-Requisite</b>	-					
<b>Anti-Requisite</b>	-					
<b>Co-Requisite</b>	-					

**COURSE DESCRIPTION:** This course is designed to provide an overview on Quality assurance and management, infection control and prevention, Antibiotic resistance and disaster management.

**COURSE OUTCOMES:** After successful completion of the course, students will be able to:

- CO1.** Apply NABH guidelines to improve the quality of patient care in the health care system.
- CO2.** Identification of suitable evidence-based infections control principles and techniques to control and prevent to disease in the healthcare environment
- CO3.** Identify barriers and opportunities in the health care system based on contextual knowledge on microbial antibiotic resistance.
- CO4.** Demonstrate knowledge on different disaster management techniques to make patient health safety
- CO5.** Work independently or in teams to solve problems with effective communication.

### CO-PO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	3	-	-	-	-	3	2	-	-	2
<b>CO2</b>	3	-	-	-	-	-	-	-	-	-
<b>CO3</b>	3	-	-	-	-	-	-	-	-	1
<b>CO4</b>	3	-	-	-	-	-	-	-	-	-
<b>CO5</b>	-	-	-	-	-	-	3	3	-	-
<b>Course Correlation Mapping</b>	<b>3</b>	-	-	-	-	<b>3</b>	<b>3</b>	<b>3</b>	-	<b>2</b>

*Correlation Levels: 3: High; 2: Medium; 1: Low*

## **COURSE CONTENT**

### **Module 1: QUALITY ASSURANCE AND MANAGEMENT (15 Periods)**

Quality assurance and management - The objective of the course is to help students understand the basic concepts of quality in health care and develop skills to implement sustainable quality assurance programs in the health system: Concepts of Quality of Care, Quality Improvement Approaches, Standards and Norm, Quality Improvement Tools, Introduction to NABH guidelines.

### **Module 2: INFECTION CONTROL AND PREVENTION (15 Periods)**

The objective of this section will be to provide a broad understanding of the core subject areas of infection prevention and control and to equip AHPs with the fundamental skills required to reduce the incidence of hospital-acquired infections and improve health outcomes. Concepts taught should include a. Evidence-based infection control principles and practices [such as Sterilization, Disinfection, Effective hand hygiene and use of Personal Protective Equipment (PPE)], Prevention & control of common healthcare-associated infections, Components of an effective infection control program, and Guidelines (NABH and JCI) for Hospital Infection Control

### **Module 3: ANTIBIOTIC RESISTANCE (15 Periods)**

Antibiotic Resistance: History of antibiotics, way of resistance happens and spreads, Types of resistance- intrinsic, acquired, passive, Trends in drug resistance & Actions to fight resistance, Bacterial persistence, Antibiotic sensitivity, Consequences of antibiotic resistance & Antimicrobial Stewardship – Barriers and opportunities, tools and models in hospitals.

### **Module 4: DISASTER PREPAREDNESS AND MANAGEMENT (15 Periods)**

The principles of on-site disaster management, Fundamentals of emergency management, Psychological impact management, Resource management, Preparedness and risk reduction, Key response functions (including public health, logistics, and governance, recovery, rehabilitation and reconstruction), information management, incident command, and institutional mechanisms

**Total Periods: 60**

## **EXPERIENTIAL LEARNING**

### **LIST OF EXERCISES:**

1. Demonstration of NABH guidelines
2. Demonstration of Vital signs
3. Demonstration of proper use of Personal protective equipment (PPE)
4. Demonstration of evidence-based infection control principles and practices [such as Sterilization, Disinfection, Effective hand hygiene, and use of Personal Protective Equipment (PPE)]
5. Discussion on various types of Antibiotics
6. Demonstration of how Resistance Happens and Spreads

## **RESOURCES**

### **TEXT BOOKS:**

1. Y. Anjaneyulu and R Marayya "Quality Assurance and Quality Management" BSP Books Private Limited, 2018.
2. Deepak Tripathi "Quality management" Jaico Publishing House, Edition 1, 2009.
3. Apurba S Sastry, Deepashree "Essentials of Hospital infection control" Jaypee Brothers Medical Publisher, Edition 1, 2019.
4. Nidhi Gauba Dhawan and Ambrina Sarar Khan "Disaster management and preparedness" CBS Publisher, 2014.
5. Gireesh Kumar KP and Eng "Handbook of antibiotics" Paras Medical Books, Edition 1, 2014.

### **REFERENCE BOOKS:**

1. Alan R. Hauser "Antibiotics for Clinicians" LWW Exclusive NP, Standard Edition, 2019.

### **VIDEO LECTURES:**

1. <https://www.youtube.com/watch?v=zSyICkGZ6iM>
2. <https://www.youtube.com/watch?v=LZapz2L6J1Q>
3. <https://www.youtube.com/watch?v=yHs0GyLNSLg>
4. <https://www.youtube.com/watch?v=KwAKjtkpdP4>

### **Web Resources:**

1. <https://www.sciencedirect.com/science/article/pii/B9780123735935000227>
2. <https://www.who.int/teams/integrated-health-services/infection-prevention-control>
3. <https://www.uicc.org/what-we-do/thematic-areas-work/antimicrobial-resistance-amr-and-its-impact-cancer-care>
4. <https://www.techtarget.com/searchsoftwarequality/definition/quality-assurance>

## SCHOOL CORE

<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>S</b>	<b>C</b>
<b>22LG101406</b>	<b>PROFESSIONAL ENGLISH</b>	2	-	-	-	2
<b>Pre-Requisite</b>	-					
<b>Anti-Requisite</b>	-					
<b>Co-Requisite</b>	-					

**COURSE DESCRIPTION:** This course deals with selected literary works of eminent writers, exercises on speaking, reading comprehension skimming and scanning, vocabulary, grammar, pronunciation, and conversation practice.

**COURSE OUTCOMES:** After successful completion of the course, students will be able to:

- C01.** Demonstrate knowledge of literary works of various pieces of eminent writers.
- C02.** Adapt general and technical vocabulary in communication.
- C03.** Apply grammatically correct English in writing.
- C04.** Analyze texts using reading techniques.
- C05.** Apply different communication styles in various situations.

### CO-PO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>C01</b>	3	-	-	-	-	-	-	3	-	-
<b>C02</b>	2	2	-	-	-	-	-	3	3	-
<b>C03</b>	2	2	-	-	3	-	-	3	3	-
<b>C04</b>	2	3	2	-	2	-	-	3	3	-
<b>C05</b>	2	2	-	-	3	-	-	3	3	-
Course Correlation Mapping	2	2	2	-	3	-	-	3	3	-

*Correlation Levels: 3: High; 2: Medium; 1: Low*

## **COURSE CONTENT**

### **Module 1: Be the Best of Whatever You Are by Douglas Malloch (06 Periods)**

Be the Best of Whatever You Are – A motivational poem, Reading Comprehension, Grammar, Vocabulary, Pronunciation, Language Games, and Conversation Practice, Letter writing.

### **Module 2: 'On saying Please' short essay by A. G. Gardiner (06 Periods)**

On Saying Please – A Short Essay, Reading Comprehension, Grammar Vocabulary, Pronunciation, Language Games, and Conversation Practice, Email writing.

### **Module 3 'If You Forget Me' poem by Pablo Neruda (06 Periods)**

If you Forget Me - A Poem, Reading Comprehension, Grammar, Pronunciation, Language Games and Conversation Practice, essay writing.

### **Module 4 'After the Sunset' short story by Bhoopal (06 Periods)**

After the Sunset–A Short Story, Reading Comprehension, Grammar, Pronunciation, Language Games, and Conversation Practice, case studies.

### **Module 5 'Man's Peril' essay by Bertrand Russel (06 Periods)**

Man's Peril - An Essay, Reading Comprehension, Vocabulary, Grammar, Pronunciation, Language Games, and Conversation Practice, report writing.

**Total Periods: 30**

## **EXPERIENTIAL LEARNING**

1. Discuss the role of Health care in nation-building?
2. List out the important vocabulary used most in Health care.
3. Small courtesies play a major role in creating an impression on other people. List out a few examples.
4. Prepare a PowerPoint presentation on the present scenario in higher education and jobs in India.
5. Being a shopkeeper and persuading a customer to buy a product which is introduced newly in the market. Prepare a conversation.
6. The English language has a rich vocabulary. List out the homophones and homonyms and write down the pronunciation and meaning of those words.
7. Describe a situation in your college where teamwork is needed and explain the strategies to manage the team effectively.
8. Write about the importance of IELTS and TOEFL exams.
9. Prepare a report on the medical camp conducted on your campus.
10. Write a letter to the concerned asking permission to attend clinical classes.
11. Prepare a E mail to justify the need of new medical equipment to your hospital.

## RESOURCES

### TEXT BOOKS:

1. G. Damodar "English Language for Undergraduate Students", Cambridge University-2019.

### REFERENCE BOOKS:

1. Meenakshi Raman & Sangeetha Sharma, *Technical Communication*, Oxford University Press, New Delhi, 2012.
2. Ashraf Rizvi, *Effective Technical Communication*, McGraw-Hill Education (India) Pvt. Ltd., New Delhi, 2018

### VIDEO LECTURES:

1. <https://www.youtube.com/watch?v=WnOOKO0CdaM>
2. <https://www.youtube.com/watch?v=H6Nlz8qmcFc>
3. <https://www.youtube.com/watch?v=-ITliZO85YM>
4. <https://www.youtube.com/watch?v=048YjXwgHWE>
5. <https://www.youtube.com/watch?v=XLLQm7Grmcc>

### Web Resources:

1. [https://www.researchgate.net/publication/331773456\\_RK\\_Narayan's\\_A\\_Snake\\_in\\_the\\_Grass\\_and\\_Stephen\\_Leacock's\\_With\\_the\\_Photographer\\_-\\_A\\_Comparative\\_Study](https://www.researchgate.net/publication/331773456_RK_Narayan's_A_Snake_in_the_Grass_and_Stephen_Leacock's_With_the_Photographer_-_A_Comparative_Study)
2. <https://smartenglishnotes.com/2020/07/17/on-saying-please-summary-analysis-and-questions-and-answers/>
3. [http://www.emcp.com/product\\_catalog/school/litLink/Grade09/U09-04forgetme/](http://www.emcp.com/product_catalog/school/litLink/Grade09/U09-04forgetme/)
4. <https://englishlanguage-lit.blogspot.com/2021/05/after-sunset-short-story-by-bhoopal.html>
5. <https://www.taylorfrancis.com/chapters/mono/10.4324/9781003090359-31/man-peril-bertrand-russell?context=ubx&refId=1d767e2d-ceb1-4537-9de5-6417eab47d1e>

## SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
<b>22MG101006</b>	<b>PRINCIPLES OF MANAGEMENT</b>	3	-	-	-	3

**Pre-Requisite** -

**Anti-Requisite** -

**Co-Requisite** -

**COURSE DESCRIPTION:** This course enables the students to study the evolution of management; functions and principles of management; application of the principles in an organisation; the system and process of effective controlling in the organisation.

**COURSE OUTCOMES:** After successful completion of the course, students will be able to:

**CO1.** Understand managerial functions of business organization.

**CO2.** Understand the planning process in the organization.

**CO3.** Describe the principles of organisation.

**CO4.** Understand the concept and process of staffing.

**CO5.** Demonstrate the ability to direct, leadership and communicate effectively.

### CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	3							1		
<b>CO2</b>	3	1		1				1	1	
<b>CO3</b>	3	1		1				1	1	
<b>CO4</b>	3	1						1	1	
<b>CO5</b>	3	1				1			1	
<b>Course Correlation Mapping</b>	<b>3</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>1</b>	<b>-</b>

*Correlation Levels: 3: High; 2: Medium; 1: Low*

## **COURSE CONTENT**

### **Module 1: INTRODUCTION TO MANAGEMENT (09 Periods)**

Meaning, Definition, Concept, Scope And Principles of Management; Evolution of Management Thought- Management Theories – Classical, Behaviour, System, Contingency and Contemporary Perspectives on Management. Management Art or Science And Management as Profession. Process And Levels of Management. Introduction to Functions [POSDCORB] of Management.

### **Module 2: PLANNING – IMPORTANCE (11 Periods)**

Planning- Importance, Objectives, Process, Policies, Types of Planning, Decision Making- Process of Decision Making, Types of Decision, Problems involved in Decision Making.

### **Module 3 ORGANISING (09 Periods)**

Meaning ,Importance, Principles of Organising, Spam of Management ,Patterns of Organisation- Formal And Informal Organisations, Common Organisational Structures; Departmentalization, Authority- Delegation, Centralization Decentralisation, Responsibility-Line and Staff Relationship.

### **Module 4 STAFFING (07 Periods)**

Sources of Recruitment, Selection Process, Training, Directing, Controlling- Meaning And Importance, Function, Span of Control, Process And Types of Control, Motivation, Coordination- Need and Types And Techniques Of Coordination- Distinction between Coordination And Cooperation- Requisites for Excellent Coordination-Systems Approaches and Coordination.

### **Module 5 EMERGING ISSUES IN MANAGEMENT (09 Periods)**

Total Quality Management, Technology Management, Talent and Knowledge Management, Leadership, Organizational Change And Development, Corporate Social Responsibility.

**Total Periods: 45**

## **EXPERIENTIAL LEARNING**

1. Students will be given case studies on management theory and its relevance to contemporary business practices.
2. Case study of Amazon India on planning and staffing personnel for its timely delivery in rural area.
3. Group discussion on technology, organisation and management.

The above all will be detailed in CHO



## **RESOURCES**

### **TEXT BOOKS:**

- 1 Charles W.L. Hill And Steven L. McShane, Principles Of Management, Tata Mc-Craw-Hill Company, New Delhi
- 2 Griffin, Ricky W., Management. AITBS Publishers and Distributors, New Delhi.

### **REFERENCE BOOKS:**

1. Principles of Management by Neeru Vasishth
2. Fundamentals of Management, 9 edition by Robbins

### **VIDEO LECTURES:**

1. <https://www.youtube.com/watch?v=tUrjAn24ZiA>
2. [https://www.youtube.com/watch?v=vtVJOg\\_tW4o](https://www.youtube.com/watch?v=vtVJOg_tW4o)

### **Web Resources:**

1. <https://byjus.com/commerce/henri-fayol-14-principles-of-management/>
2. <https://education.stateuniversity.com/pages/cw1ev9e9ib/An-Introduction-to-the-Principles-of-Management.html>
3. <https://open.lib.umn.edu/principlesmanagement/chapter/1-1-introduction-to-principles-of-management/>

## SCHOOL CORE

<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>S</b>	<b>C</b>
<b>22CS102402</b>	<b>BASIC COMPUTERS AND INFORMATION SCIENCES</b>	3	-	2	-	4
<b>Pre-Requisite</b>	-					
<b>Anti-Requisite</b>	-					
<b>Co-Requisite</b>	-					

**COURSE DESCRIPTION:** This course provides a detailed discussion and hands-on experience on basics of computer science and information science concepts of the I/O devices, CPU (central processing unit) memory, Storage devices and Introduction of windows operating systems and MS office and having the knowledge of computer networks, Internet and its applications.

**COURSE OUTCOMES:** After successful completion of the course, students will be able to:

- CO1.** Demonstrate knowledge on Basics of computer I/O devices, Processor and memory.
- CO2.** Prepare the Documents using the word processors.
- CO3.** Prepare the work sheet and Slide Presentations using the Excel and presentation tool.
- CO4.** Demonstrate the knowledge on Operating Systems usage and its types.
- CO5.** Interconnect two or more computers for Information sharing and access the Internet.
- CO6.** Work independently or in teams to solve problems with effective communication

### CO-PO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	3	2	-	-	-	-	-	-	-	-
<b>CO2</b>	3	2	2	-	-	-	-	-	-	-
<b>CO3</b>	3	2	3	-	-	-	-	-	-	-
<b>CO4</b>	2	2	3	-	-	-	-	-	-	-
<b>CO5</b>	3	2	2	-	-	-	-	-	-	-
<b>CO6</b>	-	-	-	-	-	-	3	3	-	-
Course Correlation Mapping	3	2	3	-	-	-	3	3	-	-

*Correlation Levels:      3: High;      2: Medium;      1: Low*

## **COURSE CONTENT:**

### **Module 1 INTRODUCTION TO COMPUTERS**

**(09 Periods)**

Introduction, characteristics of computers, block diagram of computers, generations of computers, computer languages, Input-output devices: Input devices (keyboard, point and draw devices, data scanning devices, digitizer, electronic card reader, voice recognition devices, vision-input devices), output devices (monitors, pointers, plotters, screen image projector, voice response systems), Processor and memory: Central Processing Unit (CPU), main memory.

### **Module 2 STORAGE DEVICES AND WORD PROCESSOR**

**(09 Periods)**

Storage Devices: Sequential and direct access devices, magnetic tape, magnetic disk, optical disk, mass storage devices, Introduction to word processor: Introduction, components of a word window, creating, opening and inserting files, editing a document file, page setting and formatting the text, saving the document, spell checking, printing the document file, creating and editing of table, mail merge.

### **Module 3 INTRODUCTION TO SPREADSHEET AND PRESENTATIONS**

**(09 Periods)**

Introduction to Excel: Introduction, about worksheet, entering information, saving workbooks and formatting, printing the worksheet, creating graphs, Introduction to PowerPoint: Introduction, creating and manipulating presentation, views, formatting and enhancing text, slide with graphs.

### **Module 4 COMPUTER NETWORKS AND INTERNET APPLICATIONS**

**(09 Periods)**

Computer networks: Introduction, types of networks (LAN, MAN, WAN, Internet, Intranet), network topologies (star, ring, bus, mesh, tree, hybrid), components of network, Internet and its Applications: Definition, brief history, basic services (E-Mail, File Transfer Protocol, telnet, the World Wide Web (WWW)), www browsers, use of the internet, Application of Computers in clinical settings.

### **Module 5 INTRODUCTION OF OPERATING SYSTEM**

**(09 Periods)**

Introduction to Operating System, Characteristics of Operating System, Types of Operating System and its components, Installation of windows OS, History of OS and features, desktop, taskbar, icons on the desktop, operation with folder, creating shortcuts, operation with windows (opening, closing, moving, resizing, minimizing and maximizing, etc.).

**Total Periods: 45**

## **EXPERIENTIAL LEARNING**

### **LIST OF EXERCISES**

1. Demonstrate of basic hardware of Computers and laptops.
2. Demonstrate about the I/O Devices and CPU.
3. Create and Design Admission/Enquiry Forms.
4. Create Student Id Card using shapes, text and colors.
5. Create Chart and show the product price comparison between years.
6. Insert the Image into various shapes

7. Calculate students marks percentage using spreadsheet.
8. Create slides about yourself using with all the details.
9. What are the steps to connect Internet
10. How to send an Email? Explain the steps in detail.

## **RESOURCES**

### **TEXTBOOKS:**

1. Priti Sinha and Pradeep K "Computer Fundamentals" BPB Publications, Edition 6, 2004.
2. James Bernstein "Office for the Web Made Easy" Independently published, Edition 1, 2021.

### **REFERENCE BOOKS:**

1. Pete Matheson "Microsoft Office 365 for Beginners"
2. Dr Sabah Sayed "Fundamentals of Computer Science" Imperial College Press, 2009.

### **SOFTWARE/TOOLS:**

1. Software: MS Office/ Window Operating System

### **VIDEO LECTURES:**

1. Computer Fundamentals - Basics for Beginners - Bing video
2. <https://youtu.be/-AP1nNK3bRs>

### **Web Resources:**

1. <https://www.udemy.com/computer-basics/online-course>
2. <https://www.educba.com/excel/courses/ms-office-course>

## SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
<b>22DF105001</b>	<b>BIOMEDICAL WASTE MANAGEMENT</b>	-	1	2	-	2

**Pre-Requisite** -

**Anti-Requisite** -

**Co-Requisite** -

**COURSE DESCRIPTION:** This course deals with biomedical waste management and environmental safety. Experimental learning on types of biomedical waste in health care system, waste minimization, General waste control and personal care in health care.

**COURSE OUTCOMES:** After successful completion of the course, students will be able to:

**CO1.** Analyze biomedical waste materials by applying decontamination and disposal techniques to prevent harm to health care professionals.

**CO2.** Work individually or Teams to solve problems with effective communication

### CO-PO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	3	2	3							1
<b>CO2</b>	-	-	-	-	-	-	3	3	-	1
Course Correlation Mapping	3	2	3	-	-	-	3	3	-	1

*Correlation Levels: 3: High; 2: Medium; 1: Low*

### EXPERIENTIAL LEARNING:

#### LIST OF EXERCISES

1. Definition of Biomedical Waste, Types of waste generated from Health Care Facility
2. Demonstration of various procedures for minimization of Biomedical Waste.
3. Demonstration of Biomedical Waste Segregation, collection, transportation, treatment and disposal (including color coding)
4. Study of Liquid BMW, Radioactive waste, Metals / Chemicals / Drug waste
5. Study of BMW Management & methods of disinfection
6. Demonstration of Modern Technology for handling BMW
7. Use of Personal protective equipment (PPE)
8. Monitoring & controlling cross-infection (Protective devices)

## **RESOURCES**

### **TEXT BOOK:**

1. Shishir Basarkar "Hospital waste management A guide for self-assessment and review, Jaypee brothers Medical Publication, Edition 1, 2009.
2. R. Radhakrishna "Biomedical waste management" Sumit Enterprises, 2007.

### **REFERENCE BOOKS:**

1. Anantpreet Singh and Sukhjit "Biomedical waste disposal" Haypee Brothers Medical Publishers (P) Ltd, 2012
2. Dr. Shalini Sharma and Prof. SVS Chauhan "An Analysis of Bio-Medical Waste Management" LAP Lambert Academic Publishing, 2010.

### **VIDEO LECTURES:**

1. <https://www.youtube.com/watch?v=qsclvnPvr18>
2. <https://www.youtube.com/watch?v=gKSPSKiB9PE>
3. <https://www.youtube.com/watch?v=SxkZdmBSkWo>

### **Web Resources:**

1. <https://byjus.com/current-affairs/biomedical-waste/>
2. <https://www.aiims.edu/en/departments-and-centers/central-facilities/265-biomedical/7346-bio-medical-waste-management.html>

## SCHOOL CORE

<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>S</b>	<b>C</b>
<b>22CE107601</b>	<b>ENVIRONMENTAL SCIENCE</b>	2	-	-	-	2
<b>Pre-Requisite</b>	-					
<b>Anti-Requisite</b>	-					
<b>Co-Requisite</b>	-					

**COURSE DESCRIPTION:** This course provides a detailed discussion on natural resources, ecosystems, biodiversity, environment pollution and control, social issues and environment, human population and environment.

**COURSE OUTCOMES:** After successful completion of the course, students will be able to:

- CO1.** Analyze natural resources to solve complex environmental problems and natural resource management considering society, environment and sustainability.
- CO2.** Analyze ecosystems and biodiversity to solve complex environmental problems by following environmental ethics considering society, environment and sustainability besides communicating effectively in graphical form.
- CO3.** Analyze various types of pollution and their control measures to solve environmental problems through appropriate tools and techniques following latest developments considering society, ethics, environment and sustainability.
- CO4.** Analyze social issues and its impact on environment, environmental acts to solve complex environmental problems considering society, environment and sustainability besides communicating effectively in graphical form.
- CO5.** Analyze human population and its impact on environment to solve complex environmental problems through team work and using appropriate tools and techniques considering ethics, society, environment and sustainability.

### CO-PO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
<b>CO1</b>	3	2	-	-	2	-	-	1	-	1
<b>CO2</b>	3	2	-	-	2	2	1	1	-	1
<b>CO3</b>	3	2	2	1	2	2	2	-	-	-
<b>CO4</b>	3	2	2	2	2	-	-	2	-	1
<b>CO5</b>	3	2	2	2	2	2	2	-	-	1
<b>Course Correlation Mapping</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>		<b>1</b>

*Correlation Levels:      3: High;      2: Medium;      1: Low*

## **COURSE CONTENT**

### **Module 1: NATURAL RESOURCES**

**(07 Periods)**

Multidisciplinary nature of environment; Natural Resources: Renewable and non-renewable resources; Forest, Water, Mineral, Food and Energy resources -Causes, Effects, Remedies, Case studies; Role of an individual in conservation of natural resource and equitable use of resources for sustainable lifestyles.

### **Module 2: ECOSYSTEMS AND BIODIVERSITY**

**(07 Periods)**

**Ecosystems:** Concept of an ecosystem, Structure and function of an ecosystem - Producers, Consumers, Decomposers; Food chains, Food webs, Ecological pyramids – Types; Characteristic features, Structure and functions of forest ecosystem, Desert ecosystem, Aquatic ecosystem.

**Biodiversity:** Concept and value of biodiversity, Role of biodiversity in addressing new millennium challenges, Hot spots of biodiversity, Threats to biodiversity, Man-wild life conflicts, Endemic, Endangered and extinct species of India, Conservation of biodiversity – In-situ and ex-situ.

### **Module 3: ENVIRONMENTAL POLLUTION AND CONTROL**

**(06 Periods)**

Causes, Adverse effects and control measures of pollution - Air pollution, Water pollution, Soil pollution, Noise pollution, Thermal pollution, Nuclear pollution, Solid waste management – Urban waste, industrial waste; Latest developments in pollution control, Hazards and disaster management – Floods, Earthquakes, Tsunamis, Case studies.

### **Module 4: SOCIAL ISSUES AND THE ENVIRONMENT**

**(06 Periods)**

Sustainable development, Urban problems related to energy, Environmental ethics –Issues, Solutions; Global warming, Acid rain, Ozone layer depletion, Nuclear accidents and case studies, Wasteland reclamation, Consumerism and waste products, Concept of green technologies, Environment justice: National Green Tribunal and its importance; Environment protection act, Air act, Water act, Wildlife protection act, Forest conservation act, Issues involved in enforcement of environmental legislation, Public environmental awareness.

### **Module 5: HUMAN POPULATION AND THE ENVIRONMENT**

**(04 Periods)**

Population growth, Population characteristics and variation among nations, Population explosion, Family welfare program, Environment and human health, Human rights, Value education, HIV/AIDS, Women and child welfare, Role of information technology in environment and human health; Case studies - Field Work/Assignment/Seminar on Environmental assets – Water bodies/Forest/Grassland/Hill/Mountain.

**Total Periods: 30**

## **EXPERIENTIAL LEARNING**

1. Visit a nearby villages and know the status of availability of local resources that can be improved through proper education.
2. Make an awareness program in the villages for the development of natural resources, ecosystems and biodiversity.
3. Prepare a document by visiting a local urban waste dumping yard near to the Tirupati city.
4. Visit a local village and find a barren land and make the land into a useful land by planting plants or providing the soil and fertilizers required to improve the soil.
5. Visit a local zoological park and identify the species variety and variability.

*(Note: It's an indicative one. The course instructor may change the activities and the same shall be reflected in CHO.)*



## **RESOURCES**

### **TEXT BOOKS:**

1. Anubha Kaushik and Kaushik, C.P., *Perspectives in Environmental Studies*, New Age International (P) Ltd. Publications, 6<sup>th</sup> Edition, 2018.
2. Erach Barucha, *Environmental Studies*, Orient Blackswan, 3<sup>rd</sup> Edition, 2021.

### **REFERENCE BOOKS:**

1. Cunningham, W. P. and Cunningham, M. A., *Principles of Environmental Science*, Tata McGraw-Hill Publishing Company, New Delhi, 8<sup>th</sup> Edition, 2016.
2. Benny Joseph, *Environmental Studies*, Tata McGraw-Hill, 2<sup>nd</sup> Edition, 2009.
3. Anji Reddy, M., *Text Book of Environmental Science and Technology*, BS Publications, Revised Edition, 2014.
4. Rajagopalan, R., *Environmental Studies*, Oxford University Press, 3<sup>rd</sup> Edition, 2015.

### **VIDEO LECTURES:**

1. <http://nptel.ac.in/courses/109/104/109104047>
2. <https://www.youtube.com/watch?v=mIPBPG-5dUw>

### **WEB RESOURCES:**

1. <https://nptel.ac.in/courses/122102006>
2. <https://www.flame.edu.in/academics/ug/program-structure/major-minor/courses/environmental-studies>
3. [https://www.tutorialspoint.com/environmental\\_studies/environmental\\_studies\\_environment.htm](https://www.tutorialspoint.com/environmental_studies/environmental_studies_environment.htm)