CENTRAL COUNCIL OF INDIAN MEDICINE  
SIDDHA MARUTHUVA PERARINGNAR (M.D. (SIDDHA) COURSE  
SYLLABUS FOR NANJU MARUTHUVAM (TOXICOLOGY) SPECIALITY  
[UNDER THE INDIAN MEDICINE CENTRAL COUNCIL (POST GRADUATE SIDDHA EDUCATION) REGULATIONS, 2016.]  

GOAL:  
- The Goal of M.D (Siddha) Nanju Maruthuvam PG programme shall be to produce competency and expertise about the knowledge of material toxicity and the clinical management with their antidotes.  
- This course aims at equipping the student for doing quality research by importing the research methodology teaching and training.

OBJECTIVES:  
At the end of M.D (Siddha) course in Nanju Maruthuvam, the PG Scholars should be able to:  
- Become capable of independent practice of the concepts of Clinical Toxicology.  
- Acquire the knowledge of ensuring safe formulating of Siddha medicine.  
- PG Scholars will become conversant about the detoxification (Suddhi process) methods of various drugs before subjecting them to medicinal formulation.  
- PG Scholars shall be able to gain the knowledge of establishing the safety of various Siddha formulation through toxicity studies based on international guidelines.  
- PG Scholars shall be empowered and aquatinted about the concepts of Pharmacovigilance and the maintenance of the Siddha Clinical Toxicological registry.  
- PG Scholars shall be able to import about the Concepts of Forensic Medicine and Medical Jurisprudence.  
- Gain knowledge about the experimental methods of evaluation and validation of antidotes mentioned in Siddha system of medicine.
### FIRST YEAR (Preliminary Examination)

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<th>S.NO</th>
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<tr>
<td>1</td>
<td>PAPER- I Research Methodology and Bio-Medical Statistics</td>
<td>100</td>
<td>Minor Project 100</td>
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<td>200</td>
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<td>Presentation-20</td>
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<td>Marks, Oral-20</td>
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<td>2</td>
<td>PAPER -II Basic Principles of Nanju Maruthuvam</td>
<td>100</td>
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### 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)

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<tr>
<td>1</td>
<td>PAPER –I Pharmacology and Experimental Toxicology</td>
<td>100</td>
<td>100(Practical 70+Oral 30)</td>
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<td>2</td>
<td>PAPER –II Principles of Forensic Medicine</td>
<td>100</td>
<td>100(Practical 70+Oral 30)</td>
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<td>3</td>
<td>PAPER - III Clinical Toxicology</td>
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<td>100(Practical 70+Oral 30)</td>
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<td>4</td>
<td>PAPER - IV Nanju Maruthuvam (Siddha Toxicology)</td>
<td>100</td>
<td>100(Practical 70+Oral 30)</td>
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**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>
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<tr>
<td>4</td>
<td>Biostatistics – Principles and Practice, (English), Elsevier, 2017</td>
<td>B Antonisamy, Solomon Christopher, Prasanna Samuel</td>
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</tbody>
</table>

PAPER -II BASIC PRINCIPLES OF NANJU MARUTHUVAM

1. The concept of 96 Thathuvam Applied in Nanju Maruthuvam,
2. Concept of Tastes in Nanju Maruthuvam
3. Ennvagaithervu
4. Daily disciplines (Naalozhukkam), Seasonal disciplines (Kaalaozhukkam)
5. Determination of poison as per Siddha and Modern texts
6. Unavu Nanju (Food Poison) – Indifference in Taste and Potency - Ill effects of certain food combinations - Paathirabaetham- (Toxicity of food substances due to vessels)
   Food Adulteration - Introduction to bureau of Indian standards)
7. Concept of ‘Pathiyam’ (Diet and Regimen during medication)
8. Siddha Management of Untoward effect during Purgation, Vomiting, Oil Bath, etc.
9. Important features and management of water, air, environmental and soil pollution mentioned in Siddha and modern texts. Occupational health hazards – Preventive measures, industrial safety.

10. Basic principles of preparation of Siddha medicines (Siddhargal marunthakkum adippada ivithigal)

11. Investigate the Adulteration in Siddha Drug

12. Suthimuraigal (purification process of raw drugs)-Importance of purification process, modern technique used to assess the physicochemical changes during suddhi

13. Untoward effects of unpurified drugs and improper preparation of drugs.

14. Marunthugalin alavu, anupanam matrum thunaimarunthugalin mukkiiyathuvam (importance of drug dosages, vehicle and adjuvant mentioned in Siddha literature) – scientific validation about drug dosages, vehicle and adjuvant.


16. Pharmacovigilance – Definitions related to pharmacovigilance studies in National and International guidelines, Clinical & observational studies related to pharmacovigilance in Siddha system of medicine

17. Adverse drug reaction, drug and food interaction.

18. Toxic plants, minerals and metals – pharmacological and toxicological aspects published in reputed texts and journals.

19. Standardization procedures of Siddha drugs as per guidelines – Physicochemical property – other chemical analysis – microbial contamination – pesticide residue, heavy metal analysis.

20. Study about medical ethics in Siddha literatures

21. Ahalamaranam

22. Duties and Responsibility of medical officer in suspected poisoning cases.

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<td>Kaivalya Navaneetham (Tamil), Manivaradhar Padhipugal 2016</td>
<td>Meiyappan</td>
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<td>5.</td>
<td>Gunapadam Thathu-Jeeva Vaguppu (Tamil) Department of Indian Medicine and Homeopathy, Fourth Edition 2004</td>
<td>Dr.R.Thiyagarajan</td>
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<td>Sarakku Suththi muraikal (Tamil) Department of Indian medicine and homeopathy, First Edition 2008</td>
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<td>Parambarai vaidhyam (Tamil) Fifth Edition 2006</td>
<td>C.Kannusamyppillai</td>
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<td>B.Rathina nayakkar</td>
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<td>Noinadal noimudhal nadal (Tamil), Department of Indian medicine and homeopathy, Third edition 2003</td>
<td>Dr.M.Shanmugavelu</td>
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<td>Noiyilla neri (Tamil), Department of Indian medicine and homeopathy, Third edition 1993</td>
<td>Dr.K.Durairajan</td>
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<td>Bogar karpam -300 (Tamil) First edition 2006</td>
<td>C.S.Murugesan</td>
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<td>13</td>
<td>Agasthiyar vaidya sinthaamani (tamil), Dept of Indian medicine &amp; Homeopathy, Chennai – 106, First edition-2008</td>
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<td>14</td>
<td>Visha vaidya sindhamani (Tamil), B.Rathina nayakkar sons, 2003</td>
<td>Munusamy Mudhaliyar</td>
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<td>15</td>
<td>Anupoga vaidya Navaneetham (English) Department of Indian medicine and homeopathy,First edition 2009</td>
<td>Dr.Anaivaari R.Anandan</td>
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<tr>
<td>16</td>
<td>Theraiyar maha karisal (Tamil &amp; English), Department of Indian medicine and homeopathy, First edition- 2009</td>
<td>Tamil – Dr.R.Thiyagarajan in English - Dr.Anaivaari R.Anandan,G.Perumal M.A(Tamil), M.A (English), M.A(ling)</td>
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<td>17</td>
<td>Theraiyar yamaga venba II(Tamil), First Edition 1997</td>
<td>Dr.R.Thiyagarajan</td>
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<td>18</td>
<td>The Siddha Formulatory of Indian medicine</td>
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<td>19</td>
<td>Textbook of social and preventive medicine (English)</td>
<td>Park</td>
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<td>20</td>
<td>The Essentials of Forensic Medicine and Toxicology (English)</td>
<td>Dr.K.S.Narayana Reddy</td>
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<td>21</td>
<td>PLIM Guidelines</td>
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<td>23</td>
<td>Parameters for Quality assessment of Ayurveda and siddha drugs, CCRAS 2005,Siddha Pharmacopoeia – I &amp; II</td>
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<td>Indian Pharmacopeia</td>
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<td>Bureau of Indian Standards</td>
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<td>Detail Knowledge from the Peer reviewed journals, Palm leaf manuscripts, Guidelines official websites related to the subject</td>
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THIRD YEAR

PAPER - I PHARMACOLOGY AND EXPERIMENTAL TOXICOLOGY

1. General Pharmacological Principles:

2. Drugs Acting on Central Nervous Systems:

3. Drugs Acting on Autonomics Nervous System:
   General considerations (Introductions)-Adrenergic and Adrenergic Blocking Drugs-Cholinergic drugs-Cholinergic blocking drugs-Ganglion stimulating and blocking drugs-Skeletal muscle relaxants-Drug therapy in Parkinsonism.

4. Autacoids and Related Drugs:
   Histamine and Antihistaminic drugs-5-Hydroxtryptamine and antagonists-Angiotensin, Kinins and Prostaglandins.

5. Drugs used in Respiratory Disorders:
   Pharmacotherapy of cough – Expectorants-Anti-tissues, Nasal decongestants-Pharmacotherapy of Bronchial asthma.

6. Hormones and Related Drugs:
   Thyroid and Antithyroidal drugs-Insulin and oral Antidiabetic drugs-Adrenal cortical steroids-Estrogens and Progestins- Antifertility Agents and Ovulation inducing drugs-Androgens and Anabolic Steroids.

7. Cardiovascular Drugs:
   Digitalis and Pharmacotherapy of cardiac failure-Cardiac arrhythmias-Antihypertensive drugs-Vasodilator drugs-Antianginal drugs-Drug used in Atherosclerosis.

8. Drugs Acting on Kidney:
   Diuretics and Antidiuretic drugs

9. Drugs Affecting Blood and Blood Forming Organs:
   Haematinsics - Coagulants-Anti-coagulants, Fibrinolytics and Anti Thrombic drugs-Blood and plasma volume expanders-Drugs induced Blood dyscrasias.

10. Gastro-Intestinal Drugs:

11. Antimicrobial Drugs:
    Sulfonamides-Quindones- Penicillins and Antibiotics effective against Gram positive Organism-Aminoglycosides and Antibiotics effective against Gram Negative Organism- Antibiotics effectively against both Gram positive and Gram Negative Organism-Anti fungal Agents.
12. Chemotherapy and Neoplastic Disease: 
Chemotherapy of Tuberculosis-Chemotherapy of Leprosy-Chemotherapy of Malaria-Chemotherapy of Helminthiasis-Chemotherapy of Malignancy.

13. Miscellaneous Drugs:
Pharmacotherapy of Gout and Rheumatoid Arthritis.

14. Experimental Toxicology:
Microbiological assay -Toxicity studies including Acute, sub acute, chronic -
General screening of Animals -OECD guide lines -CPCSEA guidelines -
Toxicological studies-Evaluation of LC50/LD50-Evaluation of Neurotoxicity-
Evaluation of Hepatotoxicity.

PRACTICALS:

Major
1. Drug antagonism studies.
2. Effect of General anaesthetics studies.
3. Effect of Anti convulsants in rat by electro convulsive methods.
5. Antidepressants studies in rat using octophotometer.
6. Skeletal muscle relaxants studies in rat using rota rod.

Minor
1. Animal handling.
2. Write about experimental animals.
3. OECD Guidelines.
4. CPCSEA Guidelines.
5. Adverse drug reactions of siddha drugs.
6. Instrumental handling in toxicology

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<td>1.</td>
<td>Textbook of Essentials of Medical Pharmacology (English), Jaypee Brothers</td>
<td>K.D.Thiripathi</td>
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<td>2.</td>
<td>Medical Pharmacology (English),CBS Publishers</td>
<td>Padma udaykumar M.D</td>
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<td>3.</td>
<td>Drugs screening Methods (Preclinical evaluation of new drugs) (English), Jaypee Brothers</td>
<td>S.K.Gupta</td>
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<td>5.</td>
<td>Pharmacology, (English), Elsevierine Publications</td>
<td>Satoskar</td>
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<td>6.</td>
<td>Clinical Pharmacology (English), Churchill Livingstone</td>
<td>Lawrence Benette</td>
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PAPER -II PRINCIPLES OF FORENSIC MEDICINE

Introduction: Definition-Forensic Medicine-Medical Jurisprudence- Forensic Pathology-History.

1. Legal Procedure:
   Police Investigation - The Coroner's inquest - The magistrate inquest - Court of Law - Record of Evidence, Perjury - Medical evidence - Dying Declaration - Oral evidence - Types of witness. Contact and duties of the Doctor in witness Box - Investigation of the scene of Death - Procedure of Criminal Trial.

2. Medical Law and Ethics:

3. Identification:
   Identification date - Race and religion - Sex - Age - General development and stature - Complexion and Features - External Peculiarities - Anthropometric Measurements - Fingerprints and Footprints - Teeth Personal effects - Handwriting Speech and voice - Gait - Tricks of Manner and habit - Memory and education - Age of the fetus - Dactylography - Superimposition - Scars - Tattoo marks - Forensic Odontology.

4. Medico Legal autopsy:
   External examination - Internal Examination - Examination of organs - Collection of Blood - Laboratory Procedures - Preservation of Viscera - Causes of Death - Examination of Mutilated bodies - Examination of Bones - Exhumation.

5. Death and its Cause:

6. Postmortem Changes:

7. Mechanical Injuries:
   Abrasions - Contusions - Incised wounds - Chop wounds - Stab on Punctured wounds - Lacerations - Defense wounds - Firearms - Firearm wounds - wounds from Revolvers and automatic pistol - Peculiar effects of Firearms, Bomb explosion wounds.
8. Regional Injuries:
   Head Injuries - Face and skull injuries of brain and Meninges - The mechanism of cerebral injury - Blunt force impacts to the head - Concussion of the Brain - Intracranial hemorrhage - Vertebral column - Spinal cord - complications of chest injuries - Traffic accidents - Investigation of automobile accidents - Railway injuries.

9. Anesthetic and Operative Deaths:
   Type of anesthesia-classification –Anesthetic patients-Anesthetic deaths-Death due to surgery-Autopsy and Investigation-Medico legal Aspects.

10. Medico Legal aspect of wounds:

11. Thermal deaths:

12. Starvation deaths:
   Symptoms - Postmortem appearances – Medico legal aspects.

13. Mechanical asphyxia:

14. Impotence and Sterility:
   The Causes of Impotence and Sterility in the male - Causes of impotence and sterility in female - Sterilization Artificial insemination - Surrogate births.

15. Virginity, Pregnancy and Delivery:
   Virginity - Pregnancy - Delivery.

16. Sexual Offences:
   Rape - Examination of the victim - Examination of the accused - Incest unnatural sexual offences - Sodomy – Tribadism-Bestiality - Sexual Perversion - Transvertism - Exhibitionism.

17. Abortion:
   The Medical termination of Pregnancy act 1971 - The methods of Procuring criminal abortion - Evidence of abortion Postmortem evidence of criminal abortion.

18. Infant Death:
   Still births - Dead birth - Signs of Live birth - Battered baby syndrome - Sudden infant death syndrome.

19. Blood Stains:
   Examination of Blood stains - Chemical examination – Microscopic and Micro chemical examination - Spectroscopic examination. Serological examination - Blood groups to tissues - DNA - Finger printing.

20. Forensic Psychiatry:
   Delirium - Delusion - Hallucination - obsession - Lucid interval - Mutism - Psychosis - Neuroses - Mental Sub normality - Psychosis associated with

21. Artifacts:
Artifacts introduced between death and Autopsy

22. Forensic Science Laboratory:
Laboratory functions.

- Dental Examination for Age estimation.
- Examination of Sexual offences cases.
- Examination of Drunkenness cases.
- Cluster of bones.
- Wound certificate.
- Medical certificates –( Illness, Physical fitness)
- Spotters – weapons, photos, slides, etc.
- Foetus examination for age.
- Identification of Forensic medicine related specimens.
- X-ray findings for age estimation.
- Microscopic examination of sperm, blood, organ tissue, human hairs and animal hairs.

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<td>V.V.Pillay</td>
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<td>The text book of Forensic Medicine and Toxicology (English), Jaypee Brothers</td>
<td>Dr.Nageshkumar G Rao</td>
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<td>Text book of Jurisprudence and Toxicology (English), Lexis Nexis</td>
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<td>Text book of Jurisprudence and Toxicology, (English), CBS Publications</td>
<td>Dr.C.K.Parikh</td>
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<td>The text book of Forensic Medicine and Toxicology, (English), Avichal Publishing Company</td>
<td>Dr.Ajay Kumar</td>
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<td>Principles of Forensic Medicine and Toxicology, (English), Jaypee Brothers</td>
<td>Dr.Bardale</td>
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<td>8.</td>
<td>Fundamentals of Forensic Medicine and Toxicology, (English), Books &amp; allied pvt Ltd</td>
<td>Dr.R.Basu</td>
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PAPER- III CLINICAL TOXICOLOGY

I. Introduction:
Definition-Branch of toxicology-Law of poisons-Classification of poisons-
Fate of poisons- Action of poisons- diagnosis of Poisoning- Prevention of
Poisons- Treatment of Poisons -Duties of a medical practitioner in
poisoning cases- Common household poisons.

II. Agricultural Poisons
Organophosphorous poisons- Organochlorins- endrin, Flurides,
Aluminium Phoshide

III. Inorganic irritant Poisons (Metals and Non Metals)
Arsenic-Mercury-antimony-copper-Lead-Manganese- Nitrites- Barium-
Phosphorous- Iodine- Chlorine- Formaldehyde.

IV. Organic irritant Poisons:
Plants: Ricinus communis-croton tiglum- Abrus Precatorium-
Semecarpus Anacardium- calotropis- Ergot- Plumbagozylanica- Capsicum
Annum- Helleborus niger- Jatropha Cursus- Gloriosa superb.
Animal: snake bites- Poisonous insects, scorpions – Bees and wasps-
cantharides-centipedes.

V. Corrosive Poisons:
Mineral acids- Caustic Alkalis-organic acids.

VI. Deliriant Poisons:
Datura – Cannabis – Cocaine – Hyocyamus Niger.

VII. Spinal Poisons:
Strychnus Nux vomica – Curare-Hemlock

VIII. Cardiac Poisons:
Tobacco – Digitalis – Aconite – Nerium – Cerebra Thevetia – Hydrocyamic
acid-Cerberaodallum- Cleistanthuscollinus- Quinine.

IX. Asphyxiants:
Carbon dioxide – Carbon monoxide – War Gases – Hydrogen sulphide-
Methane- Methy-Isocyanate.

X. CNS Depressants and Stimulants:
Alcohol – Methyl alcohol – Opium – Barbiturates-Sedatives-
Antipsychiatric agents – Bromides – Caffeine.

XI. Miscellaneous Poisons:
Hydrocarbons- Analgesics and Antipyretics- Acetyl salicylic acid-
paracetamol- turpentine-Water intoxication –Insulin.

XII. Drug dependence and drug abuses:
Definitions-classifications-Medicolegalimportances-Ethanol-Tobacco-
Tranquillisers and sedatives: Barbiturates, benzodiazepines, chloral
hydrate-opiates-cocaine-cannabis- amphetamines-Hallucinations-
Inhalant abuse.
XIII. **Anaesthetic agents.**
General anaesthetics-ether-chloroform- cyclopropane, trichloroethylene-
spinal anaesthesia- local anaesthesia-Muscle relaxants.

XIV. **Food Poisoning:**
Poisonous foods – Bacterial-Amoebiasis-protozoal infections-
Brucellosis- Bottulism- Lythyrussativus-rye, oats, barley etc- and other
vegetables poisons-Mushrooms – Argimone Mexicana – Groundnuts –
Fish poisoning.

XV. **Emergency medicine** – General and emergency medical management of
poisoning.
- Introduction to Toxico-genomics
- Introduction to Nano toxicology

XVI. **Analytical Toxicology:**
Analytical methods used in toxicology- Detailed study about various analytical
methods to identify the chemical substances/drugs/poisons by using Laboratory
methods and sophisticated instruments - different qualitative and quantitative analysis

Introduction to the principles of Analytical Toxicology- Reagent Preparation for
common Bedside Tests in Toxicology-Demonstration and Hands-on Practice of Bedside
Toxicology Tests-Simple Biochemical Color Tests and Tests for Heavy Metals-
Demonstration of Chromatographic Immunoassay Method for Drugs-Thin Layer
Chromatography-TLC Plate Preparation; sample Preparation, Application, Visualization,
and Evaluation – Extraction and Identification of Pesticides from Biological samples-
Extraction and Identification of Drugs from Biological samples-Demonstration Training-
Water Analysis of Portability(Physical and Chemical)-Demonstration of therapeutic
Drug Monitoring of Selected Drugs by High Performance Liquid Chromatography(HPLC).

**Practical:**
1. Diagnosis of Poisoning in living and dead.
2. Preservation viscera backing.
3. Drunkenness examination.
4. Toxicological Analysis.
5. Spotters:
   Identification & drawing of medico-legal inference from common poisons
e.g.Dhatura, castor, cannabis, opium, aconite, copper sulphate, pesticides
compounds, marking nut, oleander, Nux vomica ,abruss seeds, snakes, capsium,
calotropis, lead compounds & tobacco, stomach wash tube, Ryle’s tube.
References:

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<tr>
<th>S.No</th>
<th>Name of the book, Language, Publishers &amp; Year of the Publications</th>
<th>Author</th>
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<tbody>
<tr>
<td>1.</td>
<td>The essentials of Forensic Medicine and Toxicology, (English),Jaypee Brothers</td>
<td>Dr.K.S.Narayana Reddy</td>
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<td>2.</td>
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<td>9.</td>
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<td>13.</td>
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<td>Apurba Nandy</td>
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<td>15.</td>
<td>Their Benefits and Risks</td>
<td>H.Bruno Schiefer,Donold G.Irvine,Shirley C.buzik</td>
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PAPER- IV NANJU MARUTHUVAM (SIDDHA TOXICOLOGY)

1. History of Nanju Maruthuvam
3. Detailed study about animal poisoning and zoonatic diseases.
   Detailed study about classification of thel (scorpion) and signs & symptoms of thelkadi and its management
   Detailed study about classification of silanthi (spider) and signs & symptoms of silanthikadi and Nanjumurivu (spider bite and its management) other animal bites and its management such as Ants-Wasps-Centepedes-Bees-Rats-Onan-Lizards-Leech-Frog-Dog-Cat-Monkey-Horse-Fox-Unknown bite-Crocodil-Beetle-Pig – mosquito – role of mosquito in communicable diseases.
   Jeevaveri Nanju and Maruthuvam (Various Animal Bites)
4. Ovvamainoigal and its management - Allergic Diseases – household, drug, food, cosmetics, preservatives, coloring agents, food additives etc.
5. Detail study about Kanakadi – urticaria
6. Kudiverinoi – alcoholism and its management
7. Detail study about Pugaielai Nanju (Tobacco chewing and smoking) and and its management Siddha and contemporary view
8. Detail knowledge about substance abuse and its Siddha and contemporary management – de-addiction
9. Details about Idumarunthu.
10. General Siddha antidotes
11. Preparation of antidotes- different formulations mentioned in Siddha literature
12. Study about Nanjumurivu (anti dotes) in various classical Siddha texts.
13. Review the journals – scientific evaluation of Siddha antidotes against various nanjugal (poisons).
14. Untoward effects of unpurified drugs and improper preparation of drugs and its management.

CLINICAL:

Major
A. Preparation of antidotes for poisons.
B. Purification process of siddha raw drugs.

Minor
A. Description about poisons.
B. Clinical examination of poisoning cases.
C. Diagnose of poisonings.

Spotters: Poisons (Plants, Metals, Minerals and Animal Products)
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<td>Visha Vaidhya Sinthamani (Tamil), 2012</td>
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<td>Dr.G.Senthilvel., M.D(S), Ph.D Dr.J.Jeyavenkatesh., M.D(S), Ph.D</td>
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<td>Pogar elayarathil Siddha Maruthuva kanimangal (Tamil)</td>
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**DISSERTATION**

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