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Syllabus of Diploma in Endoscopy Technology First Year

S. No	Subject	Distribution of Marks			
		Th	PR	Viva-voce	Total
Paper I	ANATOMY & PHYSIOLOGY	100			100
Paper II	PATHOLOGY AND MICROBIOLOGY FOR GIT	100			100
Paper III	PHYSICS OF ENDOSCOPIC INSTRUMENTS & ITS MAINTENANCE	100			100
Paper IV	PREPRATION FOR ENDOSCOPIC PROCEDURE	100			100
Paper V	Practical & Viva Voce		75	25	100
	Total				500

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S.No.	Subject	Distribution of Marks			
		Th	PR	Viva-voce	Total
Paper I	Patient Care	100	-	-	100
Paper II	Basic Endoscopic Procedure	100	-	-	100
Paper III	Advanced Endoscopic Procedure	100	-	-	100
Paper IV	Endoscopy OT Administration, Design, Documentation, Medico legal, Record keeping, IT	100	-	-	100
Paper V	Practical & Viva-Voce		75	25	100
	Total				500

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Syllabus of Diploma in Endoscopy Technology

FIRST YEAR

Sr. No.	Subjects
1	Anatomy and Physiology
2	Pathology and Microbiology for GIT
3	Physics of Endoscopic instruments and its maintenance
4	Preparation for endoscopic procedure

Anatomy and Physiology

1. Introduction to the body as a whole
2. The cells, tissues of the body
3. The cell : Structure, Multiplication
4. Tissue : Types, structure, characteristics, functions
5. Epithelium : Simple, Compound
6. Connective : Areolar, adipose, fibrous, elastic, cartilage, blood and bone
7. Muscle : Striated (Voluntary), Smooth (Involuntary, Cardiac)
8. Nervous tissue
9. Fibrous tissue
10. Cell regeneration
11. Membranes : Musous, Serous, Synovial
12. Musculoskeletal system
13. The respiratory system :
 - a. Organs : Position and structure
 - b. Nose and nasal cavities
 - c. Functions : Respiratory, Olfactory
 - d. Pharynx
 - e. Larynx : Function – Respiratory, Vocal
 - f. Trachea, Bronchi, lungs : Lobes, lobules, pleura
14. Respiratory functions : External and internal respiration, common terms relating to disease and conditions of the system.
15. Anatomy of the esophagus, stomach, duodenum, small bowel.
16. Anatomy of abdomen, omentum, colon, rectum and anal canal.
17. Physiology and mechanism of stomach and intestinal secretion. Function of stomach, duodenum and gall bladder.
18. Physiology and function of liver, spleen, colon and rectum. Physiology of defecation.

Pathology and Microbiology for GIT

1. General lectures on micro-organisms – Classification \ shapes \ sterilization and asepsis.
2. Infection – source of infection, spread of infection, various pathogenic bacteria, viruses and diseases caused by them (gastritis, enteritis, enterocolitis, colitis etc.)
3. Pathology – General – cell injury and adaptation, inflammation and repair, fluid and hemodynamic derangement in vomiting and diarrhea.
4. Pathology of the gastrointestinal tract and genital system. IBS, IBD, Koch's abdomen.
5. Bleeding lesions of the esophagus (Varices, Mallorrie Weis Tears).
6. Polyps of stomach, gastric cancer, duodenal ulcers, bleeding lesions, helicobacter phlorie infection and antral gastritis.


7. Common diseases of the colon, cancer colon, polyps, diverticulae, granulomatous colitis, ulcerative colitis, Crohn, Disease, Functional disease, benign structure of the colon, diseases of biliary tract, stones, Gall bladder stone and cancer sequelae.
8. Pancreatic diseases needing the ERCP procedure.

Physics of Endoscopic Instruments and its Maintenance

1. Layout of Endoscopy theatre.
2. Principle and working of GI Scope
3. Principle and working of colonoscopy
4. Principle and working of bronchoscope,
5. Principle and working of esophagoscope.
6. Principle and working of fibre optic laryngoscope.
7. Sinoscope, basic laparoscope.
8. Use, care and maintenance of the common types of instruments, needles, suture... and ligatures used in operation theatre.
9. Basic endoscopy unit – Forward viewing, single channel and double channel endoscopy and specific instruments used in endoscopic and colonoscopy procedures.
10. Bio hazards and safety in medical devices.
11. Basics of video endoscopy instrumentation, mechanics, magnification etc.
12. C-Arm image intensifier.

Preparation for Endoscopic Procedure

1. Cleanliness and sterilization of ER\Operation theatre and annexes
2. Fumigation, asepsis in endoscopy rooms.
3. Fumigation continued
4. Principles of sterilization, modes of sterilization including autoclaving.
5. Pressure sterilization, boiling, dry heat, gas chemical sterilization, Gamma ray sterilization.
6. Lighting in ET including emergency lighting
7. Helping endoscopist and others to wash up and drape for operation.
8. Holding out cap, mask, gown and gloves for endoscopist and others and handling of sterilized articles.
9. Washing, cleaning, testing and repairing of gloves and sorting – themout for packing and sterilization
10. Preparation of dressings, swabs and packs packing of drums and sterilization.
11. Use, care and sterilization of the common types of instruments, needles, suture, and ligatures used in operation theatre.
12. Procedure for sending specimen for biopsy and fluid for culture.
13. Identification of instruments for common endoscopic procedures
14. Operation and examinations such as – GI Scopy, Colonoscopy, Bronchoscopy, Esophagoscopy, Fibre optic laryngoscopy, sinoscopy, basic laproscopy .
15. Setting up of tray \ trolley for various endoscopic procedures \ surgeries.
16. Assisting the scrub surgeon.
17. Scrubbing, gloving and gowning.
18. Laying tables for endoscopic.


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19. Endoscopy OT Stores – Indenting, storekeeping, accounting and audit.
20. Inventory management.
21. Setting up of table for various diagnostic and therapeutic procedures.

Syllabus of Diploma in Endoscopy Technology

SECOND YEAR

Sr. No.	Subjects
1	Patient Care
2	Basic Endoscopic Procedure
3	Advanced Endoscopic Procedure
4	Endoscopy OT Administration, Design, Documentation, Medico legal, Record keeping, IT

Patient Care

Patient preparation for different endoscopic examination :

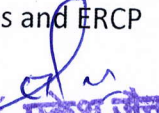
1. Special precaution in handlings patients with sepsis, blood borne infection – Hep.B, HCV, HIV Etc. – Cleaning and disinfection of the articles and endoscopy room (with special reference to HIV, HBV & HCV) Terminal disinfection of endoscopy room
2. Preparation of patient including transfer and positioning of the patient.
3. Elective and emergency procedures.
4. Observation and monitoring the patient in recovery room.

Basic Endoscopic Procedure

1. Assisting the endoscopist in various endoscopic and colonoscopic procedures like :
Herniorrhaphy : inguinal, epigastric femoral, paraumbilical abdominal laparotomy.
2. Labaroscopy : Cholecystectomy, appendicectomy.
3. Vagotomy and pyloroplasty, Gastrostomy, Ileostomy, colostomy
4. Appendicetomy
5. Colonoscopy – Endoscopy
6. Diagnostic endoscopic procedure – Giving oral anaesthetic agent, diagnostic colonscopic procedure- Assisting the anesthesiologist for induction of anaesthesia and positioning the patient, biopsy, injection sclerotherapy Gastric biopsy.
7. Basic of laparoscopy, instrumentation, technique.
8. Introduction to rigid scope, mechanics etc.
9. Common laparoscopic procedure, appendix, cholecystectomy etc.

Advanced Endoscopic Procedure

1. Assisting the endoscopist in various endoscopic and colonoscopic procedure like introduction to ERCP suite management : Organisation of hospital, Organisation of ERCP Rooms – Single and multiple units – Elective and emergency procedures.
2. Principles of surgical asepsis and ERCP room : Preparation of tables, equipments, instruments for the procedure – Care of ERCP room – before, during and after the procedure, special precaution in handlings patients with sepsis, blood borne infection – Hep.B, HCV, HIV etc. – Cleaning and disinfection of the articles and ERCP room (with special reference to HIV, HBV, HCV).


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3. ERCP room equipments, instruments and maintenance : Basic ERCP unit – side viewing scope, C-arm facility – recording and documentation of interesting procedure, specific instruments used diagnostic and therapeutic procedures – various sphincterotomes, guide wires, balloon dilators, baskets, lithotripsy handling – various types of stents – plastic and metal.
4. Diagnostic ERCP procedures – preparation of patient including transfer and positioning of the patient, assisting the anesthesiologist for induction of anaesthesia and positioning the patient, assisting the endoscopist in various diagnosis ERCP procedures.
5. Therapeutic ERCP procedures – Assisting endoscopist for CBD stone removal, CBD and CHD structure management, plastic and metal stent placement, getting tissue biopsy and brush cytology, pancreatic stent placement, maintaining patient safety and comfort in ERCP room – prevention of physical, electrical, chemical injuries \ hazards to patient – Maintenance of interpersonal relationship.
6. Pancreatectomy, drainage of pancreatic cyst (Pseudocyst), resections of small bowel, sigmoid colon and rectum, hemi and total colectomy, colostomy – colostomy of colostomy, rectopexy and abdominoperineal resection, drainage of abscess(es) in the region of the liver, hepatic resection, liver transplant, splenectomy, L-R Shunt, Esophageal varices, Gastric Varices, indication of treatment of bleeding lesions in the esophagus, glue
7. Injection and EVL
8. Gastric polyp resection, percutaneous endoscopic gastrostomy, percutaneous Jejunostomy
9. Dilatation of structures of esophagus, balloon, bougies, CRE, Balloons etc.
10. Basic ERCP procedure, premedication, position, stone retrieval and placement of stent, removal of stones from PD and CBD.
11. Gastroduodenal stenting.
12. Double balloon enteroscopy, capsule endoscopy, different types of capsules
13. Colonoscopic polypectomy colonic dilatation of strictures by Balloon.
14. Placement of expansile stents in colo-rectum
15. Emergency de-rotation of colon in sigmoid volvulus.
16. Advanced lap surgery, lap liver resections etc.
17. Therapeutic endoscopic and colonoscopic procedure – initial resuscitation of the patient – knowing about EVL and EST and assisting the endoscopist. Assisting the endoscopist in endoscopic and colonoscopic polypectomy, APC and FB removal. Maintaining patient safety and comfort in ER : Prevention of physical, electrical, chemical injuries \ hazards to patient – Maintenance of interpersonal relationship, orientation to legal and ethical issues involved in endoscopic room technique.

Endoscopy OT Administration, design, documentation, medico legal, record keeping, IT

1. Organization of hospital- Organization of endoscopy rooms – single and multiple theatre units, - Elective and emergency endoscopies, ambulatory surgery.
2. Admission and transfer procedure, maintenance of operative records.
3. Communication and health care provider – patient relationship, methods of effective communication, attending skills, rapport building skills, empathy skills, barriers to effective communication management, need for scientific management, delegation, decision making

डॉ. मुकेश जैन

सहायक आचार्य

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भारतीय मेडिकल शिक्षण संस्थान

4. Supervision – Techniques
5. Assignments – Individual and team function
6. Human relations, public relations, planning of courses block.
7. Ethical and legal issues in operation theatre and anesthesia.

REFERENCE BOOKS :


1. Williams PL, Warwick R, Dyson M, Bannister LH (eds) Gray's Anatomy. 36th edition. Churchill living stone, New York, 1980.
2. Human anatomy Regional and applied – Vol- I – B.D. Chaurasia's, 3rd CBS Publishers and distributions, New Delhi, 1995.
3. Text book of Medical Physiology – Arthur C. Guyton, John E.Hall, 9th Edition W.B. Saunders Company U.S.A. 1996
5. Essentials of Medical Physiology – Anil Baran Singh Mahapatra, 1st Ed, Current books interneational, Mumbai, 1998.
6. Clinical Anatomy for Medical Students – Richard S. Snell, 5th Ed., Little , Brown and Company, U.S.A., 1992

Pathology :

1. Fletcher : Dianostic Histopathology of Tumours – Christopher DM Fletcher, 2007 (3rd Ed.)
2. Lakhani : Basic Pathology : An Introduction to the Mecanisms of Disease – Sunil R.
3. Lakhani, Susan A. Dilly, Caroline J Finalyson and Ahmet Dogen 2003 (3rd Ed.)
4. Appleton & Lange's Review of Microbiology and Immunology – Dr. William W. Yotis, Todayao Hashimoto, Harnold J. Blumenthal – 1997.
5. Medical Microbiology – Miachael A. P Faller, Patrick R. Murray, Ken S. Rosenthal.

1. Practical Gastrointestinal Endoscopy – The Fundamental – Peter B. Cotton
2. Introduction to Operating room Technique – Kandaswami.
3. Theatre Technique – Dixon Eileen.
4. Fundamentals of Operation Theatre Service – T.K. Datta.
5. SAGES Manual perioperative care in minimally invasive surgery – Richard I. Whelan, James W. Fleshman, Dennis L. Fowler, Springer Edition.

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