

**THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY,
No.69, Anna Salai, Guindy, Chennai – 600 032.**

**D.M/ M.Ch
SUPER SPECIALTY DEGREE COURSE**



SYLLABUS AND CURRICULUM

2021-2022

M.Ch - HAND SURGERY

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI
Syllabus - M.Ch. Hand Surgery

1. AIMS & OBJECTIVES

The syllabus for M.Ch., (Hand Surgery) Course should comprehensively cover all the subjects in Hand surgery during 3 years of study period. The student who undergoes the course should have an exposure to all the facets of hand surgery and develop adequate knowledge and skill to treat the patients competently after acquiring the degree.

2. THEORY SYLLABUS

General:-

1. Basic anatomy and surgical anatomy of the hand
2. Evolution of the hand
3. Embryology and Genetics of the hand development
4. Detailed anatomy of blood vessels, tendons, nerves and joints of the hand.
5. Nail bed anatomy
6. Biomechanics of hand movement and principles of kinesiology
7. Physiology of tendon nutrition and healing
8. Skeletal surgical anatomy, healing and fixation principles
9. Physiology of nerve healing
10. Brachial plexus anatomy and variations and neck anatomy
11. Tourniquet usage in the hand
12. Pathological basics of Traumatic and non traumatic conditions of hand

Anesthesia for hand surgery:-

13. Pharmacology of local anesthetic drugs and other drugs for Hand Infections and conditions.
14. Regional blocks for upper limb surgery

Burns:-

15. Thermal burns of the hand and basics of Fluid/Electrolyte Balance
16. Electrical burns of hand and their healing process
17. Chemical burns of hand and their healing process

- 18. Surgical reconstruction in hand Burns and its sequelae.
- 19. Pathophysiology of burns.
- 20. Burn wound infections and sepsis.

Infections:-

- 21. Acute infections in hand and Microbiological basis of Infections.
- 22. Palmar space infections
- 23. Deformities of hand in Hansen's disease
- 24. Tendon transfers in Hansen's disease
- 25. Tuberculosis in the hand
- 26. Chronic Tenosynovitis

Degenerative disorders:-

- 27. Dupuytren's disease.
- 28. Rheumatoid arthritis of hand.

Trauma:-

- 29. General principles of hand surgery
- 30. Examination of hand.
- 31. Treatment of acute hand injuries.
- 32. Finger tip injuries.
- 33. Flexor tendon injuries.
- 34. Extensor tendon injuries.
- 35. Principles of reconstruction in mutilating hand injuries.
- 36. Soft tissue injuries/loss in hand
- 37. Mangled hand and severity scores in trauma Management
- 38. Fractures of hand – lower end radius, carpals, metacarpals, phalanges.-Diagnose, Classify and Manage Bony injuries
- 39. Dislocations in the hand joints
- 40. Nail injuries, grafting.
- 41. Thumb reconstruction.
- 42. Peripheral nerve injuries, electro diagnostic tests.
- 43. Brachial plexus injuries – Evaluation and management
- 44. Principles and treatment of old and neglected hand deformities.
- 45. Tendon transfers for radial, ulnar and median nerve injury.
- 46. Local and distant flap covers for soft tissue defects of the hand
- 47. Problems of small joints.
- 48. Acute Compartment syndrome

Tumours:-

- 49. Benign and malignant tumours of hand. -Diagnosis and Management
- 50. Management of tumours in the hand

Congenital disorders:-

- 51. Congenital deformities of hand, finger, thumb
- 52. Classification of congenital disorders and Developmental disorders

Miscellaneous topics:-

- 53. Boutonniere and swan neck deformities
- 54. Vascular malformations of upper extremity.
- 55. Lymphedema in upper extremity.
- 56. Ischaemic conditions of upper extremity.
- 57. Vasospastic conditions of upper extremity.
- 58. Nerve compression syndromes.
- 59. Surgery for spastic and tetraplegic hand
- 60. Hand manifestations of clinical and metabolic diseases
- 61. Neural problems and hand eg. Parkinsonism/stroke
- 62. Diabetes mellitus manifestations in the hand
- 63. Volkmann's Ischaemic contracture – Evaluation and management
- 64. Hand transplantation biology
- 65. Transplant Immunology
- 66. Counselling of patients about Injury/Disease and its outcome
- 67. Coagulation disorders and Haematological Management of sports Injuries in the Hand.
- 68. Problems and Management of Sports injuries in the Hand
- 69. Ability and appropriately seek help from Orthopedics/Rehabilitation/Orthotics/Prosthetics/Therapist/Occupational Therapist.
- 70. ALTS
- 71. Biostatistics and Research Methodology
- 72. Ethical and Legal aspects of Managing Hand Disorders
- 73. Ability to order and Interpret appropriate Investigations (Lab/Radiological)

Rehabilitation and physiotherapy:-

- 74. Physiotherapy regimens for rehabilitation
- 75. Outcome assessment of hand problems

- 76. Basics of prosthetics and orthotics
- 77. Uses of splints in the hand
- 78. Occupational therapy for hand rehabilitation
- 79. Stiff hand management

Wrist :-

- 80. Elbow / wrist/ DRUJ surgery
- 81. Carpal instability and its management

Microsurgery :-

- 82. Principles of microvascular surgery and its applications in hand surgery.
- 83. Principles of microneural surgery and its applications in hand surgery.
- 84. Preparation for Replantation and revascularization surgery.
- 85. Reconstructive microneural surgery in the hand
- 86. Microvascular tissue transfers.
- 87. Composite Tissue Allotransplantation.

Bioethics

1. Respect human life and the dignity of every individual
2. Refrain from supporting or committing crimes against humanity and condemn all such acts
3. Treat the sick and injured with competence and compassion and without prejudice and apply the knowledge and skills when needed.
4. Protect the privacy and confidentiality of those for whom we care and breach that confidence only when keeping it would seriously threaten their health and safety or that of others
5. Work freely with colleagues to discover, develop, and promote advances in medicine and public health that ameliorate suffering and contribute to human well being
6. Educate the public about present and future threats to the health of humanity
7. Advocate for social, economic, educational and political changes that ameliorate suffering and contribute to human well being.
8. Teach and mentor those who follow us, for they are the future of our caring profession.

3.CLINICAL TRAINING

The students will be clinically trained in parent department during the 3 years course.

The candidate should have had practical training and posting in various departments as part of the training as follows

1. Orthopedic departments -exposure to skeletal fixation	3 months
OR	
Plastic surgery departments – skin and soft tissue	3 months
2. Physiotherapy department - hand	15 days
3. Splint making \Occupational therapy	15 days
4. Neurology Dept and Electromyographic studies-	7 days
5. Micro vascular lab training courses	
(40hours lab training mandatory) - Certified lab.	7 days
6. A.O Technique fixations (to attend at least one course)	7 days
7. Rheumatology	7 days
8. Anaesthesia Regional Blocks-	2 weeks
9. Musculoskeletal Imaging-	2 weeks

Total	6 months

During II year, students are encouraged to undergo special postings for learning new advanced techniques / Procedure / Skills in institutions of higher repute where the requisite facilities are available without affecting the duties of the parent department.

4. SKILL TRAINING:

The student must have acquired certain surgical skills in a structured manner during the three year period. These skills will be achieved by either assisting at the surgery or performing the surgery under the supervision of the teacher.

I year

Should have assisted at the following surgeries	Should have performed the following surgeries under guidance
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Repair of flexor tendons Zone II Excision of Benign tumours like ganglion Repair digital nerve Post burn sequelae reconstruction Surgery for congenital syndactyly Minor replants Revascularisation procedure Carpal bones fracture fixation	Nail injuries Skin grafting Fracture management of hand bones Repair of flexor tendons all zones except zone II Repair of extensor tendons Local flaps Cross finger flaps Venous Access Splinting for Hand and Upper Extremities
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II year

Should have assisted at the following surgeries	Should have performed the following surgeries under guidance
Free tissue transfer for coverage Excision of malignant tumours Repair median, ulnar, radial nerves Tendon transfers for nerve injuries Entrapment neuropathies DRUJ problems management Surgery for cleft hand Major replants Surgery for Rheumatoid, de Quervain's , Dupuytren's Lower end radius management	Repair of flexor tendons Zone II Excision of Benign tumours like ganglion Repair digital nerve Post burn sequelae reconstruction Surgery for congenital syndactyly Minor replants Revascularisation procedure Carpal bones fracture fixation

III year

Should have assisted at the following surgeries	Should have performed the following surgeries under guidance
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Brachial plexus injuries	Free tissue transfer for coverage
Radial club hand	Repair median, ulnar, radial nerves
Pollicisation	Tendon transfers for nerve injuries
Macroductyly reduction	Entrapment neuropathies
Surgery for AV malformations	DRUJ problems management
Surgery for muscle transfer for VIC	Surgery for cleft hand
Free functioning muscle transfer	Major replants
Vascularised toe transfer	Surgery for Rheumatoid, de
Joint Replacement of Elbow/ wrist/Shoulder	Quervain's , Dupuytren's
Arthodesis small joints	Lower end radius management
Arthroscopic Diagnosis and	
Therapeutics	

In addition, the students should be able to

- suggest modalities of the physiotherapy needed for hand rehabilitation
- do electromyographic study in case necessary technical is not available.
- do a basic doppler study of the vessels of hand
- help in occupational rehabilitation of the hand
- manage an intensive care facility for polytrauma including a hand injury

5. TEACHING METHODOLOGY

1. Planning session with entire Faculty and students – Twice in a week
2. OP clinics – 2 days/week
3. Ward rounds - 2 days/week
4. Wound care clinics - 2 days/week
5. Per-operative teaching sessions - 2 days/week
6. Classroom lectures - once in a week
7. Video teaching session - once in a week
8. Journal reading - once in a week and e-Learning
9. Symposium - once in a month
10. Guest lecture - once in 6 months
11. Attending Emergency department Cases -2 days a week
12. Attending Referral cases from other departments
13. presenting paper in State/National/International level conferences
14. Participation in Hospital Audit/Pathology Audit/Radiological Audit
15. Case conference
16. Skill Lab/Cadaver Dissection :Once a Month.

6. RESEARCH WORK

The candidate is introduced to the field of research in Hand surgery; both at clinical and laboratory level.

The candidate will be trained in the ability to

- Frame a research question.
- Plan a study to answer the question.
- Collect the relevant information and
- Evaluate appropriately the collected data to draw a conclusion.

The candidate should become conversant with the reporting of these results as a research paper, in journals and as a presentation in conferences.

The activities would consist of:

Planning and organizing relevant studies to be submitted as a Research paper at the end of the course.

Students should compulsorily attend Research Methodology workshop conducted by the University within first six months of M.Ch Course.

7. LOG BOOK:

The Postgraduate student of a Postgraduate Degree Course in Super specialties shall maintain Log Book of the work carried out by them and the training programme undergone during the period of training including details of surgical operations assisted or done independently.

The Log Book shall be checked and assessed by the faculty members imparting the training.

Periodical evaluation of Log Book to be done by the Head of the Department as per 52nd SAB.

The Evaluation of the candidates in both theory and practical aspects will help the candidate in the improvement of his/her knowledge skills & attitude.

8. COMPETENCY ASSESSMENT:

Overall:

1. Communication / Commitment / Contribution /

Compassion towards patients and Innovation	-	10 Marks
2. Implementation of Newly learnt techniques	-	10 Marks
3. Documentation of case sheets / discharge Summary / Review	-	10 Marks
4. Number of cases presented in Clinical Meetings/ Journal Clubs / Seminars / Papers presented in Conference.	-	10 Marks
5. No. Of Medals/ Certificates won in the conference / Quiz competitions and other academic meetings with details.	-	10 Marks

Total		50 Marks

Assessment I	- February	- First Year
II	- August	- First Year
III	- February	- Second Year
IV	- August	- Second Year
V	- February	- Third Year
VI	- May	- Third Year

VIVA INCLUDING COMPETENCY ASSESSMENT – 100 Marks (50+50)

9. THEORY EXAMINATION

- Paper I Basic sciences: Surgical Anatomy, Physiology, Microbiology; Principles of Hand Surgery and Basic Knowledge of Orthopedics, Plastic Surgery & General Surgery
- Paper II Trauma of the Hand and Upper Extremity including Principles of Internal Fixation
- Paper III Neuromuscular, Tumour and deformities of hand and Upper Extremity, Congenital Anomalies, Infections, Burns, Non-traumatic disorders of Peripheral nerves, Inflammatory conditions and Joint Reconstructions (Arthrodesis, Arthroplasty and Arthroscopy including Orthotic, prosthetic, Rehabilitation of Hand), Sports Medicine
- Paper IV Recent advances in Hand Surgery

Each paper will contain:

1. Essay questions (2)	-	2 X 15	=	30 Marks
2. Short Notes (10)	-	10 X 7	=	70 Marks

Total				100 Marks

10. PRACTICAL SCHEME:

Particulars	Time for candidate to examine the cases	Time for examiners to question the candidates	Maximum Marks
Long Case	1 Case x 60 Minutes	60 Minutes	100
Short Case	3 Cases x 15 Minutes	45 Minutes	100
Ward Rounds	4 Patients x 5 Minutes	20 Minutes	100
OSCE	5 Stations x 3 Minutes	15 Minutes	50
Viva Voce		15 Minutes	100
Log Book			50
			500

As per Medical Council of India Post Graduate Medical Education Regulations 2000 (amended upto 10th August 2016) clause **13.9 A Postgraduate student of a Postgraduate degree Course in broad specialties/ Super Specialties would be required to present one poster presentation to read one paper at a National/State conference and to present one Research paper which should be published/accepted for publication/sent for publication during the period of his Postgraduate studies so as to make him eligible to appear at the Postgraduate Degree Examination.**

Apart from Poster/Oral paper presentation in National/State conferences, the Research paper published by the candidate in the University Journal of Medical Sciences will be considered as equivalent to the Research Paper as mentioned in 13.9. clause. Case Reports can also be published in University

Journal of Medical Sciences but case reports will not be considered as Research Paper.

The candidate can also present Research Paper as per Clause 13.9 of Post Graduate Education Regulation 2000, and if the article sent for publication by the candidate as primary author or corresponding author which has not yet been published/accepted for publication, the candidate should submit a letter from the HOD, stating that the article sent for publication is of publishable merit and the proof of the Research Article submitted to the Journal for publication should be sent to the university forwarded through the HOD[as per 53rd SAB]
The student can submit articles for the University journal anytime from the time of registration till 6 months prior to theory examination.

11. OSCE: 5 stations

1. Clinical photograph of clinical scenario
2. Clinical photograph of clinical scenario
3. Clinical photograph or video of Operative surgery
4. Photograph of Recent Advances in Plastic Surgery or Equipment used in Hand surgery
5. Photograph of Rehabilitation aids

12. REFERENCE BOOKS

Examination of the Hand – Lister
 Mc Gregor: Fundamental Techniques of Plastic Surgery
 Plastic Surgery by Peter C. Neligan
 Green's Operative Hand Surgery
 Campbell Orthopaedic surgery
 Surgery of the wrist
 The Growing Hand by Amit Gupta
 Structural and dynamic basis of hand surgery – Zancolli

****Note:** The editions are as applicable and the latest editions shall be the part of the syllabi.

13. JOURNALS

1. JHS: Journal of Hand Surgery American and European volumes
2. Clinics in Hand Surgery

3. Journal of Reconstructive Microsurgery
