

ANATOMY

Anatomy: Elective 1

Name of Block	Block 1
Name of Elective	Embalming techniques
Location of Hospital	Department of Anatomy, ESIC Medical College and Hospital, Faridabad
Name of Internal Preceptor	Dr Ajay R Nene
Learning Objectives of Elective	<ol style="list-style-type: none">1. Describe various methods of cadaveric preservation2. Prepare various embalming solution3. Perform femoral artery and carotid section4. Demonstrate embalming procedure
Number of students that can be accommodated in this elective	6
Prerequisites for elective	Universal precautions and required immunizations
Learning Resources	<ol style="list-style-type: none">1. Embalming – Principal and legal aspect by ML Ajmani
List of activities for student participation	<ol style="list-style-type: none">1. Participate in cadaveric donation program2. Handle cadaver3. Select and prepare embalming solution4. Select site of infusion and perform embalming procedure
Portfolio entries required	Perform at least two procedure
Log book entry required	No
Assessment	Attendance Successful embalming procedure
Other comments	N/A

Anatomy: Elective 2

Name of block	Block 1
Name of elective	Preparation of Museum Specimen
Location of hospital lab or research facility	Department of Anatomy, ESIC Medical College, Faridabad
Name of internal preceptors	Dr Ajay R Nene
Learning objectives of the elective	<ol style="list-style-type: none"> 1. Describe techniques used for preservation of specimen 2. Select and prepare solution for specimen 3. Perform dissection of cadaver and prepare specimen
No. of students that can be accommodated in this elective	6
Prerequisites for the elective	Universal precautions, Immunization
Learning resources for students	<ul style="list-style-type: none"> • Anatomy Museum death and Body displayed by Elizabeth Hallam
List of activities in which the students will participate	<ul style="list-style-type: none"> • Identify site of cadaver for specimen • Prepare solution and display the specimen
Portfolio entries required	<ul style="list-style-type: none"> • Display of at least 30 specimen
Log book entry required	Yes
Assessment	<ul style="list-style-type: none"> • Attendance • Successful display in museum
Other comments	Nil

PHYSIOLOGY

Physiology: Electives 1, 2 and 3 combined

Name of block	Block 1
Name of elective	Physiological Measurement techniques
Location of hospital lab or research facility	Clinical Physiology Lab
Name of internal preceptors	Dr Shivani Agarwal Dr Shilpa Khullar Dr Namrata Kahlon
Learning objectives of the elective	To train the students in measurement and monitoring a range of physiological parameters providing information on the extent of disease or disability and response to therapeutic interventions
No. of students that can be accommodated in this elective	6
Prerequisites for the elective	Student should have completed III rd MBBS Part I
Learning resources for students	<ul style="list-style-type: none"> • Aminoff's Electrodiagnosis in Clinical Neurophysiology • Spirometry in Practice. Second edition BTS 2005 • Laboratory evaluation of Autonomic Function. Low PA
List of activities in which the students will participate	Nerve Conduction Studies Spirometry Autonomic Function Tests
Portfolio entries required	Yes (Documentation of cases done)
Log book entry required	Yes (Completion of posting signed by preceptor with a "Meets expectation (M) grade"
Assessment	At the end of training students will be assessed on their ability to perform the procedures independently
Other comments	Students will be encouraged to undertake small research projects based on their training in elective posting in the department

Tests Summary

Test	Function	Indication
Nerve Conduction Study	To measure the function of peripheral nervous system i.e. nerves	Carpal tunnel syndrome, entrapment neuropathis, peripheral neuropathy
Spirometry	To measure airway function and dynamic lung volumes during forced or relaxed	Screening / diagnosis of suspected lung disease,

	inspiratory and expiratory maneuvers	assessment of therapy (bronchodilators), effects of therapy (cancer drugs), pre operative assessment
Autonomic Function Tests	<p>To establish the diagnosis of autonomic neuropathy that is difficult to establish based on clinical symptoms only that appear late in the course of the disease and are non-specific.</p> <p>These tests are reliable, reproducible, simple, quick to carry out and all are non-invasive in nature.</p>	<p>To diagnose the presence of autonomic failure, their natural history, and response to treatment.</p> <p>To diagnose autonomic neuropathies and distal small fiber neuropathy.</p> <p>To monitor the course of dysautonomia.</p> <p>As an instrument in research studies</p>

BIOCHEMISTRY

Biochemistry: Elective 1

Name of block	Block 1
Name of elective	Assessment of Thyroid function Disorders
Location of hospital lab or research facility	Clinical Biochemistry Laboratory, ESIC Medical College & Hospital, Faridabad
Name of internal preceptors	Dr. Gini Garima / Dr Sonam Bhatia
Learning objectives of the elective	<ol style="list-style-type: none"> 1. To describe normal thyroid functions. 2. To obtain experience in the laboratory investigations, diagnosis and treatment of Thyroid disorders 3. To perform independently Thyroid function tests
No. of students that can be accommodated in this elective	5
Prerequisites for the elective	Universal precautions, Immunization
Learning resources for students	<ul style="list-style-type: none"> • Harper's Illustrated Biochemistry by Rodwell, Bender, Botham, Kennelly, and Weil, 31st edition • Tietz Fundamentals of Clinical Chemistry And Molecular Diagnostics- 8th edition • Essentials Of Medical Pharmacology by KD Tripathi, 8th edition • Werner & Ingbar's The Thyroid: A Fundamental and Clinical Text, 11th edition • Williams Textbook of Endocrinology, 14 Edition: South Asia Edition, 2 Vol by Shlomo Melmed MBChB MACP, Ronald Koenig, Clifford Rosen, Richard Auchus, Allison Goldfine • Harrison's Principles of Internal Medicine, 21st edition • The Washington Manual of Medical Therapeutics By Zachary Cries- 36th edition

List of activities in which the students will participate	<ul style="list-style-type: none"> • Participate in laboratory activities including sample collection, Quality control, calibration, processing, machine handling and troubleshooting • Present at least 4 cases of thyroid disorders that are fully worked upon in the laboratory • Case that are to be presented should include observation of treatment and follow-up
Portfolio entries required	<ul style="list-style-type: none"> • Documentation of cases studied (Lab notebook entries) • Presentations done
Log book entry required	Yes - Completion of posting signed by preceptor with a “Meets expectation (M) grade”
Assessment	<ul style="list-style-type: none"> • Attendance • Successful verification of required portfolio entries, • Successful completion of the posting as certified in the log book with a “meets expectation ‘M’ grade”
Other comments	Students will be encouraged to undertake small research projects based on their training in elective posting in the department

Biochemistry: Elective 2

Name of block	Block 1
Name of elective	Assessment of Acid Base Disorders
Location of hospital lab or research facility	Clinical Biochemistry Laboratory, ESIC Medical College & Hospital, Faridabad
Name of internal preceptors	Dr. S.B Sharma / Dr. Seema Patel
Learning objectives of the elective	<ol style="list-style-type: none"> 1. To describe the common Acid Base Disorders 2. To explain the biochemical basis of tests done in assessment of different acid base disorders. 3. Participate in machine maintenance, quality control, calibration, processing of Blood samples 4. To be able to perform independently processing of sample and obtain experience in the laboratory investigations and diagnosis of Acid Base Disorders 5. Participate in troubleshooting
No. of students that can be accommodated in this elective	5
Prerequisites for the elective	Universal precautions, Immunization
Learning resources for students	<ul style="list-style-type: none"> • Harper's Illustrated Biochemistry By Rodwell, Bender, Botham, Kennelly, and Weil, 31st edition • Tietz Fundamentals Of Clinical Chemistry And Molecular Diagnostics- 8th edition • Harrison's Nephrology And Acid-Base Disorders : 3rd/E By J. Larry Jameson • Essentials Of Medical Pharmacology By KD Tripathi, 8th edition • Harrison's Principles of Internal Medicine, 21st edition • The Washington Manual Of Medical Therapeutics By Zachary Crees- 36th edition

List of activities in which the students will participate	<ul style="list-style-type: none"> • Participate in laboratory activities including sample collection, Quality control, calibration, processing, and machine handling • Present at least 4 cases of Acid-base disorders that are fully worked up in the laboratory • Cases that are to be presented should include observation of treatment and follow-up
Portfolio entries required	<ul style="list-style-type: none"> • Documentation of cases studied (Lab notebook entries) • Presentations done
Log book entry required	Yes - Completion of posting signed by preceptor with a “Meets expectation (M) grade”
Assessment	<ul style="list-style-type: none"> • Attendance • Successful verification of required portfolio entries, • Successful completion of the posting as certified in the log book with a “meets expectation ‘M’ grade”
Other comments	Students will be encouraged to undertake small research projects based on their training in elective posting in the department

PATHOLOGY

Pathology: Elective 1

Name of Block	1 Subject :Pathology
Name of Elective	Histopathology Topic: Breast carcinoma and its immunohistochemistry
Location of hospital lab or research facility	Histopathology lab, ESIC Medical College and Hospital, Faridabad.
Name of internal preceptor(s)	<ol style="list-style-type: none"> 1. Dr Mukta Pujani, Professor and Head, Pathology 2. Dr Manjula Jain Professor, Pathology 3. Dr Sujata Raychaudhuri Designated Professor, Pathology 4. Dr Charu Agarwal Associate Professor, Pathology 5. Dr Varsha Chauhan Assistant Professor, Pathology
Name of external preceptor (if any)	Dr. Asim Das Dean ESIC Medical College and Hospital, Faridabad
Learning objectives of the elective	<p>At the end of 4 weeks of postings in histopathology the students</p> <ol style="list-style-type: none"> 1. Should be able to record the gross findings and take appropriate sections from the specimen of modified radical mastectomy under supervision using CAP protocol. 2. Should be able to identify breast carcinoma on H&E stained sections and grade them. 3. Should be able to perform and analyse immunohistochemistry on tumor sections under supervision.
Number of students that can be accommodated in this elective	10
Prerequisites for the elective	<ol style="list-style-type: none"> 1. The students should have attended the lecture on breast pathology in 2nd MBBS. 2. Must have attended small group discussions, practical classes and slide demonstration of breast pathology in

	<p>2nd MBBS.</p> <p>3. Must have seen the slides of breast carcinoma in the practical classes in 2nd MBBS.</p>
Learning resources for students	<ul style="list-style-type: none"> • Textbooks: Sternberg's diagnostic Surgical Pathology, Rosai and Ackerman Surgical Pathology • E learning materials • Journals, articles • Self-Directed Learning
List of activities in which the student will participate	<ol style="list-style-type: none"> 1. Grossing of the Modified Radical Mastectomy Specimen under supervision. 2. Reporting of cases of Breast Carcinoma using CAP protocol with the reporting consultant. 3. Performing immunohistochemistry (IHC) for ER, PR, Her 2 and Ki-67 and analysing the IHC results.
Portfolio entries required	1. At least 04 fully worked up cases of breast carcinoma in 4 weeks.
Log book entry required	<ol style="list-style-type: none"> 1. Date wise documentation of all the cases seen by the students. 2. Recording of all internal assessment by the internal preceptor. <p>Signed by HOD Pathology</p>
Assessment	<ul style="list-style-type: none"> • Attendance • Successful completion of research objectives • Log book entry

Pathology: Elective 2

Name of Block	1 Subject :Pathology
Name of Elective	Hematology Topic: Diagnostic workup of Leukemia
Location of hospital lab or research facility	Hematology lab, ESIC Medical College and Hospital, Faridabad.
Name of internal preceptor(s)	<ol style="list-style-type: none"> 1. Dr Brig Tathagata Chatterjee, Senior consultant Hematology 2. Dr. Kanika Singh, Associate Professor Pathology 3. Dr. Dipti Sidam Assistant Professor, Pathology 4. Dr Shilpi More Assistant Professor, Pathology 5. Dr Jyoti Assistant Professor, Pathology
Name of external preceptor (if any)	Dr. Asim Das Dean, ESIC Medical College and hospital , Faridabad
Learning objectives of the elective	<p>At the end of 4 weeks of postings in hematology the students</p> <ol style="list-style-type: none"> 1. Should be able to screen and pick - up suspected cases of leukemia from the peripheral blood smear examination and automated blood cell counter report. 2. Should be able to categorize them as acute or chronic and further be able to type them broadly as myeloid and lymphoid. 3. Should be able to perform cytochemistry and special stains for confirmation of the cases. 4. Should be able to understand the basics of flow cytometry and apply and interpret flow cytometry panel for immunophenotyping of leukemia under supervision.
Number of students that can be accommodated in this elective	10

Prerequisites for the elective	<ol style="list-style-type: none"> 1. The students should have attended the hematology lecture on leukemia in 2nd MBBS. 2. Must have attended small group discussions, practical classes and slide demonstration of leukemia cases in 2nd MBBS. 3. Must have seen the slides of leukemias in the practical classes in 2nd MBBS.
Learning resources for students	<ul style="list-style-type: none"> • Textbooks: • Wintrobles, DeGruchy and Hoffbrand, Tejinder Singh • E learning materials • Journals, articles • Self-Directed Learning
List of activities in which the student will participate	<ol style="list-style-type: none"> 1. Study CBC report and observe the peripheral smears and pick up the leukemia cases 2. Correlate the cases clinically (history and clinical examination) 3. Complete Diagnostic workup of a suspected case of leukemia (BMA, special stains and flow cytometry) for confirmation and typing under supervision.
Portfolio entries required	<ol style="list-style-type: none"> 1. Log of cases seen 2. Log of investigations performed 3. Log of BMA/Biopsy examined 4. Atleast 04 fully worked up OPD/IPD cases of leukemias in 4 weeks.
Logbook entry required	<ol style="list-style-type: none"> 1. Datewise documentation of all the cases seen by the students. 2. Recording of all the internal

	assessment by the internal preceptor. Signed by the Senior Consultant Hematology
Assessment	<ul style="list-style-type: none">• Attendance• Successful completion of research objectives• Log book entry

PHARMACOLOGY

Pharmacology: Elective 1

Name of block	Block 1
Name of elective	Pharmacovigilance and Clinical Pharmacology
Location of hospital lab or research facility	Department of Pharmacology <ul style="list-style-type: none"> ▪ Room No. 24, ADR Reporting Centre, OPD Block ▪ 4th floor, Vaccine Clinical Trial Room
Name of internal preceptors	Dr. Monica Aggarwal Dr. Girish Meshram Dr. Salim Sheikh
Learning objectives of the elective	<ol style="list-style-type: none"> 1. To understand the process of ADR Reporting 2. To acquire knowledge of different types of ADRs 3. To understand the concept of Causality Assessment according to WHO-UMC Scale. 4. Understanding the process of patient recruitment in clinical trials. 5. Understand the process of obtaining informed consent.
No. of students that can be accommodated in this elective	6
Prerequisites for the elective	COVID-19 appropriate behavior Good Clinical Practice
Learning resources for students	<ol style="list-style-type: none"> 1. Mann's Pharmacovigilance, 3rd edition by Ron Mann & Elizabeth Andrews 2. An introduction to Pharmacovigilance by Patrick Waller and Mira-Harrison Woolrych 3. Fundamentals of clinical trials, 5th edition, Lawrence M Friedman 4. Textbook of clinical trials, 2nd edition, David Machin
List of activities in which the students will participate	<ol style="list-style-type: none"> 1. To demonstrate different types of ADR reporting forms 2. To demonstrate the process of ADR reporting 3. To demonstrate the process of causality assessment as per the WHO-UMC Scale 4. To demonstrate the feeding of data in the Vigiflow Software 5. To demonstrate different informed consent forms, case record forms, and

	<p>patient information sheets.</p> <ol style="list-style-type: none"> 6. To demonstrate process and the communication skills required for obtaining an informed consent. 7. To demonstrate the process of patient randomization 8. To demonstrate the process of following-up of patients in clinical trials.
Portfolio entries required	<p>Documentation of ADR reporting done (In Log books)</p> <p>Documentation of number of patients recruited (In Log books)</p> <p>Presentations</p>
Log book entry required	<p>Yes - Completion of posting signed by preceptor with a "Meets expectation (M) grade"</p>
Assessment	<p>Attendance</p> <p>Successful verification of required portfolio entries,</p> <p>Successful completion of the posting as certified in the log book with a "meets expectation 'M' grade"</p>
Other comments	<p>Students will be encouraged to undertake small research projects based on their training in elective posting in the department</p>

Pharmacology: Elective 2

Name of Block	Block 1
Name of Elective	Research (Preceptor initiated)
Location of hospital Lab or research facility	Department of Pharmacology, 3 rd Floor, Academic Block
Name of internal preceptor(s)	Dr. Monica Aggarwal Dr. Girish Meshram Dr. Salim Sheikh
Learning objectives of elective	<ol style="list-style-type: none"> 1. To collect data as prescribed in the protocol 2. To document data in the electronic case record correctly 3. To demonstrate the use of statistical software to do basic research calculations 4. To write an abstract based on the collated data 5. To present abstract to a group of peers and supervisors
Number of students that can be accommodated in this elective	4
Prerequisites for elective	Good clinical practice Good laboratory practice
Learning Resources	<ol style="list-style-type: none"> 1. Text book of Clinical Trials, 2nd edition by Machin D (Editor) 2. Fundamentals in Clinical Trials by Lawrence M Friedman 3. Practical Guide to Clinical Data Management by Prokscha S.
List of activities of student participation	<ol style="list-style-type: none"> 1. Work with supervisor in making observations, collect data and document as per protocol 2. Work with statistician to provide a statistical analysis of the data 3. Participate in research meetings of the department, internal and external meetings 4. Write abstract of work done 5. Present abstract in an internal meeting and if possible at an external meeting as a poster or oral presentation
Portfolio entries required	Laboratory notes Statistical worksheet Abstract created
Log book entries required	Satisfactory completion of posting with a “meets expectation ‘(M)’ grade”

Assessment	Attendance Successful completion of research objectives and log book entry
Other comments	Students will be encouraged to undertake small research projects based on their training in elective posting in the department.

MICROBIOLOGY

Microbiology: Elective 1

Name of block	Block 1
Name of elective	Molecular Biology
Location of hospital lab or research facility	Microbiology Laboratory
Name of internal preceptors	Dr Juhi Taneja
Learning objectives of the elective	1. To obtain experience in the laboratory investigations of chronic viral hepatitis 2. To obtain experience in diagnostic testing in viral load estimation
No. of students that can be accommodated in this elective	6
Prerequisites for the elective	Universal precautions, Immunization
Learning resources for students	<ul style="list-style-type: none"> • Ananthanarayan & Paniker's Textbook of Microbiology • Jawetz Melnick & Adelbergs Medical Microbiology 28 th Ed • Molecular Biology Genes to Proteins 4th Ed (Tropp) • Molecular Biology & Biotechnology by Kreuzer & Massey
List of activities in which the students will participate	<ul style="list-style-type: none"> • Participate in laboratory activities including sample processing, and RT PCR • Present at least 2 cases of chronic viral hepatitis that are fully worked up in the laboratory • Participate in patient education
Portfolio entries required	<ul style="list-style-type: none"> • Documentation of cases done (Lab notebook entries) • Presentations done
Log book entry required	Yes - Completion of posting signed by preceptor with a "Meets expectation (M) grade"
Assessment	<ul style="list-style-type: none"> • Attendance • Successful verification of required portfolio entries, • Successful completion of the posting as certified in the log book with a "meets expectation 'M' grade"
Other comments	Students will be encouraged to undertake small research projects based on their training in elective posting in the department

Microbiology: Elective 2

Name of Block	Block 1
Name of Elective	Hospital-acquired Infections
Location of Hospital	ESIC Medical College and Hospital, Faridabad
Name of Internal Preceptor	Dr Priti Agarwal
Learning Objectives of Elective	<ol style="list-style-type: none"> 5. To function as part of Hospital Infection Control Programme 6. To gain hands-on experience on surveillance of Hospital-acquired infections 7. To be able to investigate Hospital – acquired Infections 8. To understand the measures required to prevent hospital-acquired infections
Number of students that can be accommodated in this elective	6
Prerequisites for elective	Universal precautions and required immunizations
Learning Resources	<ol style="list-style-type: none"> 2. Textbook of Hospital Infection Control by Apurva Shastry 3. Hospital Acquired Infections: Prevention and Control by Purva Mathur
List of activities for student participation	<ol style="list-style-type: none"> 5. To participate in patient rounds in the Post-operative Ward and observe patients undergone elective Surgery 6. To participate in surveillance of hospital-acquired infection (HAI) 7. To observe and record if Infection Control Protocols especially Care-Bundles are being followed properly or not, for example <ol style="list-style-type: none"> a) Single-use lubricant jelly for foley’s insertion, daily meatal care, emptying urobag once it is 75% full, urobag level to be maintained above the ground, changing foley’s catheter every 7 days- as care-bundles to prevent Catheter-Associated Urinary Tract Infections (CAUTI) b) Single-use razor for hair removal, bath with 2% chlorhexidine 3 days prior to surgery, intravenous antibiotics 1 hour prior to surgery, aseptic part preparation with chlorhexidine and iodine,

	<p>maintaining $\geq 95\%$ oxygen saturation, temperature $\leq 37^{\circ}\text{C}$ and blood glucose < 110 mmol/dl during surgery, not disturbing surgical wound till 48 hours after surgery unless discharge from the wound- as care-bundles to prevent Surgical-Site Infections (SSI)</p> <p>c) Changing peripheral intravascular catheter every 3 days, changing gauze dressing every 72 hours and transparent dressing every 7 days, aseptic handling of the catheter- as care-bundles to prevent Catheter-Related Bloodstream Infection (CRBSI)</p> <p>8. To observe and record the compliance of hand-hygiene among health-care workers</p> <p>9. To observe and record Biomedical Waste (bandages, gloves, catheters etc.) Management especially its handling and disposal</p> <p>10. Present case records of at least 2 post-operative patients with regard to HAI</p>
Portfolio entries required	Present case records of at least 2 post-operative patients with regard to HAI
Log book entry required	Satisfactory completion of posting by preceptor
Assessment	<p>Attendance</p> <p>Successful verification of required portfolio entries</p> <p>Successful completion of the posting as certified in the log book with a meets expectation 'M' grade</p>
Other comments	

FORENSIC MEDICINE

Forensic Medicine: Elective 1

Name of block	Block 1
Name of elective	Study of Weapons
Location of hospital or research facility	ESIC Medical College and Hospital, Faridabad
Name of Internal Preceptor	Dr Aamir Tarique
Learning objectives of the elective	1. To know the various types of injuries produced by weapons 2. To know the medico-legal importance of injuries produced by different types of weapons
Number of students that can be accommodated in this elective	10
Prerequisites for electives	Not required
Learning Resources	1. Essentials of Forensic Medicine and Toxicology by K.S. REDDY 2. Manual of Practical Forensic Medicine and Toxicology
List of activities for student participation	1. To observe and identify various types of weapons in forensic medicine museum and to identify the injuries produced by them 2. To prepare medico-legal report of various types of injuries 3. Small group discussion on types of injuries
Portfolio entries required	Present records of at least three different weapons and types of injury they produce
Log book entry required	Yes – Completion of posting signed by preceptor
Assessment	1. Attendance 2. Successful completion of posting as certified in the log book with a “meets expectation ‘M’ grade”. 3. Seminar
Other comments	Students will be encouraged to think and understand about the medico-legal aspects of injuries produced by various weapons
Name of block	Block 1
Name of elective	Study of Weapons
Location of hospital or research facility	ESIC Medical College and Hospital, Faridabad

Forensic Medicine: Elective 2

Name of block	Block `
Name of elective	General Toxicology
Location of hospital or research facility	ESIC Medical College and Hospital ,Faridabad
Name of Internal Preceptor	Dr Aamir Tarique
Learning objectives of the elective	1. To know the medico-legal aspects of poisons 2. To know the symptoms suggestive of poisoning 3. Management of poisoning cases 4. Administration of antidotes
Number of students that can be accommodated in this elective	8
Prerequisites for electives	Universal precautions and required immunizations
Learning Resources	1. Essentials of Forensic Medicine and Toxicology by K.S. REDDY 2. Practical guide for forensic medicine and toxicology by K Tamilmani
List of activities for student participation	1. To observe various poisoning cases in the emergency department. 2. Under supervised conditions , perform the management of poisoning cases 3. Administer antidotes of poisons under supervision.
Portfolio entries required	Present case records of at least three poisoning cases and their management
Log book entry required	Yes – Completion of posting signed by preceptor
Assessment	1. Attendance 2. Sussessful completion of posting as certified in the log book with a “meets expectation ‘M’ grade”. 3. Seminar
Other comments	Students will be encouraged to think and understand about various types of poisoning cases and their management.