

Guidelines  
for  
Competency Based Training Programme  
in  
**DNB- GENERAL SURGERY**



**NATIONAL BOARD OF EXAMINATIONS**

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## **INTRODUCTION**

### **Preamble**

After qualifying in the final examination of the NBE, the candidate should be able to function as a specialist in General Surgery. This requires a thorough knowledge of the fundamentals. He/She should be reasonably acquainted with the recent advances and be able to perform essential elective and emergency operative procedures independently. He/She should be able to make decisions regarding patient management and adopt favorable attitudes. During this period, the candidate will also acquire skills of experience in research methodology by writing a dissertation / thesis.

## **PROGRAMME GOAL**

The goal of DNB course in Surgery is to produce a competent surgeon who:

- Has acquired the competence pertaining to surgery that is required to be practised in the community and at all levels of health care system
- Has acquired the skills to manage the patients of trauma and all life saving surgeries effectively.
- Has acquired skill in effectively communicating with patient and his attendants.
- Has the desired surgical skills to independently operate on elective and emergency cases
- Is aware of the latest developments in the field of surgery
- Is oriented to principles of research methodology
- Has acquired skills in educating medical and paramedical professionals

## **PROGRAMME OBJECTIVES**

### **Objectives**

The aim of the courses is to develop human resources and personnel in the field of surgery who shall:

1. Provide the health care to the patients needing surgical care with principles and ethics.
2. Teach and train future undergraduates and postgraduates medical students and junior doctors in General Surgery in Hospitals and other Institutions.
3. Carry out and guide research to improve the practice of the art and science of surgery
4. Have management capabilities to manage personnel and budgets to make health care more cost-effective
5. Organize health teams to provide care during natural or man-made calamities.

6. Develop further in the areas of their interest and/or specialize to practice existing or new specialties allied to surgery through further training programs as required

At the end of the course, the Diplomate of National Board in Surgery shall be able to:

1. Practice the art and science of surgery in his/her field of practice and seek and provide consultation as required. He/She will be able to provide comprehensive and good quality surgical care in general surgery including pre-operative and postoperative care
2. Conduct research and communicate the findings, result and conclusion to his fraternity
3. Acquire necessary skills of teaching and training his junior colleagues and medical students and Para-medical personnel
4. Keep abreast with the latest developments by self learning and/or participating in continuing medical education programs
5. Organize and manage administrative responsibilities in the routine day to day work as well as new situations including natural and/or man-made accidents/ calamities
6. Manage situations calling for emergency interventions in the sphere of surgical specialties and also routine problems in their areas within the ambit of the general surgeon
7. Exhibit awareness of the importance of surgical audit and the need for considering cost affectivity in patient management
8. Be aware of one's professional and infrastructural limitations and be able to refer to appropriate centers at the optimum time, when required
9. Exhibit awareness of the need for accurate documentation in medical records including medico-legal cases.
10. Adopt ethical procedures in the field of doctor-patient relationship

11. Exhibit proper attitude in dealing with patients and relatives and be able to communicate with them effectively
12. To develop the skill of innovation and improvisation in times of need.

## **ELIGIBILITY CRITERIA FOR ADMISSIONS TO THE PROGRAMME**

### **(A) DNB General Surgery Course:**

1. Any medical graduate with **MBBS** qualification , who has qualified the **Entrance Examination** conducted by NBE and fulfill the eligibility criteria for admission to DNB **Broad Specialty** courses at various NBE accredited Medical Colleges/ institutions/Hospitals in India is eligible to participate in the Centralized counseling for allocation of DNB General Surgery seats purely on merit cum choice basis.
2. Admission to 3 years post MBBS DNB General 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 : 3 Years**

## 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 three 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

The following pages comprise schedules of knowledge and operative skills, which provide a syllabus for training in general surgery and its sub-specialties. The knowledge required includes the basic science relevant to each topic. There is no intention to limit knowledge and operative experience. Trainees, as part of their general surgical training, must acquire competence in the scheduled operations but will also have experience of other procedures from the sub-specialty departments.

**Knowledge:** The Postgraduates are required to acquire sound knowledge of the below listed topics. The list includes topics found in most standard surgical textbooks. The candidates should also be familiar with recent advances and current controversies.

1. **Applied Basic Sciences** include applied anatomy, physiology, biochemistry, microbiology, pharmacology and pathology.

2. **General Surgical Topics** include the following:

- History of Surgery
- Molecular and Cell Biology
- Mediators of Inflammatory Response
- Regenerative Medicine
- Fluids and Electrolyte balance/ Acid – Base metabolism
- Wound Healing and Wound Management
- Pathophysiology and Management of Shock
- Principles of Operative Surgery: Asepsis, Sterilization and Antiseptics
- Surgical Infections and Antibiotics
- Nutrition and Metabolism
- Principles of Burn Management
- Principles of Oncology
- Principles of Laparoscopy, Endoscopy and Robotics
- Hemostasis, Blood Transfusion
- Trauma: Assessment of polytrauma, triage, basic and advanced trauma
- Basic Principles of Anesthesia
- Informed Consent and Medico legal Issues

- Pediatric Surgery
- Organ Transplantation
- Molecular Biology and Genetics
- Hernias: Types of hernias, repair techniques
- Breast Diseases: Benign breast disorders, investigations, screening, genetics, Breast Cancer
- Thyroid Disorders: Solitary nodule, investigations, multinodular goiter, Graves disease malignancies
- GIT Diseases
- Urogenital disease
- Cardio thoracic disease
- Hepatobiliary disease
- Surgery in CNS disorder
- Diabetes and Renal failure in Surgery
- HIV AIDS in Surgery (Universal Safety precautions)

### **3. Imaging modalities in Surgery**

- X-ray and Angiography
- MRI, Ultrasound, CT, PET, Etc.
- Image guided interventional procedures

## **PRE-OPERATIVE MANAGEMENT**

### **Pre-operative Management**

- Assessment of fitness for anesthesia and surgery.
- Tests of respiratory, cardiac and renal function.
- Management of associated medical conditions, e.g.: diabetes; respiratory disease, cardiovascular disease; malnutrition; anemia; steroid, anticoagulant, Immunosuppressant and other drug therapy.
- Nutritional Management

### **Infection**

- Pathophysiology of the body's response to infection.
- The sources of surgical infection - prevention and control.
- Surgically important micro-organisms.
- Principles of asepsis and antisepsis.
- Surgical sepsis and its prevention.
- Aseptic techniques.
- Skin preparation.
- Antibiotic prophylaxis.
- Sterilisation.
- HIV

## **Investigative and Operative Procedures**

- Excision of cysts and benign tumours of skin and subcutaneous tissue.
- Principles of techniques of biopsy.
- Suture and ligature materials.
- Drainage of superficial abscesses.
- Basic principles of bowel anastomosis.

## **Anesthesia**

- Principles of anesthesia.
- Pre-medication and sedation.
- Local and regional anesthesia.
- Care and monitoring of the anaesthetized patient.

## **Theatre Problems**

- Surgical technique and technology.
- Diathermy - principles and precautions.
- Lasers - principles and precautions.
- Explosion hazards relating to general anesthesia and endoscopic Surgery.
- Tourniquets - uses and precautions.
- Prevention of nerve and other injuries in the anaesthetized patient.
- Surgery in hepatitis and HIV carriers (special precautions).
- Disorders of coagulation and haemostasis (prophylaxis of thromboembolic disease).

## **PRE-OPERATIVE MANAGEMENT**

### **Skin and Wounds**

- Pathophysiology of wound healing.
- Classification of surgical wounds.
- Principles of wound healing.
- Incisions and their closure.
- Suture and ligature materials.
- Scars and contracture.
- Wound dehiscence.
- Dressings.

### **Fluid Balance**

- Assessment and maintenance of fluid and electrolyte balance.

- Techniques of venous access.
- Nutritional support - indications, techniques, total parenteral nutrition.

## **Blood**

- Disorders of coagulation and haemostasis.
- Blood transfusion - indications, hazards, complications, plasma substitutes.
- Haemolytic disorders of surgical importance.
- Haemorrhagic disorders; disorders of coagulation.

## **Post-operative Complications**

- Post-operative complications - prevention, monitoring, recognition, management.
- Ventilatory support - indications.

## **Post-operative Sequelae**

- Pain control
- Immune response to trauma, infections and tissue transplantation.
- Pathophysiology of the body's response to trauma.
- Surgery in the immuno-compromised patient.

## **TRAUMA**

### **Initial Assessment and Resuscitation after Trauma**

- Clinical assessment of the injured patient.
- Maintenance of airway and ventilation.
- Hemorrhage and shock.  
BLS, ATLS

### **Chest, Abdomen and Pelvis**

- Cardio respiratory physiology as applied to trauma.
- Penetrating chest injuries and pneumothorax.
- Rib fractures and flail chest.
- Abdominal and pelvic injuries.

### **Central Nervous System Trauma**

- Central nervous system: anatomy and physiology relevant to clinical examination of the central nervous system; understanding of its functional

- disorders particularly those caused by cranial or spinal trauma; and interpretation of special investigations.
- Intracranial hemorrhage.
  - Head injuries, general principles of management.
  - Surgical aspects of meningitis.
  - Spinal cord injury and compression.
  - Paraplegia and quadriplegia - principles of management.

### **Special Problems**

- Pre-hospital care.
- Triage.
- Trauma scoring systems.
- Traumatic wounds - principles of management.
- Gunshot and blast wounds.
- Skin loss - grafts and flaps.
- Burns.
- Facial and orbital injuries.

### **Principles of Limb Injury**

- Peripheral nervous system - anatomy and physiology.
- Fractures - pathophysiology of fracture healing.
- Non-union delayed union, complications.
- Principles of bone grafting.
- Traumatic edema, compartment and crush syndromes, fat embolism.
- Brachial plexus injury.

## **INTENSIVE CARE**

### **Cardiovascular**

- The surgical anatomy and applied physiology of the heart relevant to clinical cases.
- Physiology and pharmacological control of cardiac output, blood flow, blood pressure, and coronary circulation.
- Cardiac arrest, resuscitation.
- Monitoring of cardiac function in the critically ill patient, central venous pressure, pulmonary wedge pressure, tamponade, cardiac O/P measurements.
- The interpretation of special investigations.
- The management of hemorrhage and shock.
- Pulmonary edema.
- Cardiopulmonary bypass - general principles, cardiac support.

## **Respiratory**

- The surgical anatomy of the airways, chest wall, diaphragm and thoracic viscera.
- The mechanics and control of respiration.
- The interpretation of special investigations; lung function tests, arterial blood gases, radiology.
- The understanding of disorders of respiratory function caused by trauma, acute surgical illness and surgical intervention.
- Respiratory failure.
- Complications of thoracic operations.
- Adult respiratory distress syndrome.
- Endotracheal intubation, laryngotomy, tracheostomy.
- Artificial ventilation.

## **Multisystem Failure**

- Multisystem failure.
- Renal failure - diagnosis of renal failure, complications of renal failure.
- GI tract and hepatic failure.
- Nutrition.

## **Problems in Intensive Care**

- Sepsis, predisposing factors, organisms causing septicemia.
- Complications of thoracic operations.
- Localized sepsis, pneumonia, lung abscess, bronchiectasis, empyema, mediastinitis.

## **Principles of ICU**

- Indications for admission.
- Organization and staffing.
- Scoring.
- Costs.

## **NEOPLASIA: TECHNIQUES AND OUTCOME OF SURGERY**

### **Principles of Oncology**

- Epidemiology of common neoplasms and tumour-like conditions; role of cancer registries.
- Clinico-pathological staging of cancer.

- Pathology, clinical features, diagnosis and principles of management of common cancers in each of the surgical specialties.
- Principles of cancer treatment by surgery, radiotherapy, chemotherapy, immunotherapy and hormone therapy.
- The principles of carcinogenesis and the pathogenesis of cancer relevant to the clinical features, special investigations, staging and the principles of treatment of the common cancers.
- Principles of molecular biology of cancer, carcinogenesis; genetic factors; mechanisms of metastasis.
- Tumor Biology and Tumor Markers

### **Cancer Screening and Treatment**

- The surgical anatomy and applied physiology of the breast relevant to clinical examinations, the interpretation of special investigations, the understanding of disordered function and the principles of the surgical treatment of common disorders of the breast.
- The breast: acute infections; benign breast disorders; nipple discharge; mastalgia, Carcinoma of breast; mammography; investigation and treatment.
- Screening program

### **Techniques of Management**

- Terminal care of cancer patients; pain relief.
- Rehabilitation.
- Psychological effects of surgery and bereavement.

### **Ethics and the Law**

- Medical/legal ethics and medico-legal aspects of surgery.
- Communication with patients, relatives and colleagues.

### **Outcome of Surgery**

- The evaluation of surgery and general topics.
- Decision-making in surgery.
- Clinical audit.
- Statistics and computing in surgery.
- Principles of research and design and analysis of clinical trials.
- Critical evaluation of innovations - technical and pharmaceutical.
- Health service management and economic aspects of surgical care.



## **LOCOMOTOR SYSTEM**

Musculo-skeletal anatomy and physiology relevant to clinical examination of the locomotor system and to the understanding of disordered locomotor function, with emphasis on the effects of acute musculoskeletal trauma.

### **Effects of Trauma and Lower Limb**

- Effects of acute musculo-skeletal trauma.
- Common fractures and joint injuries.
- Degenerative and rheumatoid arthritis (including principles of joint replacement).
- Common disorders of the lower limb.
- Amputations and prosthesis.

### **Infections and Upper Limb**

- Common soft tissue injuries and disorders.
- Infections of bones and joints (including implants and prostheses).
- Pain in the neck, shoulder and arm.
- Common disorders of the hand, including hand injuries and infections.

### **Bone Disease and Spine**

- Common disorders of infancy and childhood.
- Low back pain and sciatica.
- Metabolic bone disease (osteoporosis, osteomalacia).
- Surgical aspects of paralytic disorders and nerve injuries.

## **VASCULAR**

The surgical anatomy and applied physiology of blood vessels relevant to clinical examination, the interpretation of special investigations and the understanding of the role of surgery in the management of cardiovascular disease

### **Arterial Diseases**

- Chronic obliterative arterial disease.
- Amputations.
- Aneurysms.
- Carotid disease.
- Special techniques used in the investigation of vascular disease.

- Limb ischaemia: acute and chronic; clinical features; gangrene; amputations for vascular disease.
- Principles of reconstructive arterial surgery.
- Atherosclerosis
- Principles of Angioplasty/stenting
- Thrombolysis
- Reno-vascular disease
- Raynaud's/vasospastic disorders
- Lymphoedema
- Cerebrovascular disease
- Vasculitis
- Mesenteric ischaemia
- Graft prosthetics
- Graft surveillance
- Autonomic dysfunction
- Reperfusion injury
- Ischaemic limb Arterial trauma
- Hyper/hypo coagulable state
- Arteriography
- Continuous wave doppler
- Duplex ultrasound

### **Venous Diseases**

- Vascular trauma and peripheral veins.
- Varicose veins.
- Venous hypertension, post-phlebitic leg, venous ulceration.
- Disorders of the veins in the lower limb.
- Deep venous thrombosis and its complications.
- Chronic ulceration of the leg.
- Thrombosis and embolism.

### **Lymphatics and Spleen**

- Thromboembolic disease.
- Spleen; role of splenectomy; hypersplenism.
- Lymph nodes; lymphoedema.
- Surgical aspects of auto-immune disease.
- The anatomy and physiology of the haemopoietic and lymphoreticular systems.
- Surgical aspects of disordered haemopoiesis.

## **HEAD, NECK and ENDOCRINE**

The surgical anatomy and applied physiology of the head and neck relevant to clinical examination, the interpretation of special investigations, the understanding of disorders of function, and the treatment of disease and injury involving the head and neck.

### **The Head**

- Laryngeal disease; maintenance of airway; tracheostomy.
- Acute and chronic inflammatory disorders of the ear, nose, sinuses and throat.
- Intracranial complications.
- Foreign bodies in ear, nose and throat.
- Epistaxis.
- Salivary gland disease.
- The eye - trauma, common infections.

### **Neck and Endocrine Glands**

The surgical anatomy and applied physiology of the endocrine glands relevant to clinical examination, the interpretation of special investigations, the understanding of disordered function and the principles of the surgical treatment of common disorders of the endocrine glands.

- Common neck swellings.
- Thyroid: role of surgery in diseases of the thyroid; complications of thyroidectomy; and the solitary thyroid nodule.
- Parathyroid; hyperparathyroidism; hypercalcaemia.
- Secondary hypertension.
- Pituitary Gland
- Adrenal cortex
- Adrenal medulla
- Gut as endocrine organ
- Endocrine pancreas and the management of:-
- Thyrotoxicosis
- Adrenal insufficiency
- Hyper/hypo thyroidism
- Carcinoid syndrome
- Counselling and screening in familial disease
- Anaesthetic and pharma-cological problems
- Radio-immuno assays
- Imaging techniques
- Histo/cyto pathology

## **Skin in Surgical Disorders**

- Skin and Subcutaneous Tissue / soft tissue

## **Paediatric Surgical Disorders**

- Neonatal physiology: the special problems of anaesthesia and surgery in the newborn; and the principles of neonatal fluid and electrolyte balance.
- Correctable congenital abnormalities.
- Common paediatric surgical disorders: cleft lip and palate; pyloric stenosis; intussusception; hernia; maldescent of testis; torsion; and diseases of the foreskin.
- RIF pain
- Testicular pain
- Paediatric trauma
- Burns
- Intussusception
- Pyloric stenosis
- Hirschprung's disease
- Ano-rectal anomalies
- Tracheo-oesophageal fistula
- Spina bifida
- Congenital small bowel obstruction
- Intestinal malrotation
- Associated anomalies
- Paediatric oncology
- Management of less complex abdominal trauma
- Hydrocephalus

## **ABDOMEN**

The surgical anatomy of the abdomen and its viscera and the applied physiology of the alimentary system relevant to clinical examination, the interpretation of common special investigations, the understanding of disorders of function, and the treatment of abdominal disease and injury.

### **Abdominal Wall**

- Anatomy of the groin, groin and other ventral hernias, acute and elective; clinical features of hernias; complications of hernias.
- Anterior abdominal wall, anatomy, incisions, laparoscopic access.

## Acute Abdominal Conditions

- Peritonitis; intra-abdominal abscesses.
- Common acute abdominal emergencies.
- Intestinal obstruction; paralytic ileus.
- Intestinal fistulae.
- Investigation of abdominal pain.
- Investigation of abdominal masses.
- Gynaecological causes of acute abdominal pain.
- Pelvic inflammatory disease.
- Assessment of the acute abdomen
- Appendicitis and right iliac fossa pain
- Peritonitis
- Acute intestinal obstruction
- Intestinal pseudo-obstruction
- Biliary tract emergencies
- Acute pancreatitis
- Strangulated hernia
- Intestinal ischaemia
- Swallowed foreign bodies
- Gastrointestinal bleeding
- Toxic megacolon
- Superficial sepsis and abscesses
- Acute ano-rectal sepsis
- Ruptured aortic aneurysm
- Acute presentations of urological disease
- Acute presentations of gynaecological disease
- Sub-total colectomy
- Diagnostic laparoscopy
- Gastrectomy for bleeding
- Endoscopy for upper GI obstruction
- Laparotomy for perforated colon
- Suture of bleeding peptic ulcer
- Emergency cholecystectomy
- Exploration of scrotum for torsion
- Emergency hernia repair
- Laparotomy for abdominal
- Reduction of paraphimosis
- Laparotomy for small bowel injury
- Diagnostic peritoneal lavage
- Intestinal obstruction
- Splenic repair
- Hartmann's operation
- Operation for ruptured liver

- Pancreatic debridement
- Median sternotomy

### **Reconstructive Surgery**

- Myocutaneous flaps
- Tissue expanders
- Breast reduction

### **Colorectal**

- Therapeutic Endoscopy, colonoscopy
- Anterior resection of rectum
- AP resection of rectum
- Ileorectal anastomosis
- Panproctocolectomy
- Closure of Hartmann's
- Prolapse surgery
- Incontinence surgery
- Sphincter repair
- Recto-vaginal fistula
- Ileo-anal and colonic pouch
- Colo-anal anastomosis
- Operation for intestinal fistula
- Complex fistula-in-ano
- Posterior approach to rectum
- Block dissection of groin
- Operative cholangiography
- Laparoscopic suturing and knotting
- Nephrectomy
- Pyelo and ureterolithotomy
- Pyeloplasty
- Open prostatectomy

### **Laparotomy for acute abdomen**

- Splenectomy
- Oesophageal dilatation
- Operations for upper GI bleeding
- Exploration of common bile duct
- Biliary bypass
- Formation of Roux-en-Y loop
- Oesophagectomy/total gastrectomy
- Pancreatectomy

- Liver resection
- Oesophagectomy
- Total and subtotal gastrectomy
- Heller's myotomy
- Long oesophageal myotomy
- Pharyngeal pouch
- Repair of biliary stricture
- Whipple's procedure
- Pancreatectomy (distal and total)
- Drainage of infected pancreatitis
- Drainage of pancreatic pseudo-cyst
- Liver injuries
- Hydatid disease
- Porto-systemic shunt
- Vascular suture/anastomosis
- Control of venous bleeding
- Balloon thrombo-embolectomy
- Fasciotomy
- Arterial injuries
- Vascular access for dialysis

### **Abdominal injury**

- Assessment of the multiply injured patient
- Triage (major accidents)
- Battle triage and Field hospitals
- Initial management of head injuries.
- Closed abdominal injuries, especially splenic, hepatic and pancreatic injuries
- Closed chest injuries
- Stab and gunshot wounds
- Arterial injuries
- Injuries of the urinary tract
- Initial management of head injuries and interpretation of CT scans
- Initial management of severe burns

### **SMALL BOWEL AND COLORECTAL DISORDERS**

- Neoplasms of large bowel
- Inflammatory bowel disease (inc.medical management)
- Diverticular disease
- Irritable bowel syndrome

- Haemorrhoids
- Anal fissure
- Rectal prolapse
- Acute appendicitis/RIF pain
- Intestinal obstruction
- Intestinal pseudo-obstruction
- Intestinal ischaemia
- Peritonitis
- Large bowel and rectal injuries
- Anal tumours
- Pelvic autonomic nerves
- Screening for colorectal cancer
- Genetics of colorectal cancer
- Place of radiotherapy and chemotherapy in treatment
- Anorectal physiology
- Anorectal ultrasound
- Faecal incontinence
- Chronic constipation
- Intestinal fistulae
- Colonic bleeding
- Radiation enterocolitis
- Other small bowel conditions
- Colonic obstruction
- Colonic perforation
- The use of staplers

## **LAPAROSCOPIC SURGERY AND MINIMAL ACCESS SURGERY**

- Laparoscopic anatomy of the abdomen
- Diagnostic laparoscopy
- Physiology of pneumo-peritoneum Dangers of pneumoperitoneum
- Principles of diathermy
- Informed consent for laparo-scopic procedures
- Pre and post operative management of laparoscopic cases
- Port complications
- Technology of video imaging, cameras, insufflator etc.
- The methods of manipulation of images
- Laparoscopic instruments, clips, staplers and port types
- Management of equipment failure
- Ultrasound interpretation, internal and external techniques
- Recognition and management of laparoscopic complications
- Use and dangers of diathermy
- Anaesthetic problems in laparoscopic surgery
- Medico-legal implications of video-endoscopic surgery



- Theory and practice of cholecystoscopy
- Theory of different forms of diathermy
- Laparoscopic ultrasound
- Advanced instrumentation and equipment
- Endoscopic suturing devices
- Theory, uses and dangers of lasers and other energy sources e.g. harmonic scalpel
- Creation and maintenance of new endoscopic spaces
- Use of assistance robots and robotic instruments

### **TRANSPLANTATION with special reference to RENAL AND HEPATIC DISEASE**

- Pathology of renal and hepatic disease
- Patho-physiology of renal and hepatic failure
- Peritoneal- and haemo-dialysis
- Management of fluid and electrolyte disorders
- Selection of patients for transplantation
- Post-operative management
- Immuno-pathology of rejection
- Management of rejection
- Immunosuppression
- Opportunist infections
- Immunosuppression and cancer
- Transmission of viral and fungal diseases
- Tissue typing
- The HLA system
- Bladder dysfunction

### **HEPATOPANCREATOBILIARY SURGERY**

- • Gallstones and complications
- • Biliary stricture
- • Obstructive Jaundice
- • Neoplasms of the Liver, Biliary Tract and Pancreas
- • Pancreatitis, acute and chronic, complications
- • Liver injuries
- • Portal Hypertension
- • Hydatid disease
- • ESRD and Liver transplantation

### **UPPER GI TRACT**

- Neoplasms of the upper GI tract

- Management of perforations of the upper GI tract
- Management of intestinal obstruction
- Management of GI bleeding
- Oesophageal motility disorders
- Oesophageal Strictures
- Gastro-oesophageal reflux and its complications
- Peptic ulceration and its complications
- Radiation enteritis
- Abdominal trauma
- Principles of screening for cancer
- The use and limitations of multimodality treatment for upper GI cancer
- Oesophageal motility disorders
- Other small bowel conditions
- Principles of Small bowel resection
- Sutured and stapled anastomoses
- Genito Urinary Tract
- Urinary tract infection.
- Urinary Tract Obstruction
- Haematuria.
- Trauma to the urinary tract.
- Urinary calculi.
- Retention of urine.
- Urinary tract Neoplasm
- Disorders of prostate.
- Pain and swelling in the scrotum.
- Other Scrotal Lesions
- Testicular Neoplasm

## **NEUROSURGERY**

- Cranial, spinal and peripheral nerve tumors
- Head Injury
- Spinal and peripheral nerve injuries
- Hydrocephalus
- Cerebrovascular Accidents
- Infections
- Recent advances

## **CARDIAC AND THORASIC SURGERY**

- Myocardial revascularization
- Valvular Disorders
- Peripheral vascular disease
- Reno vascular disease

- Secondary Hypertension
- Inflammatory Lung Disease
- Chest Wall lesions
- Thoracic Neoplastic Disease
- Chest Trauma
- Pleural Diseases

### **ORTHOPEDICS**

- Principles of Orthopedic Trauma
- Casts and braces
- Nerve injuries
- Hand Infections
- Principles of Traction
- Amputations
- Principles of Rehabilitation
- Congenital Lesions
- Bone and Joint Infections

### **OTHER AREAS**

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

### **CLINICAL POSTINGS**

1. Surgical Posting: Each candidate is posted in different surgical units soon after joining the course
2. Rotations in Specialty Departments are for a period of minimum 3-6 months & a maximum of one year. This is done after candidate has spent at least 1 year in learning basic ward work and surgical skills in the surgical unit.

The postgraduate student rotates through all the clinical units in the department. In addition, following special rotations are also undertaken:

**Mandatory Postings** (*minimum 15 Days in each*)

- Cardiothoracic/ Thoracic Surgery
- Orthopedic Surgery
- Neuro Surgery

He should have assisted at least 2 procedures in the above mentioned areas

- The rest of the postings in other specialties should be as per the choice of the candidates or as per interim arrangement and if no other areas of posting is being undertaken by the candidate the above mentioned mandatory postings should be increased to a period of minimum one month each.

**Rotational Postings (Optional)**

- Radiology (2 weeks)
- Anaesthesia (2 weeks)
- Gynae & Obs. (2 weeks)
- Emergency (2 weeks)
- Urology (6 weeks)
- Pediatric Surgery (6 weeks)
- ICU (6 weeks)
- Bariatric Surgery (6 weeks)
- Minimally Invasive Surgery (6 weeks)

If the institution does not have these departments, they should have a local tie up with a suitable hospital for imparting this training.

## Competencies

### Objectives

- To provide a comprehensive and structured training programme in general surgery and to enable trainees to achieve the training and experience necessary for independent practice.
- The PG should be able to take proper history, conduct physical examination, perform or request for relevant investigations. He should be able to interpret these investigations to arrive at a working diagnosis along with a list of differential diagnosis. He should be able to develop and management plan which should be well documented and any emergency management should be initiated immediately if required.
- Communicate with patient. Discuss operative plan, possible management options, postoperative complications etc and be able to take informed consent
- Perform minor operative procedures and common major general surgical operations independently
- Evaluate and manage trauma and acute surgical emergencies.
- Undertake Critical care
- Undertake wound management

### The skills should be differentiated into:

- *Essential*
- *Desirable*

### Surgical Skills:

#### Essential

- Scrubbing(surgical hand wash and donning of gowns and gloves) & Patient part preparation and draping

- Working knowledge of sterilization of OT instruments including Laparoscopic Set
- Knowledge of Surgical Material, sutures and Instruments
- Electro Surgical Units
- Shifting of OT patients
- WHO Safety check list implementation
- Acquisition of basic surgical skills to perform minor/medium surgeries independently Suprapubic cystostomy
- Cystolithotomy
- Varicocele
- Orchidectomy
- Excision of Cyst & I&D
- Excision of Breast Lump
- Surgery of Hydrocele
- Appendectomy
- Herniotomy
- Hernia repair (ventral & groin) and management
- Umbilical hernia
- Exploratory laparotomy in different conditions
- Haemorrhoidectomy
- Fistulectomy
- Fissurectomy
- Circumcision
- Skin grafting
- Stoma Formation

### **Desirable**

- Urethral Dilatation
- Ureterolithotomy

## **Basic Ward Procedures**

### **Essential**

- Insertion of intravenous cannula, Nasogastric tube, urinary catheters
- Removal of Tubes and Drains
- Abdominal Paracentesis, Pleural Tap
- Venous Cutdown
- Wound dressings

### **Desirable**

- Taking blood samples

## **ICU Procedures**

### **Essential**

- Insertion of CVP line, arterial lines, endotracheal intubation
- Intercostal Drainage
- Tracheostomy
- Knowledge of Ventilators and Monitors
- Prescribing TPN
- Taking an ABG Sample and its Interpretation -E

## **Minor Surgical Procedures**

### **Essential**

- Hydrocele surgery
- Lymph node biopsy
- Excision of superficial swellings
- Ingrowing toe nail
- Banding of Haemorrhoids
- Vasectomy
- Trucut Biopsy

## **Emergency Room Procedures**

### **Essential**

- Peritoneal lavage
- Suturing of lacerations
- Drainage of abscesses
- Wound Debridement
- Reduction and Plaster application of Common simple fractures and dislocations
- Use of external fixators in compound fractures
- Skeletal traction
- Anal Dilatation and Sphincterotomy
- Preoperative Workup and Postoperative Care

### **Desirable**

- Focused Abdominal Sonography for Trauma

## **Major Operative Procedures**

### **A) Perform Independently/ Assistance:**

The following list is not exhaustive. The Trainee should try to get the maximal operative exposure possible. The range of exposure will also depend upon the type of surgeries a particular unit (where the Trainee is posted) is performing.

### **Routine**

#### **Essential**

- Cholecystectomy
- Groin Hernia Repair
- Mastectomy
- Breast Lump Excision
- Suprapubic cystostomy



- Bowel Resection
- Feeding Gastrostomy and feeding jejunostomy
- Emergency Nephrectomy
- Orchidopexy

### **Desirable**

- Microdochoectomy
- Radical Duct Excision
- Hemithyroidectomy
- Cystogastrostomy
- Bowel Anastamosis
- Cysts and Sinuses of the Neck
- Pyelolithotomy
- Ureterolithotomy
- Varicose vein surgery and Vein harvesting

### **Emergency:**

#### **Essential**

- Appendectomy
- Laparotomy for intestinal Obstruction
- Trauma Laparotomy
- Splenectomy
- Closure of Peptic Ulcer Perforation
- Enteric Perforation
- Amputations
- Tracheostomy

## **B) Assist/Observe**

The below mentioned skills and procedures are desirable for a DNB General Surgery resident:

### **Vascular**

- Reconstructive arterial surgery.
- Aneurysm Surgery

### **The Head**

- Parotidectomy, submandibular gland excision

### **Neck and Endocrine Glands**

- Thyroidectomy, parathyroidectomy, congenital or developmental problems
- Adrenalectomy
- Surgery for endocrine pancreatic tumours

### **Paediatric Disorders**

Common paediatric surgical disorders: cleft lip and palate; pyloric stenosis; intussusception; hernia; maldescent of testis; torsion; and diseases of the foreskin.

### **Plastic And Reconstructive Surgery**

- Types of skin grafts, flaps, tissue expanders
- Reconstructive surgery for head and neck, breast, bedsores and abdominal wall defects

## **C) Surgical Audit (Essential)**

- Bio Statistics
- Surgical practice & medical legal aspects
- Ethical surgical trials
- Bio Medical Waste Management
- Communication Skills

## THESIS PROTOCOL & THESIS

The candidates are required to submit a thesis at the end of three years of training as per the rules and regulations of NBE.

### **Guidelines for Submission of Thesis Protocol & Thesis by candidates**

Research shall form an integral part of the education programme of all candidates registered for DNB degrees of NBE. The Basic aim of requiring the candidates to write a thesis protocol & thesis/dissertation is to familiarize him/her with research methodology. The members of the faculty guiding the thesis/dissertation work for the candidate shall ensure that the subject matter selected for the thesis/dissertation is **feasible, economical and original**.

### **Guidelines for Thesis Protocol**

The protocol for a research proposal (including thesis) is a study plan, designed to describe the background, research question, aim and objectives, and detailed methodology of the study. In other words, the protocol is the 'operating manual' to refer to while conducting a particular study.

The candidate should refer to the NBE Guidelines for preparation and submission of Thesis Protocol before the writing phase commences. The minimum writing requirements are that the language should be clear, concise, precise and consistent without excessive adjectives or adverbs and long sentences. There should not be any redundancy in the presentation.

The development or preparation of the Thesis Protocol by the candidate will help her/him in understanding the ongoing activities in the proposed area of research. Further it helps in creating practical exposure to research and hence it bridges the connectivity between clinical practice and biomedical research. Such research exposure will be helpful in improving problem solving capacity, getting updated with ongoing research and implementing these findings in clinical practice.

Research Ethics: Ethical conduct during the conduct and publication of research is an essential requirement for all candidates and guides, with the primary responsibility of ensuring such conduct being on the thesis guide. Issues like Plagiarism, not maintaining the confidentiality of data, or any other distortion of the research process will be viewed seriously. The readers may refer to standard documents for the purpose.

The NBE reserves the right to check the submitted protocol for plagiarism, and will reject those having substantial duplication with published literature.

## PROTOCOL REQUIREMENTS

1. All of the following will have to be entered in the online template. The thesis protocol should be restricted to the following word limits.
  - Title : 120 characters (with spacing) page
  - Synopsis [structured] : 250-300
  - Introduction : 300-500
  - Review of literature : 800-1000
  - Aim and Objectives : Up to 200
  - Material and Methods : 1200-1600
  - 10-25 References [ICMJE style]
2. It is mandatory to have ethics committee approval before initiation of the research work. The researcher should submit an appropriate application to the ethics committee in the prescribed format of the ethics committee concerned.

## Guidelines for Thesis

1. The proposed study must be approved by the institutional ethics committee and the protocol of thesis should have been approved by NBE.
2. The thesis should be restricted to the size of 80 pages (maximum). This includes the text, figures, references, annexures, and certificates etc. It should be printed on both sides of the paper; and every page has to be numbered. Do not leave any page blank. To achieve this, following points may be kept in view:
  - a. The thesis should be typed in 1.5 space using Times New Roman/Arial/ Garamond size 12 font, 1” margins should be left on all four sides. Major sections viz., Introduction, Review of Literature, Aim & Objectives, Material and Methods, Results, Discussion, References, and Appendices should start from a new page. Study proforma (Case record form), informed consent form, and patient information sheet may be printed in single space.
  - b. Only contemporary and relevant literature may be reviewed. Restrict the introduction to 2 pages, Review of literature to 10-12 pages, and Discussion to 8-10 pages.
  - c. The techniques may not be described in detail unless any modification/innovations of the standard techniques are used and reference(s) may be given.
  - d. Illustrative material may be restricted. It should be printed on paper only. There is no need to paste photographs separately.

3. Since most of the difficulties faced by the residents relate to the work in clinical subject or clinically-oriented laboratory subjects, the following steps are suggested:
  - a. The number of cases should be such that adequate material, judged from the hospital attendance/records, will be available and the candidate will be able to collect case material within the period of data collection, i.e., around 6-12 months so that he/she is in a position to complete the work within the stipulated time.
  - b. The aim and objectives of the study should be well defined.
  - c. As far as possible, only clinical/laboratory data of investigations of patients or such other material easily accessible in the existing facilities should be used for the study.
  - d. Technical assistance, wherever necessary, may be provided by the department concerned. The resident of one specialty taking up some problem related to some other specialty should have some basic knowledge about the subject and he/she should be able to perform the investigations independently, wherever some specialized laboratory investigations are required a co-guide may be co-opted from the concerned investigative department, the quantum of laboratory work to be carried out by the candidate should be decided by the guide & co-guide by mutual consultation.
4. The clinical residents are not ordinarily expected to undertake experimental work or clinical work involving new techniques, not hitherto perfected OR the use of chemicals or radioisotopes not readily available. They should; however, be free to enlarge the scope of their studies or undertake experimental work on their own initiative but all such studies should be feasible within the existing facilities.
5. The DNB residents should be able to freely use the surgical pathology/autopsy data if it is restricted to diagnosis only, if however, detailed historic data are required the resident will have to study the cases himself with the help of the guide/co-guide. The same will apply in case of clinical data.
6. Statistical methods used for analysis should be described specifically for each objective, and name of the statistical program used mentioned.

#### **General Layout of a DNB Thesis:**

- **Title-** A good title should be brief, clear, and focus on the central theme of the topic; it should avoid abbreviations. The Title should effectively summarize the proposed research and should contain the PICO elements.

- **Introduction-** It should be focused on the research question and should be directly relevant to the objectives of your study.
- **Review of Literature** - The Review should include a description of the most relevant and recent studies published on the subject.
- **Aim and Objectives** - The 'Aim' refers to what would be broadly achieved by this study or how this study would address a bigger question / issue. The 'Objectives' of the research stem from the research question formulated and should at least include participants, intervention, evaluation, design.
- **Material and Methods-** This section should include the following 10 elements: Study setting (area), Study duration; Study design (descriptive, case-control, cohort, diagnostic accuracy, experimental (randomized/non-randomized)); Study sample (inclusion/exclusion criteria, method of selection), Intervention, if any, Data collection, Outcome measures (primary and secondary), Sample size, Data management and Statistical analysis, and Ethical issues (Ethical clearance, Informed consent, trial registration).
- **Results-** Results should be organized in readily identifiable sections having correct analysis of data and presented in appropriate charts, tables, graphs and diagram etc.
- **Discussion**—It should start by summarizing the results for primary and secondary objectives in text form (without giving data). This should be followed by a comparison of your results on the outcome variables (both primary and secondary) with those of earlier research studies.
- **Summary and Conclusion-** This should be a précis of the findings of the thesis, arranged in four paragraphs: (a) background and objectives; (b) methods; (c) results; and (d) conclusions. The conclusions should strictly pertain to the findings of the thesis and not outside its domain.
- **References-** Relevant References should be cited in the text of the protocol (in superscripts).
- **Appendices** -The tools used for data collection such as questionnaire, interview schedules, observation checklists, informed consent form (ICF), and participant information sheet (PIS) should be attached as appendices. Do not attach the master chart.

## **Thesis Protocol Submission to NBE**

1. DNB candidates are required to submit their thesis protocol within 90 days of their joining DNB training.
2. Enclosures to be submitted along with protocol submission form:
  - a) Form for Thesis Protocol Submission properly filled.
  - b) Thesis Protocol duly signed.
  - c) Approval letter of institutional Ethical committee. (*Mandatory, non receivable of any one is liable for rejection*)

## **Thesis Submission to NBE**

1. As per NBE norms, writing a thesis is essential for all DNB candidates towards partial fulfillment of eligibility for award of DNB degree.
2. DNB candidates are required to submit the thesis before the cut-off date which shall be 30th June of the same year for candidates appearing for their scheduled December final theory examination. Similarly, candidates who are appearing in their scheduled June DNB final examination shall be required to submit their thesis by 31st December of preceding year.
3. Candidates who fail to submit their thesis by the prescribed cutoff date shall NOT be allowed to appear in DNB final examination.
4. Fee to be submitted for assessment (In INR): 3500/-
5. Fee can be deposited ONLY through pay-in-slip/challan at any of the Indian bank branch across India. The challan can be downloaded from NBE website [www.natboard.edu.in](http://www.natboard.edu.in)
6. Thesis should be bound and the front cover page should be printed in the standard format. A bound thesis should be accompanied with:
  - a. A Synopsis of thesis.
  - b. Form for submission of thesis, duly completed
  - c. NBE copy of challan (in original) towards payment of fee as may be applicable.
  - d. Soft copy of thesis in a CD duly labeled.
  - e. Copy of letter of registration with NBE.
7. A declaration of thesis work being bonafide in nature and done by the candidate himself/herself at the institute of DNB training need to be submitted bound with thesis. It must be signed by the candidate himself/herself, the thesis guide and head of the institution, failing which thesis shall not be considered.

## ***The detailed guidelines and forms for submission of Thesis***

***Protocol & Thesis are available at***

***[www.natboard.edu.in.thesis.php](http://www.natboard.edu.in.thesis.php)***

## **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. DNB Trainees are entitled to leave during the course of DNB training as per the Leave Rules prescribed by NBE.
2. A DNB 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. MATERNITYLEAVE:
  - a. A female candidate is permitted a maternity leave of 90 days once during the entire duration of DNB course.
  - b. The expected date of delivery (EDD) should fall within the duration of maternity leave.
  - c. Extension of maternity leave is permissible only for genuine medical reasons and after prior approval of NBE. The supporting medical documents have to be certified by the Head of the Institute/hospital where the candidate is undergoing DNB training. NBE reserves its rights to take a final decision in such matters.
  - d. The training of the candidate shall be extended accordingly in case of any extension of maternity leave being granted to the candidate.
  - e. Candidate shall be paid stipend during the period of maternity leave. No stipend shall be paid for the period of extension of leave.
4. Male DNB candidates are entitled for paternity leave of maximum of one week during the entire period of DNB training.
5. No kind of study leave is permissible to DNB candidates. However, candidates may be allowed an academic leave as under across the entire duration of training program to attend the conferences/CMEs/Academic programs/Examination purposes.

<b>DNB COURSE</b>	<b>NO. OF ACADEMIC LEAVE</b>
DNB 3 years Course (Broad & Super Specialty)	14 Days
DNB 2 years Course (Post Diploma)	10 Days
DNB Direct 6 years Course	28 days

6. Under normal circumstances leave of one year should not be carried forward to the next year. However, in exceptional cases such as prolonged illness the leave across the DNB training program may be clubbed together with prior approval of NBE.
7. Any other leave which is beyond the above stated leave is not permissible and shall lead to extension/cancellation of DNB course.
8. Any extension of DNB training for more than 2 months beyond the scheduled completion date of training is permissible only under extraordinary circumstances with prior approval of NBE. Such extension is neither automatic nor shall be granted as a matter of routine. NBE shall consider such requests on merit provided the seat is not carried over and compromise with training of existing trainees in the Department.
9. Unauthorized absence from DNB training for more than 7 days may lead to cancellation of registration and discontinuation of the DNB training and rejoining shall not be permitted.

#### 10. 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 DNB training and have to be sent to NBE.
- c. The medical treatment should be taken from the institute/ hospital where the candidate is undergoing DNB 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 DNB 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.

11.

- a. Total leave period which can be availed by DNB candidates is  $120+28 = 148$  days for 6 years course,  $60+14=74$  days for 3 years course and  $40+10 = 50$  days for 2 years course. This includes all kinds of eligible leave including academic leave. Maternity / Paternity leave can be availed separately by eligible candidates. Any kind of leave including medical leave exceeding the aforementioned limit shall lead to extension of DNB training. It is clarified that prior approval of NBE is necessary for availing any such leave.
- b. The eligibility for DNB Final Examination shall be determined strictly in accordance with the criteria prescribed in the respective information bulletin.

# 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

<b>PART – I</b>	<b>CONDUCT OF THEORY EXAMINATION</b>	Candidate has to appear for Theory Exam and it will be held for One day.
<b>PART – II</b>	<b>FEEDBACK SESSION ON THE THEORY PERFORMANCE</b>	Candidate has to appear for his/her Theory Exam Assessment Workshop.
<b>PART – III</b>	<b>WORK PLACE BASED CLINICAL ASSESSMENT</b>	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 DNB Final Examination leading to the award of the degree of Diplomate of National Board in General Surgery. The DNB final is a two-stage examination comprising the theory and practical part. An eligible candidate who has qualified the theory exam is permitted to appear in the practical examination.

### Theory Examination

1. The theory examination comprises of **Four** papers, maximum marks 100 each.
2. There are 10 short notes of 10 marks each, in each of the papers. The number of short notes and their respective marks weightage may vary in some subjects/some papers.
3. Maximum time permitted is 3 hours.
4. Candidate must score at least 50% in the aggregate of **Four** papers to qualify the theory examination.

5. Candidates who have qualified the theory examination are permitted to take up the practical examination.
6. The paper wise distribution of the Theory Examination shall be as follows:

**PAPER 1:**

- Basic sciences applied to the specialty
- Principles of General Surgery
- Perioperative care
- Trauma and critical care
- Research Methodology

**PAPER 2:**

- Elective Orthopedics
- Skin and Subcutaneous Tissue / soft tissue
- Head and Neck
- Breast and Endocrine

**PAPER 3:**

- Vascular
- Abdominal

**PAPER 4:**

- Genitourinary and other subspecialites
- Transplantation
- Recent Advances

**a) Practical Examination:**

1. Maximum Marks: 300.
2. Comprises of Clinical Examination and Viva.
3. Candidate must obtain a minimum of 50% marks in the Clinical Examination (including Viva) to qualify for the Practical Examination.
4. There are a maximum of three attempts that can be availed by a candidate for Practical Examination.

5. First attempt is the practical examination following immediately after the declaration of theory results.
6. Second and Third attempt in practical examination shall be permitted out of the next three sessions of practical examinations placed alongwith the next three successive theory examination sessions; after payment of full examination fees as may be prescribed by NBE.
7. Absentation from Practical Examination is counted as an attempt.
8. Appearance in first practical examination is compulsory;
9. Requests for Change in center of examination are not entertained, as the same is not permissible.
10. Candidates are required not to canvass with NBE for above.

### **Declaration of DNB Final Results**

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

## **RECOMMENDED TEXT BOOKS AND JOURNALS**

### **Essential**

1. Bailey and Love's Short practice of Surgery
2. Textbook of Surgery by David C Sabiston Jr. WB Saunders Co  
Or Schwartz-Principles of Surgery
3. Textbook of Operative Surgery – Farquharson Eric L
4. Clinical Methods – K Das
5. Recent advances in Surgery by Taylor
6. Applied Anatomy by RJ Last
7. Hamilton Bailey Demonstration of Clinical signs & Symptoms in surgery
8. Emergency Surgery By Hamilton Baily

### **Preferable**

9. An introduction to the symptoms and signs of surgical diseases  
Norman Browse
10. Mastery of Surgery by Josef Fisher
11. Maingot's Abdominal Operations by Zinner
12. Oxford Text Book of Surgery Vol.I,II & III by Morris and Wood
13. ACS textbook of Surgery
14. S.Das Text Book on Surgical Short Cases
15. Laparoscopic Surgery Technique-Darzi
16. Zollinger Atlas of Surgical Operation

### **Journals**

1. Indian Journal of Surgery
2. British Journal of Surgery



3. JACS
4. American Journal of Surgery
5. SCNA
6. Annals of Surgery
7. JAMA-Archives of Surgery
8. Diseases of Colon and Rectum
9. Journal of Trauma
10. Journal of Minimal Access Surgery

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