CENTRAL COUNCIL OF INDIAN MEDICINE

SIDDHA MARUTHUVA PERARINGNAR (M.D. (SIDDHA) COURSE

SYLLABUS FOR PURA MARUTHUVAM (EXTERNAL THERAPY) SPECIALITY

[UNDER THE INDIAN MEDICINE CENTRAL COUNCIL (POST GRADUATE SIDDHA EDUCATION) REGULATIONS, 2016.]

GOAL:
The goal of MD Pura Maruthuvam shall be establishing the External therapies of Siddha System of medicine for treating various diseases affecting mankind and to getting global acceptance in the healthcare delivery system.

OBJECTIVES:

- To teach the importance of external therapeutic procedures for the betterment of the patients those undergoing treatment for various conditions along with internal medicines.
- To make aware of the contemporary and developments in External therapies to the Siddha students and graduates.
- To make the students for acquiring the advanced skills through teaching external therapies in the treatment of various ailments.
- To create potent resources for the teaching of 32 external therapies and other special therapies of Siddha System of Medicine.
- Developing professional and academic knowledge of external therapeutic expertise in academic arena, clinical practice and research aspects.
- Scientific study of external therapies and also along with internal medicines in treating various ailments.
- Providing World class hands on training and practice in 32 types of external therapies.
- To document the clinical practice of external therapies in line of global scientific research and global acceptance.
- To equip a graduate with the capacity for independent practice and application of external therapies for treating various ailments.
- To establish and develop the pharmacopeia and various Siddha external therapies and medications.
- Establishing the standard operative procedure (SOP) for external therapies of Siddha System of Medicine for treating many chronic conditions for a uniform care across the country and global level.
- Implementation of role and importance of external therapies in National Health Programmes.
- Establishing the selective external therapy procedures as a preventive and treatment tool for Non-communicable diseases (NCD).
- Documentation of External therapies for the evidence based medical science.
### FIRST YEAR (Preliminary Examination)

<table>
<thead>
<tr>
<th>S. NO</th>
<th>SUBJECT</th>
<th>THEORY</th>
<th>PRACTICAL/CLINICAL</th>
<th>VIVA</th>
<th>TOTAL MARKS</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>PAPER –I Research Methodology and Bio-Medical Statistics</td>
<td>100</td>
<td>Minor Project -100 (Submission of report -60 marks, Publication/Presentation-20 marks, Oral-20 Marks)</td>
<td>--</td>
<td>200</td>
</tr>
<tr>
<td>2.</td>
<td>PAPER –II Basic Principles of Siddha Adopted in Pura Maruthuvam and Clinical surgery</td>
<td>100</td>
<td>--</td>
<td>50</td>
<td>150</td>
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</tbody>
</table>

### SECOND YEAR

**Essential:** Obtain CME credit points through, Seminars/Workshops/Conferences(National/International)

**Desirable:** Publication/ Visits or internship at Industry / Lab / Research institute /other AYUSH Institutions/ Journal club/ Teaching under graduate students

### THIRD YEAR (Final Examination)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>PAPER –I Aruvai, Agni and Kaaram-Invasive and Non Invasive Procedures</td>
<td>100</td>
<td>100(Clinical 70+Oral 30)</td>
<td>50</td>
<td>250</td>
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<td>2.</td>
<td>PAPER –II Thokkanam and Physical Medicine</td>
<td>100</td>
<td>100(Clinical 70+Oral 30)</td>
<td>50</td>
<td>250</td>
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<td>3.</td>
<td>PAPER –III Preparation and Applications of Puramarunthukal</td>
<td>100</td>
<td>100(Practical 70+Oral 30)</td>
<td>50</td>
<td>250</td>
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<tr>
<td>4.</td>
<td>PAPER –IV Essentials in Orthopaedics and Traumatology</td>
<td>100</td>
<td>100(Clinical 70+Oral 30)</td>
<td>50</td>
<td>250</td>
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</tbody>
</table>

**Dissertation:** Maximum marks will be 100 and Minimum marks for passing will be fifty percent.
FIRST YEAR

PAPER- I RESEARCH METHODOLOGY AND BIO-MEDICAL STATISTICS

CLINICAL RESEARCH METHODS UNIT-I

- Measures of disease frequency
- Measures of association/impact in clinical research
- Measurement errors in clinical research
- Validity in clinical research
- Bias in clinical research
- Descriptive bio-statistics
- Inferential bio-statistics
- Formulating research question
- Descriptive studies
- Analytical studies
- Pre-clinical studies
- Experimental studies
- Sampling and sample size estimation
- Survival analysis

CLINICAL RESEARCH METHODS UNIT-II

- Bio-medical literature search / Organization of Literature search (Zotero/etc)
- Developing data collection instruments/Case Record Form (CRF)
- Developing analysis plan
- Use of statistical software for data analysis
- Writing protocol: Principles and Guidelines
- Ethics in clinical research (Siddha, International/National)
- Scientific writing/ Writing the Dissertation (Including University Guidelines)
- Scientific presentation (oral/visual/poster)
- Case report writing / presentation
- Journal critique
- Writing research grants
- Comparative study of traditional medical systems (specifically Chinese, Ayurveda, Homeopathy, Unani)
- Mentorship
- Pedagogic methods

CLINICAL RESEARCH METHODS UNIT-III

- Introduction to National health programmes/health system including AYUSH
- Indian health/medical research systems/bodies including AYUSH ICMR, CCRAS, CCRS, Clinical Trials Registry of India etc
- Orientation to National clinical research guidelines/regulatory bodies CDSCO/DCGI/NABH/QCI Indian GCP for ASU
• Drug standardization as per Pharmacopoeial Laboratory for Indian Medicine (PLIM)
• International guidelines ICH-GCP; WHO guidelines for traditional medicine; WHO/OECD guidelines for animal studies

**CLINICAL RESEARCH METHODS UNIT-IV (MINOR PROJECT)**

• Cross-sectional study (Hospital-based)
• Patients; Care-takers; Physicians
• Cross-sectional study (Community-based)
• Local traditional health traditions, including traditional bone-setting
• Community (including tribal populations)
• Studies using qualitative research methods
• Clinical epidemiological studies (Hospital-based)
• Secondary data analysis of clinical data with report
• Case report/Case-series writing
• Systematic review
• Literary research
• Comparative study of traditional medical systems
• Report on visit to industry / entrepreneurship ideas

Publication of any of the above work will get 20 marks

**References:**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the book, Language, Publishers &amp; Year of publication</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Biostatistics – Principles and Practice, (English), Elsevier, 2017</td>
<td>B Antonisamy, Solomon Christopher, Prasanna Samuel</td>
</tr>
</tbody>
</table>
1. Definition for Pura Maruthuvam
2. Synonyms of Pura Maruthuvam
3. Importance of Pura Maruthuvam
4. Udallkoorgal and Udalthathuvam related with Pura Maruthuvam
5. Siddha pathology
6. Nadiyum Noikanippum and other diagnostic methods in siddha
7. Type of Pura Maruthuvam
   - Aruvai (Surgical)
   - Invasive
   - Non-Invasive
   - Others.

Siddha basic principles - Five element theory - Three vital humours - Seven physical constituents - Naadi - Siddha pathology - Siddha way of diagnosis - Treatment in Siddha medicine - Prevention of diseases - Life style mentioned in Siddha literatures - External therapies - Selection of patients for external therapies - Types of external therapies - Instruments used in external therapies - Pre requisite for external therapies - Diseases meant for external therapies - Medicines used in various external therapies.

CLINICAL SURGERY:

1. Surgical principles
2. General scheme of case taking
3. Special symptoms and sign
4. Lump or swelling
   a. Examination
   b. Investigation
   c. Differential diagnosis
5. Ulcer
   a. Examination
   b. Investigation
   c. Differential diagnosis
6. Sinus and fistula
   a. Examination
   b. Investigation
   c. Differential diagnosis
7. Peripheral vascular diseases and gangrene
   a. Examination
   b. Investigation
   c. Differential diagnosis
8. Varicose vein
   a. Examination
   b. Investigation
   c. Differential diagnosis

9. The lymphatic system
   a. Examination
   b. Investigation
   c. Differential diagnosis

10. Peripheral nerve lesion
    a. Examination
    b. Investigation
    c. Differential diagnosis

11. Diseases of muscle, tendon, and fasciae
    a. Examination
    b. Investigation
    c. Differential diagnosis

12. Diseases of bone
    a. Examination
    b. Investigation
    c. Differential diagnosis

13. Bone and joint injury
    a. Examination
    b. Investigation
    c. Differential diagnosis

14. Head injury
    a. Examination
    b. Investigation
    c. Differential diagnosis

15. Intracranial space occupying lesion
    a. Examination
    b. Investigation
    c. Differential diagnosis

16. Spinal injury
    a. Examination
    b. Investigation
    c. Differential diagnosis

17. Spinal abnormalities
    a. Examination
    b. Investigation
c. Differential diagnosis

18. Diseases and injury of hand
   a. Examination
   b. Investigation
   c. Differential diagnosis

19. Diseases and injury of foot
   a. Examination
   b. Investigation
   c. Differential diagnosis

20. Diseases and injury of head and face
   a. Examination
   b. Investigation
   c. Differential diagnosis

21. Diseases and injury of jaws and temporo mandibular joints
   a. Examination
   b. Investigation
   c. Differential diagnosis

22. Diseases of palate, tongue, cheek and floor of mouth
   a. Examination
   b. Investigation
   c. Differential diagnosis

23. Diseases of salivary glands
   a. Examination
   b. Investigation
   c. Differential diagnosis

24. Diseases of neck
   a. Examination
   b. Investigation
   c. Differential diagnosis

25. Disorder of thyroid gland

26. Injuries of chest
   a. Examination
   b. Investigation
   c. Differential diagnosis

27. Diseases of chest
   a. Examination
   b. Investigation
   c. Differential diagnosis
28. **Diseases of breast**
   a. Examination
   b. Investigation
   c. Differential diagnosis

29. **Abdominal injuries**
   a. Examination
   b. Investigation
   c. Differential diagnosis

30. **Acute abdomen**
   a. Examination
   b. Investigation
   c. Differential diagnosis

31. **Chronic abdominal condition**
   a. Examination
   b. Investigation
   c. Differential diagnosis

32. **Abdominal lump**
   a. Examination
   b. Investigation
   c. Differential diagnosis

33. **Rectal diseases**
   a. Examination
   b. Investigation
   c. Differential diagnosis

34. **Urinary disorders**
   a. Examination
   b. Investigation
   c. Differential diagnosis
   d. Hernia and other swelling in inguinal scrotal region
   e. Examination
   f. Investigation
   g. Differential diagnosis

35. **External genitalia diseases**
   a. Examination
   b. Investigation
   c. Differential diagnosis
<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the book, language, publisher, year</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dr.J.Jeyavenkatesh., M.D(S), Ph.D</td>
</tr>
<tr>
<td>8.</td>
<td>Therankarisalai-300, (Tamil), Govt Siddha medical college.</td>
<td>--</td>
</tr>
<tr>
<td>10.</td>
<td>Udalkoorugal,(Tamil), Indian Medicine and Homeopathy Thurai</td>
<td>Dr.R.Thiagarajan H.I.M</td>
</tr>
<tr>
<td>11.</td>
<td>Udalthathuvam, (Tamil), Department of Indian Medicine and Homeopathy</td>
<td>Dr.P.M. Venugopal H.B.I.M.</td>
</tr>
<tr>
<td>12.</td>
<td>External Therapies of Siddha Medicine</td>
<td>Dr. T. Thirunaraynan, Dr. R. Sudha</td>
</tr>
<tr>
<td>15.</td>
<td>Essential surgery, (English), Churchill Livingstone</td>
<td>Clive R.R. Quick</td>
</tr>
<tr>
<td>16.</td>
<td>Anatomy of general surgical operation, (English), elsvier health science</td>
<td>Glyn G.Jamieson</td>
</tr>
<tr>
<td>17.</td>
<td>short practice of surgery, (English) Edward Arnold lid.</td>
<td>Bailey &amp; Loves's</td>
</tr>
<tr>
<td>19.</td>
<td>Principle and practice of surgery, (English), Churchill livingstone</td>
<td>OJames Garden</td>
</tr>
</tbody>
</table>
THIRD YEAR

PAPER-I ARUVAI, AGNI AND KAARAM - INVASIVE AND NON INVASIVE PROCEDURES

ARUVAI (EXCISION)

Definition
Materials and Methods
Preparation of Application
Literature Evidence
Therapeutic procedures for varies disease

OOTHAL (BLOWING)
Definition
Materials and Methods
Preparation of application
Literature evidence
Therapeutic procedures for various diseases

VARTHI VAITHAL (MEDICATED WICK)
Definition
Materials and Methods
Preparation of application
Literature evidence
Therapeutic procedures for various diseases

KEERAL (INCISION)
Definition
Materials and Methods
Preparation of application
Literature evidence
Therapeutic procedures for various diseases

ATTAI VIDAL (LEECH THERAPY)
Definition
Materials and Methods
Preparation of application
Literature evidence
Therapeutic procedures for various diseases

KURUTHI VANGAL (VENESUCTION)
Definition
Materials and Methods
Preparation of application
Literature evidence
Therapeutic procedures for various diseases
PEETCHU (DOUCHE)
Definition
Materials and Methods
Preparation of application
Literature evidence
Therapeutic procedures for various diseases

URINCHAL (SUCTION)
Definition
Materials and Methods:
Preparation of Application:
Literature Evidence:
Therapeutic Procedures for Various Diseases

SALAGAI (PROBE)
Definition
Materials and Methods
Preparation of Application
Literature Evidence
Therapeutic procedures for varies Diseases

MURICHAL (BONE RESTRUCTURING)
Definition
Materials and Methods
Preparation of Application
Literature Evidence
Therapeutic procedures for varies Diseases

KOMBUKKATTAL (FRACTURE IMMOBILIZATION)
Definition
Materials and Methods
Preparation of Application
Literature Evidence
Therapeutic procedures for varies Diseases

AKKINI SUTTIGAI-CAUTERY
Definition
Materials and Methods
Preparation of Application
Literature Evidence
Therapeutic procedures for various Diseases

POTTANAM (MEDICATED POUCH/PACKS)
Definition
Materials and Methods
Preparation of Application
Literature Evidences
Therapeutic procedures for various Diseases

**PUGAI (FUMIGATION)**
Definition
Materials and Methods
Preparation of Application
Literature Evidences
Therapeutic procedures for various Diseases

**KALIKAM (EYE DROPS)**
Definition
Materials and Methods
Preparation of application
Literature evidences.
Therapeutic procedures for various Diseases

**NASIYAM (NASAL DROPS)**
Definition
Materials and Methods
Preparation of application
Literature evidences.
Therapeutic procedures for various Diseases

**NASIKABARANAM (INSUFFLATION)**
Definition
Materials and Methods
Preparation of application
Literature evidences.
Therapeutic procedures for various Diseases

**KARAM (CHEMICAL CAUTERY)**
Definition
Materials and Methods
Preparation of application
Literature evidences.
Therapeutic procedures for various Diseases

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</table>
PAPER-II THOKKANAM AND PHYSICAL MEDICINE

Definition of Thokkanam
General Procedures of Thokkanam
Types of Thokkanam
Diseases treated with Thokkanam
Therapeutic benefits of Thokkanam

PHYSICAL THERAPEUTIC MODALITIES

a) Electrotherapy

Electrical stimulation
Effects of Heat
Effects of Cold
Superficial Heat Therapy
Deep Heat Therapy
TENS / IFT
UV irradiation
Laser therapy
Cry therapy

b) Therapeutic Exercises

Balance and Co-ordination exercises
Strengthening exercises
Mobilisation exercises
stretching exercises
c) Traction
Methods of Traction,
Traction at different levels,
Indications and Contra-indications
d) Massage and Manipulation
Methods and techniques in different clinical conditions
e) Clinical applications
Therapeutic modalities in different clinical conditions
Indications
Complications
Contra-indications

ORTHOTICS
Principle and prescription of orthosis
Cervical and Thoraco-lumbar orthoses
Orthoses for Spinal deformities
Upper limb orthoses
Lower limb weight bearing orthoses
Orthosis for weakness and deformities
Foot wear modifications
Orthosis in Polio, Spinal cord injury, Stroke, Nerve injury, Cerebral Palsy,
Rheumatology & Sports
Ambulatory aids
Wheel chairs and Tricycles
Assistive devices

REHABILITATION OF NEUROMUSCULAR CONDITIONS
Neuro-muscular Conditions
a) CNS- Stroke
Traumatic Brain Injury
Multiple sclerosis
Parkinsonism
Spinal cord injury and diseases
b) Anterior horn cell diseases
c) Plexopathies
d) Nerve injuries and diseases
e) Muscular diseases – myopathies and dystrophies
8. Cancer, Geriatrics and Sports Rehabilitation

SPORTS REHABILITATION
Scope of sports medicine
Athlete and normal person
Type of muscle fibres in different sports activities
Methods of improving performance
Sports injuries
First-aid and rehabilitation management
Long-term disability in sports injuries
Stress fractures

**VASCULAR DISEASES REHABILITATION**
Arterial diseases
TAO
Diabetes Mellitus
Vasculitis
Occupational disorders
Rehabilitation management
Venous diseases
DVT
Varicose veins
Venous ulcers
Lymphatic diseases
Lymph oedema
Filiariasis
Rehabilitation management

**REHABILITATION OF ORTHOPAEDIC AND RHEUMATOLOGIC CONDITIONS**
Orthopaedics
Structure and development of bone
Osteoporosis, Scurvy, Rickets
Genu valgum and varum
Chondro-dystrophies
Gigantism, dwarfism
Osteomyelitis
Cervical rib,
Congenital Dislocation of Hip,
Arthrogyrophosis,
Congenital limb deficiencies,
Spinal dysraphism
Osteogenesis imperfecta
Trauma- Fractures and complications,
Volkmann’s ischemic contracture,
Delayed union, mal-union, non-union,
Post-operative management,
Post-traumatic management,
Post-burns management
Soft tissue conditions – Ganglion,
Bursitis,
Dupytren’s contracture,
Muscle and tendon injuries,
Trigger finger,
Dequervain’s disease,
Plantar Fasciitis,
Tennis elbow.
RHEUMATOLOGY
Study of Rheumatic diseases
Rheumatoid Arthritis & Juvenile Rheumatoid Arthritis
Ankylosing spondylitis
Psoriatic Arthritis
Rheumatic fever and others
Collagen diseases – SLE, Polyarteritis Nodosa, Scleroderma, Dermatomyositis
Degenerative diseases - Osteo arthritis
Metabolic bone & joint disorders – Gout, Pseudo gout, Alkaptonuria
Infections – Septic, Syphilitic, T.B., Gonorrhoeal, HIV
Affections of different joints

References:

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<td>Therankarisalai-300, (Tamil), Govt Siddha Medical College.</td>
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<td>5.</td>
<td>Siddha medicine Volume - III - Special Areas (English) - Tamil Valarchi Kazhagam, 2010</td>
<td>Dr. J. R. Krishnamoorthy et. Al.</td>
</tr>
<tr>
<td>6.</td>
<td>A Complete Manual on Siddha External Therapies, Shanlax Publications, Maudurai, Tamilnadu, 2017</td>
<td>Dr. G. Senthilvel., M.D(S), Ph.D Dr. J. Jeyavenkatesh., M.D(S), Ph.D</td>
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<td>Massage For Therapists, (English) published by Blackwell science.</td>
<td>Margaret hollies</td>
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<td>9.</td>
<td>Tidy’s Physiotherapy, (English), Elsevier publisher</td>
<td>Edited by stuart porter</td>
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<tr>
<td>10.</td>
<td>Muscle Energy Techniques: A Practical Handbook for Physical Therapist (English)</td>
<td>John Gibbons and Amanda Williams</td>
</tr>
<tr>
<td>12.</td>
<td>Neurological Rehabilitation (English), paperback publisher</td>
<td>Carr.</td>
</tr>
<tr>
<td>13.</td>
<td>Handbook of Physical Medicine and Rehabilitation (English) paperback publisher</td>
<td>Randall L. Braddom</td>
</tr>
<tr>
<td>13.</td>
<td>Orthopaedics and Traumatology (English)</td>
<td>Prof. M. Natarajan, Mayilvahanan Natarajan</td>
</tr>
</tbody>
</table>
### PAPER III - PREPARATION AND APPLICATIONS OF PURAMARUNTHUKAL

This includes Materials used for the preparation of Puramarunthukal, preparatory methods, preservation, precautionary measures, application techniques and its therapeutic usage, contraindications etc.,

1. Herbs used in Pura Maruthuvam
2. Metals and minerals used in Pura Maruthuvam
3. Animal products used in Pura Maruthuvam
4. Preparation from combination of Mineral and herbal, herbal and Animal Origin, Metals and Herbals etc.

#### References:

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<tr>
<td>2.</td>
<td>GunapadamThathu Jeeeva Vaguppu (2nd and 3rd part), (Tamil), Department of Indian Medicine and Homoeopathy, (2004)</td>
<td>Dr. R.Thiyagarajan</td>
</tr>
<tr>
<td>4.</td>
<td>Therankarisalai-300, (Tamil), Govt Siddha Medical college.</td>
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</tr>
<tr>
<td>5.</td>
<td>Siddha Maruthuvanga Churukkam, (Tamil), Department of Indian Medicine and Homoeopathy - Chennai.</td>
<td>Dr.Ka.Su.Uthamarayan</td>
</tr>
</tbody>
</table>
PAPER IV - ESSENTIALS IN ORTHOPAEDICS AND TRAUMATOLOGY

ORTHOPEDICS: GENERAL


CONGENITAL DEFORMITIS:

Aetiology-lower limb-congenital talipes equinovarus-developmentals dysplasia of the hip-congenital genu recurvatum- Upperlimb- sprengel’s shoulder-radioulnar synostosis-madelung’s deformity-syndactylism- polydactylism-Congenital Skeletal Limb Deficiencies-congenital absence of the radius-congenital absence of the radius-congenital absence of the radius-Neck and Spine-congenital torticollis-spine bifida-congenital scoliosis.

GENERALISED DISEASES OF BONES:


DISEASES OF JOINT:

AVASCULAR NECROSIS OF BONE AND EPHYPSEAL OSTEOCHONDRITIS


REGIONAL CONDITIONS OF NECK AND UPPER LIMB


REGIONAL CONDITIONS OF THE SPINE AND LOWER LIMB:


TRAUMATOLOGY

INJURIES TO BONES AND JOINTS


INJURIES OF THE SHOULDER AND ARM
**Shoulder** – Fracture clavicle – Dislocation of the Acromioclavicular joint – Dislocation of the shoulder joint – Recurrent dislocation of shoulder.

**Arm** – Fracture of the proximal end of humerus – Fracture of the greater tuberosity – Fracture neck of humerus – Fracture of the shaft of the humerus.

**INJURIES OF THE ELBOW, FOREARM AND WRIST**


**Forearm** – Fracture both bones forearm – Monteggia fracture dislocation – Galleazzi fracture dislocation.


**INJURIES OF THE HAND**


**INJURIES OF THE HIP AND THIGH**


**INJURIES OF THE KNEE AND LEG**


**Leg** – Fracture of Tibia and Fibula – Fracture Fibula.

**INJURIES OF THE ANKLE AND FOOT**

**Ankle** – Fracture-dislocation of the ankle-epiphyseal injury lower end of tibia.


**INJURIES OF THE SPINE**
Classification- Thoraco- Lumbar Spine-mechanism and types of injuries-stable fractures-management of paraplegia-bed sore-bladder care.

Cervical Spine-lower cervical spine injuries-upper cervical spine injuries.

FRACTURES OF THE PELVIS

Fractures of the pelvis ring- mechanism- classification-management-fractures of the acetabulum-fractures and the sacrum-coccyx.

POLYTRAUMA

Polytrauma-Incidence-primary survey-Glasgow coma scale-triage-resuscitation-management.


SOFT TISSUE INJURIES INCLUDING SPORTS INJURIES


Injuries Of Muscle-type and pathology-rupture of the biceps brachi-rupture of the supraspinatus –rupture of the tendoachillies.

NERVE INJURIES

Nerve injuries-injuries of peripheral nerves- classification- mechanism of closed nerve injuries-diagnosis of nerve lesion-clinical examination-management of nerve injuries-radial nerve injuries-median nerve injuries-ulnar nerve injuries-brachial plexus injuries erb’s palsy-klumpke’s palsy- sciatic nerve injuries-lateral popletial nerve injuries.

VASCULAR INJURIES


AMPUTATION

Indication-types-selection of level of amputation-level of amputation-stump and its management-complication-amputation in children- prosthetic fitting and rehabilitation.

NEUROMUSCULAR SKELETAL DISORDERS

EXTRA PYRAMIDAL - Parkinsonism
Neurological features of Wilson disease
Huntington's disease
Tardine dyskinesia
Restless leg syndrome

**DEMYLINATING LESION**
- Multiple sclerosis
  - Schildre's diffuse cerebral sclerosis

**MND**
- Amyotropic lateral sclerosis
  - Spinal muscular atrophies
  - Hemiplegia
  - Bulbar palsy

**DISEASE OF CEREBELLUM**
- Ataxias

**DISEASE OF SPINAL CORD**
- Myelopathy

**NERVE ROOTS AND PLEXUSES**

**DISEASE OF VERTEBRAL COLUMN**
- Klippelfeil syndrome
  - Arnold - chiari malformation
  - Cervical spondylosis

**PERIPHERAL NERVOUS SYNDROME**
- Guillainbarre's syndrome
  - Diabetic neuropathy
  - Neuralgic amyotrophy

**DISEASE OF MUSCLES**
- Muscular dystrophy
  - Polymyositis

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<tr>
<td>1.</td>
<td>The Principles of Exercise Therapy, (English), CBS publisher</td>
<td>M.Dena Gardiner</td>
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<td>Massage for Therapists, (English),Paperback publisher</td>
<td>Margaret hollies</td>
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<td>Tidy's Physiotherapy, (English), Elsevier publisher</td>
<td>Stuart porter</td>
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<td>4.</td>
<td>Orthopaedics and Traumatology, (English)</td>
<td>M. Natarajan</td>
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<td>5.</td>
<td>Textbook of Orthopaedics and Traumatology (English) wolters Kluwer</td>
<td>Natarajan</td>
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<td>6.</td>
<td>Essential Orthopaedics Including Clinical Methods, (English) Jaypee Brothers publisher</td>
<td>J Maheshwari</td>
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<td>7.</td>
<td>Essentials of Orthopaedics, (English), Jaypee Brothers</td>
<td>R M Shenoy</td>
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<td>8.</td>
<td>Essentials of Ortho physiotherapy for Upper and Lower Limb Fractures, (English), Jaypee Brothers publisher</td>
<td>Saurabh Garg</td>
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<td>10.</td>
<td>Orthopaedics and Traumatology, (English), hodder Arnold publisher</td>
<td>Apley</td>
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</table>
11. Physical medicine and rehabilitation, (English), Georgefulk lid | Sullivan

12. Adam's Orthopaedics and Traumatology, (English) | Adam


14. Textbook of Medicine, (English) Jaypee Brothers publisher | K.V. Krishna das

**DISSEMINATION**

Kindly refer the regulation 11 of IMCC (Post-Graduate Siddha Education) regulations, 2016.