



SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

ORDINANCE GOVERNING
BSc MEDICAL RECORDS TECHNOLOGY
CURRICULUM 2023-24

|| Om Shree Manjunathayanaya Namaha ||



Edition Year : 2023-24

Published by

Registrar

Shri Dharmasthala Manjunatheshwara University

(A State Private University established under the Shri Dharmasthala Manjunatheshwara University
Act No 19 of 2018 of Government of Karnataka and Notification No. ED 261 URC 2018 dated 19th December 2018)

6th Floor, Manjushree Block SDM Medical College Campus,
Manjushree Nagar, Sattur, Dharwad - 580 009, Karnataka, India

Email: registrar@sdmuniversity.edu.in / sdmuo@sdmuniversity.edu.in
Web.: sdmuniversity.edu.in

Tel.: +91 836 2477511, 23211117, 8197466841 & 8861475842



SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY

THE LOGO

Poojya Dr D. Veerendra Heggade, Hon'ble Chancellor of the University, while searching for an appropriate Logo for the University, saw a photograph picked from Temple Architecture showing Wings of a Bird, sculpted in Indian style and wanted it to be incorporated in the logo for the University, as the Wings symbolize 'Spreading of Knowledge beyond Boundaries'. Further it was felt that the Central theme of the logo should be 'Rudra' (The Linga) with wings on each side. In this way, the logo of the University was conceptualized.

Hence:

1. The central part represents Rudra who Demolishes Darkness.
2. The Three horizontal lines on The Linga stand for Samyak Darshan (Right Belief), Samyak Gyan (Right Knowledge) and Samyak Charitra (Right Conduct).
3. The Wings symbolize spreading of Knowledge across the boundaries.
4. Base line "Truth Liberates" highlights the Purpose of Education: to liberate oneself unconditionally. It shows that it is not discipline, nor knowledge nor the efforts to freedom that liberate but Truth is what liberates you from all your conditioning and ignorance.

The overall significance of Shri Dharmasthala Manjunatheshwara University's Logo is:

Darkness of ignorance is destroyed by the flow of knowledge to bring Liberty to everyone, by realizing the truth. And, it should spread globally without the boundaries as hindrance.



**SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY**

VISION

Shri Dharmasthala Manjunatheshwara University will set the highest standards of teaching and learning, awakening the intelligence of the students and nurturing the creativity hidden in them by creating an environment where the ancient wisdom blends with modern science, to transform them into whole human beings to face the challenges.

MISSION

- To ensure that the journey of education is inspiring, pleasant and enjoyable.
- Attract the best of teachers and students.
- Achieve high principles of trust, love and spirituality in the students.
- Create a collaborative, diverse and exclusive community.
- Transform the student of today to be a leader of tomorrow and a better human being.
- Produce passionate teachers.
- Evolve innovative teaching techniques.
- Create a peaceful environment.
- Prepare the student to face the social challenges.
- Create a University of which the Nation is proud of.
- Be an effective partner in Nation Building.
- Create an Eco-friendly University.
- Create a University based on the principles of beauty, love and justice.

|| Om Shanti! Om Shanti! Om Shanti ||



SDMU/ACD/ALLIED/Notif-231/694/2021

Date: 31.12.2021

NOTIFICATION

Ordinance Governing Curricula of B.Sc. in Medical Records Technology

Ref: Minutes of the 5th Meeting of Academic Council held on 8th December 2021

In exercise of the powers conferred under Statutes 1.4 (Powers and functions - Para ix & x) of Shri Dharmasthala Manjunatheshwara University, the Academic Council is pleased to approve and notify the Ordinance governing the Curricula of B.Sc. in Medical Records Technology with effect from the date of notification.

Lt Col U. S. Dinesh (Retd)
REGISTRAR

To: The Principal, SDM College of Medical Sciences & Hospital

Copy for kind information to:

1. Hon'ble Vice Chancellor - Shri Dharmasthala Manjunatheshwara University
2. Pro Vice Chancellor (Academics) - Shri Dharmasthala Manjunatheshwara University
3. Controller of Examinations - Shri Dharmasthala Manjunatheshwara University
4. Coordinator - Medical Allied Sciences, SDM College of Medical Sciences & Hospital, Dharwad
5. Office of the Registrar

BSc MEDICAL RECORDS TECHNOLOGY

CONTENTS

- I. Preamble**
- II. General Guidelines**
- III. First year Course contents**
 - 1. Anatomy and Physiology
 - 2. Biochemistry, Microbiology and Pathology
 - 3. Medical Terminology 1 and Hospital services
 - 4. Introduction to Medical records
 - 5. Subsidiary subjects
- IV. Second year Course contents**
 - 1. Pharmacology and Forensic medicine
 - 2. Medical Terminology 2
 - 3. Information Technology
 - 4. Medical records – Operation and Management
 - 5. Subsidiary subjects
- V. Third year Course contents**
 - 1. Bio-Statistics and Hospital Statistics
 - 2. Medical Ethics and Medicolegal aspects of Medical records
 - 3. Health Information and Quality Management
 - 4. Medical / Surgical Coding, Medical Transcription and Telemedicine
 - 5. Subsidiary subjects
- VI. Internship**

PART I: B Sc. MEDICAL RECORDS TECHNOLOGY

BSc MRT

PREAMBLE

The BSc in Medical Records Technology (BSc MRT) is a specialized 4 years undergraduate program that trains students in the systematic documentation, management, and protection of medical records and health information. As healthcare systems evolve to become more data-driven and patient-centered, accurate and accessible medical records are crucial for quality care, legal compliance, insurance processing, and research.

This course equips students with the necessary knowledge and technical skills to create, maintain, and manage medical records in both paper and electronic formats. Students are trained in medical terminology, disease classification (ICD-10), hospital procedures, electronic health records (EHR), data privacy laws, and coding and billing practices.

Through a blend of classroom instruction, laboratory training, and hospital internships, the program prepares graduates to become efficient health information management professionals who play a critical role in the functioning of healthcare institutions.

OBJECTIVES:

The BSc in Medical Records Technology program aims to develop skilled professionals capable of managing and maintaining health information systems in healthcare settings.

The core objectives of the program are:

1. To impart fundamental knowledge of medical record science, medical terminology, hospital procedures, and healthcare documentation systems.
2. To train students in the collection, organization, classification, storage, and retrieval of medical records in both manual and electronic formats.
3. To develop expertise in disease and procedure coding systems such as ICD-10, CPT, and other relevant classification systems.
4. To ensure awareness of medico-legal aspects of record keeping, including confidentiality, data security, and ethical handling of health information.

5. To prepare students to work efficiently in various departments like outpatient records, inpatient records, central registration, and discharge sections of hospitals.
6. To familiarize students with hospital information systems (HIS) and electronic health records (EHR) used in modern healthcare facilities.
7. To enhance administrative and analytical skills for supporting hospital management, insurance processes, audits, and clinical research through accurate record management.
8. To provide hands-on training and practical exposure through internships in hospital medical records departments, ensuring real-world competency.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

1. Ensure that the security and confidentiality of medical records is maintained.
2. Review records for completeness, accuracy, and compliance with regulations.
3. Discuss the process of identification, compile, abstract, and code patient data, using standard classification systems.
4. Plan, develop, maintain, or operate a variety of health record indexes or storage and retrieval systems to collect, classify, store, or analyse information.
5. Discuss the process of preparing statistical reports, narrative reports, or graphic presentations of information for use by hospital staff, researchers, or other users.
6. Assist in managing the department or supervising clerical workers, or controlling activities of personnel in the medical records department.
7. Exhibit professional behaviour, personal attributes and interpersonal relationships with others.

PART II: GENERAL GUIDELINES

- 1. NAME OF THE PROGRAM: Bachelor of Science in Medical Records technology (BSc MRT)**
- 2. DURATION:** 4 (Four) years including 1 Year Internship.
- 3. MEDIUM OF INSTRUCTION:** English
- 4. INTAKE: 05 seats/year**
- 5. ELIGIBILITY FOR ADMISSION:**
 - a.** A candidate seeking admission to the Bachelor of Science Degree Programs in Allied Health Sciences of SDM University, shall have studied English as one of the principal subjects during the tenure of the course.
 - b. Regular entry:**

Two-year Pre-University examination or equivalent as recognized by Pre-University Board or equivalent authority with, Physics, Chemistry and Biology as principal subjects of study.

OR

Any equivalent examination recognized by the SDM University for the above purpose with Physics, Chemistry and Biology as principal subjects of study.
 - c. Lateral entry** (Direct entry to second year of the BSc AHS program) shall be given to candidates with two years diploma from a recognized Government Board and as recognized by SDM University in a subject for which the candidate desires to enrol, in the respective Allied Health Sciences program. Candidate shall have passed plus 12 [10+2] with Physics, Chemistry and Biology, as principal subjects. Such candidates are eligible for Lateral entry to second year for Allied Health Science courses fulfilling the conditions specified above, only in the same subject/stream studied during Diploma. This will be applicable to only those programs which are having diploma degrees.
 - d.** Selection of the candidates and admission process will be as per the SDM university rules and regulations.

Note:

- The candidate shall have passed individually in each of the principal subjects.
- Candidates who have completed diploma or vocational course through correspondence shall not be eligible for any of the programs mentioned above.

6. DISTRIBUTION OF COURSES AND TEACHING HOURS:**First Year**

SI No	Subject	Theory	Practical	Postings	Total
1	Anatomy and Physiology	70	30	-	100
2	Biochemistry, Microbiology and Pathology	90	60	-	150
3	Medical Terminology 1 and Hospital services	100	30	100	230
4	Introduction to Medical records	100	30	300	430

Subsidiary Subjects:

SI No	Subject	Teaching hours
1	English and Communication Skills	20
2	Health care	20
3	Basic Science with Skill Development Training and Hospital Procedure and Records	40

Second Year

SI No	Subject	Theory	Practical	Postings	Total
1	Pharmacology and Forensic medicine	100	40		140
2	Medical Terminology 2	80	40	100	220
3	Information Technology	100	100	-	200
4	Medical records – Operation a Management	100	50	250	400

Subsidiary Subjects:

Sl No	Subject	Teaching hours
1	Indian constitution	20
2	Sociology	20
3	Environment science and health	20
4	Clinical psychology	20

Third Year

Sl No	Subject	Theory	Practical	Postings	Total
1	Bio-Statistics and Hospital Statistics	100	100	100	300
2	Medical Ethics & Medicolegal aspects of Medical records	100	50	100	250
3	Health Information and Quality Management	100	50	100	250
4	Medical/Surgical Coding, Medical Transcription and Telemedicine	100	100	100	300

Subsidiary Subjects:

Sl No	Subject	Teaching hours
1	Research methodology	20

7. SCHEME OF EXAMINATION:**a. Internal Assessments:**

- There shall be 2 internal assessment exams (IA) in a year. Formative assessments (FA) shall be conducted throughout the year in the form of class tests, assignments, seminars, journal/logbook assessment etc.
- IA marks for all courses/subjects shall be computed on the basis of a continuous evaluation of the student in internal assessment exams and formative assessments together. Each IA marks shall include 30% FA marks in both theory and practical.
 - Final IA marks shall be calculated as average of two IA marks.

b. Final University Examination (UE):

Final University examination (UE) shall be conducted at the end of each academic year.

Resit examination (RE) shall be conducted within 2 months of the announcement of results, as per SDM university guidelines. The students who are absent in the main examination he/she will be appearing under the term as the “**Supplementary**” examination.

c. Eligibility criteria to appear for Final UE shall be as follows-

i. Attendance eligibility criteria:

- Candidates should get **75% attendance in Theory and Practical separately** for each subject to be eligible to appear for the university examinations (UE).
- **75% attendance in each departmental postings** is a prerequisite to appear for university examination. This attendance may be considered for the main subjects which have got clinical postings. This attendance will apply for the eligibility of all the papers of that subject in that particular year.
- Only such candidates are eligible to appear for the university examinations in their first attempt. A candidate lacking in prescribed percentage of attendance in any subjects either in theory or practical will not be eligible to appear for the University Examination in that subject.

ii. Internal assessment eligibility criteria:

- Students must score **50% in theory and 50% practical separately** to be eligible to appear for the university examinations (average of two IAs).
- The marks of the internal assessment must be displayed on the notice board of the college within a fortnight from the date of assessments. Remedial exams may be conducted as per the rules of SDM University.
- The IA marks shall be communicated to the SDM University at least 15 days before the commencement of the University examination. The University shall have access to the records of all such periodical tests.

d. Final University exam and Internal Assessment Marks distribution:

First Year

Sl No	Subject	Theory				Practical			Total
		UE	Viva	IA	Total	UE	IA	Total	
1	Anatomy and Physiology	70	-	30	100	-	-	-	100
2	Biochemistry, Microbiology and Pathology	70	-	30	100	-	-	-	100
3	Medical Terminology 1 and Hospital services	70	10	20	100	40	10	50	150
4	Introduction to Medical records	70	10	20	100	40	10	50	150

Second Year

Sl No	Subject	Theory				Practical			Total
		UE	Viva	IA	Total	UE	IA	Total	
1	Pharmacology and Forensic medicine	70	-	30	100	-	-	-	100
2	Medical Terminology 2	70	10	20	100	40	10	50	150
3	Information Technology	70	10	20	100	40	10	50	150
4	Medical records – Operation and Management	70	10	20	100	80	20	100	200

Third Year

Sl No	Subject	Theory				Practical			Total
		UE	Viva	IA	Total	UE	IA	Total	
1	Bio-Statistics and Hospital Statistics	70	10	20	100	40	10	50	150
2	Medical Ethics & Medicolegal aspects of Medical records	70	10	20	100	40	10	50	150
3	Health Information and Quality Management	70	10	20	100	40	10	50	150
4	Medical/Surgical Coding, Medical Transcription and Telemedicine	70	10	20	100	40	10	50	150

Theory University Examination Pattern: Total - 70 marks

- I. Long essay: 2 Questions X 10 marks each = 20 marks (answer 2 out of 3 questions)
- II. Short essay: 6 Questions X 5 marks each = 30 marks (answer 6 out of 8 questions)
- III. Short answer: 10 Questions X 2 marks each = 20 marks (answer all questions)

8. EXAMINERS

- a. **Appointment of Examiners:** Examiners shall be appointed by the University to conduct the Final University practical examinations, from the panel of examiners approved by the Board of Studies/Board of appointment of examiners. For Practical examinations, there shall be one external examiner and one internal examiner. Theory paper shall be valued by both the examiners.

b. Qualification and Experience of Examiners: (Internal and External examiner)

Post graduation MSc in the respective field with two years of teaching experience. Relaxation can be done in case of non-availability of examiners and with the approval of board of appointment of examiners.

Post MD/MS/PhD – can be appointed as examiners after completion of their MD/MS/PhD

9. PASS CRITERIA:

- a. For pass in a subject student has to get **minimum 40% marks in University Theory paper and 40% marks in university practical exam separately.**
- b. **Where the subject has only Theory component and NO practical component**, student has to get minimum 40% marks in University Theory paper and 50% marks in Theory aggregate, i.e., Theory marks in UE + Final IA marks added together, to be declared PASS in university examination.
- c. **Where the subject has BOTH Theory and Practical component**, A total aggregate of 50% marks in Theory (Theory marks in UE + Viva voce + IA) and 50% aggregate marks in Practical (Practical marks in UE + IA) separately is required for the candidate to be declared PASS in university examination.
- d. **If the student fails in either Theory or practical component of a subject paper**, the he/she has to appear for both Theory and Practical exam in the next resit examination. If student fails in resit exam also, then he/she will be promoted to next year based on carry over guidelines.

10. CARRYOVER CRITERIA:

- A. **1st Year** – Student can **carryover 50% of subjects** after university exam (UE) and Resit exam (RE) results to next year. These students can be promoted to 2nd year as ATKT (Allowed to keep term) students. These ATKT students shall be permitted to attend classes of next year.

B. 2nd year – Student can appear for 1st year failed subjects and 2nd year subjects together during 2nd year university exam (UE) and also 2nd year Resit exam.

- i. If student does not clear all 1st year subjects even after 2nd year resit exam, then he/she will not be promoted for 3rd year. Student has to clear all the 1st year subjects to be promoted to 3rd year.
- ii. However, if student clears all 1st year subjects in university exam or after Resit exam, he/she can carryover 50% of 2nd year subjects to next year. These students can be promoted to 3rd year as ATKT students.

C. 3rd year - Student can appear for 2nd year failed subjects ONLY during 3rd year university exam. He/she can appear for 3rd year subjects in subsequent university conducted exams only after he/she clears all the 2nd year subjects. Student has to PASS in all the 3rd year subjects to start his/her internship.

11. DECLARATION OF CLASS:

The class shall be awarded to a candidate who passes all the main subjects in the first attempt on the basis of percentage obtained as follows:

- a. First Class with Distinction = 75% and above
- b. First Class = 65% to 74.9%
- c. Pass Class = 50% to 64.9%

12. INTERNSHIP

Twelve months (one year) internship shall be mandatory after successful completion of third year. The 'Internship Completion Certificate' shall be issued by the college and copy of same is submitted to the University.

13. MAXIMUM DURATION FOR COMPLETION OF COURSE

A candidate shall complete the course within **six years from date of admission** (excluding internship), failing, which candidate shall re-register for the course.

14. AWARD OF DEGREE

A candidate who has passed in all the subjects of all the years and has successfully completed the internship shall be eligible for award of degree.

PART III: FIRST YEAR COURSE CONTENTS

SUBJECT: ANATOMY AND PHYSIOLOGY

ANATOMY:

- Cells, tissue & organ
- Cardiovascular system
- Respiratory system
- Musculoskeletal system
- Endocrine system
- Digestive system
- Urinary system
- Reproductive system
- Integumentary system
- Lymphatic system
- Nervous system including sensory system- eye & ears
- Special senses – smell, taste, visual and equilibrium & hearing
- Immune system

PHYSIOLOGY

1. Cell, organelles

2. Blood

- Blood cells
- Haemoglobin
- Blood groups
- Coagulation Factors
- Anaemia & Immunoglobulins

3. Cardiovascular system

- Heart rate, cardiac cycle, cardiac output, blood pressure, hypertension, radial pulse

4. Respiratory system

- Ventilation
- Functions
- Lungs Volumes and capacities

5. Gastrointestinal system

- Process of digestion in various parts

6. Endocrinology

- List of Endocrine Glands
- Hormones : Their secretion and functions (in brief)

7. Excretion system

- Structure of nephron
- Urine formation

8. Central nervous system

- Parts
- Sliding Filament Theory
- Neuro Muscular Junction
- Wallerian Degeneration
- Motor Nervous system
 - o Upper motor neuron system
 - o Lower motor neuron system
- Sensory nervous system
- Sympathetic Nervous system
- Parasympathetic nervous system

9. Special senses

- Eye & ear (in brief)

There shall be no practical university exam for Anatomy and Physiology subject.

Recommended text books (latest editions):

1. Text book of Anatomy & Physiology for nurses – P. R. Asha Lata & G Deepa, 3rd edition
2. B.D. Chaurasia's Handbook of General Anatomy, 6th edition, edited by Krishna Garg, CBS Publishers and Distributors, New Delhi
3. B. D. Chaurasia's Human Anatomy, volume1, 2, 3, 4, 8th edition, edited by Krishna Garg, CBS Publishers and Distributors, New Delhi
4. AK Jain for B.Sc Paramedical Students
5. Chatterjee (CC) Human Physiology Latest Ed. Vol. 1, Medical Allied Agency
6. Choudhari (Sujith K) Concise Medical Physiology Latest Ed. New

SUBJECT: BIOCHEMISTRY, MICROBIOLOGY AND PATHOLOGY

BIOCHEMISTRY

Objectives:

To understand biochemistry laboratory investigation requests, reports, the normal ranges of investigations, severity and specificity of disease conditions which will help him perform International Classification of diseases to clinical pertinence.

Contents:

- Chemistry of the biomolecules in health and diseases
- Enzymes produced in the G.I.Tract, Diagnostic enzymology
- Carbohydrates – mono, di and polysaccharides, lipids- fattyacids, triglycerides, phospholipids, Proteins – hemoglobin, myoglobin, collagen, elastin of physiological importance
- Metabolic pathways for energy production – Glycolysis, TCA cycle, beta oxidation of fattyacids (in brief)
- Functions of cholesterol, lipoproteins, atherosclerosis, myocardial infarction markers
- Diabetes mellitus - definition, types, features, gestation diabetes mellitus, glucose tolerance test, glycosuria, Hypoglycemia & its causes
- Electrolyte Metabolism, acid-base balance
- Vitamins, Minerals – Functions, Deficiency states
- Clinical Biochemistry - Normal reference values/ranges of biochemistry investigations and their importance, Organ function tests – Liver, renal, Thyroid

Reference textbooks:

1. Textbook of Biochemistry by M D Rafi
2. Essentials of Biochemistry by U Satyanarayana
3. Manipal manual of Clinical Biochemistry by Shivananda Nayak
4. Godkar - Textbook of Medical Laboratory Technology

MICROBIOLOGY

Objectives:

To understand microbiology laboratory investigation requests, reports, various types of bacterial, viral and fungal infections, culture reports, severity and specificity of disease conditions which will help him perform International Classification of diseases to clinical pertinence.

Contents:

General Microbiology:

- **General characters and classification of Bacteria.**
- **Sterilization and Disinfection.**
 - Physical agents- Sunlight, Temperature less than 1000C, Temperature at 1000C, steam at atmospheric pressure and steam under pressure, irradiation, filtration.
 - Chemical Agents- Alcohol, Aldehyde, Dyes, Halogens, Phenols, Ethylene oxide.

Staining Methods, Collection and Transportation of Specimens, and Disposal of Laboratory/Hospital Waste

- **Staining Methods**
 - Simple, Grams staining, Ziehl-Neelsen staining or AFB staining, Negative, Impregnation
- **Collection and Transportation of Specimens**
 - General Principles, Containers, Rejection
 - Samples - Urine, Faeces, Sputum, Pus, Body fluids, swab, blood
- **Disposal of Laboratory/Hospital Waste:**
 - Non-infections waste, infected sharp waste disposal, infected non-sharp waste disposal.

Parasitology, Mycology, virology and nosocomial infection

- **Parasitology**
 - Parasitism, host & vectors etc., classification of parasites, diseases caused by various parasites (in very brief)
- **Mycology**
 - Morphology & structure of fungi (in brief), classification of fungi, lab diagnosis of fungal infections, opportunistic fungal infection

- **Virology**
 - General characters of viruses, classification of viruses, lab diagnosis of viral infections (in brief).
- **Nosocomial Infections (in brief)**
 - The possibilities and consequences of nosocomial infections, needle prick injuries etc., in a health care facility

Others:

- Immunity, Allergy (in brief).
- Safety and Infection control practices
- Biomedical waste management
- Safety, Emergency Medical response & First Aid

Recommended textbooks:

1. Anathanarayana & Panikar Medical Microbiology
2. Roberty Cruckshank - Medical Microbiology - The Practice of Medical Microbiology

PATHOLOGY

Objectives:

To understand pathology laboratory reports, the normal ranges of investigations, severity and specificity of disease conditions which will help him perform International Classification of diseases to clinical pertinence.

Contents:

- Inflammation, Infection, Degeneration

Cell Injury and Cellular Adaptations.

- Normal Cell
- Cell Injury- types of cell injury, etiology of cell injury, morphology of cell injury, cellular swelling (in brief)
- Cell death : types- autolysis, necrosis, apoptosis & gangrene (in brief)
- Cellular adaptations-atrophy, hypertrophy, hyperplasia & dysplasia (in brief)

Inflammation

- Acute inflammation - vascular event, cellular event, inflammatory cells(in brief)
- Chronic Inflammation - general features

Haemodynamic Disorders :

- Oedema, hyperemia, congestion, haemorrhage, circulatory disturbances, thrombosis, ischaemia & infarction (in brief)

Neoplasia :

- Definition, how does it differ from hyperplasia, difference between benign tumor and malignant tumor (in brief)

Healing:

- Definition, different phases of healing, factors influencing wound healing. (in brief)

Hematology and Clinical pathology;

- Complete hemogram, Blood groups, cross-matching, transfusion
- Tests done on various body fluids and tissues, dipstiks
- Various pathology laboratory reports

Sample collection and transport

- Types of sample collection tubes, order of draw, different types of samples for different laboratory tests
- Test request forms, consent forms

There shall be no practical university exam for Biochemistry, Microbiology and Pathology subject.

Recommended text books (latest editions):

1. Harsh Mohan - Textbook of Pathology for Nursing.
2. Textbook of Pathology for Allied Health Sciences by Ramadas Nayak
3. Basic Advanced Laboratory Techniques in Histopathology and Cytology by Pranab Dey

SUBJECT: MEDICAL TERMINOLOGY 1 AND HOSPITAL SERVICES

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 there in common usage.

All the above will enable the students in -

- Developing an ability to read and understand medical records and the medical literature
- Writing terms correctly when abstracting medical records
- Establishing accuracy in International Classification of Diseases, Surgical procedures which will be useful in statistics, medical billing, and auditing medical insurance claims.

Introduction to Medical Terminology

- Definition and Origin of Medical Terms.
- Components of Medical Terms
- Prefixes
- Suffixes
- Roots and Combining forms
- External Anatomy and Internal Anatomy

Terms Relating to the Body as a Whole

- Study of the Body
- Basic Structures
- Cells
- Tissues
- Organs
- Systems
- Directions
- Anatomic Planes and Position

The Skeletal System

- Pathologic conditions (Inflammations and Infections)
- Hereditary, Congenital and Developmental Disorders
- Fractures
- Metabolic and Deficiency Diseases
- Symptomatic Terms
- Diagnostic Terms
- Oncology Terms
- Operative Terms
- Laboratory Tests and Procedures
- Standard Abbreviations

The Muscular System

- Pathologic Conditions
- Degenerative and Innervative Disorders
- Hereditary, Congenital and Developmental Disorders
- Symptomatic Terms
- Diagnostic Terms
- Oncology Terms
- Operative Terms
- Laboratory Tests and Procedures.
- Standard Abbreviations

Integumentary System

- Pathologic Conditions
- Fungal, Viral and Parasitic Infections
- Hereditary, Congenital and Developmental Disorders
- Symptomatic Terms
- Diagnostic Terms
- Oncology Terms
- Operative Terms
- Laboratory Tests and Procedures

HOSPITAL SERVICES:

Introduction to Hospital organisation

- Who's Who in hospital – Key administrators and their functions, overview of medical and para-medical specialities, main service departments.
- Overview of health services – government services: private & not for profit: primary, secondary & tertiary health care: types of hospital: community, super – speciality etc.
- Culture, Values and Mission
- Organizational Structure
- Managing People (Human Resources) - Overview – scope and functions of HR dept, HR planning, Recruitment and Appointment, Performance Appraisal, Promotion, internal transfers, Problems and Legal issues

Clinical Services:

- Overview of clinical departments and services – OPD, In-patients, ICU, Surgical, Emergency, Community/family Health, Paramedical & Rehabilitation.
- Types of doctors, their training, roles and responsibilities
- Medical Audit, Medical Negligence & Litigation

Nursing Services and Wards:

- Objectives of the nursing service
- Nursing service organization, types of nurses, their training, qualifications and functions, other ward staff, personnel issues.
- Ward management

Diagnostic Services (Radiology, Laboratories, Blood Bank etc)

- Overview – main services and their functions

Patient Services (non-medical)

- Reception, Welcome/Help Desk
- Patient facilities, wheelchairs, Ambulances
- Public Relations – objectives, functions, policies, different media, methodologies, networking

Managing Support Services

- Overview of functions of all support services including Laundry, Catering, Cleaning, CSSD, Transport, Security, Materials (Purchase and Stores) etc
- Maintenance department services – Civil, electrical, water, biomedical etc

Health Insurance

- Definition and Concept of Health Insurance
- Issues in Health Insurance
- Effective Health Insurance
- Reason of Lack of coverage
- Health Insurance in India and Third Party Administration
- Billing and Health Insurance
- Insurance Regulatory Developments Authority and its Role
- Financial Management

Recommended text books (latest editions)

A. Medical Terminology

1. "The Language of Medicine" by Davi-Ellen Chabner
2. "Medical Terminology: A Short Course" by Davi-Ellen Chabner
3. "Medical Terminology for Health Professions" by Ann Ehrlich & Carol L. Schroeder
4. "A Short Textbook of Medical Terminology" by Dr. R. Dharmalingam

B. Hospital Services

1. Hospital Services: Planning and Management, Author: Sakharkar B.M. Publisher: Jaypee Brothers
2. Hospital Administration, Authors: D.C. Joshi & Mamta Joshi, Publisher: Jaypee Brothers McCauley
3. Hospital Administration and Management, Author: McGibony & McCauley
4. Essentials of Hospital Support Services Management by G.D. Kunders
5. Manual on Hospital Support Services by WHO Regional Office for South-East Asia

SUBJECT: INTRODUCTION TO MEDICAL RECORDS

Objectives:

1. Define Medical Health Records
2. Differentiate between the terms medical record, health record, and medical chart.
3. Define various types of softwares available for the effective management of records.
4. Sensitize about various types of health and medical records
5. Maintain medical records in both soft and hard copies as well as in electronic form

Contents:

- 1. Orientation of entire Hospital including Medical Records Department.**
- 2. History of Development of Medical Records During different periods**
 - The History of Medical Records as a whole in brief.
 - The History of Medical Records of India.
- 3. Characteristics of quality Medical Records:**
 - Definition, Characteristics of 'Good' Medical Record
 - Values of 'Good' Medical Record to various users
 - Source-oriented, Problem-oriented, and Integrated medical records
- 4. Medical Records for different patient encounters with health care facility**
 - Ambulatory Care Records- Emergency & Outpatient Records
 - Clinical Records in Long Term Care and Rehabilitation Facilities
 - Mental Health Records
- 5. Medical Record Forms and their Content**
 - a. The Basic Medical Records forms used at O.P.& I.P. Registration
 - b. Special Record Forms.
 - c. Forms used in all the services and concerned wards of the hospital
 - d. The flow of Medical Records in the Medical Records Dept.
 - e. Standard Order of Arrangement of Medical Record forms
 - f. Identification of Patients at O.P. Registration Counter.
 - g. Organization of Admitting Services: out-patient, EMS, in-patient.

- h. Admitting the Patients to the concerned services at In-Patient Counter.
- i. Patients visit II time to the hospital for treatment at Repeaters Counter.
- j. Arranging of Medical Record forms at the time of Assembling the Records.
- k. Forms Control while issuing on Indent.
- l. Standardization of forms, Printing & Quality of Paper.

6. The importance of Reception Counter.

7. The collection of Hospitals Daily In-Patients Census Reports of all the wards and the duties and responsibilities.

8. The purpose and uses of Medical Records.

9. The values of Medical Records to Doctors, Patients, Hospital

10. Organizational Aspects of Medical Record Department/Services

- Policies
- Functions
- Location, Space and Layout
- Equipment
- Forms Designing and Control
- Medical Records Flow and Processing

11. Organizational Aspects of the Centralized Admitting Services

- Principles of Identification of a Patient
- Methods of Collection of Identification Data
- Types of Central Admitting Services
- Admitting Policies
- Procedure Outlines for Admissions
- Flow of Records following Admissions
- Advantages of good Admitting Policies and Procedures
- Pre-requisites for smooth & efficient functioning of the Centralized Admitting Services

12. Medical Record Department Management

- Planning, Organizing, Directing and Controlling
- Personnel
- Principal Responsibilities and Duties of the Medical Record Administrator/ Director

13. Functions of Medical Records Department which includes-

- | | |
|-------------------------------------|------------------------------------|
| 1. I.P. Daily Census Report | 7. Diagnostic/Disease Indexing |
| 2. Accession Reg. Maintenance | 8. Issuing Forms & Registers |
| 3. Assembling the Records. | 9. Hospital Statistics Maintenance |
| 4. Complete Incomplete Rds. Control | 10. Birth and Death Maintenance. |
| 5. Discharge Analysis | 11. Maintenance of MLC Records. |
| 6. Coding Diagnosis/Diseases | 12. Filing the Records. |

PRACTICAL:

1. Registration of new cases
2. Registration of old cases
3. OP/IP records retrieval
4. Patient Identity Card
5. Diagnostic/Disease Index Card
6. Operation Index Card
7. Physician/Surgeons Index Card

Recommended text books (latest editions)

1. Medical Records: Organization and Management, Author: G.D. Mogli, Publisher: Jaypee Brothers
2. Principles of Medical Records Science, Author: M.M. Ahmed, Publisher: Paras Medical Publisher
3. Manual for Medical Record Officers, Author: WHO Regional Office for South-East Asia, Available as PDF: WHO Library SEARO
4. 4. Health Information Management Technology: An Applied Approach (Supplementary / Advanced), Author: Nanette B. Sayles, Publisher: AHIMA

FIRST YEAR SUBSIDIARY SUBJECTS

Sl No	Subject	Teaching hours
1	English and Communication Skills	20
2	Health care	20
3	Basic Science with Skill Development Training and Hospital Procedure and Records	40

1. ENGLISH AND COMMUNICATION SKILLS

Teaching Hours: 20

ENGLISH

1. Functional English –Grammar: Components of a sentence – Verb - Transformation of sentences – Voice - Reported speech - Positive/ negative -Statement/ Interrogative - Subject verb agreement - Common errors – Exercises
2. Vocabulary: Synonyms and antonyms - Idioms and phrases – Similies - Words denoting assemblage
3. Writing skills: Note making – Summarizing - Report writing - Letter writing - Expansion of an idea- Comprehension
4. Reading: What is efficient and fast reading? - What is Awareness of existing reading habits - Tested techniques for improving speed - Improving concentration and comprehension through systematic study

COMMUNICATION

5. Introduction: Communication process - Elements of communication - Barriers of communication and how to overcome them.
6. Speaking: Importance of speaking efficiently - Voice culture - Preparation of speech - secrets of good delivery - Audience psychology handling - Presentation skills - Conference/Interview technique
7. Listening: Importance of listening - Self-awareness about listening -Action plan execution - Barriers in listening - Good and persuasive listening
8. Nonverbal Communication: Basics of nonverbal communication
9. Memory: What is memory, Brain- mind potential? - Systems for memorizing - Summary page- Building positive mental habits
10. Self-awareness: Self-image - Self talk – Relaxation - Personality development

2. HEALTH CARE

Teaching Hours: 20

1. Introduction to Health: Definition of Health, Determinants of Health, Health Indicators of India, Health Team Concept, National Health Policy, National Health, Programmes (Briefly Objectives and scope) Population of India and Family welfare programme in India
2. Introduction to Nursing
3. Nursing principles. Inter-Personnel relationships. Bandaging: Basic turns; Bandaging extremities; Triangular Bandages and their application. Nursing Position, Bed making, prone, lateral, dorsal, dorsal recumbent, Fowler's positions, comfort measures, Aids and rest and sleep. Lifting and Transporting Patients: Lifting patients up in the bed. Transferring from bed to wheel chair. Transferring from bed to stretcher.
4. Bed Side Management: Giving and taking Bed pan, Urinal : Observation of stools, urine. Observation of sputum, Understand use and care of catheters, enema giving.
5. Methods of Giving Nourishment: Feeding, Tube feeding, drips, transfusion
6. Care of Rubber Goods
7. Recording of body temperature, respiration and pulse, Simple aseptic technique, sterilization and disinfection. Surgical Dressing: Observation of dressing procedures
8. First Aid: Syllabus as for Certificate Course of Red Cross Society of St. John's Ambulance Brigade.

Reference Books:

1. Preventive and Social Medicine by J.Park
2. Text Book of P & SM by Park and Park
3. Counseling & Communicate skills for medical and health, Bayne- Orient Longman Pvt. Ltd.

3. BASIC SCIENCE WITH SKILL DEVELOPMENT TRAINING AND HOSPITAL PROCEDURE AND RECORDS

Teaching Hours: 40

1. Basic science with skill development training

- Medical ethics & the relevant medico legal aspects
- Responsibilities & duties
- Ethical behaviour & conduct
- Medico-legal aspects and its relation to consumer protection act
- Biomedical waste & Its management
- Cardiopulmonary resuscitation- basic cardiac life support & advanced cardiac life support
- Critical care nephrology - management of renal failure in ICU
- Basic principles of blood transfusion & fluid therapy
- Sterilization - material & methods
- Biochemistry, Microbiology, Pathology & other related instrumentation: Basic principles of commonly used instruments, care & maintenance

2. Infection control

- The cycle of infection
- Infectious organisms
- The reservoir of infection
- The susceptible host Transmission of disease Practical asepsis
- Handling linen
- Disposal of contaminated waste
- Environmental asepsis
- Isolation technique
- The isolation patient in radiology dept.
- Precaution for the comprised patient Surgical asepsis

3. Medication and their administration (nursing classes)

- The role of the radiographer Medication information
- The topical route
- The oral route
- The parenteral route Preparation of injection
- The intravenous route Charting

4. Dealing with acute situations (emergency medicine classes)

- Accident victims: Head injury/ Fractures/ Burns
- Life threatening emergencies: Respiratory arrests, Heart attacks and cardiac arrests, Shocks
- Other emergencies - Epitaxis, Postural hypotension and vertigo
Seizures, Diabetic coma and insulin reaction Asthma

5. CARDIOPULPONARY RESUSCITATION (C.P.R)

- Basics of CPR - How to give CPR? Precautions during CPR
- Basic cardiac life support & advanced cardiac life support

6. HOSPITAL PROCEDURE AND RECORDS

General idea about the role, importance and procedures of the following within the hospital set up -

- Medical records
- Medical photography
- Computer networking system
- Laboratory services
- Sample collection and transport
- Biomedical waste disposal

SECOND YEAR COURSE CONTENTS

SUBJECT: PHARMACOLOGY AND FORENSIC MEDICINE

PHARMACOLOGY

Objectives:

To understand drugs and their actions on human body systems, side effects, contra indications, allergic reactions which will enable him to perform qualitative analysis of medical records, accurate coding and medical billing if required

Topics:

- General and Local anaesthetics
- Hypnotics and Sedatives
- Narcotic analgesics, narcotic antagonists,
- Non-narcotic analgesics, antipyretics,
- Psycho-pharmacological agents,
- Drugs acting on autonomic nervous system
- Antihistamines,
- Blocking agents
- Respiratory pharmacology,
- cardiovascular pharmacology
- Coagulants and anticoagulants,
- Diuretics, hormones
- Chemotherapy
- Drug addiction

Reference textbooks:

1. Essentials of Medical Pharmacology by K.D. Tripathi. Edition 6th or 7th / Latest edition
2. Pharmacology for Medical Undergraduates, Edition 3rd or 4th Edition / latest edition

FORENSIC MEDICINE

Objectives:

To know about the basics of Forensic Science, Types of medico- legal cases, external causes of injuries, adverse effect of drugs and chemicals, medical laws and ethics, medico-legal autopsy, determination of causes underlying death and code them, etc.

Topics:

- Asphyxia deaths
- Hanging
- Rape, Sodomy
- Gun shot injury, injury by bullets, sharp objects
- Traffic Accidents
- Drowning
- Medico-legal aspects of wounds, Wound certificate
- Toxicology, Food poisoning
- Medico-legal autopsy.
- Medical Ethics, Hippocratic Oath, and Code of Ethics for the Medical Record Professionals

There shall be no practical university exam for Pharmacology and Forensic Medicine subject.

Recommended text books (latest editions):

1. The essentials of Forensic Medicine and Toxicology By KSN Reddy and OP Murty 35 th Edition
2. FORENSIC MEDICINE & TOXICOLOGY FOR MEDICAL STUDENTS By Gautam Biswas 6 th Edition
3. Principles of Forensic Medicine & Toxicology By Dr Rajesh Bardale 3 rd Edition
4. ICD 11 by WHO

SUBJECT: MEDICAL TERMINOLOGY 2

1. Terms related to investigations and operation, treatment of conditions, disorders of -

- Skin and Breast (integumentary system)
- Musculoskeletal .
- Neurological and psychiatric disorder.
- Cardio- vascular
- Blood and blood forming organs
- Respiratory
- Digestive
- Uro-genital
- Gynecological
- Maternal, Antenatal and Neonatal conditions.
- Endocrine and Metabolic.
- Sense organs - Vision & Hearing
- Systemic: Infections, diseases , Immunological diseases, diseases of the connective tissue.

2. Supplementary terms : Selected terms relating:

- Oncology
- Anesthesiology
- Physical Medicine and Rehabilitation
- Nuclear medicine.
- Plastic surgery of burns and maxillofacial surgery
- Radio- Diagnosis
- Radiotherapy
- Geriatrics and Psycho geriatrics.

3. Explain the importance of various Health Records related terminologies and usages, covering the full range of general medical, surgical, pharmaceutical, hospital terms, medical abstracts, and abbreviations

4. Discuss in brief the various terminologies used in Health Records

Department such as:

- Asymmetric Digital Subscriber Line
- Ambulatory Care
- Anatomical Therapeutic Chemical Classification System
- Continuity of Care Document (CCD)
- Chief Complaint (CC)
- Reason for Consultation (ROC)
- Reason for visit (ROV)
- Clinical Data Respository (CDR)
- Clinical Decision Support System (CDSS)
- Computer Based Patient Record (CPR)
- Computerized Physician Order Entry (CPOE)
- Current Procedural Terminology (CPT)
- Data, Database Management System
- Digital Imaging and Communications in Medicine (DICOM)
- Developmental origins of Health and Diseases
- Electronic Medical Records
- Family History
- Health Care Provider
- International Classification of Diseases
- Management Information Systems
- Medical Code Sets
- Medical Management Information System
- Health Information Managements
- Monthly Index of Medical Specialties
- NANDA-North American Nursing Diagnosis Association
- Non Participating Physician
- Operating Room
- Operating Theatre
- Over the Counter Drugs
- Picture Archive Communication System (PACS)
- Review of Systems (ROV)

- Systemized Nomenclature of Medical Clinical Terms
- Third Party Administration
- Vital Statistics

Recommended text books (latest editions)

1. "The Language of Medicine" by Davi-Ellen Chabner
2. "Medical Terminology: A Short Course" by Davi-Ellen Chabner
3. "Medical Terminology for Health Professions" by Ann Ehrlich & Carol L. Schroeder
4. "A Short Textbook of Medical Terminology" by Dr. R. Dharmalingam

SUBJECT: INFORMATION TECHNOLOGY

Medical informatics, may defined as the art and science of processing medical information.

This course provides an overview of healthcare information systems with a concentration on computerized health information management (HIM) functions. Students will be introduced to common software applications utilized to perform HIM processes. Emerging technology issues in healthcare will be explored.

Basic ICD-10, ICD-9CM Coding - This course is designed to introduce the student to medical nomenclature and classification systems. Emphasis will be placed on ICD-9-CM structure, conventions, and guidelines for coding in hospitals and physicians' offices.

Objectives:

On completion of this program, trainee will have knowledge of accessing and processing biomedical and clinical information, basic principles of patient and hospital data base management (expertise in computing, communications, and content)

1. The Internet

- Define the Internet, How the Internet works
- Internet capabilities and limitations
- How to connect to the Internet via modem ISDN, etc.
- Navigate the World Wide Web
- Identify services and tools offered on the Internet
- Use services and tools offered on the Internet
- Explain book marks
- Safety

2. Email

- Define electronic mail Compose electronic messages
- Send electronic messages using appropriate format Transmit document using electronic mail system

3. Basic knowledge of networks

- Explain communications standards
- Describe network structures
- Explain network types and protocols
- Explain network connectivity
- Explain the function of servers in a graphic network
- Describe various network operating systems
- Explain the difference between network software and individual use software
- Use a network to access, file, and store files

4. Information processing activities

- Key, process, print and store text and data information using integrated software
- Troubleshoot basic computer malfunctions
- Load media devices
- Set, Operate and maintain Print devices/ scanner devices
- Monitor peripheral equipment operations

5. Operating Systems

- Identify operating systems and their attributes (i.e., DOS, Unix, Macintosh, Windows)
- Identify the advantages and disadvantages of the computer to individuals and business.
- Identify the roles and equipment used for input, processing, and output in an information system.
- Identify correct safety procedures

6. Demonstrate basic computer literacy

- Create directories/folders and sub- directories
- Manipulate files (copy, rename, delete)
- Computer File Manipulation
- Create data directory and subdirectories/folders and place files in subdirectories/folder.
- Format disks, Make backup disks/files of a data directory or Subdirectory/folder and delete data from backup disks/files

a) Personal computer systems

- Monitor system status and performance
- Run diagnostics
- Report computer system malfunction(s)
- Report software malfunction(s)
- Maintain security
- Perform backup procedure(s)
- Perform preventive maintenance
- Follow log-off and power-down procedure(s)
- Follow equipment maintenance procedures
- Follow quality control procedures

b) Maintain computer security requirements

- Follow security rules, regulations, and codes
- Implement security procedures

c) Software applications

- Define software types and functions
- Describe need for application software
- Describe different types of software applications
- Explain advantages and disadvantages of integrated and dedicated software
- Explain software copyright laws
- Explain data compression techniques
- Explain use of passwords/security Utilize desktop productivity tools

e) Operation of peripheral devices

- Identify peripherals and operating requirements of each
- Explain purpose of input devices (e.g., keyboard, mouse, scanners, pens, bar code readers, credit/debit/smart cards, voice, video, gloves)
- Describe operation of output devices (e.g. voice, speaker output devices, printers, plotters, printer sharing units, SCSI interface, video display)
- Describe operation of multimedia (video, audio sound)

g) Information Processing Cycle

- Describe difference between data files and program files

7. Database

- Define and explain database
- Explain terms used in database systems
- Describe common functions of database systems
- Use database to create, input, edit, and display fields and records
- Analyze structure of database file
- Perform calculations with a data base file
- Alter structure of database file
- Sort records based on multiple fields
- Identify advanced database Technology
- Use appropriate reference materials
- Utilize relational database
- Enter elements into database
- Proofread database
- Design report formats
- Transfer data to and from remote database
- Print reports using data from multiple databases Use database files with other application software Verify accuracy of output (e.g., edit reports)

8. Basic Data Processing

- Input, update and store data into records in an existing database - Open stored spreadsheet, input and update data into spreadsheet, store revised spreadsheet and print revised spreadsheet
- Database and Spreadsheet Operations –
 - o Plan and create database, input and update data into records, store database and print quick reports from database.
 - o Create spreadsheet, input data into spreadsheet, update data in spreadsheet and store spreadsheet.

9. Introduction to Spread sheet packages

10. Introduction to Word Processing packages

- Document processing Key, print and store merge documents (form letters, mailing labels and envelopes)
- Scan documents onto a formatted storage medium and import into a word processing program

- Locate and retrieve information from a variety of electronic sources
- Prepare, place and send information on the internet
- Print and store transparency masters for presentation from legible longhand or edited rough draft using presentation software.

11. Basic Computer Concepts and Applications

- Explain how data is stored in main computer memory
- Explain how computer system executes program instruction
- Explain computer storage capacity
- Explain how data is represented
- Describe data storage devices Identify types of memory
- Describe back-up and archival disciplines
- Merge a database application and a spreadsheet application with a word processing document.
- Use available software to input personal, business, and organizational names in proper indexing order, and produce an alphabetical list.
- Integrate database, spreadsheet and graphic files Convert documents from one system to another
- Demonstrate use of computer Thesaurus
- Use multimedia techniques/resources
- Perform merge functions

10. Hospital Information System (HIS) with Electronic Medical Records

- Analysing information requirements
- Reporting systems
- Early warning systems
- Computerized Systems, intranet

Recommended text books (latest editions)

1. Biomedical Informatics: Computer Applications in Health Care and Biomedicine – Edward H. Shortliffe & James J. Cimino
2. Health Information Management Technology: An Applied Approach – Nanette B. Sayles
3. Essentials of Health Information Management: Principles and Practices – Mary Jo Bowie & Michelle Green

4. ICD-10-CM and ICD-10-PCS Coding Handbook with Answers – Nelly Leon-Chisen
5. Step-by-Step Medical Coding – Carol J. Buck
6. Official Coding Guidelines (Published by CMS or WHO)
7. Computer Fundamentals – P.K. Sinha & Priti Sinha
8. Microsoft Office 365: In Practice" Series** – Randy Nordell
9. Database Systems: A Practical Approach to Design, Implementation, and Management – Thomas Connolly & Carolyn Begg
10. Healthcare Information Security and Privacy – Sean P. Murphy
11. Principles of Information Security – Michael E. Whitman & Herbert J. Mattord
12. Electronic Health Records: Understanding and Using Computerized Medical Records – Richard Garte
13. Introduction to Information Systems – R. Kelly Rainer & Brad Prince

SUBJECT: MEDICAL RECORDS – OPERATION AND MANAGEMENT

Filing Methods and storage

- The Medical Records Numbering System.
- The Medical Records Filing System.
- Storage- Microfilming and Disk Storage, arrangement of files/records
- Registers & Indexes
- Record movement control & Tracking system
- Know how to store and retrieve the medical records including old records
- Describe about the main factors that govern the organization of work.
- Determine various personnel, physical infrastructure and facilities required in a Medical Records Department
- Take special care to reserve the safety of records and protect them from insects, termites and prevent them from being exposed to heat, fire, dampness and dust
- Ensure that there is a proper locking system to ensure restricted entry.

Retention, Preservation and Destruction of Medical records

- Store and retain the medical records as per the organization protocol and review them for completion
- Retain all records that reflect the clinical care provided to a patient, including provider notes, nurses' notes, diagnostic testing and medication lists
- Enter the laboratory results in the report carefully
- Follow the process and take written consent of authorized person before releasing any patient related information
- Regularly update the reports
- Know the storage duration of different files i.e. For normal cases, death case and medico-legal case, and for cases related to transplant
- Take approval prior to destroying any old medical record

Medical Records Receiving & Review

- Collect the discharge notes or previous day discharge file from the concerned authority
- Assemble patients' health information by cross-verifying from concerned authority

- Make sure that patients' initial medical charts are complete
- Check that all related forms are completed, properly identified and authenticated, and that all necessary information is present
- Communicate with physicians and other health care professionals to clarify diagnoses or to obtain additional information or complete the forms and files when the information is missing
- Review the medical record inpatient admission sheet, discharge summary, history and physical, physician progress notes, consultation notes, operation and procedure notes, etc.
- Use appropriate tools/software to perform documentation & review
- Correlate laboratory test results, procedures, and treatments with diagnosis as and when required and seek the help of nurse or concerned doctor
- Ensure that all data is present if not then ask the concerned person
- Check that all laboratory results are same as those in laboratory reports and no information is missing
- Compare the final diagnosis of the inpatient admission sheet to the one recorded on the discharge summary, history and physical and progress report, plus the operative and pathology reports to ascertain that there are no discrepancies in information.

Quality Management

- External and Internal Pressures for quality
- Quality Assessment and Quality Improvement
- Quality Assurance & Medical Care Evaluation
- Utilization review processing & outcomes of Utilization management
- Risk management program
- International Standards Organization [ISO], Quality Council of India & National Accreditation Board of Hospitals [NABH]

Maintaining the confidentiality of the medical records

- Ensure that Medical Records can be taken out of Medical Records Department only by authorised persons
- Take written consent from the persons requesting the file/s other than patient appointment
- Ensure maximum security against loss, tampering and from use by any unauthorized individual by ensuring that:

- No un-authorised persons should be allowed to enter medical records department or to have access to patient medical records out of the department
- Patients or their relatives will not be allowed to carry the patient files or to keep them in their possessions
- Comprehend that disclosure of information contained in the medical records are a breach of confidentiality
- Comprehend that disclosure of any information to unauthorized persons would subject to disciplinary action and possible termination
- Ensure that medical Records in the department are kept secured and in strict confidentiality

PRACTICAL:

RECORD MAINTENANCE AND PRACTICAL WORK

1. O.P. Registration
2. O.P. Registration for Repeaters (old patients)
3. I.P. Registration.
 - a) Collection of data for admission
 - b) Issue of Patient Index Card (Identity)
 - c) Preparation of Master Index Card.
 - d) Preparation of IP folders.
4. Daily In-Patients Census Collection from the Wards
5. Entry in the Census Register and its maintenance.
6. Maintenance of Accession Register.
7. Assembling the Records.
8. Making Deficiency Check List.
9. Complete and Incomplete Records Control.
10. Discharge Analysis.
11. Coding the Diseases.
12. Indexing in the Cards.
13. Generation of Hospitals Biostatistics.
 - a) OP Statistics.
 - b) IP Statistics.
 - c) No. of Beds Sanctioned
 - d) No. of Beds Commissioned.

- e) Bed Occupancy in %
 - 1) Service wise.
 - 2) Unit wise.
 - 3) Ward wise.
- 14. The registration rules for births and deaths as per the act 1969 and also Mysore registration of Births and Deaths act 1970.
- 15. Maintenance of Birth, Still Birth and Death Registers.
- 16. Sending of Birth, Still Birth, & Death Reports to the Municipality, Corporation & Cause of Death to Bangalore.
- 17. Dealing with the Accident Register, Issue of Wound Certificate, Brought Death Reg.& its correspondence.
- 18. Dealing with the Certificates of Rest, Fitness, O.P. Attendance, In-Patient, Admission and Discharge, Admission & Discharged on AMA, Disability, Age Certificates and etc.,
- 19. Maintenance of Stock of Registers and Forms.
- 20. Equipments required to the MRD for the maintenance of Medical Records.

Recommended text books (latest editions)

- 1. Medical Records: Organization and Management, Author: G.D. Mogli, Publisher: Jaypee Brothers
- 2. Principles of Medical Records Science, Author: M.M. Ahmed, Publisher: Paras Medical Publisher
- 3. Manual for Medical Record Officers, Author: WHO Regional Office for South-East Asia, Available as PDF: WHO Library SEARO
- 4. Health Information Management Technology: An Applied Approach (Supplementary / Advanced), Author: Nanette B. Sayles, Publisher: AHIMA

SECOND YEAR SUBSIDIARY SUBJECTS

Sl No	Subject	Teaching hours
1	Indian constitution	20
2	Sociology	20
3	Environment science and health	20
4	Clinical psychology	20

1. INDIAN CONSTITUTION

Teaching Hours: 20

1. Meaning of the term 'Constitution' Making of the Indian Constitution 1946-1950
2. The democratic institutions created by the constitution Bicameral system of Legislature at the Centre and in the States.
3. Fundamental Rights and Duties their content and significance
4. Directive Principles of States Policies the need to balance Fundamental Rights with Directive Principles.
5. Special Rights created in the Constitution for: Dalits, Backwards, Women and Children and the Religious and Linguistic Minorities.
6. Doctrine of Separation of Powers legislative, Executive and Judicial and their functioning in India
7. The Election Commission and State Public Service commissions
8. Method of amending the Constitution
9. Enforcing rights through Writs:
10. Constitution and Sustainable Development in India

Reference Books:

1. J.C. Johari: The Constitution of India- A Politico-Legal Study-Sterling Publication, Pvt. Ltd. New Delhi.
2. J.N . Pandey: Constitution Law of India, Allahbad, Central Law Agency, 1998.
3. Granville Austin: The Indian Constitution – Corner Stone of a Nation-Oxford, New Delhi, 2000

2. SOCIOLOGY

Teaching Hours: 20

Course Description

This course will introduce student to the basic sociology concepts, principles and social process, social institutions [in relation to the individual, family and community and the various social factors affecting the family in rural and urban communities in India will be studied.

1. Introduction:
 - a. Meaning – Definition and scope of sociology. Its relation to Anthropology, Psychology, Social Psychology
 - b. Methods of Sociological investigations – Case study, social survey, questionnaire, interview and opinion poll methods.
 - c. Importance of its study with special reference to health care professionals
 - i. Social Factors in Health and Disease:
 - d. Meaning of social factors, Role of social factors in health and disease
2. Socialization:
 - a. Meaning and nature of socialization, Primary, Secondary and Anticipatory socialization, Agencies of socialization
3. Social Groups:
 - a. Concepts of social groups influence of formal and informal groups on health and sickness. The role of peoples involved in the primary and secondary health care groups in the hospital and rehabilitation setup.
4. Family:
 - a. The family, meaning and definitions, Functions of types of family, Changing family patterns. Influence of family on individual's health, family and nutrition, the effects of sickness in the family and psychosomatic disease and their importance to physiotherapy
5. Community:
 - a. Rural community: Meaning and features – Health hazards to rural communities, health hazards to tribal community.
 - b. Urban community: Meaning and features – Health hazards of urbanities
6. Culture and Health: Concept of Health Concept of culture and Health, Culture and Health Disorders

7. Social Change: Meaning of social changes, Factors of social changes, Human adaptation and social change, Social change and stress, Social change and deviance, Social change and health programme. The role of social planning in the improvement of health and rehabilitation
8. Social Problems of disabled: Consequences of the following social problems in relation to sickness and disability remedies to prevent these problems, Population explosion Poverty and unemployment Beggary, Juvenile delinquency Prostitution Alcoholism, Problems of women in employment
9. Social Security: Social Security and social legislation in relation to the disabled
10. Social Work: Meaning of Social Work, The role of a Medical Social Worker

Reference Books:

1. Sachdeva & Vidyabhushan, Introduction to the study of sociology
2. Indrani T.K., Text book of sociology for graduates nurses and Physiotherapy students, JP Brothers, New Delhi 10

3. ENVIRONMENT SCIENCE AND HEALTH

Teaching hours: 20

1. Introduction to Environment and Health
2. Sources, health hazards and control of environmental pollution
3. Water
4. The concept of safe and wholesome water.
5. The requirements of sanitary sources of water.
6. Understanding the methods of purification of water on small scale and large scale. Various biological standards, including WHO guidelines for third world countries. Concept and methods for assessing quality of water.
7. Domestic refuse, sullage, human excreta and sewage their effects on environment and health, methods and issues related to their disposal.
8. Awareness of standards of housing and the effect of poor housing on health.
9. Role of arthropods in the causation of diseases, mode of transmission of arthropods borne diseases, methods of control

Recommended Books:

1. Text Book of Environmental Studies for under graduate courses By Erach Bharucha Reprinted in 2006, Orient Longman Private Limited /Universities Press India Pvt. Ltd.

4. CLINICAL PSYCHOLOGY

Total teaching hours: 20

1. Introduction to psychology
2. Intelligence, Learning, Memory, Personality, Motivation
3. Body integrity- one's body image
4. Patient in his Milan
5. Self-concept of the therapist, Therapist patient relationship-some guidelines
6. Illness and its impact on the patients
7. Maladies of the age and their impact on the patient's own and others concept of his body image
8. Adapting changes in vision
9. Why Medical Psychology needs / demands commitment?

THIRD YEAR COURSE CONTENTS

SUBJECT: BIOSTATISTICS & HOSPITAL STATISTICS

Objectives:

On completion of this Course, the students will be able to:

- Define i) General Statistics, ii) Biostatistics iii) Hospital Statistics and, iv) Health Statistics
- Define various important Hospital Statistical Terms
- Understand the basics of theoretical aspects of General Statistics & Biostatistics;
- Learn the methods for the collection, presentation, analysis and interpretation of numerical data
- Compute data on Admissions & Discharges, monthly analysis of Hospital Performance Statistics and the Daily Inpatient Census;
- Compute percentages and rates commonly used in preparation of hospital statistical information;
- Describe the role of the Medical Record Practitioner in ensuring accuracy and reliability of statistical Data compiled and presented by the Medical Record Department

BIOSTATISTICS

- Definition of Statistics and Biostatistics
- Frequency Distribution: Measures of Central Tendency – Arithmetic Mean, Median and Mode for un-grouped and grouped data
- Presentation of data: Bar diagram, Pie Diagram, Histogram, Frequency polygon, Frequency curve, and Line diagram.
- Measures of Variation: Range, Inter Quartiles, Mean Deviation, Standard Deviation Co-efficient of Variation
- Probability: Definitions of Classical Probability (Priori) and Frequency, Probability (Posteriori), Addition and Multiplicative Theorems of Probability
- Probability Distribution: Binomial distribution, Poisson distribution and Normal distribution
- Sampling- Definition: Population and simple Sampling, Simple Random Sampling

- Stratified Random Sampling, Systematic Random Sampling and Cluster Sampling
- Correlation and Regression: Scatter Diagram, Linear Correlation and Linear Regression Equation
- Test of Significance – Procedure Test of Significance for large samples and for small samples Chi-square Test – Testing for association Misuse of Chi-square Test

HOSPITAL STATISTICS

- Definition of hospital statistics, and important Hospital Terms
- Sources of Hospital Statistics – Registers, Medical Records and Daily Ward Census
- Analysis of Hospital Services and Discharges Important Rates, Ratio and Percentages with Formula
- Uses and Limitations of Hospital Statistics.
- Hospital Statistics Reporting.

VITAL STATISTICS

- Definition and Uses of Vital statistics
- Methods of Collection of Vital Statistics
- Formulae for processing Vital Statistics: Crude Rates, Specific Rate
- Mortality Rates – Crude Death Rate, Specific Death Rates with respect to age, sex etc.
- Cause-of-death Rates; Infant Mortality Rates; Neonatal Mortality Rates
- Post-Neonatal Mortality Rate or Late Infant Mortality Rate
- Describe the various database management measures.
- Acquire knowledge about the incidence of diseases.
- Acquire knowledge about epidemiology
- Ensure to keep the information in the medical records updated
- Maintain the record of inpatient and OPD regularly
- Maintain the disease record
- Ensure to keep track of surgeries, transplant, etc.
- Record the statistics weekly, monthly, yearly
- Maintain the statistics depending on the information gathered for each case

HEALTH STATISTICS

- Introduction, Uses and Sources
- Criteria of ill health, Classification of healthy and sick
- Collection of hospital statistical data: Birth, Death, fetal death, live birth and immature infants, reporting, determination of basic data, daily analysis of hospital service, discharge analysis procedure, cumulative method, monthly and annual reports, computation of percentage (ratios) inpatient census and bed occupancy rate (computerized and manual), presentation of hospital data.
- Measurement of morbidity

Health Care Statistics, Quality control of Data Collection & Presentation

- Incomplete Record Control
- Inpatient census and rates computed from it.
- Ambulatory care statistics
- Long term Care Statistics
- Processing and reporting of Reproductive Health Statistics
- Reporting of Notifiable Diseases to Public Health Authorities

PRACTICAL:

Acquire knowledge regarding how to prepare the statistics for:

- Number of the OPD cases
- Number of the surgeries performed
- Number of transplant
- Number of the MTP cases
- Which doctor performed which surgery
- Number of Medico-legal cases
- Number of births
- Number of new borne deaths
- Number of deaths
- Number of days a patient stay in hospital
- Patients attended by same nurse

Recommended text books (latest editions)

1. Textbook of Biostatistics, Author: B. K. Mahajan, Publisher: Jaypee Brothers
2. Principles of Biostatistics, Authors: Marcello Pagano & Kimberlee Gauvreau
3. Hospital Statistics, Author: G.D. Mogli, Publisher: Jaypee Brothers
4. A Textbook of Biostatistics, Author: Dr. A. Indrayan, Publisher: Prentice Hall India

SUBJECT: MEDICAL ETHICS AND MEDICOLEGAL ASPECTS OF MEDICAL RECORDS

- **Medical Record in a Court of Law**
 - Ownership of the Medical Record
 - Privileged Communication and confidentiality of Medical Records
 - Release of Information: To the Patient, To Authorized Persons/Agencies Legal Implications of release of Information to unauthorized, Persons/Agencies.
 - Corrections in identification data medical documentations
 - Legal requirements in Retention of Medical Records
- **Structure of Indian Judicial System**
 - Subordinate courts - Various Tribunals - High court and
 - Supreme court – their working relationships and effect of orders.
- **Medico – legal cases**
 - IPC – Medical Termination of Pregnancy Act 1971
 - Transplantation of Human Organs Act.
- **Law of Contract**
 - Patient as a consumer - Law of Tort - Composition of D.C.D.R.F, S.C.D.R.C and N.C.D.R.C - powers, terms and jurisdiction, enforcement of orders.
- **Medical Negligence**
 - Negligence - Medical Negligence - Contributory Negligence –
 - Gross Negligence - Criminal Negligence - Onus of Proof - Prevention of such Negligence.
- **Liability and Compensation**
 - Vicarious Liability - Liability of Medical Professionals and Para-medical staff
 - Quantum of Compensation
 - Applicability of provisions of Consumer Protection Act for various institutions.

- **Consumer Protection Act 1986**
 - Definition.
 - The Central Consumer Protection Council.
 - Objects of the Central Council.
 - The State Consumer Protection Councils.
 - Objects of the State Council.
 - Composition of the District forum.
 - Jurisdiction of the District Forum.
- **The right to information act, 2005**
 - Definition
 - Right to information.
 - Designation of Public Information Officers.
 - Request for obtaining information.
 - Disposal of request.
 - Exemption from disclosure of information.
 - Constitution of Central Information Commission.
 - Constitution of State Information Commission.
- **Consent**
 - Consent - Different types and their validity, invalidity blanket, and improper consents.
 - Informed Consent in clinical trials
 - Consent as a process - full proof methods for proper Consent
 - Various defects in obtaining Consent.
- **Patient's Rights & Responsibilities in Hospital**
 - Describe necessary arrangements to ensure patient safety and comfort
 - Understand sensitivities involved in patient's right
 - Learn MRHIT role in maintaining patient's rights
 - Medical Jurisprudence: Medico-legal Ethics, Law, Aspects & Registration

- **Identify the various events which come under the medico- legal cases.**
 - Discuss the formalities which are important to handle a medico- legal case.
 - Describe the events where the details of medico- legal cases can be revealed.
 - Acquire skills & knowledge regarding the storage of medico- legal records following the laws related to medico legal record keeping
 - Comprehend that how to record different type of medico- legal cases separately
 - Comprehend that how long to keep a particular medico legal record as per the organizational protocols and policies
 - Comprehend that how to maintain the record of medico legal cases following organization's protocols
- **Important case studies**
 - District Forums, State Consumer Disputes Redressal Commission
 - National Consumer Disputes Redressal Commission Case study as how cases were decided.
- **Necessary rules and regulations on the Registration of Birth and Death Reports**

Registration of Births and Deaths act 1969 and also according to the Mysore Registration on Births and Deaths & Rules 1970.

- Collection of Birth & Death Case Records.
- Follow up the procedure in MRD
- Writing the Birth & Death register with the help of Case Record.
- Birth and Death Reports to the Municipality/Corporation.
- Sending the Cause of Death Reports to the Central Station.
- Delay in sending the Birth & Death reports rules & regulations.
- District Statistical Department concerned to MRD.

- **Formalities in of issue of „Corrigendum“ in case of General Cases Or Medico Legal Cases: Supporters:-**
 - Ration Card,
 - Electoral List from Revenue Dept. and An affidavit from the Court.
- **Statutory Aspects & Registration**
 - Record and maintain data for birth and death rates
 - Record and maintain data for communicable diseases/endemic diseases
 - Provide medical record data to government bodies for preparing census as per the regulations and policies
 - Ensure that the medical record data collected for birth and death is accurate and all demographic and basic details are complete
 - Provide the birth and death data to municipal corporation /Government bodies for maintaining the census and providing the registries to the concerned person relatives
 - Provide data related to communicable disease and endemic disease. e.g. Dengue, Malaria, Hepatitis, Bird flu, Swine flu, HIV etc. with demographic details to Government bodies for maintaining the report and statistics
 - Sensitization on current best practices in Medical record & Health Information Management System (HIMS)
- **Records required for Medico Legal Cases**

1. Accident Registers	5. Age Examination
2. Wound Certificates	6. Examination of the Injured
3. Sexual Offences	7. Examination of the Custody
4. Impotency Cases	8. Production to the Court

Recommended textbooks:

1. Medical Ethics, Law and Professionalism in Healthcare, Author: V. V. Pillay, Publisher: Paras Medical Publisher
2. Textbook of Medical Law and Ethics, Author: R.K. Sharma, Publisher: Jaypee Brothers
3. Medical Ethics and Medico Legal Aspects for Paramedical Students, Author: Dr. Anil K. Sharma & Dr. Richa Sharm, Publisher: Peepee Publishers
4. A Textbook of Medical Jurisprudence and Toxicology, Author: Parikh's or Modi's
5. Medical Council of India (now NMC) – Code of Ethics Regulations
6. National Health Systems Resource Centre – MLC and Patient Rights
7. WHO Guidelines on Medical Records and Ethics

SUBJECT: HEALTH INFORMATION AND QUALITY MANAGEMENT

Contents:

1. Health information system

- Introduction
- Distinction between data and information.
- Components of health information system.
- Uses of health information
- Sources of health information - census, registration of vital events, sample registration system, notification of diseases, hospital records, disease registers, record linkage, epidemiological surveillance, other health records, environmental health data, health man power statistics, population surveys, other routine statistics related to health, non- quantifiable information.

2. Development of Health Care Information

- Health Care Information standards, Paper based Health Records, Computer based patient records, Ethical issues in Health Information Management

3. Fundamental of Health Informatics, Clinical coding and Terminology

- Fundamentals of Health Informatics & Data Security
- Introduction to health informatics: Definition, Domain, Sub-domain, Tools, Focus,
- Application, subject area, Aspects, & Functions
- Major theories such as System Theory, Information Theory, Learning Theory and Change Theory
- Health Informatics Literacy: Information, computer and professional literacy.
- Health Information System: Definition, Purposes, Structure (operation, telecommunication, system development / project management, application support, support, network, system administration), Roles and responsibilities (CIO, Director, Manager, Supervisor, Operator, Telecommunication technician, Telecommunication Operator, System Analyst, Programmer, Consultant), Technology infrastructure (Computers, Networks, Peripherals)
- Introduction to Health Informatics Applications: Hospital Information System, Clinical Decision Support System, eHealth, mHealth, Telemedicine.

4. Health Information Management & Nomenclature:

- Informatics and Health Information Management - Introduction, Health care delivery systems, Informatics in Health Care, Health Information Management profession, Data and information management, Information systems Development
- Aggregate Health care data - Secondary records and Health care database,
- Clinical classification and Terminologies,
- Reimbursement methodologies
- Nomenclature: Introduction, Statistical classification, choosing a classification system, other classification, Encoding system.

5. Organizational Development and Planning in Health Information Management:

- Leadership, management, organizational structures theory, accreditation requirements, licensing regulations, and certification requirements relevant to department/ organization
- Financial management and budgeting
- Strategy development
- Policy development, agendas, lead meetings, maintain documentation, and follow up
- Effective communication and negotiation skills, stakeholder analysis

6. Electronic Health Records

EHR – definitions, components, merits & demerits, Preliminary steps in implementation of EHR , Issues and challenges in implementation of HER, Planning for the introduction of HER , Factors to be considered when developing EHR & implementation plan , Implementation plan, Laboratory Information system, Pharmacy Information system, Picture archiving and communication system, order sets, provider order, point of care charts, clinical decision support system

QUALITY MANAGEMENT IN HEALTH CARE

1. Introduction & Evolution of Quality Systems

Definition – Concepts & Perspectives – Types of Quality – Dimensions of Quality – Evolution of Quality – Quality characteristics – Importance and Benefits of Quality – Variable and Attributes – Conforming and Non - Conforming unit – Defect – Standards or Specification – Quality of design – Quality of conformance – Quality of performance – Quality Control – Total Quality Control.

2. TQM & SIX – SIGMA

TQM Definition – Principles of TQM – Implementing TQM Concepts in Hospital Departments – Six Sigma – Features – Benefits and Goals of Six Sigma – Scope of Six Sigma in Hospital – Pareto Analysis - Root Cause Analysis – Quality Improvement Teams.

3. Process Approach to Quality Management in Hospitals:-

Process – Process Management – Triple Role of Process Team – PDCA Cycle – Preparation of process flow diagrams for distinct processes in a hospital – Quality Aspects of processes in Hospitals Diagnostic services – Nursing services – Housekeeping – Blood Bank – Pharmacy – OPD – Surgery – ICU – Emergency and Trauma Care – Canteen – Hospital Stores.

4. Quality Assurance Methods:-

Definition – Principles of Quality Assurance – Quality Policy – Quality Manual – Hospital Sop's 5'S Techniques – Specification limits – Process Control limits – Process capability analysis tools
Product Testing – Prototype Testing – Failure Testing – Process Mapping – Process Mapping Tools
Quality Audit – Business Process Reengineering – Essence of Re-engineering.

5. Quality Certification systems

Introduction – International Standards ISO 9000-9004 – Elements of ISO 9000 – Areas of ISO 9000- Family of ISO 14001 – Environment Management Systems – ISO 14000 Family Stages of Environmental Management Standards – Evaluation and Compliance

6. Quality Accreditation in Hospitals:-

Accreditation System – Process – Procedure – Joint Commission International (JCI) – Mission – Benefits – Value – Accreditation in 15 Areas – JCI for Primary care centres – JCI Accredited Hospitals in India – Basic Objectives of National Accreditation Board for Hospitals (NABH) – Standards of NABH – Documentation Procedure – Patient Rights and Education – Benefits of NABH to Hospital – Employees – Patients and TPA's

Recommended text books (latest editions)

1. Health Information Management, Author: G.D. Mogli, Publisher: Jaypee Brothers
2. Health Information Management Technology: An Applied Approach, Author: Nanette B. Sayles, Publisher: AHIMA (American Health Information Management Association)
3. Essentials of Health Information Systems and Technology, Author: Jean A. Balgrosky
4. Textbook on Quality Management in Healthcare, Authors: Sakharkar B.M. Publisher: Jaypee Brothers
5. NABH Standards Manuals (Free/Institution Access) Publisher: Quality Council of India (QCI)

SUBJECT: MEDICAL / SURGICAL CODING, MEDICAL TRANSCRIPTION AND TELEMEDICINE

- 1. International Classification of Diseases (ICD-10) and Surgical Procedures (ICD-9CM), CPT, HCPCS & SNOMED-CT:**
- 2. Medical Coding: International classification of disease (ICD) and International Classification of Functioning, Disability and Health (ICF)**

- Describe the concept of International Classification of Diseases.
- Comprehend the Purposes and uses of the ICD classification
- Underline the basic difference between the two types of classification i.e. ICD and ICF.
- Acquire knowledge of the various ICD and ICF codes available
- Select the up-to-date ICD and ICF coding mechanism and software
- Read & Comprehend the ICD and ICF thoroughly, accurately and quickly
- Acquire knowledge how to refer the manuals and guidelines of using the coding whenever required
- Acquire knowledge of referring, allotting or discarding medical codes
- Determine that how to find the main term in the Alphabetic Index.
- Determine that how to refer to the notes, modifiers, and sub terms under the main term.
- Determine that how to follow any cross-reference instructions.
- Determine that how to read instructions, terms, symbols, etc. which may further qualify the code.
- Determine that how to assign the Code Number thus obtained.
- Provide correct code to a particular disease accurately
- Ascertain the discrepancies in information and confirm from the doctor for clarification of the diagnosis before putting the Code
- Ensure that the discharged inpatient medical records should be coded daily and regularly against the discharge census
- Acquire knowledge and skills to check the records that are not coded

Nomenclatures and Classification Systems:

- Standard Nomenclatures of diseases (SNDO).
- Current Medical Information Terminology.
- Systematized Nomenclature of Pathology (SNOP)
- Systematized Nomenclature of Medicine (SNOMED)
- Common Procedures Coding System (HCPCS)
- Current Procedural Terminology
- International Classification of Functioning, Disability and Health (ICF)
- Case-Mix Classifications
- Diagnosis Related Groups
- ICD – 9 (CM)
- ICD – 10
- ICD- Oncology (ICD - O)

Medical Transcription:

- Basics of Medical Transcription
- Objectives of Medical Transcription
- Rules of Medical Transcription Advantages of Medical Transcription
- Division of medical words into their component parts - Forms, Suffixes, Prefixes and Terminology
- Laboratory tests, Clinical procedures and Abbreviations

Telemedicine:

- Basic health care
- Classification of Telemedicine
- Technology of Telemedicine
- Objectives of Telemedicine
- Rules of Telemedicine
- Telemedicine act
- Merits of Telemedicine
- Future Telemedicine plans
- Research

Recommended text books (latest editions)

1. MEDICAL / SURGICAL CODING, ICD-10 Coding Manual (Indian Edition), Publisher: WHO / Ministry of Health & Family Welfare, India
2. The Complete Medical Transcriptionist, Author: Laura Bryan
3. Medical Transcription Made Easy, Author: K. B. Dhanalakshmi (India-specific)
4. MOSBY's Guide to Medical Transcription, Author: Alice G. Ettinger
5. Telemedicine: Technologies and Applications, Authors: R.S. Khandpur, Publisher: Tata McGraw Hill
6. Handbook of Telemedicine, Publisher: WHO / Indian Ministry of Health (Available as PDF)
7. Introduction to Telemedicine, Authors: A. C. Norris / R. Wootton

THIRD YEAR SUBSIDIARY SUBJECTS

I. RESEARCH METHODOLOGY

Teaching hours:20

1. Introduction: Research Methodology

- Research process
- Steps involved in research process
- Research methods and methodology

2. Variables and scales of measurements

- Definitions and examples of qualitative, quantitative, continuous discrete, dependent and independent variable
- Definitions, properties and examples of nominal, ordinal, interval and ratio scales of measurements.

3. Sampling

- Population, sample, sampling, reasons for sampling, probability and non-probability sampling.
- Methods of probability sampling – simple random, stratified, systematic-procedure
- Merits and demerits.
- Use of random number table.

4. Organization of data

- Frequency table, histogram, frequency polygon, frequency curve, bar diagram, pie chart

5. Measures of location

- Arithmetic mean, median, mode, quartiles and percentiles – definition
- Computation (for raw data), merits, demerits and applications

6. Measures of variation

- Range, inter-quartile range, variance, standard deviation, coefficient of variation- definition
- Computation (for raw data), merits, demerits and applications

INTERNSHIP

The internship of the BSc Medical Records Technology (MRT) is a one-year compulsory program which includes a crucial hands-on learning experience. It helps students apply theoretical knowledge to real-world healthcare settings and develop practical competencies.

INTERNSHIP POSTINGS

1. Outpatient Department - 3 months
2. In-patient Department -2 months (Documentation Analysis and Deficiency Checking)
3. Medical Coding - 3 months
4. Notification for Birth & Death - 1 month
5. Census - 1 month
6. Confidentiality and Release of Information including MLC – 2 months.

Skills to be developed during Internship -

1. Medical Records Management Skills
 - a. Organizing inpatient and outpatient records
 - b. Assembling, filing, and retrieving patient files
 - c. Tracking and maintaining patient record movement
 - d. Creating and updating patient master index (PMI)
 - e. Ensuring completeness and accuracy of documentation
2. Electronic Health Records (EHR) Handling
 - a. Working with Hospital Information Systems (HIS)
 - b. Entering, updating, and retrieving digital medical records
 - c. Scanning and digitizing paper records
 - d. Ensuring compliance with data privacy and security protocols
3. Medical Coding and Classification
 - a. Applying ICD-10 codes for diseases and procedures
 - b. Understanding CPT/HCPSC coding systems
 - c. Assigning codes for insurance and billing purposes
 - d. Verifying coding accuracy for audits and reimbursements

4. Health Insurance & Billing Support
 - a. Preparing discharge summaries and insurance forms
 - b. Verifying documentation for insurance claims
 - c. Assisting with medical audits and claim settlements
5. Legal and Ethical Aspects
 - a. Understanding medico-legal record maintenance
 - b. Ensuring confidentiality of patient information
 - c. Complying with healthcare regulations and institutional policies
6. Documentation and Reporting
 - a. Assisting in preparation of hospital statistics and monthly reports
 - b. Maintaining mortality, morbidity, and notifiable disease registers
 - c. Preparing data for NABH and other accreditation audits
7. Communication & Coordination
 - a. Interacting with doctors, nurses, and hospital staff
 - b. Responding to queries from insurance companies and patients
 - c. Supporting quality improvement and clinical documentation teams
8. Practical Exposure in Various Departments
 - a. Central registration unit
 - b. Admission and discharge section
 - c. Outpatient and inpatient medical records units
 - d. Coding and transcription sections

At the end of internship, graduate should be able to-

1. Understand the role of a medical record and health information technician.
2. Enter data, such as demographic characteristics, history and extent of disease, diagnostic procedures, or treatment into computer.
3. Review records for completeness, accuracy, and compliance with regulations.
4. Retrieve patient medical records for physicians, technicians, or other medical personnel.
5. Protect the security of medical records to ensure that confidentiality is maintained.
6. Process patient admission or discharge documents.
7. Transcribe medical reports.
8. Identify, compile, abstract, and code patient data, using standard classification systems.

9. Resolve or clarify codes or diagnoses with conflicting, missing, or unclear information by consulting with doctors or others or by participating in the coding team's regular meetings.
10. Release information to persons or agencies according to regulations.
11. Prepare statistical reports, narrative reports, or graphic presentations of information for use by hospital staff, researchers, or other users.
12. Compile medical care and census data for statistical reports on diseases treated, surgery performed, or use of hospital beds.
13. Guide hospital staff and public for collecting, maintaining, storing, retrieval and importance of medical records.
14. Consult classification manuals to locate information about disease processes.
15. Demonstrate professional behavior, personal attributes and interpersonal relationships with others.

