Guidelines

for

Competency Based Training Programme

in

FNB- Minimal Access Surgery

NATIONAL BOARD OF EXAMINATIONS

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CONTENTS

PREAMBLE:

- The goal of the MIS Fellowship is to provide the fellow with the necessary training and education to be comfortable in the performance of a wide variety of minimally invasive operations.
- The fellow is exposed to the broad applications of minimally invasive surgery, including bariatric surgery, surgery for gastroesophageal reflux disease (GERD), hernia surgery, and solid organ surgery.
- The Fellow will have ample opportunity to participate in both basic science and clinical research, and scholarly activity with presentations in national and international symposia is expected.
- The Fellow will be provided with the necessary stimuli to pursue a successful career in either private practice or academic surgery upon completion of the Fellowship.

PROGRAMME GOALS:

Diploma in MAS endeavors to evolve and enhance minimal access surgical skills among members and fellows of AMASI, IAGES and other organizations infuse state of art surgical techniques and practices and to undertake state of art research in this sphere of Medical practice.

PROGRAMME OBJECTIVES:

Gaining laparoscopic skills is very important. Skill in conventional surgical procedure does not necessarily confer skills in Laparoscopic surgery. The course is aimed at bridging this gap and is formulated with the following objectives in mind.

1. To master the tactile sensation, altered hand and eye co-ordination due to the length and design of instruments and the absence of three dimensional depth perception due to two dimensional representation of the three dimensional abdominal cavity.
2. To learn about specialized Laparoscopic equipments and instrumentation.
3. To learn the principles of Laparoscopic surgery.
4. To learn the indications, contra-indications and limitations of MIS and various procedures.
5. To perform abdominal insufflation using Veress needle.

6. To perform laparoscopic procedures on live animal models in the purposeful, wet laboratory in association with J&J Ethicon Lab. G. Learn to perform on human patients.
7. Sterilization and maintenance of instruments and video equipments.
8. Documentation, storage data and presentation.
9. Anesthesia in laparoscopic surgery.
10. Aim to practice MIS as an armatarium.
11. Improving knowledge and trouble shooting in MIS.
12. Electro surgery and other newer energy sources.
13. Learning about prosthetic meshes and fixation devices.
14. To learn about tissue marcellators and organ retrieval systems.
15. To known about the complications and its managements in MIAS
16. Basic and advanced skills in Endo-knotting and intracorporeal suturing techniques.
17. To understand all the basic principles (instruments, materials, equipment and anaesthesia) and be able to perform the most frequently used basic laparoscopic techniques.
18. To be able to perform basic technical tasks in laparoscopic surgery including intracorporeal suturing and knot tying techniques, two hand coordination for dissection and safe use of energy sources.
19. To be able to describe results and potential complications of laparoscopic procedures and manage them.
20. To be able to perform some advanced laparoscopic procedures like in fields of HBP, Bariatric, Upper GI, Hernia and Colorectal surgeries and have hands on experience of advance procedures.

ELIGIBILITY CRITERIA FOR ADMISSIONS TO THE PROGRAMME

(A) FNB Minimal Access Surgery Course:

1. Any medical graduate with ***DNB/MS (General Surgery)*** qualification , who has qualified the ***Entrance Examination*** conducted by NBE and fulfill the eligibility criteria for admission to FNB courses at various NBE accredited Medical Colleges/ institutions/Hospitals in India is eligible to participate in the Centralized counseling for allocation of FNB Minimal Access Surgery seats purely on merit cum choice basis.

2. Admission to 2 years FNB Minimal Access Surgery course is only through ***Entrance Examination*** conducted by NBE and Centralized Merit Based Counseling conducted by National Board of Examination as per prescribed guidelines.

Duration of Course: 2 Years

Every candidate admitted to the training programme shall pursue a regular course of study (on whole time basis) in the concerned recognized institution under the guidance of recognized post graduate teacher for assigned period of the course.

TEACHING AND TRAINING ACTIVITIES

The fundamental components of the teaching programme should include:

1. Case presentations & discussion- once a week
2. Seminar – Once a week
3. Journal club- Once a week
4. Grand round presentation (by rotation departments and subspecialties)- once a week
5. Faculty lecture teaching- once a month
6. Clinical Audit-Once a Month
7. A poster and have one oral presentation at least once during their training period in a recognized conference.

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan) interesting and difficult case unit discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into theoretical, clinical and practical in all aspects of the delivery of the rehabilitative care, including methodology of research and teaching.

Theoretical: The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The students are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.

Symposia: Trainees would be required to present a minimum of 20 topics based on the curriculum in a period of two years to the combined class of teachers and students. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the trainees with the dates for presentation.

Clinical: The trainee would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.

Bedside: The trainee would work up cases, learn management of cases by discussion with faculty of the department.

Journal Clubs: This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and resident doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.

Research: The student would carry out the research project and write a thesis/ dissertation in accordance with NBE guidelines. He/ she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

SYLLABUS

Components of the Program:

The activities of the fellow will be a blend of clinical experience, research, and teaching responsibilities for medical students and General Surgery residents. Clinical experience is to include both operative time and clinic hours. Prior fellows have performed both basic science research, as well as clinical research. Topics have varied from surgical education to virtual reality simulation. Teaching responsibilities will range from formal Grand Rounds presentations for the Department of Surgery to informal clinical instruction in the operating room and surgical clinic.

The activities will be divided as follows:

- Clinical 60%
- Research 20%
- Teaching/Education 20%

PATIENT CARE

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows are expected to perform the following:

- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- Gather essential and accurate information about their patients
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- Develop and carry out patient management plans
- Counsel and educate patients and their families
- Use information technology to support patient care decision and patient education

- Perform competently all medical and invasive procedures considered essential for the area of practice
- Provide health care services aimed at preventing health problems or maintaining health
- Work with health care professionals, including those from other disciplines, to provide patient-focused care

MEDICAL KNOWLEDGE

Fellows must demonstrate knowledge about established and evolving biomedical, clinical, and cognitive (epidemiological and socio-behavioral) sciences and the application of this knowledge to patient care. Fellows are expected to perform the following:

- Demonstrate an investigatory and analytic thinking approach to clinical situations
- Know and apply the basic and clinically supportive sciences which are appropriate to their discipline.

PRACTICE-BASED LEARNING AND IMPROVEMENT

Fellows must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Fellows are expected to perform the following:

- Analyze practice experience and perform practice-based improvement activities using a systematic methodology
- Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
- Obtain and use information about their population of patients and the larger population from their patients are drawn
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and of information on diagnostic and therapeutic effectiveness

- Use information technology to mange information, access on-line medical information, and supplement their own education
- Facilitate the learning of students and other health professionals.

INTERPERSONAL AND COMMUNICATION SKILLS

Fellows must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients' families, and professional associates. Fellows are expected to perform the following:

- Create and sustain a therapeutic and ethically sound relationship with patients
- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory questioning, and writing skills
- Work effectively with others as a member or leader of a health care team or other professional group.

PROFESSIONALISM

Fellows must demonstrate a commitment to carrying out professional responsibilities and sensitivity to a diverse patient population. Fellows are expected to perform the following:

- Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and families that supercedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and ongoing professional development
- Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical treatment, confidentiality of patient information, informed consent, and business practices
- Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

SYSTEMS-BASED PRACTICE

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Fellows are expected to perform the following:

- Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
- Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
- Practice cost-effective health care and resource allocation that does not compromise the quality of care
- Advocate for quality patient care and assist patients in dealing with system complexities
- Know how to partner with health care managers and health care providers to assess, coordinate, improve health care and know how these activities can affect system performance.

ORGANIZATION OF TRAINING:-

A. Training programs in MIS should be in a multidisciplinary centre of minimally invasive surgery and should be organized by a qualified, accredited specialist in MIS.
B. The Centre should use the guidelines and protocols by national professional bodies and are reviewed at regular intervals.

THE MEANS OF TRAINING:-

1. Entry requirements:

• MS in General Surgery or DNB General Surgery from an Institute or Medical College recognized by Medical Council of India or Indian Medical Council.

2. The trainees should participate in all relevant activities of the training unit such as the care of Out -Patients and In -Patients, on call duties during both day and night, also participating in educational activities, including the teaching of other health professionals. Participation in audit and clinical or basic research is essential.
3. The duration of MIS training should include a Minimum of two Year in an approved programme and should cover the clinical and research aspects of the following areas:

A. Good text books on MIS written by leading and experienced Authors
B. Educational tools such as Video tapes /CD ROMS
- Simulators for Endo – Training
- Box trainers to master the skills
- Endo trainer rooms with adequate space and good air-conditioning facility to work long hours in the simulators so the trainee can avoid fatigue.
- Endo-cameras mounted on a special stands with the monitors
- Special hand instruments to learn the hand and eye co-ordination
- To learn depth perception
- To learn tactile sensations

4. The training should be structured throughout with clearly defined targets to be met after specified intervals. An education plan should be drawn up in consultation with the trainees at the beginning of each attachment and progress should be monitored regularly, by means of log book.

SCHEDULE

Weekly Schedule

Monday: AM: Operating Room
PM: Operating Room
Tuesday: AM: Endoscopy
Clinic
PM: Clinic
Wednesday: AM: Operating Room
Research
Training Laboratory
PM: Operating Room
Research
Medical Student Didactic Lectures
Thursday: AM: Clinic
Training Laboratory
PM: Clinic
Research
Training Laboratory
Friday: AM: Operating Room
Research
PM: Operating Room
Research

TROUBLE SHOOTING:

Laparoscopic procedures are inherently complex. Many things can go wrong. The surgeon must learn sufficiently about all equipments which can trouble shoot and to solve it. Common problems to be learnt are:

1. Cause of Poor insufflations
2. Reason for excessive pressure for insufflation

3. Reasons for inadequate lighting
4. Reasons for too bright lighting
5. Reasons for loss of picture on monitors
6. Reasons for poor quality pictures /fogging / haze
7. Reasons for flickering electrical interference
8. Reasons for inadequate cauterization/inadequate irrigation and suction

TRAINING PROGRAMME SYLLABUS

MINIMAL INVASIVE ABDOMINAL SURGERY: (Laparoscopic Surgery)

A. General Principles:

1. Equipment set up and trouble shooting
2. Patient preparation
3. Anesthesia and Monitoring
4. Access to abdomen
5. Creating pneumoperitoneum
6. Abdominal wall lift devices
7. Principles of laparoscopic haemostasis
8. Principles of Electosurgery

PREOPERATIVE EVALUATION FOR LAPAROSCOPIC SURGERY

1. Before surgery, evaluation by qualified anesthetist is mandatory. This should Include:

Systems affected by Pneumoperitoneum

- Air way
- Respiratory system
- Cardiovascular System

Other Relevant systems

- Central nervous system
- Endocrine system

• Gastrointestinal system

Other relevant History
• Post anesthetic experience of the patient
• Post anesthetic family History of the patient
• Allergies to local anesthetics of the patient
• Medications taken in the past.

2. Monitoring and safety considerations which should include:
1. Breath sounds (Precardial or esophageal stethoscope)
2. Electrocardiogram (continuous)
3. Blood pressure, pulse (continuous, non invasive)
4. Continuous oxygen saturation (Pulse oximeter)
5. Expired carbon dioxide (Capnograph)
6. Temperature gauge
7. Ventilator and additional monitors (optional)

3. Fire prevention is a crucial safety consideration. The operating room is an Oxygen rich environment. The ends of the fibro optic cables become extremely hot and can ignite drapes. Hence fire extinguisher should be placed just outside the laparoscopic theatre.

ADMINISTRATION

Setting up the laparoscopic surgery unit, quality control and assurance, creating protocol for management and organizing and coordinating of clinical meetings.

The course will ensure training in all three domains of learning i.e.
• Cognitive (Knowledge)
• Affective (Behavior, communications skills towards the patients)
• Psychomotor (Development of skills)

The syllabus consists of:

1. Diagnostic Laparoscopy
2. Laparoscopic Appendectomy
3. Laparoscopic Cholecystectomy
4. Laparoscopic Adhesiolysis

Advanced module in MIS FOR GENERAL SURGEONS:

1. Laparoscopic Herniaplasty

Direct – TEP REPAIR

Indirect – TAPP REPAIR

2. Laparoscopic Perforation Closure
3. Vagotomy and GJ (Stapling and Hand Suturing)
4. Nissen Fundoplication for GERD and Hiatus Hernia
5. CBD Exploration using C-Arm control
6. Laparoscopic Splenectomy
7. Assisted large and small bowel surgeries
8. Liver resections
9. Pancreatojejunostomy and Cystogastrostomy for Pseudocysts of pancreas.
10. Laparoscopic Rectopexy for prolapsed rectum.
11. Laparoscopic APR/Right and left colectomy
12. Trans – Hiatal Esophagectomy
13. Gastrectomy for Ca. Stomach
14. Meckels Diverticulectomy
15. Obesity surgery and Diabetic control surgery (optional)

- Sleeve Gastrectomy
- Gastric Banding
- Gastric Bypass

Clinical Experience

GENERAL SURGERY

- Bariatrics
- Gastroesophageal reflux disease
- Paraesophageal hernia
- Achalasia
- Ventral hernia
- Inguinal Hernia
- Hematologic disorders
- Hepatobiliary disorders

COLORECTAL SURGERY

- Diverticulitis
- Colon cancer

PEDIATRIC SURGERY

- Gastroesophageal reflux disease
- Hematologic disorders

ENDOCRINE SURGERY

- Disorders of the adrenal gland

TRANSPLANT SURGERY

- Living donor nephrectomy

SURGICAL ONCOLOGY

- Disorders of the adrenal gland
- Hepatobiliary disorders

OPERATIVE EXPERIENCE

The Fellowship operates with a mentor system. The Fellow will act as the assistant surgeon early during the training period. As the Fellow's skill increases, she or he will graduate to the role of Primary Surgeon under supervision, and assist the Surgery Resident in performing procedures. The Fellow will also be responsible for teaching the Surgery Resident in open general surgery cases and minor surgical operations. In addition, the Fellow will become familiar with robotic-assisted surgery, and eventually perform operations as Primary Surgeon using the robot.

ENDOSCOPY

The Fellow will perform both upper and lower endoscopy under the supervision of Attending Surgeons from Minimally Invasive Surgery and Colorectal Surgery. The Fellow will also supervise resident performed endoscopy.

The academic activities of the program in the hospital should include:

1. Regular academic sessions
2. Case discussion and seminars
3. Paper presentation
4. Audit/ Project/Research
5. Thesis
6. Conferences/CME's/Live workshops

• Fine tuning skills in the purpose built animal (wet) laboratory

• The programme is organized to have maximum "Hands-on" practice sessions in the "Purpose Built" animal laboratory.

• Lecture hall for CME, conference and live workshop transmission with good acoustics.

Other areas in which knowledge is to be acquired:

- Biostatistics, Research Methodology and Clinical Epidemiology
- Ethics
- Medico legal aspects relevant to the discipline
- Health Policy issues as may be applicable to the discipline

Competencies

Hands on training

Assisting basic Laparoscopic surgeries.

1. Laparoscopic cholecystectomy
2. Laparoscopic appendectomy
3. Laparoscopic inguinal hernia

Assisting advanced laparoscopic surgeries

1. Laparoscopic nissen fudoplication
2. Laparoscopic toupet fundoplication
3. Laparoscopic Splenectomy
4. Laparoscopic Nephrectomy
5. Laparoscopic ovarian cystectomy
6. Laparoscopic hemicolectomy
7. Laparoscopic abdomino perineal resection

Practical Assessment of the candidate will be based on minimum surgeries performed and entered in log book checked and countersigned by Expert / Guide (Annexure 2). The maximum Weightage is for surgeries performed independently and minimum Weightage will be given to surgeries observed. The minimum surgeries required as follows- Procedure	Minimum surgeries required per sessions
Endo-trainer	To be judged at contact session
Appendix	10 independent surgeries
Gall bladder	10 independent surgeries
Hernia(1st Semester)	10 independent surgeries
Diag lap + small bowel	08 independent surgeries
Colon & Rectum	04 independent surgeries

Laparoscopic management of Rectal Prolapse Laparoscopic Colectomy Laparoscopic Resection		Anterior		
Upper	GI	Surgeries	04	Independent Surgeries
Laparoscopic management of Achalasiacardia Fundoplication				

OR

The fellow will achieve the required number of cases for the advanced minimally invasive non-bariatric portion of the fellowship (150 MIS cases) and also achieve the required number of cases for the minimally invasive bariatric surgery portion of the fellowship (50 gastric bypasses, 10 restrictive – Lap-Bands and sleeves), and 5 revisions for a total of 100 cases). The minimum number of cases the fellow will complete is 250.

LOG BOOK

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s) The candidate will maintain the record of all academic activities undertaken by him/her in log book .

1. Personal profile of the candidate
2. Educational qualification/Professional data
3. Record of case histories
4. Procedures learnt
5. Record of case Demonstration/Presentations
6. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.
7. In the absence of production of log book, the result will not be declared.

Leave Rules

1. FNB Trainees are entitled to leave during the course of FNB training as per the Leave Rules prescribed by NBE.
2. FNB candidate can avail a maximum of 20 days of leave in a year excluding regular duty off/ Gazetted holidays as per Hospital/Institute calendar/policy.

3. MATERNITY / PATERNITY LEAVE:

    a. There is no provision of maternity or paternity leave during the FNB tenure. However, if a FNB trainee avails maternity (90 days) or paternity (7 days) leave during the FNB tenure, her or his tenure will be extended by an equal number of days.
    b. FNB trainees are required to complete their training by a prescribed cut off date (as per information bulletin of Exit exam) for being eligible to FNB Exit examination. Trainees whose FNB tenure is extended beyond this cut off date only due to the maternity/paternity leave availed by them shall be permitted to take exit examination, if otherwise eligible, with other registered candidates of same session.

4. No kind of study leave is permissible to FNB candidates. However, candidates may be allowed an academic leave of 10 days across the entire duration of training program to attend the conferences/CMEs/Academic programs/Examination purposes.
5. Under normal circumstances, leave of one year should not be carry forward to next year, however, in exceptional cases like prolonged illness or any meritorious ground the leave across the training program may be clubbed together with prior approval of NBE.
6. Any other leave which is beyond the above stated leave is not permissible and shall lead to extension/cancellation of FNB course.

7. Any extension of FNB training for more than 2 months beyond scheduled completion date of training is permissible only under extra-ordinary circumstances with prior approval of NBE. Such extension is neither automatic nor shall be granted as a matter of routine
8. Unauthorized absence from FNB training for more than 7 days may lead to cancellation of registration and discontinuation of the FNB training and rejoining shall not be permitted.
9. MEDICAL LEAVE
    a. Leave on medical grounds is permissible only for genuine medical reasons and NBE should be informed by the concerned Institute/hospital about the same immediately after the candidate proceeds on leave on medical grounds.
    b. The supporting medical documents have to be certified by the Head of the Institute/hospital where the candidate is undergoing FNB training and have to be sent to NBE.
    c. The medical treatment should be taken from the Institute/hospital where the candidate is undergoing FNB training. Any deviation from this shall be supported with valid grounds and documentation.
    d. In case of medical treatment being sought from some other Institute/hospital, the medical documents have to be certified by the Head of the Institute/hospital where the candidate is undergoing FNB training.
    e. NBE reserves its rights to verify the authenticity of the documents furnished by the candidate and the Institute/hospital regarding Medical illness of the candidate and to take a final decision in such matters.

10.
    a. Total leave period which can be availed by FNB candidates is 40+10 = 50 days. This includes all kinds of eligible leave including academic leave. Any kind of leave including medical leave exceeding the

aforementioned limit shall lead to extension of FNB training. It is clarified that prior approval of NBE is necessary for availing any such leave.

b. The eligibility for Fellowship Exit Examination shall be determined strictly in accordance with the criteria prescribed in the respective information bulletin.

Eg:- Candidate joining FNB 2 year course in 2017 admission session on 15th April, 2017 shall be completing his/her FNB training on 14th April, 2019 under normal circumstances wherein there is no extension of training. If his/her training is extended due to leave on medical grounds or any other reason for 3 months after adjusting eligible leave available in the entire duration of FNB training, the training shall be completing on 14th July, 2019. If as per the Information Bulletin for Final Examination December 2018, the cutoff date for completion of training is 30th June. 2019, such candidate shall not be eligible for December 2018 Final Examination.

Important: Extension of training due to maternity leave shall not be affected while deciding the cutoff date of FNB training.

EXAMINATION

FORMATIVE ASSESSMENT

Formative assessment includes various formal and informal assessment procedures by which evaluation of student's learning, comprehension, and academic progress is done by the teachers/ faculty to improve student attainment. Formative assessment test (FAT) is called as "Formative "as it informs the in process teaching and learning modifications. FAT is an integral part of the effective teaching .The goal of the FAT is to collect information which can be used to improve the student learning process.

Formative assessment is essentially positive in intent, directed towards promoting learning; it is therefore part of teaching. Validity and usefulness are paramount in formative assessment and should take precedence over concerns for reliability. The assessment scheme consists of Three Parts which has to be essentially completed by the candidates.

The scheme includes:-

Part I:- Conduction of theory examination
Part-II :- Feedback session on the theory performance
Part-III :- Work place based clinical assessment

Scheme of Formative assessment

PART – I	**CONDUCT OF THEORY EXAMINATION**	Candidate has to appear for Theory Exam and it will be held for One day.
PART – II	**FEEDBACK SESSION ON THE THEORY PERFORMANCE**	Candidate has to appear for his/her Theory Exam Assessment Workshop.
PART – III	**WORK PLACE BASED CLINICAL ASSESSMENT**	After Theory Examination, Candidate has to appear for Clinical Assessment.

The performance of the resident during the training period should be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student

1. Personal attributes:

- **Behavior and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.
- **Motivation and Initiative:** Takes on responsibility, innovative, enterprising, does not shirk duties or leave any work pending.

- **Honesty and Integrity:** Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values, loyal to the institution.
- **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.

2. Clinical Work:

- **Availability:** Punctual, available continuously on duty, responds promptly on calls and takes proper permission for leave.
- Diligence: Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management.
- **Academic ability:** Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.
- **Clinical Performance:** Proficient in clinical presentations and case discussion during rounds and OPD work up. Preparing Documents of the case history/examination and progress notes in the file (daily notes, round discussion, investigations and management) Skill of performing bed side procedures and handling emergencies.

3. Academic Activity: Performance during presentation at Journal club/ Seminar/ Case discussion/Stat meeting and other academic sessions. Proficiency in skills as mentioned in job responsibilities.

FINAL EXAMINATION

The summative assessment of competence will be done in the form of Fellowship Exit Examination leading to the award of the degree of Fellow of National Board in Minimal Access Surgery. The Fellowship Exit Examination is a two-stage examination comprising the theory and practical part.

Theory Examination:

1. The Theory examination comprises of one paper with maximum marks of 100.
2. There are 10 short notes of 10 marks each in the Theory paper
3. Maximum time permitted is 3 hours.

Practical Examination:

1. Maximum marks : 300
2. Comprises of Clinical Examination and viva

- The candidate has to score a minimum of 50% marks in aggregate i.e. 200 out of total 400 marks (Theory & Practical) with at least 50% marks in theory examination to qualify in the Fellowship Exit Exam.

- The Theory and Practical of Fellowship Exit Examination shall be conducted at the same examination centre of the concerned specialty.

Declaration of Fellowship Exit Results

1. Fellowship Exit Examination is a qualifying examination.
2. Results of Fellowship Exit Examination (theory & practical) are declared as PASS/FAIL.
3. FNB degree is awarded to a FNB trainee in the convocation of NBE.

RECOMMENDED TEXT BOOKS AND JOURNALS

A. Books

1. Mastery of Endoscopic and Laparoscopic Surgery. Nathaniel Soper, Lee Swanstrom, Steve Eubanks.
2. Laparoscopic Surgery of the Abdomen. Bruce MacFadyen, Maurice Arregui, Steve Eubanks, Doulgas Olsen.
3. Laparoscopic Surgery: Principles and Procedures. Daniel B. Jones
4. Laparoscopic Abdominal Surgery by John .N.Graber
5. Complication of Laparoscopic surgery by Robert W.Bailey
6. Atlas of surgical endoscopy by Jeffrey L.Ponsky.
7. Laparoscopic Bilary Surgery second edition by ALFRED CUSCHIERYE GEORGE BERCI
8. Tips & Techniques in Laparoscopic Surgery by Jean Louis Dulucq
9. Laparoscopic Cholecystectomy difficult cases and creative solutions by Avran Coopaman
10. Gastro International Endoscopy clinics of North America by Jacques Van Down MD
11. Laparoscopic Urologic Surgery by Leonard G.Gomella
12. Laparoscopic Surgery by Ballantyne
13. Bileduct and Bile Duct Stones by George Berci
14. Obesity Bariatric Surgery by Dulouq
15. Surgical Laparoscopy by Karl A.Zucker
16. Laparoscopic C Surgery Atlas for General Surgery by Garyc Vitale Josephs Sanfillo Jacques Pesissat
17. Laparoscopic Surgery by Eddie Joe Reddict
18. Operative Strategies in Laparoscopic Surgery by Edward .H.Phillips
19. Laparoscopic Cholecystectomy problem & solution BY David C Dunn
20. Current Techniques in Laparoscopy by David E Brooks
21. Principles of Surgery by Shwartz'S
22. Atlas of Laparoscopic Surgery by Theodoren.Pappas Edward .G.Chekan

23. Mastery of Surgery by Robert J.Baker
24. Bailey and Love's short practice of surgery 25TH edition by Norman S Williams
25. Schiff's Diseases of the Liver 10TH Edition VOL1& by Eugene R.Schiff
26. Text book of Surgery 18TH EDITION for modern surgical practice by Sabiston
27. Atlas of General Surgery by Sir Devid Carter VOLUME 1&2
28. SRB'S Manual of Surgery 3RD edition by Sriram Bhat M
29. Atlas of Biliary tract surgery by John L. Cameron
30. Mastery of surgery by Josef E Fischer Volume 1&2
31. Maingot's Abdominal Operations 11TH edition by Michael J. Zinner
32. Hamilton Bailey's emergency surgery 13TH edition by Brian W Ellis and Simon Paterson-Brown
33. Text book of Operative general surgery ninth edition by margaret Farquarson and Brenden Moran
34. An Atlas of Gastroenterology by Cyrus R.Kapadia MD
35. Atlas of Colonoscopy by Helmut Messmann
36. Liver A Complete book on Hepato Pancreato Biliary Diseases by Stpehanos Hadziannis
37. Essential Surgical Practice by Butterworth Heinemann
38. Operation surgery by Charcle Rob
39. Pancreas Second edition by Hans Beger
40. Surgery of Pancreatic Tumours by Shailesh V Shrikhande
41. The Washington manual of surgery Fifth edition
42. General and vascular surgery by Jamal J.Hoballah
43. Pancreatitis: Advances in Pathobiology, Diagnosis and Treatment by R.W.Ammann
44. The Ascrs manual of Colon and Rectal Surgery by Devid E. Beck
45. Manual of Surgery by Schwartz's by Charles Brunicardi
46. Manual on Clinical Surgery by S.Das 5TH Edition
47. Netter's Gastroenterology 2ND edition by Martin H Floch

48. French's Index of Surgical Differntial Diagnosis by Herold Ellis
49. Diseases of the Pancreas current surgical Therapy by Hans G Beger

B. Journals

INTERNATIONAL JOURNALS:

- The International College of Surgeons
- ELSA American Journal
- The Journal of the Royal College of Surgeons of Edinburgh
- The Surgeon : The Journal of the Royal College of Surgeons of Edinburgh and Ireland
- The Journal of Colon and Rectal Surgeons of India
- Sages Journal Grand Rounds
- British Journal of Surgery
- International Surgery Official Journal
- Surgical endoscopy
- Annals of laparoscopic and endoscopic surgery
- Journal of laparoendoscopic and advanced surgical techniques and videoscopy

NATIONAL JOURNALS:

- Indian Journal of Surgery
- Journal of IAGES
- Medical Journal Armed Forces India

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