JAMIA HAMDARD

DEPARTMENT OF PARAMEDICAL SCIENCES

CBCS ENABLED SYLLABUS
BSc. Medical Records & Health Information Management

SYLLABUS FOR BSC.

Medical Records & Health Information Management

Choice Based Credit System (CBCS)

Approval Date: 24th September 2019

DEPARTMENT OF PARAMEDICAL SCIENCES
JAMIA HAMDARD
Deemed to be University
Accredited in 'A' Grade by NAAC
Declared to be designated as Institute of Eminence (IoE) by MHRD, GOI
NEW DELHI 110062
www.jamiahamdard.edu

PROGRAM NAME: BSc. Medical Records & Health Information Management
PROGRAM CODE: 319
ACADEMIC SESSION OF INTRODUCTION OF THE PROGRAMME: (2022-2023)
SCHOOL NAME: SNSAH
DEAPRTMENT NAME: DEPARTMENT OF PARAMEDICAL SCIENCES

APPROVAL DATE OF THE BOARD OF STUDIES (B.O.S) MEETING FOR THE PRESENT SYLLABUS **24TH September 2019**
APPROVAL DATE AND NUMBER OF ACADEMIC COUNCIL OF MEETING FOR THE PRESENT SYLLABUS **39th AC (26th September 2019)**

JAMIA HAMDARD, NEW DELHI - 110062
Internal Quality Assurance Cell (IQAC)

SCHOOL OF NURSING SCIENCES AND ALLIED HEALTH

Vision Statement: To create an institute of national and international repute in Paramedic offering state of the art education entailing the finest skills combined with compassionate patient care.

Mission Statements:

MS1: To provide a quality paramedical education and prepare human and competent global paramedic professionals.

MS 2: To provide highest level of quality patient care and can make contribution towards education and research.

MS 3: To provide the most advanced and comprehensive course offerings to health sciences students possible by employing the most qualified faculty, utilizing the most advanced technology.

DEPARTMENT OF PARAMEDICAL SCIENCES

Vision Statement
Academic excellence in education, research, and health care by grooming into highly skilled health professionals and faithful experts fully committed to serve the society.

Mission Statements

MS1: To impart basic, theoretical, practical, and professional knowledge of high quality or overall holistic growth of every student.

MS 2: To develop innovative educational activities and participate in public health reforms through training, research and innovation in the field of allied health sciences.

MS 3: To strive to uphold a future generation with high academic standards.

QUALIFICATION DESCRIPTORS (QDs)

Upon the completion of BSc. in Medical Records and health information management, students will be able to:

QD-1: Demonstrate the ability to code and file the data accurately, ethically and assertively.
QD-2: Demonstrate the understanding of registering demographic data accurately and efficiently in various software programs viz., EHR.
QD-3: Use knowledge and skills required for identifying problems and issues in data filing, analysis and evaluation using medical terminologies in identifying diseases.
QD-4: Effectively manage patient accounts for billing.
QD-5: Demonstrate the competence to produce the in-patient records in the court on receipt of summons.

Mapping Qualification Descriptors (QDs) with Mission Statements (MS)

	MS-1	MS-2	MS-3
QD-1	**2**	**1**	**2**
QD-2	**1**	**1**	**2**
QD-3	**2**	**1**	**3**
QD-4	**2**	**2**	**1**
QD-5	**1**	**1**	**1**

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

SCHOOL OF NURSING SCIENCE AND ALLIED HEALTH
DEPARTMENT OF PARAMEDICAL SCIENCES
BSc. In Medical Records and Health Information Management

PROGRAM LEARNING OUTCOMES (PLOs)

After completing this Course, the students should be able to……

PLO-1: Know, Identify, formulate and interpret mathematical, quantitative or symbolic models such as formulas, graphs and tables, and draw inferences from them.
PLO-2: Apply the knowledge to accurately billing and coding principles to optimize reimbursement.
PLO-3: Communicate effectively and handle all components of claims processing efficiently.
PLO-4: Demonstrate the knowledge and understand different aspects of inpatient, outpatient and MLC records.
PLO-5: Accurately prepare medico legal claims for medico legal cases.
PLO-6: Oblige Medical officers in filing up of various types MLCs.
PLO-7: Create digital copies of paperwork and store the records electronically
PLO-8: Safeguard patient records and ensure that everyone complies with the HIPAA standards.

PROGRAM SPECIFIC OBJECTIVES (PSOs)

After completing this Course, the students should be able to…….

PSO-1: Perceive basic quantitative or qualitative reasoning to support statistical data or conclusion.
PSO-2: Learn to assemble the discharged case records along with the verification of ward census registers for accuracy.
PSO-3: Issue old case records on readmission on proper requisition
PSO-4: Maintain Medico-legal cases
PSO-5: Conduct audits, gathering and filing patient information and processing discharge papers.

Mapping of Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs) With Qualification Descriptors (QDs)

	QD-1	QD-2	QD-3	QD-4	QD-5
PLO-1	**1**	**2**	**1**	**3**	**1**
PLO-2	**1**	**1**	**1**	**1**	**1**
PLO-3	**2**	**1**	**1**	**1**	**2**
PLO-4	**2**	**1**	**1**	**1**	**3**
PLO-5	**1**	**1**	**1**	**1**	**2**
PLO-6	**2**	**1**	**1**	**1**	**2**
PLO-7	**2**	**3**	**2**	**1**	**1**
PLO-8	**2**	**2**	**2**	**2**	**3**
PSO-1	**2**	**2**	**1**	**2**	**1**
PSO-2	**1**	**2**	**1**	**2**	**2**
PSO-3	**1**	**1**	**1**	**1**	**1**
PSO-4	**2**	**2**	**1**	**1**	**3**
PSO-5	**2**	**2**	**1**	**1**	**1**

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

COURSE DESIGN

a.	Name of the Course	**BACHELORS IN MEDICAL RECORD & HEALTH INFORMATION MANAGEMENT (BMR&HIM)**
b.	Nature	Regular
c.	Duration	Minimum: Three Years & a half (six months compulsory rotatary internship included) (3 ½ years full time Integrated Program, Lateral entry in third semester for students with two year Diploma)
d.	Medium of Instruction and Examinations	English
e.	**Eligibility Criteria**	
	Educational Requirements	Eligibility for the admission : must have passed in 10+2 or equivalent qualification with any discipline from a recognized institution with 50% aggregates Those in possession of central/state recognized two year diploma will be permitted lateral entry into fourth semester
f.	Commencement of the course	July of every year
h.	Mode of Admission	Admission to the course will be made on the basis of the merit determined by the score of CET conducted by Jamia Hamdard. Students who have appeared in NEET after interview can also be given admission. For admission against the foreign national/NRI/Industry sponsored seats, students will be required to appear only in interview conducted by Jamia Hamdard.
i.	Period of Completion (Span Period)	Not more than 03 years
J.	Fees	-
k.	Total Number of Students per year	15
l.	Total number of Semesters and examinations	Six Semesters and Semester Examination in every December and May
m .	Total Theory Papers	21 Theory papers (100 marks) Exam -75 Marks/ Internal - 25 Marks + 01(100 marks) project + 01 (100marks) Assignment +04 qualifying exams
n.	Total credits	49
o.	Minimum Average Pass Marks	50% in each subject, Grade E

Course structure

(a) The course work shall be divided into three parts as given below:

Part-I	Semester-I	July to mid December
	Semester-II	January to mid May
SUMMER TRAINING	mid May to mid July (two months)	
Part-II	Semester-III	July to mid December
	Semester-IV	January to mid May
Part III	Semester V	July to mid December
	Semester VI	Assignment

Six months compulsory internship

(b) During an academic year, a candidate shall be enrolled only for one course of study and shall not appear at any other examination of this or any other University.

(c) The semester-wise course outline, total marks allocated to each course, internal assessment and semester examinations marks for all specialization are Listed.

Detailed course content of the syllabus shall be prescribed by the Board of Studies (BOS) and shall be reviewed periodically.
Every candidate shall have to undergo eight weeks summer training in an organization of repute in India or abroad. The project for the summer training shall be assigned by the organization concerned.

The BOS, depending on circumstances prevailing in the market, may change any paper and increase or decrease the number of optional papers.

1. Attendance

a) All students must attend every lecture delivered, however, to account for the late joining or other such contingencies, the attendance requirement for appearing in the semester examinations shall be a minimum of 75% of the total classes actually held.
b) In order to maintain the attendance record of a course, a roll call will be taken by the teacher in every scheduled lecture.
c) Attendance on account of participation in the prescribed functions of NCC, NSS, Inter-University sports, educational tours/field work assigned by the university to students shall be credited to the aggregate, provided the attendance record, duly counter signed by the officer in-charge, is sent to the Head of Department within two weeks time after the function/activity.
d) The teacher in-charge will consolidate the attendance record for the lectures for each student. The statements of attendance of students shall be displayed on the Department's Notice Board by the teacher concerned at the beginning of the following month and consolidated attendance before the conclusion of each semester as given in the University Calendar. A copy of the same shall be sent to the Head of Department for record. Notices displayed on the Notice Board shall be deemed to be a proper notification, and no individual notice shall be sent to students.

e) If a student is found to be continuously absent from the classes without information for a period of 30 days, the teacher in charge shall report it to the Head of Department, who will inform the Registrar through the Dean. Registrar will issue a notice to such student, as to why his/ her admission should not be cancelled. The Registrar will take a decision on cancellation of admission within 30 days of issue of the notice. A copy of the order shall be communicated to the student.

f) A student with less than 75% attendance of the lectures in each course shall be detained from appearing in the semester examination of that course. The Dean of Faculty concerned may consider application for the condonation of shortage of attendance up to 5% on account of sickness or any other extra ordinary circumstances, provided the medical certificate duly certified by registered Medical Practitioner, had been submitted within 7 days of the recovery from the illness.

g) A student detained on account of attendance will be re-admitted to the same class in the next academic year on payment of current fees except Enrolment and identity card fees

2. Scheme of Examination

Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

The candidate shall have to make an oral presentation of his/ her summer training report before a joint session of the faculty and students. Presentation of report shall carry 40 marks. The same report shall be examined by an internal examiner out of 60 marks. The total summer training shall carry 100 marks.

3. Internal Assessment

Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.

- The evaluation shall be done by course instructors and marks will be notified within a week of such test.
- There shall be two written tests in each course in a semester. The test will be conducted as per the academic calendar individual faculty member to announce the date for tests or conduct them as per academic calendar.
- The teacher concerned shall maintain records of marks of various components of evaluation for each student and the same will be confidential and notified at the end of the semester.
- The internal assessment marks shall he submitted by head of the Department to the Registrar at the end of the semester.
- A candidate who has to reappear (as an ex-student) in the semester examination of a course will retain the marks of internal assessment.
- A student who will be required to seek re-admission, for whatever reason, will have to appear for internal assessment and tests afresh

9. Semester Examinations

a) The Semester examinations shall be held at the end of each semester as notified in the academic calendar. There shall be no supplementary examination. Candidates shall appear in the examination of their uncleared papers in the next semester examination of the same paper along with other students of junior batch. Thus, the uncleared papers of Semester - I shall be cleared in Semester- III and those of Semester - II in Semester-IV. Likewise, the examination of uncleared papers of semester V and VI would be taken up by the student next year along with the junior batch.
b) The duration of semester examinations of each theory paper will be 3 hours.
c) The question papers shall be set by either an external or an internal examiner duly appointed by the Board of Studies and approved by the Vice Chancellor.
d) The papers set by the examiners shall be moderated by a panel of moderators constituted by the Board of Studies at the time of approving the panel of examiners.
e) Upon completion of the training, the training report has to be submitted in duplicate immediately on joining the third semester.
f) Evaluation of the summer training report for 60 marks shall be done by a panel comprising an external examiner and teacher in charge on the basis of presentation and viva-voce.
g) Any student who fails to defend his /her training report satisfactorily shall have to undergo training afresh in the following year and defend it in similar manner as laid down in Para 9 (f).
h) All students shall be required to be present at the time of presentation. Their attendance will be taken into account while awarding marks for presentation.
i) Every candidate shall have to prepare a project study / assignment in the Sixth semester. The subject of project/assignment shall be approved on the recommendations of the supervisor(s) and the Head of the Department.
j) A student shall be required to maintain record of periodic progress in the project in a diary. He / she should be in constant touch with his/her supervisor and obtain his/her signature in the diary regularly. There would be continuous appraisal of the project which will carry' 25 marks as a part of internal assessment and remaining 75 marks will be given by external examiner.
k) The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

10. Promotion Criteria

a) A student shall be promoted to semester-III if he/she has secured at least 50% marks each in at least 10 subjects out of 14 prescribed in Semester - I and Semester - II taken together.
b) No student shall be promoted to Semester V if he/she has more than 04 uncleared papers of the preceding semesters taken together.
c) After the declaration of the semester-VI results, if a student has any paper uncleared of any semester, he/ she will have to reappear in these papers in concerned semester in next academic year as an ex-student along with the next batch.

d) The degree will be granted only after clearing all the semester examination and completion of six months compulsory internship from the parent institution or in extraordinary circumstances from a government hospital after taking permission from the head of the departments of the concerned hospitals

e) For all the papers labeled as qualifying exams the student needs to clear these papers during the span period to be awarded the degree

11. Span Period

A student must complete all the requirements of degree within a period of Six years from his/ her admission.

Grading System

The grade awarded to a student in any particular course will be based on his/her performance in sessionals and final examinations combined together. The letter grades and their equivalent numerical points are listed below:

% Of Marks Scored	Grade	Grade Points	Description of Performance
80% or more	A+	10	Outstanding
75% or more but less than 80%	A	9	Excellent
70% or more but less than 75%	B	8	Good
60% or more but less than 70%	C	7	Average
50% or more but less than 60%	D	6	Marginal
45% or more but less than 50%	E	5	Fail
Absent/ Detained	I	-	Incomplete

Earned Credit (E C)

The credit for the course in which a student has obtained D or a higher grade will be counted as credits earned by him/ her. Any course in which a student has obtained I grade will not be counted towards his/ her earned credits

Evaluation of Performances

- SGPA (Semester Grade Point Average) will be awarded on successful completion of each semester
- CGPA (Cumulative Grade Point Average) which is the grade point average for all the completed semester at any point in time, which will be awarded in each semester on successful completion of the current semester as well as all of the previous semester. CGPA is not applicable in semester I.

Calculation of SGPA and CGPA in a semester

$$\textbf{SGPA} = \frac{\sum_{I}^{n} (\text{Earned Credits} \times \text{Grade Point})}{n}$$

(Course Credits Registered)
I

Where n is the number of subjects/papers registered

m n
(Earned Credits X Grade Point)
I I
CGPA = _____
m
(Course Credits Registered)
I

Where m is the number of semester passed

For Example

Semester - I

Course name	**Subject Credits**	**Marks**	**Grade Awarded**	**Grade Point**	**Points secured (Subject credits x grade point)**
101	3	56	D	6	18
102	3	65	C	7	21
103	3	55	D	6	18
104	3	68	C	7	21
105	3	62	C	7	21
TOTAL	**15**	306		**33**	**99**

Total credits = 15
Points secured= 99
SGPA =99/15 = 6.6

Classification of successful candidates:

The result of successful candidates who fulfill the criteria for the award of degree shall be classified at the end of last semester, on the basis of his/her CGPA
Classification shall be done on the basis following criteria: -

- He/ she shall be awarded Distinction if her/ his final CGPA is 9 and above and passed all the semester examinations in the first attempt
- He/ she shall be awarded First Division if her/ his final CGPA is 6.75 and above but less than 9.00
- He/ she shall be awarded Second Division if her/ his final CGPA is 6.00 and above but less than 6.75.
- He/ she shall be awarded Pass if her/ his final CGPA is 5.00 and above but less than 6.00
- He / she shall be treated as Fail if his/ her final CGPA is less than 5.00

1st SEMESTER

Course Code: 101(Theory) & 103(Practical)

Title of the Course: Human Anatomy

L-50

T-20

Credits (L=2, T=1): 3

(L=Lecture hours, T=Tutorial hours)

COURSE LEARNING OUTCOMES (CLOs)

After completing this Course, the students should be able to….
CLO-1: Demonstrate the different parts of the human body.

CLO-2: Learn the Preservation, and, embalming of body organs

CLO-3: Learn the study of bones, joints ,and muscles

CLO-4: Comprehend the biology concerned with the study of the body structure of organisms and their parts.

CLO-5: Categorize general slides of tissues & organs

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO2	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO3	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO4	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO5	1	1	1	1	1	1	1	1	1	1	1	1	1

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed Syllabus:

UNIT-I **12 hrs**

Introduction to Anatomy
Anatomical terms, planes, organization of human body- cell, tissue, organ & organ system.
Musculo-skeletal system:
Types of bones, structure & divisions of the skeleton system, name of all the bones and their parts, joints- classification. Structure and types of muscles
Anatomy of the Nervous system
Central nervous system & Peripheral nervous system- different components

UNIT-II **12 hrs**

Anatomy of Circulatory system:

General plan of circulatory system and its components-
Heart- size, location, coverings, chambers, blood supply, nerve supply, the blood vessels
General plan of circulation, pulmonary circulation
Name of arteries and veins and their positions Lymphatic system - general plan Anatomy of the Respiratory system:
Organs of Respiratory System (Brief knowledge of parts and position)

UNIT-III **13 hrs**

Anatomy of the Digestive system:
Anatomy of alimentary tract; Parts of the tract
Accessory glands of digestion; Pancreas, Liver, Gall Bladder
Anatomy of Excretory system Kidneys- location, gross structure, excretory ducts, ureters, urinary bladder, urethra

UNIT-IV **13 hrs**

Reproductive system
Male Reproductive System
Female Reproductive System Anatomy of the endocrine system
Name of all endocrine glands their positions, Hormones and their functions- Pituitary, Thyroid, Parathyroid, Adrenal glands, Gonads & Islets of pancreas

Reference Books:

1. Human Anatomy Regional and Applied Vol. 1, Vol.2 & Vol.3, B.D.Chaurasia C.B.S.Publishers, New Delhi
2. Hand Book of General Anatomy B.D.Chaurasia, C.B.S.Publishers, New Delhi
3. Text Book of Human Histology Inderbir Singh, Jaypee Brothers, Medical Publishers, Delhi
4. Gray's Anatomy Susan Standring, Elsevier Churchill Livingstone, Edinburg

Teaching-Learning Strategies

Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 102(Theory) & 104(Practical)

Title of the Course: Human Physiology

L-50

T-20

Credits (L=2, T=1): 3

(L=Lecture hours, T=Tutorial hours)

COURSE LEARNING OUTCOMES (CLOs)

After completing this Course, the students should be able to ……

CLO-1: Know about the measuring of Blood pressure, heart rate, pulse rate, respiratory rate, reflexes.

CLO-2: Learn to measure RBC, WBC, and Platelet count

CLO-3: Learn to measure the bleeding time and clotting time

CLO-4: Understand the RH grouping factors of blood

CLO-5: Recognize Blood Groups - ABO and RH grouping

CLO-6: Perform hemoglobin test

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO2	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO3	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO4	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO5	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO5	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO6	1	1	1	1	1	1	1	1	1	1	1	1	1

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed Syllabus:

UNIT-I **12 hrs**

General Physiology

Cell, Transport across cell membrane, homeostasis, resting membrane potential, action potential

Blood

Composition and functions of Blood

RBC, WBC, Platelet count, Hemoglobin

Blood Groups - ABO and RH grouping
Hemostasis & Anticoagulants

UNIT-II **12 hrs**

Cardio vascular system
Cardiac muscle, Pacemaker & conducting tissue
Cardiac Cycle
Cardiac output, Heart rate, ECG
Arterial blood pressure
Respiratory System
Functions of Respiratory system
Mechanism of respiration, lung volumes & capacities

UNIT-III **13 hrs**

Nerve & Muscle physiology
Neuron structure & properties
Neuromuscular junction
Skeletal muscle structure mechanism of contraction
Cerebrospinal Fluid (CSF): Composition, functions & Circulation.
Central & autonomic Nervous system Organization of CNS
Functions of various parts of Brain, in brief
Composition, functions and circulation of CSF
Differences between sympathetic and parasympathetic division

UNIT-IV **13 hrs**

Digestive system
Functional Anatomy, organization & innervations
Composition and functions of all Digestive juices
Digestion & Absorption of carbohydrates, proteins and fats
Excretory System
Kidneys: Functions, Nephron, Juxta-glomerular Apparatus
Renal circulation
Mechanism of Urine formation
GFR
Endocrine and Reproductive systems, Endocrine glands & hormones secreted
Functions of Reproductive system
Male Reproductive System: spermatogenesis, Testosterone.
Female reproductive system: Ovulation, Menstrual cycle.
Pregnancy test

Reference Books:

1.Text book of Guyton (Arthur C) Prism Publishers Bangalore.

2. Review of medical Ganong Appleton and Physiology, Lange.

Teaching-Learning Strategies
Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages
Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 105

Title of the Course: Medical Ethics, Legal aspects and Medical Terminology

L-5

Credits: NA (Qualifying Exam)

(L=Lecture hours)

COURSE LEARNINGOUTCOMES (CLOs)

After completing this Course, the students should be able to ……
CLO-1: Know about the Ethical, Moral, and Legal responsibilities
CLO-2: Learn their roles as health care professionals.
CLO-3: Understand the principles of medical ethics
CLO-4: Uphold their responsibilities with dignity in a medical profession
CLO-5: Accomplish their assigned tasks in their clinical rotations.

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO2	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO3	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO4	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO5	1	1	1	1	1	1	1	1	1	1	1	1	1

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed Syllabus: **5 hrs**

Role Definition and Interaction, Ethical, Moral, and Legal Responsibilities
Medical terminology- The course employs a body systems-oriented, word-analysis approach to learning medical terminology. The goal of the class is to prepare students for the terminology they might encounter in their subsequent coursework, in their clinical rotations and ultimately in their roles as health care professionals.

Teaching-Learning Strategies
Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages
Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 106

Title of the Course: English

L-25

Credits: NA (Qualifying Exam)

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completing this Course, the students should be able to ……
CLO-1: Speak and write proper English
CLO-2: Read and understand English
CLO-3: Understand and practice medical terminology
CLO-4: Acquire a good command over English
CLO-5: Apply commonly used medical terminology in medical practice.

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	1	1	1	1	1	1	1	1	1	1	1	1	1
CLO2	1	1	1	1	1	1	1	1	1	1	1	1	1

CLO3	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
CLO4	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
CLO5	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Teaching-Learning Strategies

Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 107

Title of the Course: Computer Skills

L-5

T-30

Credits: NA (Qualifying Exam)

(L=Lecture hours, T=Tutorial hours)

COURSE LEARNING OUTCOMES (CLOs)

After completing this Course, the students should be able to ……

CLO-1: Know about basics of computer application
CLO-2: Perform computer applications related to medical records and information system.

Mapping of Course Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	**PLO2**	**PLO3**	**PLO4**	**PLO5**	**PLO6**	**PLO7**	**PLO8**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**
CLO1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
CLO2	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Teaching-Learning Strategies

Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

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- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

2nd SEMESTER

Course Code: 201

Title of the Course: International Classification of Diseases (ICD)- Part-I

L-50

Credits: 02

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Learn the general principles of disease classification by WHO
CLO-2: Understand the uses of ICD in medical records
CLO-3: Understand the purpose of ICD
CLO-4: Implement ICD Volume I, II and III

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	1	1	1	1	1	1	2	2	3	1	3	1
CLO2	2	1	2	2	1	1	1	2	3	2	1	2	2
CLO3	2	2	1	1	1	3	2	1	2	1	2	1	1
CLO4	2	2	2	1	1	1	2	2	1	1	3	2	1

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

ICD-I 201, INTERNATIONAL CLASSIFICATION OF DISEASES

1. Introduction of ICD Volume I, II and III **4 hrs**
2. History and development of uses of ICD **4 hrs**
3. Purpose of ICD **2 hrs**
4. General principle of disease classification **4 hrs**
5. How to use ICD **3 hrs**
6. Infectious and parasitic Diseases - A00-B99 **3 hrs**
7. Neoplasm - C00-C97 **4 hrs**
8. Diseases of the blood forming organ and certain disorders involving the immune e mechanism - D50-D89 **3 hrs**
9. Endocrine, Nutritional , and Metabolic Diseases - E00-E07 **3 hrs**
10. Mental and Behavioral disorder - F00-F99 **2 hrs**
11. Diseases of the Nervous system - G00-G99 **2 hrs**
12. Diseases of the Eye and Adnexa - H00-H59 **2 hrs**

13. Diseases of the Ear and Mastoid process	-	H60-H62	**2 hrs**
14. Diseases of the Circulatory System	-	I00- I99	**2 hrs**
15. Diseases of the Respiratory System	-	J00- J99	**2 hrs**
16. Diseases of the Digestive System		- K00-K93	**2 hrs**
17. Diseases of the Skin and Subcutaneous tissue	-	L00-l99	**2 hrs**
18. Diseases of the Musculo skeleton system and connective tissue		M00-M99	**2 hrs**
19. Diseases of the Genitourinary System	-	N00-N99	**2 hrs**

Reference Books:

ICD 10-CM, 10th revision, by world health organization

Teaching-Learning Strategies

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Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 202

Title of the Course: International Classification of Procedures (ICP)- Part-I

L-50

Credits: 02

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:

CLO-1: Learn the History and development of ICP
CLO-2: Understand the Purpose of ICP
CLO-3: Implement General principle of procedure according to disease classification

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	**3**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**3**	**1**	**3**	**1**
CLO2	**2**	**1**	**2**	**2**	**1**	**1**	**1**	**2**	**2**	**2**	**1**	**2**	**2**
CLO3	**2**	**2**	**1**	**1**	**1**	**3**	**2**	**1**	**2**	**1**	**2**	**1**	**1**

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

ICP-I 202
INTERNATIONAL CLASSIFICATION OF PROCEDURES

1. Introduction of ICP **6 hrs**
2. History and development of uses of ICP **6 hrs**
3. Purpose of ICP **5 hrs**
4. General principle of disease classification **5 hrs**
5. How to use ICP **5 hrs**
6. Procedures of the blood forming organ and certain disorders involving the immune mechanism **6 hrs**
7. Procedures related Mental and Behavioral disorder **6 hrs**
8. Procedures related to Diseases of the Nervous system **6 hrs**
9. Procedures related to Diseases of the Nervous system of the Eye and Adnexa **5 hrs**

Reference Books:

International Classification of Procedures in medicine by world health organization

Teaching-Learning Strategies
Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages
Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 203

Title of the Course: Medical Record Science

L-50

Credits: 02

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Learn the Uses and values of medical records
CLO-2: Understand the Functions of MRD
CLO-3: Understand Filing Method and Numbering System for Health Records
CLO-4: Maintain Basic Hospital Records in Detail
CLO-5: Perform the assigned Duties and Responsibilities of Medical Record Administrator

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	1	1	1	2	1	1	3	3	2	3	3	2	1
CLO2	2	1	2	2	1	1	1	2	3	2	1	2	2
CLO3	2	2	2	3	1	3	2	2	2	2	2	2	3
CLO4	3	2	2	3	3	3	2	2	3	3	3	2	3
CLO5	2	2	2	2	3	3	3	2	2	3	2	2	2

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

MRS -203, MEDICAL RECORD SCIENCE

History of Medical Record

1. Egyptian & Greek Period **6 hrs**

Greeco Roman Period

Byzantine Period

Jewish Period

Mohammedan Period

Medieval Period

17th -19th Century

Twentieth Century

2. The Medical record Definition & Contents **6 hrs**

Definition & Contents

Objectives

POMR

a. Basic Hospital Records in Detail
b. Obstetric records
c. New born records
d. Uses and values of medical records

Functions of MRD

Medical Record form Design

3. Medical Record Professional Duties and Responsibilities Medical Record Administrator and Medical Record Technician **6 hrs**

Medical Record Committee

Medical staff and their responsibility for the Medical Record

4. Master Patient Index Cards **6 hrs**

Objectives

Indices and Registers

Master Patient Index

Phonetic Filing

Automation of Patient Index Card

Disease and Operation Index

Physician Index

5. Filing Method and Numbering System for Health Records **6 hrs**

Storage and Retention

Numbering System

Filing System

Objectives

Coding of records

Filling equipment

6. Microfilm and Medical Records **6 hrs**

photograph

Microfilms in medical records

Equipment

Microfilm Process

7. Nomenclature and Classification Systems:- **6 hrs**

Objectives

Medical Coding

Classification

Statistical Classification

ICD, ICD-M,

Quality Control

8. Long Term and short term records- **4 hrs**

Discharge Analysis- computerized and Manual.

9. Medical Audit **4 hrs**

Reference Books:

i. The medical records book by Guy Gratton, 2015
ii. Medical records: organization and management, G.D Mogli, 2017

Teaching-Learning Strategies

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Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

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- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 204

Title of the Course: Medical Terminology -I

L-50

Credits: 02

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand Common Prefix, suffix, and roots used in medical terminology
CLO-2: Understand the Sources of medical terms
CLO-3: Understand the Disorders and operative procedures of various body systems

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	1	1	1	1	2	1	1	2	2	2	1	1	1
CLO2	1	1	2	2	1	1	1	2	2	2	1	2	2
CLO3	2	2	1	1	1	1	2	1	2	1	2	1	1

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

MEDICAL TERMINOLOGY

1. Define Medical Terminology.	**6 hrs**
2. Uses	**6 hrs**
3. Prefix, Suffix, and Roots of medical terminology	**6 hrs**
4. Sources of Medical Terms	**6 hrs**
5. Circulatory System Disorders, Operative procedures, Terms	**6 hrs**
6. Musculo-skeleton system- disorders and operative procedures Term	**5 hrs**
7. Cardio vascular system - disorders and operative procedures Terms	**5 hrs**
8. Respiratory system - disorders and operative procedures Terms	**5 hrs**
9. Digestive system - disorders and operative procedures	**5 hrs**

Reference Books:

i. Medical terminology and anatomy for icd coding by Besty J. Shiland
ii. Medical terminology, an illustrated guide, 4th edition by Barbara Janson Cohen

Teaching-Learning Strategies
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Course Code: EVS

Title of the Course: Environment science & health

L-5

Credits: NA (Qualifying Exam)

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand the Importance of Environment and Health
CLO-2: Understand the Various biological standards, including WHO guidelines
CLO-3: Understand the Environmental problems and human impacts on the environment.
CLO-4: Understand the standards of housing and the effect of poor housing on health Role

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	1	1	1	1	2	1	1	2	1	1	1	1	1
CLO2	1	1	2	1	1	1	1	1	1	1	1	1	1
CLO3	1	2	1	1	1	1	2	1	2	1	2	1	1
CLO4	1	1	1	1	1	1	1	1	1	1	1	1	1

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus:

Introduction to Environment and Health **5 hrs**

Sources, health hazards and control of environmental pollution
Water- safe and wholesome water
Sanitary sources of water
Understanding the methods of purification of water on small scale and large scale
Various biological standards, including WHO guidelines for third world country
Concept and methods for assessing quality of water
Domestic refuse, sewage, human excreta and sewage their effects on environment and health, methods and issues related to their disposal.
Awareness of standards of housing and the effect of poor housing on health Role of arthropods in the causation of diseases, mode of transmission of arthropods borne diseases, methods of control

Reference Books:

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

Teaching-Learning Strategies

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3rd SEMESTER

Course Code: 301

Title of the Course: Hospital statistics

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand the concept of Statistics
CLO-2: Understand the Types of statistics
CLO-3: Apply statistics in research

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	1	1	2	1	1	2	1	1	1	1	1
CLO2	1	1	2	1	2	2	1	1	2	2	2	2	1
CLO3	1	3	1	1	1	1	2	1	2	2	2	2	2

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

1. Introduction of Statistics Types of the statistics, application in research, sources, use of statistics **5 hrs**
2. Hospital Statistics Computation of percentages, In patient census **5 hrs**
3. Terms - Hospital In Patient, Out patient, Live birth, New born, In patient admission , In patient discharge, Fetal death, transfer, Hospital Bed, Adult bed, child bed, new born bed, Bassinets, **5 hrs**
4. Average daily Census, percentage of occupancy, In patient days, Ratio, In patient bed count, Average length of Stay. **5 hrs**
5. Ratio, rate, Death rate, Hospital Death rate, Net Death Rate, Gross Death Rate, Anesthesia Death Rate, maternal Death Rate, Neonatal Death Rate, Autopsy rate, delivery, CS rate, birth rate, Infection Rate. **5 hrs**

Reference books:

i. Statistical Methods for Hospital Monitoring with R by by Anthony Morton & Kerrie L. Mengersen & Geoffrey Playford & Michael Whitby

ii. AHA Hospital Statistics 2011: The Comprehensive Reference Source for Analysis and Comparison of Hospital Trends

Teaching-Learning Strategies

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- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 302

Title of the Course: Hospital Standardization & Accreditation, QA

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:

CLO-1: Understand the Objective of Quality Assurance in Hospital
CLO-2: Understand the Need for QA in hospital
CLO-3: Acquire Knowledge of Accreditation Agencies such as NABH, ISO, JCI
CLO-4: Implement Quality assurance in hospital
CLO-5: Implement Quality assurance tools and methods

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	1	1	2	1	2	2	1	1	2	2	2	2	1
CLO3	1	3	1	1	1	1	2	1	2	2	2	2	2
CLO4	2	2	3	2	2	2	3	3	2	1	2	2	3
CLO5	2	2	3	3	1	2	2	2	2	2	2	2	3

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

Hospital Standardization & Accreditation Quality Assurance In Hospital

1.	QA in Hospital Definition, objectives of QA, need for QA,	**5 hrs**
2.	Procedures for Quality assurance implementation, quality assurance steps,	**5 hrs**
3.	Quality assurance tools and methods.	**5 hrs**
4.	Accreditation Agencies ISO, JCI	**5 hrs**
5.	Medical Record and SOPs	**5 hrs**

Reference books:

i. Patient Safety and Hospital Accreditation: A Model for Ensuring Success by Sharon Ann Myers

ii. An Introduction to Quality Assurance in Health Care by Avedis Donabedian

Teaching-Learning Strategies

Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages

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- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 303

Title of the Course: International classification of diseases- II

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:

CLO-1: Understand External causes of morbidity and mortality
CLO-2: Understand Cases of intentional self-harm and assault
CLO-3: Understand the Factors influencing health status
CLO-4: Acquire In depth classification of diseases of various systems of human body

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	**3**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	**2**
CLO2	**1**	**1**	**2**	**1**	**2**	**2**	**1**	**1**	**2**	**2**	**2**	**2**	**1**
CLO3	**1**	**3**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**2**	**2**
CLO4	**2**	**2**	**3**	**2**	**2**	**2**	**3**	**3**	**2**	**1**	**2**	**2**	**3**

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

INTERNATIONAL CLASSIFICATION OF DISEASES- II

1. Pregnancy , childbirth and the Perpurium - O00-O99 **2 hrs**
2. Conditions Originating in the Prenatal Period **2 hrs**
3. Congenital malformation, deformation, and Chromosomal abnormalities - P00-P96 **2 hrs**
4. Symptoms and signs, and abnormal clinical and laboratory findings - Q00-Q99 **2 hrs**
5. Injury, poisoning, and certain other consequences of external causes - R00-R99 **2 hrs**
6. External causes of morbidity and mortality - V01-V99 **3 hrs**
7. Other External Causes of accidental Injury - W00-X59 **3 hrs**
8. Intentional Self harm - X60-X84 **3 hrs**
9. Assault **3 hrs**
10. Factors Influencing health status and contact - X85-Y09 **3 hrs**
    With health status - Z00-Z99 **3 hrs**

Reference books:

ICD 10-CM, 10th revision, by world health organization

Teaching-Learning Strategies

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Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 304

Title of the Course: International classification of procedures-II

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Learn codes of procedures associated with the diseases
CLO-2: Execute procedural codes related to various systems of body

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	3	3	2	1	2	2	3	3	2	2	2	2	1

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

1. Procedures related to Diseases of the Nervous system **3 hrs**
2. Procedures related to Ear and Mastoid process **3 hrs**
3. Procedures related to Circulatory System **3 hrs**
4. Procedures related to Respiratory System **3 hrs**
5. Procedures related to Digestive System **3 hrs**
6. Procedures related to Skin and Subcutaneous tissue **3 hrs**
7. Procedures related to Musculo skeleton system and connective tissue **4 hrs**
8. Procedures related to Genitourinary System **3 hrs**

Reference Books:

International Classification of Procedures in medicine by world health organization

Teaching-Learning Strategies
Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages
Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 305

Title of the Course: Medical Terminology-II

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Learn medical terminologies related to disorders and operative procedures of various body systems.
CLO-2: Comprehend the medical terminologies related to disorders and operative procedures of various body systems.

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	3	2	2	2	2
CLO2	3	3	2	2	2	2	2	2	3	2	2	2	2

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

1. Urinary system - disorders and operative procedures **4 Hrs**
2. Nervous System - disorders and operative procedures **4 Hrs**
3. Reproductive System of male and female - disorders and operative procedures Terms **5 Hrs**
4. Endocrine & Exocrine Glands - disorders and operative procedures **4 Hrs**
5. Lymphatic System - disorders and operative procedures **4 Hrs**

6. Eye and Ear - disorders and operative procedures **4 Hrs**

Reference Books:

i. Medical terminology and anatomy for icd coding by Besty J. Shiland
ii. Medical terminology, an illustrated guide, 4th edition by Barbara Janson Cohen

Teaching-Learning Strategies

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Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

4th SEMESTER

Course Code: 401

Title of the Course: DBMS and Data quality

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand database system concept
CLO-2: Understand Concurrent operations on database
CLO-3: Understand Database recovery techniques
CLO-4: Comprehend Key concepts of database – ER model, Relation model

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	3	3	2	1	2	2	3	2	2	2	2	2	1
CLO3	2	2	2	1	1	1	2	1	1	1	1	2	1
CLO4	2	2	2	1	2	1	3	3	1	1	1	1	3

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

DATA BASE MANAGEMENT SYSTEM & DATA QUALITY

Introduction to database system concept: 4 hrs
An overview of database system, basic database system terminology, database Vs traditional file approach, Data models, schemas and instances. ANSI/SPARC model and independence

ER model: 4 hrs
Entity, entity types, attributes and keys, relationship and relationship types and structural constraints, ER diagrams, Naming conventions and design issues.

Relation model: 4 hrs
Structure of Relational databases, concept of Join Operation, relational algebra, integrity constraints: Domain constraints, referential constraints.

Design theory for relational databases: 4 hrs
Concept of Functional dependencies, Keys, Closure, Minimal Cover, Decomposition: Loss less Join and FD preserving, Insert, delete and update anomalies, Normalization: First, second, third normal forms and BCNF.

Concurrent operations on database: 4 hrs
Basic concurrency problem, Concept of Schedules, Serializability, Locking and Time Stamping Techniques

Database recovery technique: 3 hrs
Failure classification, recovery concepts, recovery techniques based on deferred and immediate update, Shadow paging.

Quality measures for Data **2 hrs**

Reference books:

i. Database Management Systems | 3rd Edition Paperback by Raghu Ramakrishnan, Johannes Gehrke
ii. Database Management System (DBMS): A Practical Approach, 5th Edition by Chopra Rajiv

Teaching-Learning Strategies
Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages
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- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 402

Title of the Course: Hospital Information System

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand Policies of Information Management System (IMS), policies
CLO-2: Understand the Role of HIS in healthcare delivery
CLO-3: Understand the Advantages of integrated HIS
CLO-4: Store data in EHR software

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	3	3	2	1	2	2	3	2	2	2	2	2	1
CLO3	2	2	2	2	2	2	2	1	2	2	2	2	1
CLO4	2	2	2	1	2	1	3	3	1	2	2	1	3

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

1. HOSPITAL INFORMATION SYSTEM
   Information Management System (IMS), policies , confidentiality, integrity and security of information. **5 Hrs**

2. Unique identifier, Authorization for entries, Authorization for accessibility format (Eg. POMR)

   Electronic Health Records (E H R) Definition, EMR Issues, Interoperability, Privacy , Social and organizational Barriers, Technology limitation, Preservation of EMR, Benefits, obstacles to adoption , pictorial material, free text, structured text the options, OMR, advantage of E H R over Paper Health record., VRS , PACS,
   8 Hrs

3. Selection of Hardware and Software for health, Cost, customization , Integration and Interfacing **4 Hrs**

4. Hospital Information System **8 Hrs**
   Significance of Information Process- Role of HIS in health care delivery, Functions of a HIS (Hospital Information System) Definition , Registration, advantages of integrated HIS, MIS Reports- HIS Modules and MIS Reports - Patient Management System (IPD , OPD, Front Office, Back office and billing, Nursing Station) Clinical Management System(Diagnostics /laboratory(LIS), Radiology(RIS)

Reference books:

i. Hospital Information Systems: a Concise Study by Kelkar S. A.
ii. Strategic Information Management in Hospitals: An Introduction to Hospital Information Systems by Birgit Brigl, Alfred Winter, R. Haux, Elske Ammenwerth

Teaching-Learning Strategies

Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 403

Title of the Course: Health management and information system

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand the Management Challenges in healthcare
CLO-2: Understand the Different Types of Information System
CLO-3: Execute Framework for MIS-Operational, Managerial and strategic Level

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	3	3	2	1	2	2	3	2	2	2	2	2	1
CLO3	2	2	2	2	2	2	2	1	2	2	2	2	1

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

HEALTH INFORMATION MANAGEMENT SYSTEM

1. Framework for MIS-Operational, Managerial and strategic Level **5 hrs**
2. Management Challenges **2 hrs**
3. Different Types of System **5 hrs**
4. Characteristics of Information Processing System **5 hrs**
5. Programme Based health information system, **3 hrs**
6. Selection of feasible indicator, characteristics of indicator, standards of performance, standardization of format, collection of data from reporting units, Issues, data management Phase, analysis , ranking , feedback, Action for improvement. **5 hrs**

Reference books:

i. Health Information Management Sixth Edition: Concepts, Principles by Pamela Oachs, Amy Watters
ii. Management Information System (MIS) in Hospitals: A Computer-based Approach for Quality in Hospital Services and Administration by Anil Kumar Saini

Teaching-Learning Strategies
Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages
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- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 404

Title of the Course: Legal aspects of health care

L-25

Credits: 01

(L=Lecture hours)

COURSE OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand the Medico legal responsibilities of a medical practitioner
CLO-2: Perceive Malpractice Insurance policy
CLO-3: Implement the role of consent in health records

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	3	3	2	1	2	2	3	2	2	2	2	2	1
CLO3	2	2	2	2	2	2	2	1	2	2	2	2	1

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

1. The Legal Aspects of Medical Record **3 Hrs**
Types of Medical Records
Ownership of MR
Summon

Retention policy of Medical Record
Privileged Communication
Confidentiality of MR
Medical Record in Court

2. Malpractice Insurance policy **2 Hrs**
Professional Indemnity Policy for Doctors and Medical practitioners
Salient features of the Policy

3. Consumer protection Act and medical profession **2 Hrs**
District, State and National Level forum
Consumer protection Act and medical profession

4. Doctor- Patient Relationship **3 Hrs**
Rights of the Patient
Rights to Information
Right to privacy and confidentiality
Duties of the Patient
Rights and Duties of the doctors

5. Medical Negligence **3 Hrs**
Types of Medical Negligence
Contributory Negligence
Corporate Negligence, Comparative Negligence
Civil and Criminal Negligence
Act of omission and Act of Commission

6. Consent **3 Hrs**
Implied Consent
Informed Consent
Written and Oral Consent
Consent Obtaining from Patient and relatives
Consent from Spouse Validation of Consent

7. Medical ethics **4 Hrs**
Code of Medical Ethics,
International Code of Medical Ethics

8. Medico legal responsibilities of a medical practitioners **2 Hrs**
Definition of MLC
Registration of MLC
Preservation of trace evidence
Opinion
Grievous hurt

9. Handling of a Dead body **2 Hrs**
Issuance of Death Certificate
Information to Police
Medical certificate of Cause of Death Form
Legal Information form

10. Health Insurance **2 Hrs**
General principles and practices of insurance in UAE
Medical Insurance
Hospital and Medical Insurance companies
Role of medical record Department in providing data for insurance companies

Reference books:

i. Legal aspects of health care administration by George D. Pozgar
ii. Law relating to Health Care and Technology by Dr. Supreet

Teaching-Learning Strategies
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Assessment methods and weightages
Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 405

Title of the Course: Medical record science & hospital accreditation documentation

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Know the Purpose of Quality Assurance
CLO-2: Learn the .Principles of Quality Management
CLO-3: Understand the Definition, Meaning and Measurements of Quality of Health Care
CLO-4: Implement the Application and Benefits of Quality Management

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5

CLO1	**3**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	**2**
CLO2	**1**	**1**	**2**	**1**	**2**	**2**	**1**	**1**	**2**	**2**	**2**	**2**	**1**
CLO3	**1**	**3**	**1**	**1**	**1**	**1**	**2**	**1**	**2**	**2**	**2**	**2**	**2**
CLO4	**2**	**2**	**3**	**2**	**2**	**2**	**3**	**3**	**2**	**1**	**2**	**2**	**3**

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

Hospital Accreditation Documentation and QA

Introduction **5 hrs**

1. Quality and Its Needs
2. Purpose of Quality Assurance
3. Principles of Quality Management
4. Definition, Meaning and Measurements of Quality of Health Care
5. Application and Benefits of Quality Management

SOPs (Standard Operating Procedures) **5 hrs**

Setting Standards

1. Criteria for Setting Standards for Quality of Care
2. Licensure of Health Care Providers and Agencies
3. Government Regulation of the Health Care Environment
4. Relationship to Accreditation Facilities
5. Interplay between Quality Management and Consumer Needs

Total Quality Management: **7 hrs**

From Industry to Health Care

1. Histories of Total Quality Management
2. Quality Vs Total Quality
3. Difference between Quality Management and Total Quality Management
4. Application of Total Quality Management to Health Care Organizations
5. Quality Control and Quality Assurance
6. How it Works and Quality Control
7. Problems, Challenges and Issues in Health Care

Continuous Quality Improvement **8 hrs**

1. Continuous Quality Improvement Process
2. Differences between Traditional Management and Continuous Quality Improvement
3. Principles of Continuous Quality Improvement
4. Essentials of Continuous Quality Improvement
5. Preparing for Continuous Quality Improvement
6. Continuous Quality Improvement Cycle and its Applications to Health Care Industry
7. Data in the Continuous Quality Improvement process

Reference books:

i. Patient Safety and Hospital Accreditation: A Model for Ensuring Success by Sharon Ann Myers

ii. An Introduction to Quality Assurance in Health Care by Avedis Donabedian

Teaching-Learning Strategies

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Assessment methods and weightages

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5th SEMESTER

Course Code: 501

Title of the Course: Introduction of epidemiology

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand the Applications of Epidemiology
CLO-2: Understand the Importance of Screening in health
CLO-3: Understand the Association and causation

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	2	2	2	1	2	2	1	1	2	2	2	2	1
CLO3	1	3	1	2	2	1	2	1	2	2	2	2	2

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

Principles of Epidemiology

1. Scope and Applications of Epidemiology **3 hrs**
Definition and history of epidemiology, Basic measurements, Different epidemiological methods

2. Measures of morbidity and mortality **3 hrs**
Rate, Ratios for comparative purpose, Crude and specific mortality rate, Case fatality rate, Incidence and prevalence, Relative risk, Attributable risk

3. Descriptive epidemiology **3 hrs**
Defining population, Hypothesis formulation, Time, place and person distribution

4. Analytical epidemiology **5 hrs**
Case control study (CCS), Basic steps of CCS, Estimation of risk, Odds ratio, Biasness in CCS, Cohort study, Framework of cohort study, Elements of cohort study, Calculation of risk, Advantage and disadvantages of case control and cohort studies.

5. Experimental epidemiology **4 hrs**
Animal and human studies, Randomized Controlled Trials (RCT), Types of RCT, Non Randomized Trials

6. Association and causation **3 hrs**
Spurious, indirect and direct association, Criteria for judging causality, Confounding factor

7. Screening in health **4 hrs**
Concept of screening, Aims and objectives, Uses of screening, Types of screening, Criteria for screening, Evaluation of screening.

Reference books:

i. Gordis Epidemiology 6th/2019 By David D Celentano
ii. Basics of Epidemiology - Concepts made simple by Dr. Anil Mishra

Teaching-Learning Strategies

Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 502

Title of the Course: Health services and research methodology

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Understand the Medical paradigms of Health care and the knowledge development
CLO-2: Understand the Implication of hypothesis in research
CLO-3: Understand the Role of research in policy making

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	2	2	2	1	2	2	1	1	2	2	2	2	1
CLO3	1	3	1	2	2	1	2	1	2	2	2	2	2

‘3’ for ‘High-level’mapping, 2 for ‘Medium-level’mapping, 1 for ‘Low-level’mapping.

Detailed syllabus

1. Health Services and a social system **3 hrs**

1.1. Society, health and development
1.2. A systems approach to health services
1.3. Challenges facing health services in a society
1.4. Formal and lay care

2. Health care and the knowledge development **3 hrs**
2.1. Culture and disease
2.2. Diseases and medical knowledge
2.3. Medical paradigms
2.4. The challenge of professionalism
2.5. Societal forces and the bureaucracy

3. Health care services demand and supply **4 hrs**
3.1. The need and demand for health care
3.2. The relationship between need and use
3.3. Staff-patient interactions
3.4. People as consumers and policy makers
3.5. Financing health care services

Research methodology

A. Scientific research: Characteristics, Type and Models **4 hrs**

1. Scientific Research and its Characteristics;
2. Aims, Types and Methods

B. Concepts, Constructs and Variables and Operationalization of Variables **2 hrs**

C. Hypothesis **3 hrs**
a. Nature and Definition of Hypothesis;
b. Type of hypothesis;
c. Characteristics and functions of hypothesis
d. Formulating and testing hypothesis

D. Logic of Inquiry **3 hrs**
a. Science and logic;
b. Elements of logical analysis;
c. Validity and truth;
d. Types of reasoning
e. Strategies in research
f. Designing of Research

E. Problem formation and developing research questions **3 hrs**
a. Components in research;
b. Selection of research topics;
c. Sources and focus;
d. Operationalizing concepts;
e. Formulating research questions

Reference books:

i. Research Methodology: Methods and Techniques by C.R. Kothari, Gaurav Garg
ii. Social Research Methods: Qualitative and Quantitative Approaches, 7Th Edition by Neuman and W Lawrence, publisher Pearson India

Teaching-Learning Strategies

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Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 503

Title of the Course: Electronic health record

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:

CLO-1: Understand the Retention policy of electronic Health Records
CLO-2: Understand the Legal issues in practice of physician
CLO-3: Manage interoperability issues in EHR
CLO-4: Perform Health Record Registration
CLO-5: Conduct medical audit

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	3	3	2	2	2	2	2	2	1	2	2	2	2
CLO2	3	3	2	1	2	2	3	2	2	2	2	2	1
CLO3	2	2	2	2	2	2	2	1	2	2	2	2	1
CLO4	2	2	2	1	2	1	3	3	1	2	2	1	3
CLO5	2	2	2	1	2	1	3	3	1	2	2	1	3

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

1. Content of Electronic Health Record Administrative data- admission /Discharge Record, Consent, Clinical data- Medical history, Physical Examination, Physician orders, Progress notes, Pathology and radiological report, Consultation report, Operation record, Anesthesia Record, Nursing Notes & Record,TPR or Graphic Record, SOMR, POMR,Integrated Medical records **5 hrs**
2. Retention of electronic Health Records, release of information from Health Record, Filing Methods , Storage and retention, Centralized and Decentralized Health Record,Legal aspects of Health Record. **4 hrs**
3. Electronic Health Record Definition, EMR Issues, Interoperabilty, Privacy , Social and organizational Barriers, Technology limitation, Preservation of EMR, Customization of EMR, Privacy policy , Accessibility of Health Record, CDSS (Clinical decision System), Integration and Interfacing **3 hrs**
4. Selection software and Hardware for EHR, Cost effectiveness and Quality assurance, PACS (Picture Archival communication System) **2 hrs**
5. Health Record Registration Communicable Diseases, Notifiable disease report, Morbidity report, Birth and Death Registration **2 hrs**
6. Legal issues in practice of physician, electronic Medical Record in Court, MLC **2 hrs**
7. Medical Coding and Classification **1 hr**
8. Medical Audit **1 hr**
9. Microfilm and Medical record **1 hr**
10. E H R - Pictorial material, free text, structured text OMR, advantage of E H R over Paper Health record. **4 hrs**

Reference books:

i. The Electronic Health Record For The Physicians Office For Simchart For The Medical Office With Access Code 3Rd Edition 2020 by Pepper J, Elsevier
ii. Medical Informatics 20/20: Quality And Electronic Health Records Through Collaboration Open Solutions And Innovation by Douglas Goldstein , Jones and Bartlett Publishers

Teaching-Learning Strategies
Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

Assessment methods and weightages
Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on written tests, assignments, presentations, viva-voice etc.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

Course Code: 504

Title of the Course: National health policies and national health program

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:
CLO-1: Know the Various systems of Indian healthcare services
CLO-2: Learn the National Health policy
CLO-3: Understand the National population Policy
CLO-4: Implement the National Health Programmes and its Data management

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	2	2	2	2	2	2	2	2	1	2	2	2	2
CLO2	2	2	1	1	2	2	2	2	2	2	2	2	1
CLO3	2	2	2	2	2	2	2	1	2	2	2	2	1
CLO4	2	2	2	1	2	1	2	2	1	2	2	1	2

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

1. Indian Healthcare system **2 hrs**
2. Primary healthcare and globalization **3 hrs**
3. Policies, programmes and five-year plan **3 hrs**

4. The essential package and the district model (NRHM, NUHM, NHM) **4 hrs**
5. Various systems of Indian healthcare services **3 hrs**
6. National Health policy **2 hrs**
7. National population Policy **3 hrs**
8. National Health Programmes and its Data management RNTCP, RCH, NLEP, AIDS Control Programme etc. **5 hrs**

Reference books:

i. National Health Programmes And Policies (2017-18) by Samta Soni, CBS PUBLICATION
ii. Indian Policy And Development: A Manual For National Schemes And International Policies by Saumitra mohan, McGraw Hill

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Course Code: 505

Title of the Course: Hospital administration and biostatistics

L-25

Credits: 01

(L=Lecture hours)

COURSE LEARNING OUTCOMES (CLOs)

After completion of this course, the students should be able to:

CLO-1: Know the Statistical methods in the field of medicine
CLO-2: Understand the Method of data collection
CLO-3: Execute the Presentation of data by the use of Diagram, charts, tables

Mapping of Course Learning Outcomes (CLOs) with Program Learning Outcomes (PLOs) and Program Specific Outcomes (PSOs)

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PSO1	PSO2	PSO3	PSO4	PSO5

CLO1	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	**2**
CLO2	**2**	**2**	**1**	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**1**
CLO3	**2**	**3**	**2**	**2**	**2**	**2**	**2**	**1**	**2**	**2**	**2**	**2**	**1**

'3' for 'High-level'mapping, 2 for 'Medium-level'mapping, 1 for 'Low-level'mapping.

Detailed syllabus

Bio Statistics- Definition, Vital, and Health statistics, crude rates **5 hrs**

Probability, Frequency distribution chart, statistical methods in the field of medicine, method of collection, Presentation, Diagram, charts, tables **5 hrs**

Frequency distribution: Type of measures, frequencies, class interval, **5 hrs**

Measures of Central Tendency Arithmetic mean, Mode, median, group and ungrouped data **5 hrs**

Measures of Variability or dispersion Range, Inter Quartile range, Standard Deviation, Mean Deviation, Variance, Coefficient of Variation **5 hrs**

Reference books:

i. Hospital Administration and Management: A Comprehensive Guide by Joydeep Das Gupta, Jaypee Brothers Medical Publishers
ii. A Textbook of Biostatistics by Dr. B. Annadurai, New Age International (P) Ltd., Publishers

Teaching-Learning Strategies

Giving lectures to large groups of students, followed by tutorials and seminars, as well as some independent study, is the teaching approach used. However, there are a range of alternative delivery techniques that can be highly effective, and concepts like didactic learning and problem-based learning are commonly employed in teaching with the use of power point presentations, group discussions, and A/V aids.

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- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).

6th SEMESTER

BMR -601 Submission of assignment & viva voce

Teaching-Learning Strategies

The concept of didactic learning is used to provide guidance to students for dissertation. Giving lectures to large groups of students, as well as some independent study for research work, is the teaching approach used. Problem-based learning is commonly employed in teaching with the use of group discussions, and brainstorming sessions.

Assessment methods and weightages

Evaluation of marks are done on internal and external assessment. Each theory course shall carry 100 marks. Of these, 75 marks shall be for semester examination and 25 marks for internal assessment.

- Internal assessment for 25 marks in respect of theory papers will be based on viva-voice.
- The minimum pass marks shall be 50% (grade E) in each theory/ assignment and viva-voce (combined examination).