Total Credits = 25

SEMESTER 1st		Contact Hrs.			Marks			Credits
Subject Code	Subject Name	L	T	P	Int.	Ext.	Total	
GMRTS1-101	Healthcare Delivery System in India	3	1	0	40	60	100	4
GMRTS1-102	Health Information Management -I	3	1	0	40	60	100	4
GMRTS1-103	Human Anatomy and Physiology	3	1	0	40	60	100	4
GMRTS1-104	Medical Record Science	2	0	0	40	60	100	2
GMRTS1-105	Medical Terminology	2	0	0	40	60	100	2
GMRTS1-106	Communication Skills	2	0	0	40	60	100	2
GMRTS1-107	Health Information Management–I Laboratory	0	0	4	40	60	100	2
GMRTS1-108	Communication Skills-Laboratory	0	0	2	40	60	100	1
GMRTS1-109	Clinical/Hospital Visits	0	0	8	100	0	100	4
Total		**15**	**3**	**14**	**420**	**480**	**900**	**25**

Total Credits = 25

SEMESTER 2nd		Contact Hrs.			Marks			Credits
Subject Code	Subject Name	L	T	P	Int.	Ext.	Total	
GMRTS1-201	Diseases and Surgical Procedures	3	1	0	40	60	100	4
GMRTS1-202	Health Information Management - II	3	1	0	40	60	100	4
GMRTS1-203	Biochemistry & Microbiology	3	1	0	40	60	100	4
GMRTS1-204	Legal Aspects of Health Care	2	0	0	40	60	100	2
GMRTS1-205	Basic Computers and Information Science	2	0	0	40	60	100	2
GMRTS1-206	Diseases and Surgical Procedures Laboratory	0	0	4	40	60	100	2
GMRTS1-207	Health Information Management – II Laboratory	0	0	4	40	60	100	2
GMRTS1-208	Basic Computers and Information Science Laboratory	0	0	2	40	60	100	1
GMRTS1-209	Project/Field work	0	0	8	40	60	100	4
Total		**13**	**3**	**18**	**360**	**540**	**900**	**25**

Overall Marks / Credits

Semester	Marks	Credits
1st	900	25
2nd	900	25
Total	1800	50

HEALTHCARE DELIVERY SYSTEM IN INDIA

Subject Code:GMRTS1-101   **L   T   P   C**   **60 Hours**
                                3   1   0   4

COURSE OBJECTIVES:
1. Concept and methods about the History of disease.
2. Significance about demography & Vital Statistics, Demography
3. Significance about immunizations

COURSE OUTCOME:
1. To know about the concept and methods about the History of disease.
2. To understand the significance about demography & Vital Statistics, Demography
3. Knowledge about immunizations

COURSE SYLLABUS

UNIT- I   15 Hours

Introduction to National Healthcare System
The course provides the students a basic insight into the main features of Indian health care delivery system and how it compares with the other systems of the world. Introduction to healthcare delivery system, National Health Programme.

UNIT- II   15 Hours

Demography & Vital Statistics, Demography – its concept , Vital events of life & its impact on demography, Significance and recording of vital statistics, Census & its impact on health policy.

UNIT- III   15 Hours

Epidemiology-Principles of Epidemiology, Natural History of disease, Methods of Epidemiological studies, Epidemiology of communicable & non-communicable diseases.

UNIT- IV   15 Hours

Immunization- Disease transmission, host defense immunizing agents, cold chain, immunization, disease monitoring and surveillance.

Reference books
1. Kelkar S. India's Private Health Care Delivery: Critique and Remedies.
2. Einstein, A., B. Podolsky, and N. Rosen, 1935, "Can quantum-mechanical description of physical reality be considered complete?", Phys. Rev. 47, 777-780.
3. Medical Records Organization and Management Paperback – 27 February 2017 by Mogli Gd (Author).
4. Essentials of health information management: Principles and Practices Book by Mary Jo Bowie and Michelle A. Green.
5. Medical Record Auditor Book by Deborah J. Girder, 2008 published.

HEALTH INFORMATION MANAGEMENT-I

Subject Code: GMRTS1-102   **L   T   P   C**   **60 Hours**
                                    3   1   0   4

COURSE OBJECTIVES:
1. Health Information Management serves the healthcare industry and the public by managing, analyzing, and utilizing the data vital for patient care and making the data accessible to healthcare providers.
2. Enhancing individual patient care through timely and relevant information is one of the primary goals for the Health Information Management Technology

COURSE OUTCOME:
1. To learn the about the Health Information Management serves in public by managing, analyzing, and utilizing the data vital for patient care and making the data accessible to healthcare providers.
2. To understand how to enhancing individual patient care through timely and relevant information is one of the primary goals for the Health Information Management Technology

COURSE SYLLABUS:

UNIT-I.   15 Hours

Characteristics of quality Health Information Management:
a. Definition, Characteristics of Medical Record
b. Values of Medical Record to various users
c. Required Characteristics of entries in medical Records
d. Source-oriented, Problem-oriented, and Integrated medical records
e. Medical Record Forms and their Content
f. Standard Order of Arrangement of Medical Record forms
g. Analysis of Medical Record-Quantitative & Qualitative
h. Incomplete Record Control

UNIT-II   15 Hours

Organizational Aspects of the Centralized Admitting Services
a. Principles of Identification of a Patient
b. Methods of Collection of Identification Data
c. Types of Central Admitting Services
d. Admitting Policies
e. Procedure Outlines for Admissions
f. Flow of Records following Admissions
g. Advantages of good Admitting Policies and Procedures

UNIT-II   I5 Hours

Medical Record Department Management

a. Planning, Organizing, Directing and Controlling

b. Personnel Management

c. Principal Responsibilities and Duties of the Medical Record Administrator

d. Tools of Management in the Hands of the Medical Record Administrator

VI. Intradepartmental and Interdepartmental Relationships

a. Developing Intradepartmental Relationship

b. Developing Interdepartmental Relationships with various Departments of the Hospital

<h2 style="text-align:center">UNIT-IV   15 Hours</h2>

Medico-Legal Aspects of Health Information Management

a. Medical Ethics, Hippocratic Oath, and Code of Ethics for the HIM Professionals

b. Ownership of the Medical Record

c. Privileged Communication and confidentiality of Medical Records

d. Release of Information: To the Patient, To Authorized Persons /Agencies Legal Implications of release of Information to unauthorized, Persons/Agencies.

e. Consents: Different types and their validity, invalidity blanket, and improper consents.

f. Corrections in identification data medical documentations

g. Rights and responsibilities of patients

h. Medical Record in a Court of Law

i. Legal requirements in Retention of Medical Records

Reference books

1. Oachs PK, Watters A, editors. Health information management: Concepts, principles, and practice. Chicago, IL: Ahima; 2016.

2. LaTour MK. Eichenwald Shirley Maki (2010) Health Information Management, Concepts, Principles, and Practice. American Health Information Management Association; Chicago, Illinois.

3. Introduction to Health Information Management, Text Book by Donna Olson and Sue Bierdermann

4. Foundations of Health Information Management Book by Melissa LaCour and Nadinia A. Davis

5. Legal aspects of health information management Textbook by Dana McWay

HEALTH INFORMATION MANAGEMENT-I LABORATORY

Subject Code:GMRTS1-107   **L   T   P   C**   **60 Hours**
                                     0   0   4   2

COURSE OBJECTIVES:
1. Verify the documentation of medical records.
2. Organizational Aspects of the Centralized Admitting Services, Personnel Management
3. Principal Responsibilities and Duties of the Medical Record Administrator

COURSE OUTCOME:
1. Knowledge about verifying the documentation of medical records.
2. To understand about the Organizational Aspects of the Centralized Admitting Services, Personnel Management
3. To understand about principal Responsibilities and Duties of the Medical Record Administrator

COURSE SYLLABUS:
Practical:

Actual handling of medical records

1. Medical Records for different patient encounters with health care facility

2. Filing Methods, Storage, and Retention

3. Organizational Aspects of the Centralized Admitting Services

a. Principles of Identification of a Patient

b. Methods of Collection of Identification Data

4. Medical Record Department Management

a. Planning, Organizing, Directing and Controlling

b. Personnel Management

c. Principal Responsibilities and Duties of the Medical Record Administrator

d. Tools of Management in the Hands of the Medical Record Administrator

Reference books
1. Oachs PK, Watters A, editors. Health information management: Concepts, principles, and practice. Chicago, IL: Ahima; 2016.
2. LaTour MK. Eichenwald Shirley Maki (2010) Health Information Management, Concepts, Principles, and Practice. American Health Information Management Association; Chicago, Illinois.

    3. Introduction to Health Information Management, Text Book by Donna Olson and Sue Bierdermann

    4. Foundations of Health Information Management Book by Melissa LaCour and Nadinia A. Davis

    5. Legal aspects of health information management Textbook by Dana McWay

HUMAN ANATOMY AND PHYSIOLOGY

Subject Code:GMRTS1-103   **L T P C**   **60 Hours**
                                                                    3   1   0   4

COURSE OBJECTIVES:

1. Describe the various homeostatic mechanisms and their imbalances.
2. Identify the various organs and system of different systems of human body.
3. Perform the various experiments related to special senses and nervous system.
4. Appreciate coordinated working pattern of different organs of each system.

COURSE OUTCOME

1. Understand the technical functions of various organs and systems of the body
2. Acquire knowledge about various body fluids, hormones and enzymes

COURSE SYLLABUS:

UNIT-I   15 Hours

Integumentary system: Structure and functions of skin

Urinary system
Anatomy of urinary tract with special reference to anatomy of kidney and nephrons, functions of kidney and urinary tract, physiology of urine formation, micturition reflex and role of kidneys in acid base balance, role of RAS in kidney and disorders of kidney.

Nervous system

Organization of nervous system, neuron, neuroglia, classification and properties of nerve fibre, electrophysiology, action potential, nerve impulse, receptors, synapse, neurotransmitters. Central nervous system: Meninges, ventricles of brain and cerebrospinal fluid. Structure and functions of brain (cerebrum, brain stem, cerebellum), spinal cord (gross structure, functions of afferent and efferent nerve tracts, reflex activity)

UNIT-II   15 Hours

Skeletal system
Divisions of skeletal system, types of bone, salient features and functions of bones of axial and appendicular skeletal system Organization of skeletal muscle, physiology of muscle contraction, neuromuscular junction

Joints
Structural and functional classification, types of joints movements and its Articulation

UNIT-III   15 Hours

Respiratory system: Anatomy of respiratory system with special reference to anatomy of lungs, mechanism of respiration, regulation of respiration Lung Volumes and capacities transport of respiratory gases, artificial respiration, and resuscitation methods.

Cardiovascular system:

Heart – anatomy of heart, blood circulation, blood vessels, structure and functions of artery, vein and capillaries, elements of conduction system of heart and heartbeat, its regulation by autonomic nervous system, cardiac output, cardiac cycle. Regulation of blood pressure, pulse, electrocardiogram and disorders of heart.

UNIT-IV   15 Hours

Blood and lymphatic system:

Body fluids, composition and functions of blood, hemopoeisis, formation of hemoglobin, anemia, mechanisms of coagulation, blood grouping, Rh factors, transfusion, its significance and disorders of blood, Reticulo endothelial system.

Lymphatic organs and tissues, lymphatic vessels, lymph circulation and functions of lymphatic system,

Digestive system:

Anatomy of GI Tract with special reference to anatomy and functions of stomach, (Acid production in the stomach, regulation of acid production through parasympathetic nervous system, pepsin role in protein digestion) small intestine and large intestine, anatomy and functions of salivary glands, pancreas and liver,

movements of GIT, digestion and absorption of nutrients and disorders of GIT.

Reference Books:

- Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson Churchill Livingstone, New York

- Text book of Medical Physiology by Arthur C, Guytonand John.E Hall. Miamisburg, OH, U.S.A

- Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam, Jaypee brother's medical publishers, New Delhi

- Principles of Anatomy and Physiology by Tortora Grabowsk, Palmetto, GA, U.S.A

MEDICAL RECORD SCIENCE

Subject Code:GMRTS1-104	L T P C	30 Hours
	2 0 0 2	

COURSE OBJECTIVES:
1. To provide information regarding preparation and maintain medical records.
2. To learn about reviewing medical records while keeping patient privacy

COURSE OUTCOME:
1. Knowledge about the information regarding preparation and maintain medical records.
2. To understand about reviewing medical records while keeping patient privacy.

COURSE SYLLABUS:

UNIT-1.   7 Hours

History of Development of Medical Records During different periods
1. Early Ancient Times to Renaissance Period (16th &17th Centuries)
2. 18th -20th Centuries and Till Date
3. In U.S.A.
4. At International Level
5. In India

UNIT-II.   8 Hours

Characteristics of quality Medical Records:
1. Definition, Characteristics of 'Good' Medical Record
2. Values of 'Good' Medical Record to various users
3. Required Characteristics of entries in medical Records
4. Responsibility for Medical Record Quality
5. Source-oriented, Problem-oriented, and Integrated medical records
6. Medical Record Forms and their Content
7. Standard Order of Arrangement of Medical Record forms
8. Analysis of Medical Record-Quantitative & Qualitative
9. Incomplete Record Control

UNIT-III.   8 Hours

Medical Records for different patient encounters with health care facility
1. Ambulatory Care Records {Emergency & Outpatient Records]
2. Clinical Records in Long Term Care and Rehabilitation Facilities
3. Mental Health Records

Medico-Legal Aspects of the Medical Records
1. Medical Ethics , Hippocratic Oath, and Code of Ethics for the Medical Record Professionals
2. Ownership of the Medical Record Privileged Communication

UNIT- IV.   7 Hours

Medical Record Department Management

1. Planning, Organizing, Directing and Controlling
2. Personnel
3. .Principal Responsibilities and Duties of the Medical Record Administrator/ Director
4. Tools of Management in the Hands of the Medical Record Administrator/ Director

Reference books

1. Berg M, Bowker G. The multiple bodies of the medical record: Toward a sociology of an artifact. Sociological Quarterly. 1997 Jun;38(3):513-37.
2. Kohane IS. Getting the data in: three year experience with a pediatric electronic medical record system. InProceedings of the Annual Symposium on Computer Application in Medical Care 1994 (p. 457). American Medical Informatics Association.
3. Documentation for Medical Records Book by Barbara Odom-Wesley, Chris L. Meyers, and Diann Brown.
4. HCISPP Study Guide Book by Justin Rainey and Timothy Virtue.
5. Fundamentals of Medical Science for Medical Record Personnel Book by Florence C. Amato

MEDICAL TERMINOLOGY					
Subject Code:GMRTS1-105	**L**	**T**	**P**	**C**	**30 Hours**
	2	**0**	**0**	**2**	

COURSE OBJECTIVES:

This course introduces the elements of medical terminology. Emphasis is placed on building familiarity with medical words through knowledge of roots, prefixes, and suffixes.

Topics include: origin, word building, abbreviations and symbols, terminology related to the human anatomy, reading medical orders and reports, and terminology specific to the student's field of study. Spelling is critical and will be counted when grading tests.

COURSE OUTCOME:

On the completion of this course, the students will be able:

1. To know the elements of medical words.
2. To develop sense of correctness of medical terms.
3. To gain an understanding of standard medical abbreviations.
4. To understand the relationship between medical terms and their synonyms in common usage.
5. To spell correctly the medical terms, to detect the meaning of unfamiliar medical terms, by analysis into their elements, and to follow directions given in medical phraseology
6. To appreciate the logical order of medical terms, the exactness of concepts in medical terms, and the importance of medical terminology consciousness and continuous study.

COURSE SYLLABUS:

<div align="center">

UNIT-I   **8 Hours**
</div>

Introduction to Medical Terminology:
Definition and Origin of Medical Terms, Define word roots, prefixes, and suffixes, Basic medical terms, Components of Medical Terms, Prefixes
And Suffixes, Roots and Combining forms, External Anatomy and Internal Anatomy

<div align="center">

UNIT-II   **7 Hours**
</div>

Additional Lists and their combining forms grouped as:
Verbs, Adjectives, Body Fluids, Body Substances, Chemicals, Colours and Phobias

<div align="center">

UNIT-III   **8 Hours**
</div>

Terms Relating to the Body as a Whole

a. Study of the Body

b. Basic Structures

c. Cells

d. Tissues

e. Organs

f. Systems

g. Directions

h. Anatomic Planes and Position

<div align="center">

UNIT- IV   **7 Hours**
</div>

Basic medical abbreviations/symbols
Diagnostic, surgical, and procedural terms and abbreviations related to the integumentary system, musculoskeletal system, respiratory system, cardiovascular system, nervous system, and endocrine system.

Reference Books

1. Cohen BJ, DePetris A. Medical terminology: An illustrated guide. Lippincott Williams & Wilkins; 2013 Feb 8.
2. Stanfield PS, Hui YH, Cross N. Essential Medical Terminology: Textbook and Online Course with Embedded EBook. Jones & Bartlett Publishers; 2013 Sep 16.
3. Medical Terminology Book by Davi-Ellen Chabner.
4. Medical Terminology for Health Professionals Textbook by Ann B. Ehrlich and Carol L. Schroeder.
5. Medical Terminology Systems: A Body Systems Approach Book by Barbara Gylys and Mary Ellen Wedding.

COMMUNICATION SKILLS

Subject Code:GMRTS1-106	L T P C	30 Hours
	2 0 0 2	

COURSE OBJECTIVE:
1. The students will be able to appreciate communication skills.
2. The topic shall also include the 'Soft skills' which is a term often associated with a person's "EQ" (Emotional Intelligence Quotient)

COURSE OUTCOME:
1. The students will understand appreciation of communication skills as these are important to everyone - those are how we give and receive information and convey our ideas and opinions with those around us.
2. Also learn about the topic which include the 'Soft skills' which is a term often associated with a person's "EQ" (Emotional Intelligence Quotient) which is an important part of their individual contribution to the success of an organization.

COURSE SYLLABUS

UNIT-1   7 Hours

- Basic Language Skills: Grammar and Usage. Business Communication Skills with focus on speaking - Conversations, discussions, dialogues, short presentations, pronunciation.

UNIT-II   7 Hours

- Teaching the different methods of writing like letters, E-mails, report, case study, collecting the patient data etc. Basic compositions, journals, with a focus on paragraph form and organization. Basic concepts & principles of good communication

UNIT-III   8 Hours

- Special characteristics of health communication. Types & process of communication. Barriers of communication & how to overcome.

UNIT-IV   8 Hours

- Soft Skills - with important sub-elements: Communication Styles, Team work, Leadership Skills Effective & Excellent Customer Service, Decision Making & Problem Solving, Managing Time and Pressures, Self-Management & Attitude.

Recommended Text Books / Reference Books:
- Effective Communication and Soft Skills by Nitin Bhatnagar Pearson Education India, 2011
- Communication N Soft Skills Paperback – 2013 by Niraj Kumar, Chetan Srivastava

COMMUNICATION SKILLS LABORATORY

Subject Code:GMRTS1-108   **L T P C**   **2 Hours /Week**
                                      0 0 2 1

COURSE OBJECTIVE:
1. The students will be able to appreciate communication skills.
2. The topic shall also include the 'Soft skills' which is a term often associated with a person's "EQ" (Emotional Intelligence Quotient)

COURSE OUTECOME:
1. The students will understand appreciation of communication skills as these are important to everyone - those are how we give and receive information and convey our ideas and opinions with those around us.
2. Also learn about the topic which include the 'Soft skills' which is a term often associated with a person's "EQ" (Emotional Intelligence Quotient) which is an important part of their individual contribution to the success of an organization.

COURSE SYLLABUS:
1. Précis writing and simple passage from a prescribed text books. Atleast100 words should be chosen and few questions from the passage may be said to answer.
2. Speaking skill testing: Giving as small topic and to speak for at least two minutes on it.
3. Group discussion on profession related topics
4. To practice all forms communication i.e. drafting report, agenda notes, précis writing, E. mail drafting, circular, representations, press release, telephonic communication, practice of writing resume and Writing application of employment.
5. Organizing a mock interview.
6. Locate a specified book in the library Find out some words in the dictionary Pronunciation, stress and intonation Give abbreviations of particular words and vice-versa Give meaning of some words Spell some words Practice of handling some communication system like telephone and noting down and conveying message.

CLINICAL/ HOSPITAL VISIT

Subject Code: GMRTS1-109   **L T   P C**   **120 Hours**
                                       0 0 8 4

- Visit will include visit to the entire chain of healthcare delivery system –sub centre, PHC, CHC, SDH, DH and Medical College, private hospitals, dispensaries and clinics.
- Governance at village level including interaction and group discussion with village panchayat and frontline health workers.
- Clinical visit to their respective professional department within the hospital.

2nd Semester

DISEASES AND SURGICAL PROCEDURES				

Subject Code:GMRTS1-201	L T P C	60 Hours
	3 1 0 4	

COURSE OBJECTIVES:
1. To know the elements of medical words.
2. To develop sense of correctness of medical terms.
3. To gain an understanding of standard medical abbreviations.
4. To understand the relationship between medical terms and their synonyms in common usage.
5. To spell correctly the medical terms, to detect the meaning of unfamiliar medical terms, by analysis into their elements, and to follow directions given in medical phraseology
6. To appreciate the logical order of medical terms, the exactness of concepts in medical terms, and the importance of medical terminology consciousness and continuous study.

COURSE OUTCOME:
1. To understand about the elements of medical words, medical abbreviations and develop the sense of correctness of medical terms.
2. To learn about the relationship between medical terms and their synonyms in common usage.
3. To understand the correctly about medical terms, to detect the meaning of unfamiliar medical terms, by analysis into their elements, and to follow directions given in medical phraseology
4. To understand the logical order of medical terms, the exactness of concepts in medical terms, and the importance of medical terminology consciousness and continuous study

COURSE SYLLABUS:

UNIT-1	15 Hours

Introduction and usage of International Classification of Disease
Coding of final diagnosis and secondary diagnosis.

UNIT-II	15 Hours

International Classification of Diseases
 Volume 1 – Tabular list
 Volume 2 – Instruction manual
 Volume 3 – Alphabetical Index
Morbidity and Mortality Reporting

UNIT- III	15 Hours

CPT – Current Procedural Terminology (Introduction)
HCPCS – Healthcare Common Procedure Coding System (Introduction)

ICD- Oncology (ICD - O)

ICP (Procedure) coding system

UNIT- IV   15 Hours

Disease and operation nomenclatures, International Classification of Disease 10, International Classification of Disease – 9CM, indexing of patient care data.

ICD-10 CM- Alpha-numeric coding Guidelines

Reference Books

1. Sabiston DC, Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston textbook of surgery: the biological basis of modern surgical practice. Philadelphia: Wb Saunders; 2001.

2. Gershwin ME, Incaudo G, editors. Diseases of the sinuses: a comprehensive textbook of diagnosis and treatment. Springer Science & Business Media; 2012 Dec 6.

3. Textbook of Surgery, 4th Edition,Julian A. Smith (Editor), Andrew H. Kaye (Editor), Christopher Christophi (Editor), Wendy A. Brown (Editor).

4. Browse's Introduction to the Symptoms & Signs of Surgical Disease, Edited By James A. Gossage, Matthew F. Bultitude, Steven A. Corbett.

5. Surgical & Medical Procedures For Nurses & Para Medical Staff, 1st Edition By Nathan

DISEASES AND SURGICAL PROCEDURES LABORATORY

Subject Code:GMRTS1-206   **L T P C**   **60 Hours**

                                                              0 0 4 2

COURSE OBJECTIVES:

1. To know the elements of medical words.
2. To develop sense of correctness of medical terms.
3. To gain an understanding of standard medical abbreviations.
4. To understand the relationship between medical terms and their synonyms in common usage.
5. To spell correctly the medical terms, to detect the meaning of unfamiliar medical terms, by analysis into their elements, and to follow directions given in medical phraseology
6. To appreciate the logical order of medical terms, the exactness of concepts in medical terms, and the importance of medical terminology consciousness and continuous study.

COURSE OUTCOME:

1. To understand about the elements of medical words, medical abbreviations and develop the sense of correctness of medical terms.
2. To learn about the relationship between medical terms and their synonyms in common usage.

3. To understand the correctly about medical terms, to detect the meaning of unfamiliar medical terms, by analysis into their elements, and to follow directions given in medical phraseology

4. To understand the logical order of medical terms, the exactness of concepts in medical terms, and the importance of medical terminology consciousness and continuous study

COURSE SYLLABUS:

ICP (Procedure) coding system - Practical

International Classification of Diseases –

Practical SNOMED-CT

Reference Books

1. Sabiston DC, Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston textbook of surgery: the biological basis of modern surgical practice. Philadelphia: Wb Saunders; 2001.

2. Gershwin ME, Incaudo G, editors. Diseases of the sinuses: a comprehensive textbook of diagnosis and treatment. Springer Science & Business Media; 2012 Dec 6.

3. Textbook of Surgery, 4th Edition,Julian A. Smith (Editor), Andrew H. Kaye (Editor), Christopher Christophi (Editor), Wendy A. Brown (Editor).

4. Browse's Introduction to the Symptoms & Signs of Surgical Disease, Edited By James A. Gossage, Matthew F. Bultitude, Steven A. Corbett.

5. Surgical & Medical Procedures For Nurses & Para Medical Staff, 1st Edition By Nathan

HEALTH INFORMATION MANAGEMENT - II

Subject Code: GMRTS1-202   **L   T   P   C**   **60 Hours**
                                      3   1   0   4

COURSE OBJECTIVES: Verify the documentation in the health record is timely, complete, and accurate, Collect and maintain health record data, Apply mortality and morbidity codes as per the guidelines, Identification of the legal use of health records and relevant documents, Identification of discrepancies between documentation and disease coding.

COURSE OUTCOME:

1. Students learn to maintain the complete accurate record of health timely.
2. Knowledge about the mortality and morbidity codes as per the guidelines.
3. Knowledge about the legal use of health records and relevant documents.
4. Students learn to identify the discrepancies between documentation and disease coding

COURSE SYLLABUS:

UNIT-I.   16 Hours

A. Organizational Aspects of Medical Record Department/Services

a. Policy development, Functions, Location, Space and Layout, Equipments, Forms Designing and Control.
b. Medical Records Flow and processing

B. Heath Care Statistics, Quality control of Data Collection & Presentation

a. Heath Care Statistics, Inpatient census and rates computed from it. Processing and reporting of Vital Health Statistics
d. Reporting of Notifiable Diseases to Public Health Authorities

UNIT-II   14 Hours

A. Quality Management: Quality Assurance and Quality Improvement, Utilization management & Utilization review processing. Accreditation requirements, licensing regulations, and certification requirements relevant to department/organization.
b. International Standards Organization [ISO], Quality Council of India, Joint Commission International [JCI] & National Accreditation Board of Hospitals [NABH]

UNIT-III   15 Hours

A. Fundamentals of Health Informatics

Hospital Information System (HIS) with Electronic Medical Records (EMR) or Electronic Health Information Management System, EHR – definitions – contents and examples of EHR practices. Preliminary steps in implementation of HER. Issues and challenges in implementation of HER and Planning for the introduction of HER and Factors to be considered when developing EHR & implementation plan.

B. Telemedicine:

Objectives of Telemedicine, Technology of Telemedicine, Rules of Telemedicine and Future Telemedicine plans

<div align="center">

UNIT-IV.   **15 Hours**
</div>

A. Health Insurance and Billing Design:

a. Definition and history of Health Insurance, Concepts in Health Insurance, Types of health insurance, Social health insurance, Private health insurance, Community health insurance (CHI)

b. Government-initiated health insurance schemes (GHI), Denial of claims Role of MRD in and Health Insurance and Billing

B. Medical Transcription:

a. Basics of Medical Transcription, Objectives of Medical Transcription, Rules of Medical Transcription and Advantages of Medical Transcription

Reference books

1. Oachs PK, Watters A, editors. Health information management: Concepts, principles, and practice. Chicago, IL: Ahima; 2016.

2. LaTour MK. Eichenwald Shirley Maki (2010) Health Information Management, Concepts, Principles, and Practice. American Health Information Management Association; Chicago, Illinois.

3. Introduction to Health Information Management, Text Book by Donna Olson and Sue Bierdermann

4. Foundations of Health Information Management Book by Melissa LaCour and Nadinia A. Davis

5. Legal aspects of health information management Textbook by Dana McWay

<div align="center">

HEALTH INFORMATION MANAGEMENT – II LABORATORY
</div>

Subject Code: **GMRTS1-207**   **L   T   P   C**   **60 Hours**
                                         0   0   4   2

COURSE OBJECTIVES:
1. Verify the documentation in the health record of Hospital Information System
2. To know about Heath Care Statistics

COURSE OUTCOME
1. To understand about the Verification regarding the documentation in the health record of Hospital Information System
2. To understand about the Heath Care Statistics.
3. Analyse and determine the factors affecting enzyme activity.

COURSE SYLLABUS:
SOP

1. Hospital Information System (HIS) with Electronic Medical Records (EMR) or Electronic Health Information Management System
2. Heath Care Statistics, Quality control of Data Collection & Presentation
3. Heath Care Statistics, Quality control of Data Collection & Presentation

Reference books

1. Oachs PK, Watters A, editors. Health information management: Concepts, principles, and practice. Chicago, IL: Ahima; 2016.

2. LaTour MK. Eichenwald Shirley Maki (2010) Health Information Management, Concepts, Principles, and Practice. American Health Information Management Association; Chicago, Illinois.

3. Introduction to Health Information Management, Text Book by Donna Olson and Sue Bierdermann

4. Foundations of Health Information Management Book by Melissa LaCour and Nadinia A. Davis

5. Legal aspects of health information management Textbook by Dana McWay

BIOCHEMISITY AND MICROBIOLOGY

Subject Code:GMRTS1-203	L	T	P	C	60 Hours
	3	1	0	4	

COURSE OBJECTIVES:

1. Identify normal and abnormal biochemical constituents of urine and estimate biochemical parameters in blood and urine. Collect and maintain health record data.
2. Identification tests as per Indian Pharmacopoeia, handle various instruments used in biochemical investigations
3. Analyse and report the physiological and pathological constituents of urine.
4. Analyse and determine the factors affecting enzyme activity.

COURSE OUTCOME:

1. To understand how to identify the normal and abnormal biochemical constituents of urine and estimate biochemical parameters in blood and urine. Collect and maintain health record data.
2. To perform identification tests as per Indian Pharmacopoeia. Handle various instruments used in biochemical investigations
3. To understand about analyzing and report the physiological and pathological constituents of urine and determine the factors affecting enzyme activity.

COURSE SYLLABUS:

<table>
<tr><td></td><td align="center">**UNIT-I:**</td><td align="right">**15 Hours**</td></tr>
</table>

Biochemistry

a) Chemistry of the human body fluids in health and diseases

b) Cerebrospinal fluid

c) Clotting mechanism of the blood,

d) Enzymes produced in the G.I.Tract,

<table>
<tr><td></td><td align="center">**UNIT-II**</td><td align="right">**15 Hours**</td></tr>
</table>

Biochemistry

a) Nitrogenous substances, lipids, carbohydrates,

b) Electrolytes

c) Metabolism, acid-base balance,

d) Normal values and ranges of biochemistry investigations

<table>
<tr><td></td><td align="center">**UNIT-III**</td><td align="right">**15 Hours**</td></tr>
</table>

Microbiology

a) Introduction to Microbiology,

b) Classification and characteristics of organisms,

c) Cultivation and identification of organisms, Viral, fungal, bacterial etc

<table>
<tr><td></td><td align="center">**UNIT- IV**</td><td align="right">**15 Hours**</td></tr>
</table>

Microbiology

a) Disinfection, antiseptics, sanitation,

b) Immunity,

c) Allergy

d) Pathogenic organisms, non-pathogenic organisms, virus and fungus.

Reference books

1. Kango N. Textbook of microbiology. IK International Pvt Ltd; 2010 May 13.

2. Bhatia SC. Textbook of biotechnology. Atlantic Publishers & Dist; 2005.

3. A Laboratory Text Book of Biochemistry, Molecular Biology and Microbiology
Book by Sharad Vats.

4. Basic Techniques in Biochemistry, Microbiology and Molecular biology Book by Aakanchha
Jain, Richa Jain, and Sourabh Jain.

5. Laboratory Manual of Microbiology, Biochemistry and Molecular Biology Book by Indu
Ravi, Jyoti Saxena, and Mamta Baunthiyal.

LEGAL ASPECTS OF HEALTH CARE

Subject Code:GMRTS1-204   **L T P C**   **30 Hours**
                                 2 0 0 2

COURSE OBJECTIVES:
   1. Verify the documentation Legal Aspects of Health Care
   2. Know about method of Medical Termination of Pregnancy Act
   3. Know about The Consumer Protection

COURSE OUTCOME:
   1. To understand about the Legal Aspects of Health Care
   2. To understand and learn about the method of Medical Termination of Pregnancy Act
   3. To understand about The Consumer Protection

COURSE SYLLABUS:

UNIT-I   **10 Hours**
Legal Aspects of Health Care:
Introduction To Healthcare, Hospital organization.
The Consumer Protection Act: Introduction, objectives and amendments.

UNIT-II   **5 Hours**
The Transplantation of Human Organs Act: Introduction, objectives and amendments.

UNIT-III   **5 Hours**
The Medical Termination of Pregnancy Act:
Introduction, objectives and amendments.
Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act:

UNIT-IV   **10 Hours**
Introduction, objectives and amendments.
The Consumer Protection Act: Introduction, objectives and amendments.
Health Insurance (Medi-Claim Policy). Bio-Medical Waste (Management and Handling) Rules.
Ethics committees for animals and humans.

Reference books
1. Hall MA, Orentlicher D, Bobinski MA, Bagley N, Cohen IG. Health care law and ethics.
Wolters Kluwer; 2018 Feb 26.
2. Pozgar GD. Legal and ethical essentials of health care administration. Jones & Bartlett
Learning; 2020 Mar 11.
3.Legal Aspects of Health Care Administration Hardcover – Import, 24 March 2011
by George D. Pozgar (Author)
4. Legal Aspects Of Health Care Administration Hardcover – Import, 27 March 2015
by George D. Pozgar (Author), Nina Santucci (Author)
5. Legal Aspects Of Health And Safety By Dimmond B.

| **BASIC COMPUTERS AND INFORMATION SCIENCE** |

| Subject Code:GMRTS1-205 | **L T P C** | 30 Hours |
| | **2 0 0 2** | |

COURSE OBJECTIVES:

The students will be able to appreciate the role of computer technology. The course has focus on computer organization, computer operating system and software, and MS windows, Word processing, Excel data worksheet and PowerPoint presentation.

COURSE OUTCOME:

1. The students will be able to appreciate the role of computer technology.

2. Students should gain the knowledge about various computer organization, computer operating system and software, and MS windows, Word processing, Excel data worksheet and PowerPoint presentation.

COURSE SYLLABUS:

UNIT-I   **10 Hours**

- **Computer networks:**
- **Introduction**- Types of network (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.

Unit-II   **10 Hours**

- **Introduction to MS-Word:** 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.
- **Introduction to Excel: I**ntroduction, about worksheet, entering information, saving workbooks and formatting, printing the worksheet, creating graphs.
- **Introduction to power-point:** introduction, creating and manipulating presentation, views, formatting and enhancing text, slide with graphs.
- **Introduction of Operating System:** Introduction, operating system concepts, types of Operating system.

Unit III   **10 Hours**

- **Computers as data analysis in Preclinical development**. Chromatographic dada analysis (CDS), PRACTICAL Information management System (LIMS) and Text Information Management System(TIMS).

Reference books

1. Kango N. Textbook of microbiology. IK International Pvt Ltd; 2010 May 13.

2. Bhatia SC. Textbook of biotechnology. Atlantic Publishers & Dist; 2005.

3. Computer Science: An Overview | Twelfth Edition | By Pearson Paperback – 30 June 2017
by Glenn Brookshear (Author), Dennis Brylow (Author)

4. Fundamentals Of Computers And Information System by Niranjan Shrivastava, WILEY
INDIA

Books from same Author: Niranjan Shrivastava

5. Computer Fundamentals : Concepts, Systems & Applications- 8th Edition Paperback – 30
November 2004
by Priti Sinha, Pradeep K., Sinha (Author)

BASIC COMPUTERS AND INFORMATION SCIENCE LABORATORY

Subject Code:GMRTS1-208	**L**	**T**	**P**	**C**	**30 Hours**
	0	**0**	**2**	**1**	

COURSE OBJECTIVES:

The students will be able to appreciate the role of computer technology. The course has focus on computer organization, computer operating system and software, and MS windows, Word processing, Excel data worksheet and PowerPoint presentation.

COURSE OUTCOME:

1. The students will be able to appreciate the role of computer technology.

2. Students should gain the knowledge about various computer organization, computer operating system and software, and MS windows, Word processing, Excel data worksheet and PowerPoint presentation.

COURSE SYLLABUS:

1. Learning to use MS office: MS word, MS PowerPoint, MS Excel.

2. Basic Data Processing

3. Database and Spreadsheet Operations

4. Basic Computer Concepts and Applications

5. Miscellaneous: Scanning of documents (of various sizes) and in different conditions (for e.g., mutilated), file naming, saving, uploading, etc. Copying of original medical document, back up of old data/ records.

Reference books

1. Kango N. Textbook of microbiology. IK International Pvt Ltd; 2010 May 13.

2. Bhatia SC. Textbook of biotechnology. Atlantic Publishers & Dist; 2005.

3. Computer Science: An Overview | Twelfth Edition | By Pearson Paperback – 30 June 2017
by Glenn Brookshear (Author), Dennis Brylow (Author)

4. Fundamentals Of Computers And Information System by Niranjan Shrivastava, WILEY INDIA

Books from same Author: Niranjan Shrivastava

5. Computer Fundamentals : Concepts, Systems & Applications- 8th Edition Paperback – 30 November 2004

by Priti Sinha, Pradeep K., Sinha (Author)

PROJECT / FIELD WORK

Subject Code:GMRTS1-209   **120 Hours**

L   T   P   C
0   0   8   4

Course Objectives: This subject will lead to practical understanding of the procedures. Project report making lead to a introduction on research investigations.

Course details:
Students have to carry out a research project under the supervision of a faculty/hospital administration. The project report has to be prepared on the basis of the research work carried out. The assessment is done on the basis of the work done and the presentation and viva.