Curriculum
MCh Plastic Surgery
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Curriculum
MCh Plastic Surgery

The infrastructure and faculty of the department of Plastic Surgery will be as per MCI guidelines

1. Goals

The goal of MCh course is to produce a competent surgeon who:

Recognizes the health needs of adults and carries out professional obligations in keeping with principles of National Health Policy and professional ethics;
Has acquired the competencies pertaining to plastic surgery that are required to be practiced in the community and at all levels of health care system;
Has acquired skills in effectively communicating with the patients, family and the community;
Is aware of the contemporary advances and developments in medical sciences.
Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and
Has acquired skills in educating medical and paramedical professionals.

2. Objectives

At the end of the MCh Plastic Surgery, the student should be able to:

Recognize the key importance of medical problems in the context of the health priority of the country;
Practice the specialty of plastic surgery in keeping with the principles of professional ethics;
Identify social, economic, environmental, biological and emotional determinants of adult Plastic Surgery and know the therapeutic, rehabilitative, preventive and promotion measures to provide holistic care to all patients;
Take detailed history, perform full physical examination and make a clinical diagnosis;
Perform and interpret relevant investigations (Imaging and Laboratory);
Perform and interpret important diagnostic procedures;

Diagnose illnesses in adults based on the analysis of history, physical examination and investigative work up;
Plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
Plan and advise measures for the prevention of diseases;
Plan rehabilitation of adults suffering from chronic illness, and those with special needs;
Manage emergencies efficiently;
Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;
Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine;
Demonstrate competence in basic concepts of research methodology and epidemiology;
Facilitate learning of medical/nursing students, practicing surgeons , para-medical health workers and other providers as a teacher-trainer;
Play the assigned role in the implementation of national health programs, effectively and responsibly;
Organize and supervise the desired managerial and leadership skills;
Function as a productive member of a team engaged in health care, research and education.

3. Syllabus:

Theory

❖ **Principles, Techniques, and Basic Sciences**

- Techniques and principles in Plastic Surgery
- Wound Healing: Normal and Abnormal
- Wound care
- The Blood Supply of the Skin
- Muscle flaps and their Blood supply
- Transplant Biology and Applications to Plastic Surgery
- Implant Materials
- Principles of Microsurgery
- Microsurgical Repair of Peripheral Nerves and Nerve Grafts
- Tissue Expansion
- Local Anesthetics

- Principles of Craniofacial distraction

❖ **Skin and Soft Tissue**

- Dermatology for Plastic Surgeons
- Mohs Micrographic Surgery
- Congenital Melanocytic Nevi
- Malignant Melanoma
- Thermal, Chemical and Electric Injuries
- Principles of Burn Reconstruction
- Radiation and Radiation Injuries
- Lasers in Plastic Surgery

❖ **Congenital Anomalies And Pediatric Plastic Surgery**

- Embryology of the Head and Neck
- Vascular Anomalies
- Cleft Lip and Palate
- Non syndromic Craniosynostosis and Deformational Plagiocephaly
- Craniosynostosis syndrome
- Craniofacial Microsomia
- Orthognathic Surgery
- Craniofacial Clefts and Hypertelorbitism
- Miscellaneous Craniofacial Conditions
- Otoplasty and Ear Reconstruction

❖ **Head and Neck**

- Soft tissue and Skeletal injuries of the Face
- Head and Neck Cancer and Salivary Gland Tumors
- Skull Base Surgery
- Craniofacial and Maxillofacial Prosthetics
- Reconstruction of the Scalp, Calvarium and Forehead
- Reconstruction of the Lips
- Reconstruction of the Cheeks
- Nasal Reconstruction
- Reconstruction of the Eyelids, Correction of Ptosis and Canthoplasty
- Facial Paralysis Reconstruction
- Mandible Reconstruction
- Reconstruction of Defects of the Maxilla and Skull Base

- Reconstruction of the Oral Cavity, Pharynx and Esophagus

❖ **Aesthetic Surgery**

- Cutaneous Resurfacing: Chemical Peeling, Dermabrasion and laser resurfacing
- Filler Materials
- Botulinum Toxin
- Structural Fat grafting
- Blepharoplasty
- Facelift
- Forehead Lift
- Rhinoplasty
- Liposuction
- Abdominoplasty and Lower Truncal Circumferential Body Contouring
- Facial Skeletal Augmentation with Implants
- Osseous Genioplasty
- Hair Transplantation

❖ **Breast**

- Augmentation Mammoplaty and its Complications
- Mastopexy and Mastopexy Augmentation
- Breast Reduction: Inverted-T Technique
- Vertical Reduction Mammoplasty
- Gynecomastia
- Breast Cancer for the Plastic Surgeon
- Breast Reconstruction: Prosthetic Techniques
- Latissimus Dorsi Flap Breast Reconstruction
- Breast Reconstruction: Tram Flap Techiniques
- Breast Reconstruction- Free Flap Techniques
- Nipple Reconstruction

❖ **Trunk and Lower Extremity**

- Thoracic Reconstruction
- Abdominal Wall Reconstruction
- Lower- Extremity Reconstruction
- Foot and Ankle Reconstruction
- Reconstruction of the Perineum

- Lymphedema
- Pressure Sores
- Reconstruction of the Penis

❖ **Hand**

- Plastis Surgeons and the Development of Hand Surgery
- Principles of Upper Limb Surgery
- Radiologic Imaging of the Hand and Wrist
- Soft- tissue Reconstruction of the Hand
- Fractures and Ligamentous Injuries of the Wrist
- Fractures, Dislocations, and Ligamentous Injuries of the Hand
- Tendon Healing and Flexor Tendon Injury
- Repair of the Extensor Tendon System
- Infections of the Upper Limb
- Tenosynovitis
- Compression Neuropathies in the Upper Limb and Electrophysiologic Studies
- Thumb Reconstruction
- Tendon Transfers
- Congenital Hand Anomalies
- Duputyren's Disease
- Replantation in the Upper Extremity
- Upper Limb Arthritis
- Upper Limb Amputation and Prosthesis

Practical:

History, examination and writing of records:

- History taking should include the back ground information, presenting complaints and history of present illness, history of previous illness, family history, social and occupational history and treatment history.
- Detailed physical examination should include general examination and systemic examination (Chest, Cardio-vascular system, Abdomen, Central nervous system, locomotor system and joints), with detailed examination of the abdomen.
- Skills in writing up notes, maintaining problem oriented records, progress notes, and presentation of cases during ward rounds, planning investigations and making a treatment plan should be taught.

Bedside procedures & Investigations:

- Therapeutic skills: Venepuncture and establishment of vascular access, Administration of fluids, blood, blood components and parenteral nutrition, Nasogastric feeding, Urethral catheterization, Administration of oxygen, Cardiopulmonary resuscitation, Endotracheal intubation.

Clinical Teaching

General, Physical and specific examinations of Maxillofacial & Hand Injuries should be mastered. The resident should able to analyse history and correlate it with clinical findings. He should be well versed with all radiological procedures like CT Angio, CT Face with 3D Reconstruction and X-Ray of face. He should present his daily admissions in morning report and try to improve management skills, fluid balance, and choice of drugs. He should clinically analyse the patient & decide for pertinent Investigations required for specific patient.

4. Teaching Programme

General Principals

Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skills oriented.

Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

Teaching Sessions

The teaching methodology consists of bedside discussions, ward rounds, case presentations, clinical grand rounds, statistical meetings, journal club, lectures and seminars. Along with these activities, trainees should take part in inter-departmental meetings i.e clinico-pathological and clinico-radiological meetings that are organized regularly.

Trainees are expected to be fully conversant with the use of computers and be able to use databases like the Medline, Pubmed etc.

They should be familiar with concept of evidence based medicine and the use of guidelines available for managing various diseases.

Teaching Schedule

Following is the suggested weekly teaching programme in the Department of Plastic Surgery:

Sr. No.	Description	Frequency

1.	Central Teaching	Once a week
2.	Seminar / Journal club	Once a week
3.	Case Presentation	Once a week
4.	Cath conference	Once a week
5.	File Audit/Stat Meet.	Once month
6.	Grand Round/Interdepartmental Meet	Once a month

- Each unit should have regular teaching rounds for residents posted in that unit. The rounds should include bedside case discussions, file rounds (documentation of case history and examination, progress notes, round discussions, investigations and management plan), interesting and difficult case unit discussions.
- Central hospital teaching sessions will be conducted regularly and MCh residents would present interesting cases, seminars and take part in clinico-pathological case discussions.

Conferences and Papers

- A resident must attend at least one conference per year.
- One paper must be presented in at least 3 years.

5. Schedule of Posting:

OPD:	Twice a week
OT:	Twice a week
Emergency:	Twice a week

- The M Ch resident should do the dressings of the patient that have been operated/assisted by them and of patients in Burns ICU.
- The M Ch resident should note down the History and examination of admitted patients and should daily put progress notes in files.
- The normal working hours will be from **8.00 AM to 8.00 PM**. When on emergency duty, the resident is supposed to stay overnight in the resident room.
- The M Ch resident shall be posted in other departments as per the following schedule:

Orthopedics	15 days
Onco surgery	15 days
Radiology	15 days
Anesthesia	15 days

- **Log Book:**
  All the work done during the course will be recorded by the candidate in the log book duly signed by the consultant.

6. Research Projects

- Every candidate shall carry out work on an assigned research project under the guidance of a recognized postgraduate teacher, the project shall be written and submitted in the from of a Project.
- Every candidate shall submit project plan to university within time frame set by university
- Thesis shall be submitted to the University within 9 months of joining the course.
- The student will (i) identify a relevant research problem, (ii) conduct a critical review of literature, (III) formulate a hypothesis, (iv) determine the most suitable study design, (v) state the objectives of the study, (vi) prepare a study protocol, (viii) undertake a study according to the protocol, (viii) analyze and interpret research data, and draw conclusion, (ix) write a research paper.

7. Assessment

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

General Principles

- The assessment is valid, objective and reliable
- It covers cognitive, psychomotor and affective domains.
- Formative, continuing and summative (final) assessment is also conducted in theory as well as practical. In addition, research project is also assessed separately.

Formative Assessment

The formative assessment is continuous as well as end of term.
The former is based on the feedback from the consultants concerned.
Formative assessment will provide feedback to the candidate about his/her performance and help to improve in the areas they lack.
Record of internal assessment should be presented to the board of examiners for consideration at the time of final examination.

Internal 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. Marks should be allotted out of 100 as followed.

Sr. No.	Items	Marks
1.	Personal Attributes	20
2.	Clinical Work	20
3.	Academic activities	20
4.	End of term theory examination	20
5.	End of term practical examination	20

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.

4. **End of term theory examination** conducted at end of 1st, 2nd year and after 2 years 9 months

5. **End of term practical/oral examinations** after 2 years 9 months.

Marks for **personal attributes** and **clinical work** should be given annually by all the consultants under whom the resident was posted during the year. Average of the three years should be put as the final marks out of 20.

Marks for **academic activity** should be given by the all consultants who have attended the session presented by the resident.

The Internal assessment should be presented to the Board of examiners for due consideration at the time of Final Examinations.

Summative Assessment

Ratio of marks in theory and practical will be equal.
The pass percentage will be 50%.
Candidate will have to pass theory and practical examinations separately.

A. Theory examination

Sr. No.	Title	Marks
Paper –I	Basic Sciences as related to Plastic Surgery	100
Paper-II	Clinical Plastic Surgery	100
Paper-III	Operative Plastic Surgery	100
Paper-IV	Recent advances in Plastic Surgery	100
	Total	**400**

B. Practical & Viva-Voce Examination

S. no		Marks
1.	Long Case (1)	100
2.	Short Cases (2) 75 marks each	150
3.	Procedure	50
4.	Grand Viva including Instruments/Radiology/Pathology	100
	Total	**400**

8. Job Responsibilities

Outdoor Patient (OPD) Responsibilities

- The working of the residents in the OPD should be fully supervised.
- They should evaluate each patient and write the observations on the OPD card with date and signature.
- Investigations should be ordered as and when necessary using prescribed forms.
- Residents should discuss all the cases with the consultant and formulate a management plan.
- Patient requiring admission according to resident's assessment should be shown to the consultant on duty.
- Patient requiring immediate medical attention should be sent to the casualty services with details of the clinical problem clearly written on the card.
- Patient should be clearly explained as to the nature of the illness, the treatment advice and the investigations to be done.
- Resident should specify the date and time when the patient has to return for follow up.

❖ **In-Patient Responsibilities**

Each resident should be responsible and accountable for all the patients admitted under his care. The following are the general guidelines for the functioning of the residents in the ward:

- Detailed work up of the case and case sheet maintenance:
- He/She should record a proper history and document the various symptoms. Perform a proper patient examination using standard methodology. He should

develop skills to ensure patient comfort/consent for examination. Based on the above evaluation he/she should be able to formulate a differential diagnosis and prepare a management plan. Should develop skills for recording of medical notes, investigations and be able to properly document the consultant round notes.

- To organize his/her investigations and ensure collection of reports.
- Bedside procedures for therapeutic or diagnostic purpose.
- Presentation of a precise and comprehensive overview of the patient in clinical rounds to facilitate discussion with senior residents and consultants.
- To evaluate the patient twice daily (and more frequently if necessary) and maintain a progress report in the case file.
- To establish rapport with the patient for communication regarding the nature of illness and further plan management.
- To write instructions about patient's treatment clearly in the instruction book along with time, date and the bed number with legible signature of the resident.
- All treatment alterations should be done by the residents with the advice of the concerned consultants and senior residents of the unit.

❖ **Admission day**

Following guidelines should be observed by the resident during admission day.

- Resident should work up the patient in detail and be ready with the preliminary necessary investigations reports for the evening discussion with the consultant on duty.
- After the evening round the resident should make changes in the treatment and plan out the investigations for the next day in advance.

❖ **Doctor on Duty**

- Duty days for each Resident should be allotted according to the duty roster.
- The resident on duty for the day should know about all sick patients in the wards and relevant problems of all other patients, so that he could face an emergency situation effectively.
- In the morning, detailed over (written and verbal) should be given to the next resident on duty. This practice should be rigidly observed.
- If a patient is critically ill, discussion about management should be done with the consultant at any time.
- The doctor on duty should be available in the ward through out the duty hours.

❖ **Care of Sick Patients**

- Care of sick patients in the ward should have precedence over all other routine work for the doctor on duty.
- Patients in critical condition should be meticulously monitored and records maintained.
- If patient merits ICU care then it must be discussed with the senior residents and consultants for transfer to ICU.

❖ **Resuscitation skills**

At the time of joining the residency programme, the resuscitation skills should be demonstrated to the residents and practical training provided at various work stations.

- Residents should be fully competent in providing basic and advanced cardiac life support.
- They should be fully aware of all advanced cardiac support algorithms and be aware of the use of common resuscitative drugs and equipment like defibrillators and external cardiac pacemakers.
- The resident should be able to lead a cardiac arrest management team.

❖ **Discharge of the Patient**

- Patient should be informed about his/her discharge one day in advance and discharge cards should be prepared 1 day prior to the planned discharge.
- The discharge card should include the salient points in history and examination, complete diagnosis, important management decisions, hospital course and procedures done during hospital stay and the final advice to the patient.
- Consultants and DM Residents should check the particulars of the discharge card and counter sign it.
- Patient should be briefed regarding the date, time and location of OPD for the follow up visit.

❖ **In Case of Death**

- In case it is anticipated that a particular patient is in a serious condition, relatives should be informed about the critical condition of the patient beforehand.
- Residents should be expected to develop appropriate skills for breaking bad news and bereavements.
- Follow up death summary should be written in the file and face sheet notes must be filled up and the sister in charge should be requested to send the body to the mortuary with respect and dignity from where the patient's relatives can be handed over the body.

- In case of a medico legal case, death certificate has to be prepared in triplicate and the body handed over to the mortuary and the local police authorities should be informed.
- Autopsy should be attempted for all patients who have died in the hospital especially if the patient died of an undiagnosed illness.

❖ **Bedside Procedures**

The following guidelines should be observed strictly:

- Be aware of the indications and contraindications for the procedure and record it in the case sheet. Rule out contraindications like low platelet count, prolonged prothrombin time, etc.
- Plan the procedure during routine working hours, unless it is an emergency. Explain the procedure with its complications to the patient and his/her relative and obtain written informed consent on a proper form. Perform the procedure under strict aseptic precautions using standard techniques. Emergency tray should be ready during the procedure.
- Make a brief note on the case sheet with the date, time, nature of the procedure and immediate complications, if any.
- Monitor the patient and watch for complications(s).

❖ **OT responsibilities**

- The 1st year resident observes the general layout and working of the OT, understands the importance of maintaining sanctity of the OT, scrubbing, working and sterilization of all the OT Instrument, know how of microscopes. He/ She is responsible shifting of OT patients, for participating in surgery as 2nd assistant and for post operative management of patient in recovery and in ward. The 2nd year resident is responsible for pre op work up of the patient, surgical planning and understanding the rationale of surgery. He/she is the first assistant in surgery and is responsible for anticipating intra op and post op complications and managing them. The final year resident should be able to perform minor/medium/major surgeries independently and assist in medium/major/extra major surgeries. He/she should be able to handle all emergencies and post op complications independently and is responsible for supervision and guidance of his/her juniors.

❖ **Medico-Legal Responsibilities of the Residents**

- All the residents are given education regarding medico-legal responsibilities at the time of admission in a short workshop.

- They must be aware of the formalities and steps involved in making the correct death certificates, mortuary slips, medico-legal entries, requisition for autopsy etc.
- They should be fully aware of the ethical angle of their responsibilities and should learn how to take legally valid consent for different hospital procedures & therapies.

They should ensure confidentiality at every stage.

9. Suggested Books & Journals:

Suggested Books

- ❖ Mathes: Principles & Practices of Plastic surgery
- ❖ Grabb & Smith: Plastic surgery
- ❖ Mc Gregor: Fundamental techniques of Plastic surgery
- ❖ Mc Carthy: Current therapy in Plastic surgery
- ❖ Rees: Aesthetic plastic surgery
- ❖ Green's: Operative Hand surgery
- ❖ Grab's: Encyclopedia of flaps

Suggested Journals

- Plastic and Reconstructive Surgery journal
- Journal of Plastic Reconstructive and Aesthetic Surgery
- Burns
- Plastic Surgery Clinics
- Hand Clinics

10. Model Test Papers

MODEL TEST PAPERS

MCh Plastic Surgery
Paper-I

Basic Sciences as Related to Plastic Surgery

Maximum Marks : 100 Time : 3 Hours

- Attempt **ALL** questions.
- Answer each question and its parts in **SEQUENTIAL ORDER**.
- **ALL** questions carry equal marks.
- Illustrate your answer with **SUITABLE DIAGRAMS**.

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1. Describe anatomical basis of Le Fort Fractures
2. Write a note on structure of skin and explain basis of graft “take”.
3. Describe LASER as applicable to hair reduction.
4 What is the role of orthodontist in the management of Cleft lip and Palate

5 What is the structure of silicone? Describe its various forms and discuss its applications.

6 Describe the applied anatomy of Temporoparietal fascial flap. What are its uses?

7. Tissue adhesives in Plastic Surgery
8. ARDS .
9. Enumerate the muscles supplied by Median nerve. How do you manage a case of “Carpal Tunnel Syndrome”?
10. Burn Sepsis

MODEL TEST PAPERS

MCh Plastic Surgery
Paper-II

Clinical Plastic Surgery

Maximum Marks : 100 Time : 3 Hours

- Attempt **ALL** questions.
- Answer each question and its parts in **SEQUENTIAL ORDER**.
- **ALL** questions carry equal marks.
- Illustrate your answer with **SUITABLE DIAGRAMS**.

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1. Discuss surgical management of Carinoma of Buccal mucosa.

2. Discuss the etiopathology, clinical features and management of Temporo Mandibular Joint [TMJ] ankylosis.

3. Describe the relevant surgical anatomy, mechanism of injury, clinical features and management of avulsion injury of Scalp.

4. Use of various forms of Silver in burns.

5. Storage of skin grafts.

6. Post burn reconstruction of moustache.

7. Classification according to burn depth.

8. Classify syndactyly. How to manage Complex syndactyly

9. Discuss management of Comminuted fracture of manible

10. Delto pectoral flap

MODEL TEST PAPERS

MCh Plastic Surgery
Paper-III

Operative Plastic Surgery

Maximum Marks : 100 Time : 3 Hours

- Attempt **ALL** questions.
- Answer each question and its parts in **SEQUENTIAL ORDER**.
- **ALL** questions carry equal marks.
- Illustrate your answer with **SUITABLE DIAGRAMS**.

1. Discuss the rationale and technique of Alveolar bone grafting and management of Palatal fistula.

2. Discuss Pathological anatomy and various options for correction of unilateral hair lip nose.

3. Describe the resuscitation of a child with burn injuries.

4. Discuss methods for estimation of size and depth of burn wounds and prognostic factors in a burn patient.

5. Bleparoplasty

6. Double opposing Z Plasty

7. Full thickness graft

8. Swan neck deformity of the digits.

9. Monitoring free flap

10. Protruding pre maxilla

MODEL TEST PAPERS

MCh Plastic Surgery
Paper-I

Recent Advances in Plastic Surgery

Maximum Marks : 100 Time : 3 Hours

- Attempt **ALL** questions.
- Answer each question and its parts in **SEQUENTIAL ORDER**.
- **ALL** questions carry equal marks.
- Illustrate your answer with **SUITABLE DIAGRAMS**.

Write Short Notes on:

1. Fat grafting
2. Single stage repair of hypospadias
3. Wound healing
4. Aesthetic units of Nose and their importance.
5. Factors influencing the outcome after nerve repair.
6. Alloplastic implant.
7. Face transplant
8. Embolisation in Vascular malformations.
9. Bone substitutes.
10. Radial artery free forearm flap