Curriculum
M.Ch. Burns & Plastic Surgery, AIIMS Nagpur

Index

A. GOALS

The goal of M.Ch. program in Burns and Plastic Surgery is to produce a competent plastic surgeon who:

1. Recognizes the health needs of adults and carries out his/her professional obligations in keeping with **principles of National Health Policy** and **Professional Ethics**;
2. Has acquired the competencies pertaining to plastic surgical practice that are required to be practiced in the community and at all levels of the health care system;
3. Has acquired skills in effectively communicating with the patients, family and the community;
4. Is aware of the contemporary advances and developments in medical sciences.
5. Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and
6. Has acquired skills in educating medical, paramedical and nursing professionals**.**

Motto: -

"Mastering Precision & Skill and Innovating to Restore"

B. PROGRAMME OUTCOMES

At the end of the M.Ch. Burns and Plastic Surgery program, the student should be able to:

1. Recognize the key importance of medical problems in the context of the health priority of the country.
2. Practice the specialty of plastic surgery in keeping with the principles of ***professional ethics*.**
3. Identify social, economic, environmental, biological and emotional determinants of Plastic Surgery and know their therapeutic, rehabilitative, preventive and promotion management strategies.
4. Measures to provide holistic care to all patients.
5. Take detailed history, perform a full physical examination and make a clinical Diagnosis.
6. Perform and interpret relevant investigations (Imaging and Laboratory).
7. Perform and interpret important diagnostic procedures.
8. Diagnose illnesses in adults based on the analysis of history, physical examination and investigative work up.
9. Plan and deliver comprehensive treatment for illness/deformities in adults and pediatric patients using principles of rational drug therapy and skillful surgical interventions.
10. Plan and advise measures for the prevention of diseases;
11. Plan rehabilitation of adults suffering from chronic illness, and those with special needs;
12. Manage emergencies efficiently;

13. Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
14. Demonstrate **empathy and a humane** approach towards patients and their families and respect their sensibilities;
15. Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
16. Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature to practice evidence-based medicine;
17. Demonstrate competence in basic concepts of research methodology and epidemiology;
18. Facilitate learning of medical/nursing students, practicing surgeons, paramedical health workers and other providers as a teacher-trainer;
19. Play the assigned role in the implementation of national health programs, effectively and responsibly;
20. Organize and supervise the desired managerial and leadership skills;
21. Function as a productive member of a team engaged in health care, research and education.

C. ELIGIBILITY

Candidates holding M.S. General Surgery, M.S. Orthopedics and M.S. ENT degrees from INI/NMC recognized Institute/ D.N.B. from recognized institute/ hospital shall be of the minimum qualification.

D. SELECTION OF CANDIDATES

The selection shall be through the entrance test (INI/CET/SS) conducted by the competent authority.

E. DURATION OF TRAINING

The training shall be for 3 years. During these years, the candidate shall be a senior resident who will perform clinical, teaching and research activities as prescribed in curriculum. During the last six months, the candidate shall be given additional administrative responsibilities.

F. SYLLABUS

The M.Ch. Plastic and Reconstructive Surgery course will include the following in broad categories: -

1. General Plastic Surgery
2. Microvascular surgery, Brachial plexus and Peripheral nerve surgery
3. Burns and Post-burn deformity
4. Craniofacial, Cleft and Pediatric Plastic Surgery
5. Head and Neck Surgery
6. Breast
7. Hand and Upper Extremity
8. Trunk and Lower Extremity
9. Aesthetic Surgery and medicine
10. Reconstructive Surgery of External Genitalia, Intersex Disorders and Sex reassignment Surgeries
12. Maxillofacial surgery, trauma and reconstruction
13. Peripheral vascular surgery

1. General Plastic Surgery

A. General Principles

1.1 History and Development of plastic surgery in India and across the World
1.2 The scope of plastic surgery
1.3 Evidence Based Medicine and Research in plastic surgery
1.4 Medico legal issues in plastic surgery practice
1.5 Liability issues in plastic surgery, legal & insurance perspective
1.6 Documentation, Recordkeeping and consent.
1.7 Patient safety issues in plastic surgery
1.8 Psychological aspects of plastic surgery
1.9 Ethics in plastic surgery
1.10 Photography in plastic surgery.

1.11 Information technology relevant to plastic surgery.

B. Basic principles and techniques

2.1 Wound: Definition, classification and Implications
2.2 Wound healing-normal and abnormal.
2.3Wound management - Mechanical and pharmacological dressing techniques, Negative pressure wound therapy & other techniques.
2.4 Scar biology and Management
2.5 Keloid, hypertrophic scars- prevention and management
2.6 Unstable scar and scar contracture.
2.7 Anatomy and functions of Skin
2.8 Viscoelastic Properties of Skin
2.9 Infective conditions of skin
2.10 Benign and malignant skin and soft tissue tumours
2.11 Radiation and Radiation Injuries
2.12 Principles of tissue reconstruction
2.13 Skin grafts
2.14 Blood supply to skin, cutaneous circulation & vascular basis of flaps.
2.15 Flaps: Classification, variations and applications
2.16 Flap Pathophysiology and pharmacology
2.15 Grafts fat, fascia, tendon, nerve, cartilage, bone, composite tissue
2.16 Principles of Cancer Management
2.17 Lymphedema: Pathophysiology and management
2.18 Principles of microvascular surgery and Technique
2.19 Nosocomial infections
2.20 Principles of genetics & general approach to the management of congenital malformations.
2.21 Vascular anomalies: Pathophysiology and management
2.22 Fetal surgery
2.23 Local anesthesia, nerve blocks, regional anesthesia
2.24 Principles of anesthesia for infants, adults,
2.25 Pain management
2.26 Plastic Surgical Instrumentation: General principles.

C. Technology applications

3.1 Technological innovations
3.2 Laser and energy device applications
3.3 Tissue Expansion- principles and application
3.4 Distraction Histogenesis
3.5 Endoscopy in Plastic Surgery
3.6 Robotics
3.7 Simulations
3.8. 3.D printing technology & applications
3.9 Suture Materials, Implants and Biomaterials in plastic surgery
3.10 Transplantation biology, techniques and applications
3.11 Regenerative medicine, cell therapy & stem cells

3.12 Tissue Engineering applications in plastic surgery
3.13 Telemedicine in plastic surgery
3.14 Information and Digital Technology for Plastic surgeon
3.15 Teaching tools and methods in plastic surgery
3.16. Training modules for plastic surgery trainees.

2. Microvascular surgery, Brachial plexus and Peripheral nerve surgery

A. Microvascular surgery

1. Instrumentation in Microsurgery
2. Basic Principles of free-flap surgery
3. Fundamental principles
    3.1 Fundamental Principles of microvascular surgery
    3.2. Pre-operative planning for microsurgery
    3.3. Factors affecting outcome of microvascular flap surgery
    3.4. Anatomy of angiosomes and perforators
4. Replantation and revascularization
5. Recent advances in microsurgery
6. Terminologies in Microsurgery.

B. Peripheral Nerve surgery

1. Types of Nerve injury
2. Diagnosis and management of peripheral nerve lesions/injuries
3. Compression neuropathies- upper and lower limb
4. Topographic anatomy of various peripheral nerves.

C. Brachial plexus Surgery

1. Anatomy of the Brachial Plexus
2. Mechanism of Brachial Plexus Injury
3. Examination, Investigations and Diagnosis of Brachial Plexus Injury
4. Management of neonatal brachial plexus injury
5. Management of adult Brachial Plexus injury
6. Management of Chronic Brachial Plexus injury.

D. Microlymphatic surgery

1. Lymphedema pathophysiology
2. Assessment of lymphedema
3. Medical Management of Lymphedema
4. Surgical management of Lymphedema
5. Microlymphatic surgery.

E. Composite Tissue Allotransplantation

1. Principles and regulations of Composite Tissue Allotransplant
2. Recent developments in Hand transplant

3. Face transplant.

F. Video microsurgery

G. Robotic microsurgery

H. Tubal recanalization and Vaso-vasostomy

I. Arteriovenous Fistula

3. Burns

1. History of acute burns injuries & management
2. Multidisciplinary burn team
3. Prevention of burns
4. Burn management in disasters and humanitarian crisis
5. Pathophysiology of acute burns
6. Systemic Inflammatory Response Syndrome (SIRS)
7. Early burn care
8. Fluid management in acute burns
9. Inhalation burns
10. Management of the burn wound
11. Skin and skin substitutes
12. Nutrition in Burns
13. Burn wound infection and treatment
14. Sepsis in burns
15. Multiorgan Dysfunction Syndrome (MODS)
16. Anesthesia for a burned patient
17. Biomarkers in Burn care
18. Electrical burns
19. Chemical burns
20. Facial burns
20. Hand burns
21. Feet burns
22. Pediatric burns
24. Geriatric burns
25. Burns in pregnancy
26. Management of Pain in burns
27. Psychiatric and psychological considerations in burns
28. Burn rehabilitation
29. Post burns scars
29. Post burns contractures
30. Post burn facial deformities
31. Skin bank
32. Role of allografts in burns
33. Skin substitutes
34. Organizing a burn unit.

4. Craniofacial Cleft and Pediatric Plastic Surgery

1. General

1.1. Embryology and anatomy of craniofacial complex.
1.2. Growth and development changes in face, anatomy of facial skeleton.
1.3. Structure and development of teeth and Dentofacial anomalies.
1.4 Harvesting of bone grafts (including cranial bone).

2. Craniofacial anomalies

2.1. Principles of craniofacial surgery.
2.2. Craniofacial clefts. Tessier's clefts classification.
2.3. Craniosynostosis - syndromic and non-syndromic
2.4. Hypertelorism.
2.5. Craniofacial microsomia.
2.6. Craniofacial distraction.
2.7. Hemifacial atrophy.
2.8. Treacher-Collins Syndrome.
2.9. Pierre Robin sequence.
2.10. Other craniofacial syndromes, e.g.- Binders syndrome etc.
2.11 Distraction osteogenesis
2.12 Distractors and craniofacial fixation devices.

3. Cleft Lip and Palate

3.1. Embryology of head and neck.
3.2. Embryogenesis of cleft lip and palate.
3.3. History and evolution of techniques in Cleft surgery.
3.4. Classification of Clefts
3.5. Unilateral Cleft lip
3.6. Bilateral Cleft lip
3.7. Cleft Palate
3.8. Alveolar Clefts
3.9. Secondary deformity correction in clefts
3.10. Management of palatal fistula
3.11. Flaps in clefts- Abbe flap, Tongue flap, buccal flaps, free flaps etc.
3.12. Secondary cleft nose correction
3.13. Orthodontics in Cleft lip and Palate.
3.14. Midface skeletal evaluation and corrections and Orthognathic surgery
3.15 Distraction in Clefts.
3.16. Velopharyngeal incompetence.
3.17. Speech therapy in cleft lip and palate.
3.18. Middle ear management in Cleft palate
3.19. Antenatal diagnosis and management.

5. Head and Neck Surgery

A) Head and Neck Tumors

1. Benign and Malignant tumors of Head and Neck.
2. Tumors of oral cavity, oropharynx and Mandible.
3. Jaw tumors, lesions and cyst.
4. Principles of Reconstruction

4.1 Principles of reconstruction of Cancer of upper Aerodigestive system
4.2 Reconstruction of the Mandible and Maxilla

5. Tumors of skin
6.1 Benign skin tumors of the Head and neck
6.2 Malignant skin tumors of the Head and Neck

6. Pediatric head and neck tumors.

B) Head and Neck reconstruction by region

1 Reconstruction of Scalp and Calvarium
2 Reconstruction of the Nose
3 Reconstruction of the Eyelids and Orbit
4 Reconstruction of external ear
5 Reconstruction of the Lip and commissure
6 Cheek reconstruction
7 Tongue reconstruction
8 Reconstruction of pharynx and esophagus

C) Principles Skull Base Surgery

D) Vascular malformations of head and neck

E) Infections of the Head & Neck

1 Infection of the Cervical spaces
2 Ludwig's angina
3 Post Hansen's deformities of the face
4 Cancrum oris/ Mucor mycosis

6. Breast

1. Diagnosis of Breast Cancer
2. Oncoplastic Surgery
3. Management of Carcinoma Breast
4. Nipple and Areola Reconstruction
5. Congenital Anomalies of The Breast
6. Tuberous Breast
7. Poland's Syndrome
8. Fat Grafting in The Breast
9. Reduction Mammoplasty
10. Mastopexy
11. Augmentation Mammoplasty and Breast Implants
12. Anaplastic Large Cell Lymphoma and Breast Implants (ALCL)
13. Gynecomastia.

7. Hand and Upper Extremity

1) Regional anatomy and principles

1.1 Functional anatomy of hand
1.2 Biomechanics of the Hand

1.3 Regional anesthesia in upper limb surgeries
1.4 Examination of hand and upper limb
1.5 Diagnostic imaging of hand and upper extremity

2) Traumatic disorders of hand
2.1 Fingertip and nail injuries
2.2 Anatomy of the skeleton of the hand and fractures of the hand and wrist
2.3 Flexor tendon injuries of the Upper Limb
2.4 Extensor tendon of the Upper Limb
2.5 Mutilating injuries of the Upper extremity
2.6 Amputation and Prothesis
2.7 Thumb reconstruction
2.8 Acute nerve injuries and repair
2.9 Compartment syndrome of the Upper limb
2.10 Pediatric upper extremity trauma and reconstruction.

3) Non-traumatic disorders of upper extremities
3.1 Infections of hand
3.2 Dupytrens disease
3.3 Rheumatoid arthritis of the Hand
3.4 Compression neuropathies of upper extremity
3.5 Hand ischemia and Volkmann's ischemic contracture
3.6 Complex Regional Pain Syndrome
3.7 Tumors of the upper limb.

4) Congenital disorders of hand and upper extremities
4.1 Embryology, classification and principles.
4.2 Common congenital hand anomalies.
4.3 Vascular anomalies of upper extremity.

5) Miscellaneous
5.1 Comprehensive management of burned hand.
5.2 Occupational hand disorders
5.3 Management of the stiff hand
5.4 Management of the Spastic hand
5.5 Management of upper extremity in tetraplegia.
5.6 Hand therapy.

8. Trunk and Lower Extremity

1) Lower Extremity

1.1 Comprehensive Lower Extremity Anatomy
1.2 Management of Lower Extremity Trauma
1.3 Lower Extremity Sarcoma Reconstruction
1.4 Reconstructive Surgery: Lower Extremity Coverage/Composite reconstruction
1.5 Diagnosis & Treatment of Painful Neuroma and of nerve compression in the lower extremity
1.6 Lower Extremity Composite Reconstruction
1.7 Foot Reconstruction.

2) Trunk Reconstruction

2.1 Comprehensive Trunk Anatomy
2.2 Reconstruction of chest
2.3 Reconstruction of the soft Tissues of the back
2.4 Abdominal Wall reconstruction.

3) Pressure Sores

4) Perineal Reconstruction

9. Aesthetic Surgery

1. Aesthetic surgery practice

1.1. Setting up an aesthetic surgery practice
1.2. Preoperative analysis and surgical Planning in aesthetic surgery
1.3. Psychological assessment & specialist referrals
1.4. Obtaining informed consent and patient counselling
1.5. Clinical photography, documentation and record keeping
1.6. Dealing with complications and unsatisfied patients
1.7. Communication and team building
1.8. Ethics and medico-legal aspects of aesthetic surgery
1.9. Anesthesia for aesthetic surgery: general and regional nerve blocks
1.10. Care and maintenance of instruments sterilization and infection control practices.

2. Age related changes & rejuvenation

A. Facial ageing

2.1. Anatomy of the face relevant to aesthetic surgery and injectables (soft tissues and skeletal)
2.2. Ageing of the face- skin, soft tissues and skeleton.

B. Facial rejuvenation

2.3. Non-surgical skin care and rejuvenation topicals and cosmeceuticals

2.4. Cutaneous resurfacing - chemical peel, surgical dermabrasion
2.5. Regenerative medicine: platelet rich plasma, mesenchymal stem cells and their aesthetic applications
2.6. Laser: physics, tissue interactions and various clinical applications
2.7. Other energy based devices: radio-frequency and ultrasound: their application in skin tightening and body contouring.
2.8. Forehead lift: endoscopic and surgical
2.9. Brow lift
2.10. Blepharoplasty: upper and lower
2.11. Oriental blepharoplasty
2.12. Secondary blepharoplasty
2.13. Thread lifts: science, indications, technique complications
2.14. Various facelift techniques: minimal access cranial suspension (macs) subcutaneous lift, Smas-platysma plication, extended Smas, subperiosteal lift
2.15. Secondary deformities from facelift surgery.

3. Aesthetic skeletal surgery
   3.1. Facial skeleton: male and female. Age related changes in the facial skeleton
   3.2. Facial skeletal augmentation: bone graft and implants
   3.3. Facial masculinization and feminisation surgeries
   3.4. Anthropometry, cephalometry, orthognathic surgery.

4. Soft tissue fillers
   4.1. Chemical composition and application of soft tissue fillers
   4.2. Temporary, semi-permanent, permanent fillers vascular and other complications of fillers.

5. Botulinum toxin - Botulinum toxin: science, indications, techniques, complications.
6. Incisions and scars
   6.1. Resting skin tension lines and their relation to incision placement and scar revision.
   6.2. Non-surgical management of incisions and scars
   6.3. Surgical management of scars of the face and other regions.

7. Rhinoplasty
   7.1. Nasal anatomy, physiology and assessments
   7.2. Rhinoplasty: aesthetic and functional, open and closed, reduction and augmentation
   7.3. Structural and preservation rhinoplasty
   7.4. Tip-plasty

7.5. The deviated/ crooked nose and cleft rhinoplasty
7.6. The septum in rhinoplasty
7.7. Secondary rhinoplasty.

8. Lip
8.1. Augmentation
8.2. Reduction

9. Fat grafting
9.1. Structural fat grafting: principles, extraction, preparation & injection techniques.
9.2. Micro, milli & nano fat grafting. Indications and complications.
9.3. Autologous fat grafting: biology, volumetric & non-volumetric effects of fat grafts
9.4. Platelet rich plasma, platelet rich fibrin, nano- fat grafting.

10. Liposuction
10.1 Principles and composition of various wetting solutions & safety issues
10.2 preoperative planning, postoperative care
10.3. Lipo-structuring- concept, applications, techniques- power assisted liposuction (PAL), ultrasound assisted liposuction (UAL), laser assisted liposuction, cryo-lipolysis
10.4. High definition lipostructuring
10.5. Face liposuction and lipolysis
10.6. Axillary contouring and axillary breast management
10.7. Gynecomastia correction
10.8. Recent techniques- Vaser, radio frequency, j plasma skin tightening
10.9. Large volume liposuction.

11. Body contouring surgeries
11.1 Obesity & massive weight loss (MWL) and post bariatric surgery weight loss
11.2 Management of high BMI patients
11.3. Body and limb contouring procedures: brachioplasty, belt lipectomy, lower body lift, upper body lift, thigh plasty, buttock lift: assessment, indications, techniques & complications.

12. Abdominoplasty
12.1 anatomy and blood supply
12.2. Standard abdominoplasty & variants
12.3. High tension lateral abdominoplasty, mini abdominoplasty, extended lipo-abdominoplasty

12.4. Neo-umbilicoplasty
12.5. Correction of divaricated recti, ventral hernia, mesh repair.

13. Implants and augmentation
    13.1. Implant biology
    13.2. Buttock augmentation, calf augmentation.

14. Aesthetic genital surgery: male & female
    14.1. Anatomy & embryology
    14.2 Analysis and planning, anatomical and functional corrections
    14.3 Penile, scrotal, vaginal, vulval, mons pubis surgical procedures.

15. Hair restoration
    15.1 Scalp anatomy and pathology biology of the hair follicle from the surgical perspective
    15.2 Patterns of hair loss
    15.3 Tools for evaluation of hair quality- TrichoScan, densitometry etc.
    15.4. Management protocols for alopecia. Medical restoration
    15.5. Various techniques of restoration including strip harvest (FUT) ,(FUE)
    15.6 Body hair transplant (non-scalp donor harvest)
    15.7 Surgical correction of baldness
    15.8 Eyebrow, moustache, beard hair transplantation.

16. Other aesthetic procedures
    16.1. Aesthetic jewellery piercing
    16.2. Cheek dimple creation
    16.3. Buccal fat pad removal
    16.4. Ear lobe: repair, augmentation, reduction.

10) Reconstruction of External Genitalia

3.1 Reconstruction of Male Genitalia
3.2 Reconstruction of acquired vaginal defects
3.3 Gender identity disorders and disorders of sex development.
3.4 Sex reassigning surgeries – male to female, female to male

12) Maxillofacial Surgery, Trauma and Reconstruction

12.1 Dentofacial anatomy, occlusions, various terminologies.
12.2. ATLS protocols.
12.3. Management of Airway and acute care.
12.4. Evaluation of injuries, imaging, principles of treatment.
12.5. General principles of facial soft tissue injury repair.

12.6. Management of soft tissue injuries of specific regions of the face.
12.7. Facial nerve injuries and management.
12.8. Restoration of anatomical subunits of face.
12.9. Incisions to access the craniofacial skeleton.
12.10. Access osteotomies to the skull base.
12.11. Skeletal Fractures –Principles and management
12.12. Fracture Mandible and condyle fractures.
12.13. Midface fractures: maxilla, nasal bone, NOE complex
12.14. Naso-Orbito-Ethmoid injuries.
12.15. Nasal bone fractures.
12.16. Frontal bone fractures.
12.17. Zygomatic complex fractures.
12.18. Management of Panfacial injuries.
12.19. Management of dento-alveolar injuries.
12.20. Fracture reduction and different modalities of skeletal stabilization; AO principles.
12.21. Primary and secondary bone grafting of the facial skeleton.
12.22. Avulsion injuries of face.
12.23. Gunshot injuries of face.
12.24 Pediatric Facial fractures.
12.25. Management of facial fractures in elderly and edentulous jaw.
12.25. Temporomandibular joint: Ankylosis, Hypermobility, dislocation.
12.26 Temporomandibular joint pain, dysfunctions.
12.27. T. M Joint Reconstruction.
12.28. Obstructive sleep apnea – Evaluation, planning and management.
12.29. Principles of osteointegration and Implantology.
12.30. Craniofacial and Maxillofacial Prosthetics.
12.31. Craniofacial Implants and retained prosthesis.
12.32. Radiological imaging

G. TEACHING PROGRAMME

General principles:

- The program has been designed to ensure competency-based training of the student during the 3 years.
- The training will essentially be self-directed and revolve around practical skills acquired from graded patient care responsibilities and formal academic sessions.
- Trainees are expected to be fully conversant with the use of computers (documentation, editing and presentation software (word, PowerPoint, Excel etc.) and be able to use databases like Medline, PubMed etc.
- They should be familiar with the concept of evidence-based medicine and the use of guidelines available for managing various diseases.
- They should also be familiar with the functioning of optical cameras for daily photography of patients as per plastic surgical principles.

Formal academic sessions:

1. **Seminars/Webinars**: To be presented by the trainee under the supervision of the teaching faculty. The topics will include Basic and advanced topics in Burns and Plastic Surgery along with recent advances.
2. **Journal Review**: It will include discussion on recent articles related to various topics in Burns and Plastic Surgery and allied disciplines.
3. **Clinical Case presentation**: Representative clinical cases shall be presented and discussed in detail in presence of faculty.
4. **Operative procedures planning and discussion:** This session aims at discussing common operative procedures and practical details.
5. **Clinical grand rounds**: A clinical grand round, involving presentation of unusual and difficult cases will be done by a post graduate student, in the presence of all the clinical staff belonging to the Department of Plastic Surgery. The exercise is to develop the clinical acumen of the trainee.
6. **Radiology/Electrophysiological meet**: Radiological and electrophysiological investigations of various cases are discussed in consultation with the faculty of Radiology and Physiology.
7. **Mortality and Morbidity meets**: Mortality and morbidity meets will be arranged to discuss complications and deaths occurring during patients' management to identify the areas for improvement.
8. **Dissertation review**: It will be planned to assess the trainee's progress and take necessary corrective steps if there are any lacunae.

9. **Attendance and presentation at academic meets**: The trainee must attend minimum of two accredited scientific meetings (CME, symposia, and conferences) during 3 years of teaching program. Trainee will present at least one poster or read one paper at State/National / International Plastic Surgical or sub-speciality (Hand, Oncoreconstruction, Aesthetic, Brachial plexus etc.) conferences during the second / third year of the training period.
10. **Research Publication (Research skills)**: Trainee will preferably publish one clinical research paper in indexed journal with significant impact factor.
11. **Didactic Lectures by faculty**

Sr. No	Description	Frequency
1	Subject seminars	Once a week
2	Journal club	Once in two weeks
3	Didactic lectures by faculty	Once a month
4	Bedside teaching	During ward rounds
5	Clinical rounds	Daily
6	Case Presentation and Treatment	Planning Once a week
7	File Audit/Statistic Meet/Mortality and Morbidity Audit	Once month
8	Grand Rounds	Once a month
9	Dissertation Review	Once every 6 months

The Candidate shall be required to participate in the teaching and training programme of Post Graduate students, Undergraduate students and interns.

Dissertation

Every student registered as post graduate shall carry out research project under the guidance of a recognized post graduate teacher, the result of which shall be written up and submitted in the form of a dissertation. Dissertation will be done in accordance with institutional protocol.

Dissertation process to be completed within six months of admission to M.Ch. Burns and Plastic Surgery program:

Activity	**July admission**	**January admission**
Selection of topic in consultation with PG Guide	September /October	March /April
Approval by Department PG Committee		
Institute Scientific Committee approval	November / December	May / June
Institute Ethics Committee approval		
Final approval letter by Academics Section	31st December	30th June

External postings:

The student will have external postings to Departments of Excellence in various subspecialties for a period of 2 weeks to a month at a time, a total of three months being permitted during a period of 3 years. This will include the following departments-

Sno	Subject	Rationale	Year	Duration
1	**Orthopedics**	*to know concepts of ideal bone alignment, management for stable bone fixation and bone handling in relation to soft tissue cover over exposed bone and commonly occurring bone fractures, principles of distraction osteogenesis and bone lenghtening*	3rd year beginning	2 weeks
2	**Dermatology**	*diagnosing and treating common skin diseases, non-surgical management of aesthetics, use of laser for skin ailments.*	2nd year mid	2 weeks
3	**Physical and Medical rehabilitation**	*principles of physiotherapy, mechanics and dynamics of rehabilative protocols, physiology and rationale of various types of current therapy, devising and proper method of preparing splints*	2nd year early	2 weeks

H. SUBJECT SPECIFIC COMPETENCIES

At the end of the course, the student should be able to acquire the following competencies as under

1. Knowledge

❖ Theoretical knowledge:

Should be able to describe & discuss and synthesize knowledge of different conditions needing plastic surgical care and their diagnosis and management.

❖ Clinical/practical skills:

Should be able to diagnose, investigate, perform surgery, manage and follow-up patients with conditions needing plastic surgical care using modern therapeutic methods.

❖ Teaching skills:

Should be able to teach relevant aspects of conditions needing plastic surgical care to resident doctors, junior colleagues, nursing and para-medical staff.

❖ Research methodology:

Should be able to identify and investigate a research problem in conditions needing plastic surgical care using appropriate methodology.

❖ Group approach:

Should have participated in multi-disciplinary meetings with radiologists, pediatricians, pathologists, orthopedic surgeons, rehabilitation specialists, oncologists and experts from allied clinical disciplines.

2. Attitudes including Communication and Professionalism

The M.Ch. candidate, at the end of training should demonstrate the ability to:

Ethical & Communicative skills and Human Relationships

- communicate in a professional manner the treatment plan with patients, their family and care givers,

- function as a part of a team in collaboration with related clinical disciplines like geriatric or mental health care team members, nursing/occupational therapy staff and nutrition unit.

- Adopt ethical principles and maintain proper etiquette in dealing with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.

● Develop communication skills to word reports and professional opinion and to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

● Acquire an effective system for identifying and addressing ethical, cultural, and spiritual issues associated with health care delivery to geriatric mental health patients.

● Acquire knowledge or applies an understanding of psychological, social, and economic factors which are pertinent to the delivery of health care to geriatric mental health patients.

● Effectively engages the patient and/or family in communications which are nonjudgmental and non-coercive.

Leadership skills

● Organize team activities in the department and community on Plastic Surgery-related conditions including prevention and public awareness.

● Plan and implement group activities with health staff in the hospital and community.

Professionalism

● Accept personal responsibility for care of patients with mental health problems, consistent with good work ethics and empathy.

● Demonstrate appropriate truthfulness and honesty with colleagues.

● Recognize personal beliefs, prejudices, and limitations, which should not come in the way of providing service.

● Respect patient confidentiality at all times in verbal and written communication.

Attitude

● Respect patients' religious, moral, and ethical beliefs and biases, even if they differ from the student’s own beliefs.

● Present all available options accurately to the patient and relatives.

● Be aware of the advantages and potential hazards of referring patients and families to community or to national resources.

● Recognize the limitations of their own skills and seeks consultation when necessary.

● Understand and develop sensitivity to end-of-life care and issues regarding provision of care.

3. Plastic Surgical Skill Development

The list of procedures which a trainee needs to perform independently, perform under supervision, assist, and observe are given below. In addition, trainees are encouraged to improve skills by doing procedures on cadavers, surgical simulators and the surgical skills laboratory if facilities are available.

Sl. No	**Competencies in Skill Development in terms of the syllabus.** At the end of the course, the trainee should be able to:
A. Perform Independently	
1)	**GENERAL PRINCIPLES** • Create a consent document appropriate to the clinical care sought by a patient • Perform steps of WHO safety protocol: surgical patient safety checklist • Obtain standard views of photographs for different conditions and create a photograph logbook • Select and use appropriate dressing materials for wounds • Demonstrate wound debridement • Demonstrate application of Negative pressure wound therapy • Demonstrate the use of external tissue expansion on simulation models • Demonstrate the harvest of split skin grafts in patients • Harvest and use a full thickness skin graft • Demonstrate use of the skin graft Mesher • Identify cutaneous vascular perforators using a vascular doppler • Demonstrate with appropriate planning, local skin flaps, pedicled skin flaps, muscle flaps, osseous flaps, free flaps, perforator flaps • Demonstrate delay procedures • Demonstrate secondary flap modification (eg; flap debulking) • Demonstrate harvest of tendon, bone, cartilage for grafts • Demonstrate the administration of local anaesthetics, Tumescent anaesthesia, nerve blocks in patients • Demonstrate Endotracheal intubation on a patient or Simulator
2)	**MICROVASCULAR SURGERY, BRACHIAL PLEXUS, PERIPHERAL NERVE SURGERY** • Set up the microscope in the operation theatre or Laboratory. • Clean and store the Micro instruments after use. • Use magnifying loupes and operating microscope during surgery. • Make a pattern of the reconstructive plan with its various components for a given defect. • Examine, decide the management, implement, operate assist and rehabilitate cases of brachial plexus injuries. • Diagnose, investigate, exploration and repair of peripheral nerves under magnification.
3)	**BURNS** • Perform escharotomy, escharectomy and fasciotomy on the limbs and trunk

	• Place central venous lines in the Subclavian, Internal Jugular and Femoral veins in Paediatric and adult patients • Should manage acute burn patients in intensive care unit including respiratory and critical burn patients. • Set-up Central Venous pressure measuring systems • Perform burn wound dressings • Harvest, apply, manage split skin grafts used to resurface burn wounds • Procure and apply allograft skin on wounds • Perform a burn wound biopsy • Perform dressings for hand burns • Perform a Z-plasty to lengthen a post burn contracture band. Release and resurface post burn contractures of various joints • Make appropriate splints to immobilize hand burns in the functional position. • Prescribe appropriates splint, pressure garments and exercises for acute burns and post burn deformities.
4)	**CRANIOFACIAL, CLEFT AND PEDIATRIC PLASTIC SURGERY** • Place a Nasopharyngeal Airway to maintain the upper airway • Demonstrate the various incisions and the anatomy to approach the Craniofacial skeleton • Demonstrate the markings for a Unilateral and Bilateral Cleft lip repair • Apply arch bars and Intermaxillary fixation for fractures of the maxilla and mandible.
5)	**HEAD AND NECK** • Obtain biopsies from benign and malignant lesions of the head and neck o Incision biopsy o Excision biopsy o Core biopsy • Perform excision biopsy of Benign lesions of the Head and neck • Make patterns and plans for partial auricular defects • Demonstrate the carving and shaping of a cartilage framework to reconstruct microtia.
6)	**BREAST** • Demonstrate the pre-operative markings of any one technique of reduction mammoplasty • Perform subcutaneous excision of Gynecomastia
7)	**HAND AND UPPER EXTREMITY** • Administer the following blocks: i. Axillary ii. Wrist, iii. Digital • Demonstrate the various local and cross finger flaps used inthe management of

	Fingertip injuries • Perform Flexor tendon repair • Demonstrate Extensor tendon repair • Set up the Controlled dynamic mobilization following Flexortendon repair • Set up the Controlled dynamic mobilization following Extensor tendon repair • Perform amputations of the: i. Thumb ii. Digits iii. Below elbow and Above elbow • Drain apical space infections, Paronychia • Perform drainage and irrigation in a case of Tenosynovitis.
8)	**TRUNK, GENITALIA, LOWER EXTREMITY** • Demonstrate the debridement of a pressure sore. • Evaluate cases of genital abnormalities. • Assess and manage congenital and acquired defects in the trunk.
9)	**AESTHETIC SURGERY** • Illustrate the design of a small Aesthetic surgery clinic • Mark the important facial Anthropometric points on a given patient • Measure the important distances and angles used for facial deformity analysis • Write a consent format for common aesthetic surgical procedures • Record photographs of the face, nose, ears, peri-orbital region, malar region, breasts, trunk, arms, thighs, and calves in standard views for documentation • Administer regional and local anesthesia to patients undergoing Aesthetic surgery • Measure the vertical height of the skull, forehead, midface, and lower face • Measure the Intercanthal distance, Palpebral fissure length, Inter-alar distance, Commissure length • Measure the width of the skull, forehead, face at the zygoma and mandibular angle • Measure the nasofrontal & nasolabial angles • Calculate the Cephalic index • Draw RSTLs on the Face and other areas • Demonstrate the pinch test to identify RSTLs • Plan incisions on the face and other parts based on the RSTLs • Perform a Z-plasty and scar revision using the Z-plasty principle • Prepare tumescent fluid to be used to infiltrate the abdomen, thighs and arms • Perform ear lobe repair for partial and complete tears.

B. Perform under supervision	
1)	**GENERAL PRINCIPLES** • Demonstrate placement of suitable tissue expanders in clinical cases.
2)	**MICROVASCULAR SURGERY, BRACHIAL PLEXUS, PERIPHERAL NERVE SURGERY** • Demonstrate dissection of recipient and donor vessel for microvascular anastomosis • Demonstrate the steps of a microvascular anastomosis and choose the appropriate instruments • Demonstrate tests to assess arterial and venous patency after microvascular transfer • Demonstrate perforator-based flap elevation in a cadaver: • Perform Neurorrhaphy • Harvest a Sural/ Superficial peroneal/ forearm cutaneous nerve graft • Demonstrate the anatomy of common sites for Compression of the Ulnar, Median, Radial, Sciatic, common Peroneal and Posterior Tibial nerves.
3)	**BURNS** • Plan and participate in a mock drill to manage mass casualties from a major burn accident • Participate in the early excision and resurfacing of burn wounds • Perform various limb and digit amputations in deep electric burns • Plan and perform flexion, extension, first web contracture release, syndactyly release and resurfacing in chronic hand burns • Perform release, resurfacing of a post burn neck contracture and make a post-operative splint for immobilization • Perform contracture release and resurfacing of post burn contractures over various joints • Resurface Facial burns according to the Aesthetic units of the face.
4)	**CRANIOFACIAL, CLEFT AND PEDIATRIC PLASTIC SURGERY** • Dissect the parotid gland and the Facial Nerve branches in the face • Demonstrate the Bicoronal & subciliary incisions used to expose the skull & orbit • Take a tongue stitch to prevent Glossoptosis • Perform nasal bone reduction and make an external nasal splint for a patient • Demonstrate the anatomy of the TMJ • Mark incision for cleft palate repair and dissect.
5)	**AESTHETIC SURGERY** • Create a digital archiving system for storing patient data • Perform liposuction and prepare a sample for micro fat grafting in a patient.

C. Assist and Observe	
	GENERAL PRINCIPLES • Perform submental intubation in a patient or cadaver • Perform tracheostomy in a patient or cadaver • Demonstrate the use of power tools • Demonstrate perforator-based flap elevation in a cadaver: i. TDAP and latissimus dorsi ii. Scapular and Parascapular iii. DIEP iv. SGAP and IGAP v. Gracilis vi. Fibula and peroneal perforator flap vii. Posterior tibial perforator flap. **MICROVASCULAR SURGERY, BRACHIAL PLEXUS, PERIPHERAL NERVE SURGERY** • Demonstrate the anatomy of the digit • Demonstrate the macro anatomy of the upper limb at the arm, forearm and hand • Demonstrate the anatomy of the lower limb at the level of the thigh, leg, and foot • Demonstrate the neurovascular anatomy of the scalp • Demonstrate use of anastomotic coupler devices in the Laboratory • Demonstrate the topographic anatomy of the Ulnar, Median, Radial nerves in the mid arm, upper, mid and lower forearm • Demonstrate the anatomy of the Brachial Plexus • Demonstrate the Spinal accessory to Suprascapular, Triceps branch to axillary, Ulnar fascicle to Biceps nerve, Median fascicle to Brachialis nerve, and Intercostal to Musculocutaneous nerve • Demonstrate the anatomy of the Fallopian tubes • Demonstrate the anatomy of the Vas Deferens • Perform superificialization of the Brachial artery prior to performing an AV fistula. **BURNS** • Place naso-gastric and naso-jejunal feeding tubes • Participate in the respiratory and nursing care of a patient with MODS, on the ventilator • Participate in the post-operative monitoring and care of a patient with burns after General anaesthesia • Demonstrate Subclavian and Femoral artery ligation an electrical burn. • Participate in primary excision and tangential excision of burns. • Harvest split thickness skin graft. **CRANIOFACIAL, CLEFT AND PEDIATRIC PLASTIC SURGERY** • Dissect the various fat compartments of the face • Harvest cancellous bone from the Iliac bone for alveolar bone grafting

	• Perform frontal craniotomy, orbito-frontal advancement, and occipital advancement • Draw the Facial midline in the 3 Coronal planes from the Cephalometric tracing, to depict the asymmetry, as described by Grayson • Assist and perform the key steps of surgery for unilateral cleft lip, anterior palate • Assist and perform the key steps of surgery for bilateral cleft lip, anterior palate • Assist and perform the key steps of cleft palate surgery • Assist in the bone grafting for alveolar clefts • Demonstrate the Abbe flap for philtral reconstruction • Demonstrate the open septo-rhinoplasty to correct nasal deformities of the cleft nose • Demonstrate the LeForte 1 advancement of the maxilla • Demonstrate the Bilateral Sagittal Split of the Mandible • Demonstrate arch bar and Ivy loop application in a patient or typhodont • Perform intermaxillary fixation in patients with fractures of the mandible • Perform open reduction and Miniplate fixation in fractures of the Frontal bones, Orbit, Zygoma, Maxilla, and Mandible • Perform intercanthal wiring in a patient • Demonstrate the vascularized auricular cartilage transfer to the Glenoid fossa • Excise a bony block and perform Costochondral reconstruction of the mandible for Temporomandibular ankylosis • Plan alloplastic reconstruction of Temporomandibular joint. • Set-up an external and internal distractor on a Stereolithographic model of a skull in a child with Brachycephaly • Perform a Box osteotomy and Facial Bipartition on a model of a patient with Hypertelorism • Set-up an external and internal distractor on a Stereolithographic model of a mandible in a child. • Demonstrate a maxillary swing procedure on a model. **HEAD AND NECK** • Demonstrate tongue reconstruction with the following flaps: i. Pectoralis major myocutaneous ii. Anterolateral thigh iii. Radial forearm microvascular flaps • Demonstrate the Glabella, Paramedian forehead and Nasolabial flaps for nasal reconstruction • Demonstrate the Radial forearm microvascular flap for total nasal reconstruction • Demonstrate the following flaps for lip reconstruction: i. Abbe ii. Estlander iii. Fan iv. McGregor v. Kerapandzic • Demonstrate the lateral canthotomy and Temporal flap for upper and lower eyelid repair

	• Demonstrate the Glabella and Lateral supra-brow flap forreconstruction of the Medial and Lateral canthus • Demonstrate the harvest of the nasal chrondromucosal graft • Demonstrate the lid switch procedure to reconstruct the upper eyelid • Demonstrate the elevation of the Temporalis fascia flap • Demonstrate the use of the Pectoralis major myocutaneousflap for pharyngeal and oesophageal reconstruction • Demonstrate the Radial forearm free flap for oesophageal reconstruction • Demonstrate the anterior rhinotomy approach to the anteriorcranial fossa • Demonstrate the LeForte I and the maxillary swing approaches to the skull base • Demonstrate the mandibular swing and condylotomy to approach the skull base and infra-temporal fossa • Demonstrate the sublingual, submandibular, retropharyngeal,buccopharyngeal and prevertebral spaces of the neck. **BREAST** • Display the anatomy of the breast and draining lymph nodes • Demonstrate the steps of a Simple mastectomy and axillarynode clearance • Demonstrate the flaps that can be used for Oncoplastic reconstructions: i. Thoracodorsal Artery Perforator ii. Lateral Intercostal artery Perforator iii. Anterior Intercostal artery Perforator and Superior epigastric artery Perforator based flaps • Demonstrate, in the Breast glandular flaps that can be used inthe redistribution of glandular tissue • Demonstrate the Pectoral fascial flap and the lower poledermal apron flap • Demonstrate the Latissimus dorsi muscle transfer to replacethe missing Pectoralis major in Poland's syndrome • Demonstrate any one technique of mastopexy • Demonstrate augmentation mammoplasty using implants. **HAND AND UPPER EXTREMITY** • Demonstrate the anatomy of the Flexor and Extensor compartments of the Upper limb • Demonstrate the Vascular anatomy of the Upper limb • Demonstrate the anatomy of the hand • Demonstrate the Nerve supply to the upper limb • Demonstrate various local and regional flaps that can be usedto resurface the thumb • Demonstrate the anatomy of the Nail bed • Manage fractures of the Hand with: i. K-wiring ii. Open reduction and internal fixation iii. External fixation • Demonstrate the Groin and Abdominal flaps for Hand resurfacing

	i. Thumb ii. Digits iii. Below elbow and iv. Above elbow • Perform the Great and second toe dissections in preparationfor a toe to the thumb transfer in a cadaver • Perform Pollicization of the Index finger • Demonstrate the Flexor muscle slide • Demonstrate the following tendon transfers i. Biceps to Triceps ii. Deltoid to Triceps iii. Brachioradialis to Flexor Pollicis Longus iv. Split FPL to EPL v. FPL tenodesis vi. FDS Lasso procedure vii. House intrinsic balancing procedure viii. EDC and EPL tenodesis ix. ECRL to FDP x. Pronator teres to FPL. **TRUNK, GENITALIA, LOWER EXTREMITY** • Demonstrate the anatomy of the chest wall, abdominal wall and back • Demonstrate the anatomy of the: i. Latissimus dorsi ii. Trapezius iii. Omentum and iv. Gluteal flaps • Demonstrate reconstruction of the Chest wall using: i. Pectoralis Major ii. Latissimus Dorsi iii. Serratus Anterior iv. Rectus Abdominis v. Omentum • Demonstrate the anatomy of the anterior abdominal wall and the component separation techniques • Demonstrate the anatomy and vascularity of the Penis, scrotum, and perineum • Dissect and prepare a Radial forearm flap for phallic reconstruction • Demonstrate vaginal reconstruction using: i. Pudendal artery-based flaps ii. Gracilis myocutaneous iii. Rectus abdominis and iv. Colon • Demonstrate the surgical steps involved in excision of the penis and testis along with creation of flaps for the neo vagina and vulva in a male to female gender reassignment surgery

	• Demonstrate the surgical steps in obliteration of the vagina, phalloplasty and scrotoplasty in a patient for female to male gender reassignment • Demonstrate the commonly used flaps in the treatment of pressure sores: I. Superior and inferior Gluteal flap II. Gluteal rotation flap III. Posterior thigh flap IV. Tensor Fascia Lata flap V. Vastus lateralis flap VI. Hamstring flap • Demonstrate the anatomy of the perineum • Demonstrate the anatomy of the lower limb at the level of the thigh, leg, and foot. • Demonstrate the following Flap anatomy i). Anterolateral thigh ii). Anteromedial thigh iii). Superior and Inferior Gluteal Artery iv). Gracilis v). Posterior leg Fasciocutaneous vi). Fibula and fibula perforator vii). Gastrocnemius viii). Soleus ix). Reverse sural artery x). Dorsalis pedis xi). Medial plantar artery xii). Perforator and propellor flaps. **AESTHETIC SURGERY** • Assist in the cleaning, packing and sterilization of commonly used surgical instruments • Dissect the superficial muscles, the Facial nerve and the blood vessels of the face • Demonstrate the Superficial Muscular Aponeurotic System (SMAS) • Identify the retaining ligaments of the face • Identify the Supra-orbital, Infra-orbital and Mental nerves • Demonstrate/ observe a Glycolic acid face peel • Demonstrate the forehead lift and expose the Supra-orbital neurovascular bundle • Demonstrate the anatomy of the Upper and Lower eyelid • Dissect to demonstrate the subcutaneous and Sub-SMAS lifts • Demonstrate the harvest of rib, iliac crest and cranial bone grafts in a cadaver or patient • Plan a simple W-plasty scar revision on a patient • Design a small Geometric Broken Line scar revision • Display the Open approach to the nose and septum • Demonstrate the Open reduction rhinoplasty • Demonstrate Costochondral graft for nasal augmentation • Demonstrate high and low septal preservation rhinoplasty

	• Demonstrate the various procedures to modify the nasal tip • Demonstrate the use of septal and costal cartilage as spreader and septal extension grafts • Demonstrate the anatomy of the nasal septum • Demonstrate the muscular and neurovascular anatomy of the Rectus abdominis, External oblique Internal oblique, Transversus abdominis and Peritoneum • Demonstrate the perforator anatomy of the anterior abdominal wall • Demonstrate any one technique of creating a neo-umbilicus • Demonstrate the posterior and anterior component separation procedure for repair of the anterior abdominal wall • Harvest a strip of skin and hair from the Occipital region and prepare Follicular units for Transplant • Perform follicular unit extraction and hair restoration • Perform hair restoration procedures over scalp and face • Demonstrate the anatomy of the Buccal fat pad • Use different types of LASERs for aesthetic procedures • Should use LASER for the management of scars, pigmented lesions, hair removal, vascular lesion etc. • Use threads, Botox and Fillers for aesthetic surgery.

I. ASSESSMENT

All the PG residents are assessed daily for their academic activities and periodically.

GENERAL PRINCIPLES

The Internal Assessment will be conducted in theory and practical/clinical examination.

FORMATIVE AND INTERNAL ASSESSMENT

Formative assessment will be continual and will assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning, and ability to practice in the system.

The performance of the resident during the training period will be monitored throughout the course and duly recorded in the logbooks as evidence of the ability and daily work of the student.

End of term theory examination

Time	Marks	Total
At end of first year (Paper I)	100	600
At end of second year (Paper II)	100	
Preliminary (4 Papers of 100 marks each)	400	

- Pattern for Paper I and Paper II: Marks: 50 Duration: 3 hours 5 questions of 10 marks each
- The Prelim theory examination will be conducted in accordance with the pattern of the final examination for theory.

End of term practical/oral examinations

Time	Marks	Total
At end of first year (Practical I)	100	700
At end of second year (Practical II)	100	
Preliminary	500	

- Pattern for Practical I and Practical II
    1. Long Case 30 marks
    2. Two Short cases – 30 marks
    3. Ward round :20 marks
    4. Viva 20 marks
- Pattern for Practical Examination (Preliminary) – in accordance with final practical examination
    1. Long Case 100 marks
    2. Three Short cases 50 marks each
    3. Ward Rounds 100 – 5 cases
    4. Viva-voce 150 marks comprising of
        1. Radiology and Nuclear imaging
        2. Instruments, Specimens and Surgical Planning
        3. Operative Procedures
        4. Research Methodology and logbook evaluation

SUMMATIVE ASSESSMENT

Essential Pre-Requisite To Appear For Summative Assessment

1. Minimum 80% attendance in each year of training.
2. At least 50% marks in Internal Assessment
3. Submission of Research Methodology Workshop Certificate will be mandatory.
4. Minimum of four satisfactory six monthly progress reports
5. Approval of Dissertation
6. Minimum one scientific paper/poster presentation at International/National/State Plastic Surgery Conference
7. Minimum one research paper – published / accepted for publication / sent for publication in a peer-reviewed indexed scientific Journal.

***Theory* - There will be four theory papers based on broad distribution, as below:**

Paper I	General principles and basic sciences relevant to plastic and reconstructive surgery	100 marks
Paper II	Clinical part I- Burns, Cleft-Craniofacial, Micro neurovascular & Brachial plexus, Upper extremity surgery	100 marks
Paper III	Clinical part II- Aesthetic surgery, Head and neck, Breast, Trunk, Genitalia, Lower limb surgery	100 marks
Paper IV	Recent Advances in Plastic and Reconstructive Surgery	100 marks
	Total Marks	**400**

Practical & Viva-Voce Examination

S. no	Particular	Details	Marks
1	Long Case - 1	Should assess the students' ability to diagnose a complex condition, order and interpret relevant investigations and plan the reconstruction of a composite defect.	100
2	Short Cases – 3 *(50 marks each)*	Each case would assess one or more aspects of one of areas of reconstruction.	150
3	Ward rounds: 5 cases	Assess the students' ability to counsel a patient or relatives about a procedure, possible complications, expected results and post-operative management. It could also assess his ability to anticipate complications, prevent them and manage them should they occur.	100
4	Grand Viva	1. Surgical planning *(30 marks)* 2. Operative procedures *(30 marks)* 3. Instruments *(30 marks)* 4. Radiology: X-rays, CT scan, MRI *(20 marks)* 5. Dissertation based viva (20 marks) 6. Osteology (Skull, Mandible, Hand, Fibula) *(10 marks)* 7. Photographs based viva *(10 marks)*.	150
		Total Marks	**500**
		Grand Total	**900**

In order to be declared successful in summative assessment, the candidate must score:

1. A minimum of 40% marks in each Theory paper and overall 50% marks for passing in theory.
2. A minimum of 50% marks in practical examination.

LOGBOOK:

The student will maintain a comprehensive log of:

1. Cases operated- observed, assisted, performed independently,
2. Seminars presented/ attended,
3. Faculty lectures attended,
4. Journal presentations made and attended,
5. Conferences/webinars attended, and presentations made.
6. Photo album-a photographic documentation of the important cases operated or assisted including relevant post-operative follow up.

Logbook of work done during the training period including rotation postings, departmental presentations, and internal assessment reports should be submitted.

J. RECOMMENDED READING:

Books (latest edition)

1. Neligan, Peter C. Text book of Plastic surgery. Elsevier.

2. Karoon Agrawal. Text book of Plastic, Reconstructive and Aesthetic surgery (6 volumes): Thieme

3. Kevin C. Chung, Grabb & Smith's: Plastic Surgery. Lippincott, Williams and Wilkins, New York.

4. Mathes, Stephen J. Plastic Surgery (Vol. 1-8). London. W.B. Saunders.

5. Mimis Cohen. Mastery of Plastic & Reconstructive Surgery (Vol.1-3). Little, Brown & Co.

6. Alan D. McGregor, Ian A. McGregor. Fundamental Techniques of Plastic Surgery. Elsevier.

7. Berish Strauch, Luis Vasconez, Charles K. Herman, Bernard T. Lee. Grabb's Encyclopaedia of flaps (2 Vol).

8. Fu-Chan Wei, Samir Mardini. Flaps and Reconstructive Surgery. Elsevier.

9. Scott W. Wolfe, William C. Pederson, Scott H. Kozin, Mark S. Cohen. Green's Operative Hand Surgery (2 Vol.).

10. David N. Herndon, Total Burn Care. Elsevier.

11. Sujatha Sarabhai. Principles & Practice of Burn care. JP Brothers.

12. Rajiv Sood, Bruce M. Achauer. Burn surgery- Reconstruction and Rehabilitation. Saunders Elsevier.

13. Raymond Fonseca. Oral and Maxillofacial Surgery. Elsevier.

14. Robert Acland, S. Raja Sabapathy. Acland's Practice manual for Microvascular Surgery. The Indian Society for Surgery of The Hand.

15. Prabha Yadav, Vinay Shankhdhar, Dushyant Jaiswal. Mastering Cancer Reconstructive Surgery with Free Flaps. JP Brothers.

Journals

International Journals

1. Plastic and Reconstructive Surgery, Journal of American Society of Plastic Surgery, Lippincott Williams & Wilkins
2. Journal of Plastic, Reconstructive & Aesthetic Surgery, JPRAS, BAPRAS, Science Direct
3. Clinics in Plastic Surgery, Elsevier
4. Burns, Journal of the International Society for Burn Injuries, Elsevier
5. Journal of Hand Surgery - Asia Pacific
6. Aesthetic Plastic Surgery Journal, Springer

National Journals

1. Indian Journal of Plastic Surgery, Thieme
2. Indian Journal of Burns, Medknow, part of Wolters Kluwer Health