

CENTRAL COUNCIL OF INDIAN MEDICINE

NEW DELHI

SYLLABUS FOR SIDDHA MARUTHUVA ARIGNAR (BSMS) COURSE

(as per the Indian Medicine Central Council (Minimum Standards of Education in Indian Medicine) amendment Regulations, 2016)

THIRD PROFESSIONAL BSMS

SUBJECT-NOI NAADAL PAPER – I (SIDDHA PATHOLOGY)

1. **Introduction to Siddha Pathology** [5 Hrs]
 - 1.1 Definition of Noi and Noi Naadal
 - 1.2 Importance of Noi Naadal
 - 1.3 Etiology of Diseases as per Siddha system.
 - 1.4 Maruthuvanin Ilakkanam according to Siddhars
 - 1.5 Noi intri vazha Kaayakalpam- mani manthira avizhtham
2. **Inter-relations between five elements, six tastes and three humours – abnormalities during derangements.** [5 Hrs]
3. **Mukkutra iyal (Vatham – Pitham – Kapham)** [10 Hrs]
 - 3.1 Predominant locations – properties – Functional varieties – physiological role [3 Hrs]
 - 3.2 Pathological conditions (increased & decreased features) [4 Hrs]
 - 3.3 Thanilai valarchi – Vetrunilai valarchi – Thannilai adaithal [3 Hrs]
 - 3.4 Derangements of Uyir thathukal [15 Hrs]
4. **Thega ilakkanam correlated with diseases** [10 Hrs]
5. **Naadi:** [15 Hrs]
 - 6.1 Definition – locations
 - 6.2 Vatha Naadi, Pitha Naadi, Kapha Naadi, ratio of Naadi, Conjoined Naadi
 - 6.3 Dhasa Naadigal-Pathways-Relationship between dasanadi and dasavayu.
 - 6.4 Pulse variations according to seasons
 - 6.5 Preponderant period of Vatha, Pitha & Kapha Naadi – conditions responsible for irregular pulse rhythm – prognosis of a disease based on Naadi.
 - 6.6 Bootha naadi and Pancha Bootha Naadi

- 6.7 Guru Naadi and its abnormalities
- 6.8 Abnormal findings of malpractice of Saram
- 6.9 Amirthanilai
- 6.10 Diagnosis of pregnancy and infertility through Naadi in various concepts
- 6. Fourteen Natural Urges and the Clinical manifestations while suppressing them. [5 Hrs]**
- 7. Asaathiya, Marana Naadikal and Kurigunangal (Fatal signs & symptoms) [5 Hrs]**
- 8. Ennvagai Thervukal [10 Hrs]**
- 8.1 Examination through Naadi
- 8.2 Examination through Sparism
- 8.3 Examination through Naa
- 8.4 Examination through Niram
- 8.5 Examination through Mozhi
- 8.6 Examination through Vizhi
- 8.7 Examination through Malam
- 8.8 Examination through Moothiram- Neerkkuri , & Neikkuri .
- 9.8.1 Neerkkuri: (Urine general examination) – Alavu (Quantity), Niram (colour), Manam (odour), Nurai (froth), Edai (Consistency/Density) – Enjal (Deposits)
- 9.8.2 Neikkuri : The different changes in the oil dropped on the urine to be observed
- 9.9 Diagnosis of diseases, curable and incurable condition through Ennvagai Thervukal
- 9. Special Diagnostic Methods in Siddha System [3 Hrs]**
- 9.1 Manikkadai Nool (Wrist circumetric findings)
- 9.2 Thoothuvan Ilakkanam
- 9.3 Maruthuva Jothidaviyal -Concepts of jothidam in diagnosis
- 9.4 Pancha patchi sasthiram - Concepts of Pancha patchi sasthiram in diagnosis
- 10. Seven physical constitutions (Udal thathukkal) [5 Hrs]**
- formation of udal thathukal, ubha thathukal and & Malangal (feaces, Urine & sweat increased & decreased features) –Uyir anal- kukki anal
- 11. Digestive fire (Udal thee) -Geographical Classifications & Seasonal variations (Nilamum pozhuthum) – Appropriate time for medications. [3 Hrs]**
- 12. Primary causes of various diseases according to Therayar. [2 Hrs]**
- 13. Worms and infectious diseases (Ottu noigal) [10 Hrs]**

14. DISEASES: [Text Book S. No. 2]

The following headings should be covered for the following diseases. Veru peyar , Noi kaaranam, mukkutra verubadu, Noyin murkurigal, pothukkurigal, noi enn, signs and symptoms of types of the diseases, Naadi nadai, Theerum Theeratha Nilai (Prognosis).

Sl. No.	Topics	Teaching Hours
1.	Suram	5 hrs
2.	Mukkadaippu	2 hrs
3.	Irumal	2 hrs
4.	Irraippu	2 hrs
5.	Ilaippu	2 hrs
6.	Thamaraga Noi	2 hrs
7.	Athi Kurathi Azhal Noi	2 hrs
8.	Vaanthi	2 hrs
9.	Gunmam	2 hrs
10.	Athisaaram	2 hrs
11.	Kirani	2 hrs
12.	Nina Kalichal	2 hrs
13.	Kaleeral Noi	2 hrs
14.	Maneeral Noi	2 hrs
15.	Paandu	2hrs
16.	Sobai	2 hrs
17.	Kaamalai	2 hrs
18.	Peruvayiru	5 hrs
19.	Siru Neer Noigal	
19.1.	Siruneer Perukkal Noi	5 hrs
19.2.	Siruneer Arukkaal Noi	5 hrs
20.	Vaatha Noigal	10 hrs
21.	Piththa Noigal	5 hrs
22.	Kabha Noigal	5 hrs
23.	Keel Vaatham	3 hrs

PRACTICALS**Major:****[40 Hrs]**

- Clinical applications of Three Humours (Vaatham, Piththam, Kabham)
- Interpretation of Enn vagai Thervukal
- Examination of Ezhu Udal Thatthukkal

Minor:**[60 Hrs]**

- Manikkadai Nool
- Neerkkuri and Neikkuri

- Clinical applications of individual humours
- Clinical applications of individual Udal Thaathu
- Clinical applications of Enn Vagai Thervu
- Clinical applications of pregnancy and infertility

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical / Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Major Practical	1	50	90
Minor Practical	1	20	30
Viva Voce	-	30	-
Total		100	120

TEXT BOOKS

1. சண்முகவேலு, நோய்நாடல் நோய்முதனாடல் திரட்டு, (பாகம் 1) 2^{ம்} பதிப்பு, சென்னை, இந்தியமருத்துவம் மற்றும் ஓமியோபதி துறை, தமிழ்நாடு அரசு, 2003
2. சண்முகவேலு, நோய்நாடல் நோய்முதனாடல் திரட்டு, (பாகம் 2) 2^{ம்} பதிப்பு, சென்னை, இந்தியமருத்துவம் மற்றும் ஓமியோபதி துறை, தமிழ்நாடு அரசு, 2003

REFERENCES

1. யூகி வைத்திய சிந்தாமணி, சென்னை, இந்தியமருத்துவம் மற்றும் ஓமியோபதிதுறை, தமிழ்நாடு அரசு, 2012

2. வேணுகோபால், பு.மு., உடல் தத்துவம், சென்னை, இந்தியமருத்துவம் மற்றும் ஓமியோபதி துறை, தமிழ்நாடு அரசு, 2014
3. முதலியார், குப்புசாமி., சித்தமருத்துவம்(பொது), சென்னை, இந்தியமருத்துவம் மற்றும் ஓமியோபதி துறை, தமிழ்நாடு அரசு, 2012
4. உத்தமராயன், க.சு., சித்தமருத்துவாங்க சுருக்கம், 3^{ம்} பதிப்பு, சென்னை, இந்தியமருத்துவம் மற்றும் ஓமியோபதி துறை, தமிழ்நாடு அரசு, 2003
5. பிள்ளை, சரவணமுத்து., பெரிய ஞான கோவை, சென்னை, ரத்தின நாயகர் அன் சன்ஸ்
6. ராஜாராம், கண்ணன்., வர்ம மருத்துவம், கன்னியாகுமரி, ATSVS சித்தமருத்துவக் கல்லூரி, 2008 (ISBN -13 978-93-80288-15-4)
7. ராஜாராம், கண்ணன்., வர்ம மருத்துவத்தின் அடிப்படைகள், கன்னியாகுமரி, ATSVS சித்தமருத்துவக் கல்லூரி, 2007 (ISBN -13 978-81-908684-0-2)
8. சிவசண்முகராஜா, சே., மருத்துவமும் சோதிடமும் (தமிழர் வாழ்வில் சித்த மருத்துவம்), முதல் பதிப்பு, யாழ்ப்பாணம், சித்தமருத்துவ வளர்ச்சிக் கழகம், 2006*
9. ராமச்சந்திரன், எஸ்.பி., அகத்தியர் கன்ம காண்டம், சென்னை, தாமரை நூலகம், 1995
- 10.மோகன், ஆர்.சி., புலிப்பாணி வைத்தியம் (மூலமும் உரையும்), 3^{ம்} பதிப்பு, சென்னை, தாமரை நூலகம், 2016
- 11.சண்முகவேலன், ஆ., (பதிப்பாசிரியர்), தேரையர் அருளிச் செய்த சிறுநீர்க்குறி சோதனை, 3^{ம்} பதிப்பு, தஞ்சாவூர், சரசுவதி மகால் நூலகம், 2005
- 12.ராமச்சந்திரன், எஸ். பி., (பதிப்பாசிரியர்), தேரையர் நீர்க்குறி வைத்தியம், சென்னை, தாமரை நூலகம், 2015
- 13.Jeyavenkatesh, J., Siddha Diagnostic Uroscopy, 1st Edn., Madurai, Shanlax Publications, 2018, ISBN: 978-9388398060

*available in public domain at <http://noolaham.org>

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THIRD PROFESSIONAL BSMS

NOI NADAL PAPER- II

(Principles of Modern Pathology)

GENERAL PATHOLOGY

- | | |
|---|-----------------|
| 1 Introduction of Pathology | [5 hrs] |
| 1.1 Definition, Terminology and evolution of pathology. | |
| 1.2 Classification of Pathology | |
| 2 Techniques for the study of pathology | [10 hrs] |
| 2.1 Applications of microscope and electron microscopes | |
| 2.2 Cytogenetic and its applications | |
| 2.3 Molecular pathology | |
| 3 Cell injury and its adaptations | [15 hrs] |
| 3.1 Etiology pathogenesis and morphology of cell injury (irreversible and irreversible) . | |
| 3.2 Pigments (endogenous and exogenous) . | |
| 3.3 Cellular adaptations and aging. | |
| 4 Immunopathology | [10 hrs] |
| 4.1 HLA system. | |
| 4.2 Diseases of immunity (AIDS) | |
| 4.3 Autoimmune diseases (SLE. Scleroderma, Sjogern"s syndrome). | |
| 4.4 Transplant rejection. | |
| 4.5 Amyloidosis (Pathogenesis, Classification, systemic amyloidosis and organal changes in amyloidosis) | |
| 5 Haemodynamics | [20 hrs] |
| 5.1 Disturbances of body fluids and electrolytes (oedema, over hydration, dehydration) | |
| 5.2 Haemodynamic disturbances (disturbances in volume and obstructive nature- hyperemia, congestion and morphology of CVC of organs, thrombosis, ischemia, Infraction) | |
| 6 Inflammation and wound healing | [10 hrs] |
| 6.1 Acute and chronic inflammation (Pathogenesis, Regulation, Morphology Systemic effects and fate of inflammations) | |
| 6.2 Chronic inflammatory diseases (TB, Syphilis, Sarcoidosis, Leprosy Action mycosis). | |
| 6.3 Healing-(Regeneration, repair, wound healing, Fracture healing) . | |

7 Gene and chromosomal pathology	[10 hrs]
7.1 Introduction to genetic diseases	
7.2 Developmental defects	
7.3 Cytogenetic (Karyotypic) abnormalities.	
7.4 Storage diseases	
7.5 Disorders with multifactorial inheritance.	
8 Infectious diseases	[15 hrs]
8.1 Diseases caused by bacteria- Plague, Anthrax, Pertussis, and Botulism.	
8.2 Diseases caused by virus- Yellow fever, Dengue Hemorrhagic fever, SARS, Herpes, Rabies	
8.3 Diseases caused by fungi- Mycetoma, Candidiasis.	
8.4 Diseases caused by Parasites- Amoebiasis, Malaria, Filariasis, Cysticercosis, TORCH complex.	
9 Neoplasia	[10 hrs]
9.1 Microscopic features of tumours.	
9.2 Carcinogenesis- molecular, Physical, Chemical and Biological.	
9.3 Characteristics of tumours- Growth, Invasion, Metastasis.	
9.4 Prognostic markers, Grading and staging.	
9.5 Para neoplastic syndromes.	
9.6 Lab diagnosis of cancers.	
10 Environmental and Nutritional Diseases	[15 hrs]
10.1 Alcoholism, Thermal and radiation injury	
10.2 Obesity	
10.3 Protein energy malnutrition	
10.4 Deficiency diseases of vitamins and trace elements	
10.5 Cancer diet.	
11 Hematopoietic System	[15 hrs]
11.1 RBC- Anemia and classifications, Iron deficiency anaemia, Sideroblastic, Megaloblastic, Pernicious, haemolytic anaemias, hereditary anaemias, Aplastic anemia.	
11.2 WBC- Leukemia	
11.3 Platelets- Thrombocytopenia	
11.4 Hemorrhagic diseases- hemophilia	
11.5 Transfusion reactions.	
12 Clinical Pathology	[15 hrs]
12.1 Haematology	
12.2 Examination of Sputum for AFB.	
12.3 Examination of Urine	
12.4 Examination of Faeces	
12.5 Blood smear examination	
12.6 Widal Test	
12.7 Vaginal Smear.	
12.8 Serological test- VDRL – Elisa Test – Hbs Ag, RA factor – ASO Titre	
12.9 Skin – Skin clipping procedure.	

12.10 Liver Function Tests, Renal Function Tests.

12.11 Radiology

PRACTICALS

(Total 100 Hours)

1. Haematology- Bleeding Time, Clotting Time, Cell counts – Rbc, Wbc and platelets, ESR, Hb
2. Serology- Widal test, RA factor, ASO titer, VDRL, Hbs Ag
3. Smear - Vaginal smear examination
4. Urine Examinations- Normal and Abnormal constituents.
5. Faeces- Morphology of worms like ascaris, Ankylostoma, Enterobius vermicularis.
6. Sputum for AFB.
7. Radiology
 - 7.1. Basic principles
 - 7.2. Osteology- Fracture, Dislocation and tumor
 - 7.3. Respiratory system- COPD, TB, Pleural effusion.
 - 7.4. CVS- Cardiomegally.
8. Slides (Histopathology & Haematology)
 - 8.1. Fatty liver.
 - 8.2. Liver Cirrhosis
 - 8.3. PCOD
 - 8.4. Ovarian Cyst & Carcinoma
 - 8.5. Uterus- Fibroid, Endometriosis, Carcinoma
 - 8.6. Fibroadinoma breast.
 - 8.7. Appendicitis.
 - 8.8. Colloidal Goiter.
 - 8.9. CML
 - 8.10. AML.
 - 8.11. ALL.
 - 8.12. CLL.
 - 8.13. Iron deficiency aneamia
 - 8.14. Sickle cell aneamia.
 - 8.15. Aplastic anemia.
9. Specimens
 - 9.1. Fatty liver.
 - 9.2. Liver Cirrhosis
 - 9.3. PCOD
 - 9.4. Ovarian Cyst & Carcinoma
 - 9.5. Uterus- Fibroid, Endometriosis, Carcinoma
 - 9.6. Fibroadinoma breast.
 - 9.7. Appendicitis.
 - 9.8. Spleenomegally.

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical / Clinical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Major Practical	1	50	90
Minor Practical	1	20	30
Viva Voce	-	30	-
Total		100	120

Text Books:

1. Mohan, Harsh., Text Book of Pathology, 6th Edn., Delhi, Jaypee Brothers Medical Publishers, 2010.
2. Kumar, Vinay., *et al.*, Robbins and Cotran Pathologic Basis of Disease, 7th Edn., Noida, India, Elsevier India, 2008.
3. Panikar, Jayaram CK., Text Book of Medical Parasitology, 6th Edn., Delhi, Jaypee Brothers Medical Publishers, 2007.
4. Sanyal & Battacharya, Clinical Pathology, A Practical Manual, 2nd Edn., Noida, India, Elsevier India, 2011.
5. Mohan, Harsh., Clinical Pathology, 6th Edn., Delhi, Jaypee Brothers Medical Publishers, 2010.

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THIRD PROFESSIONAL BSMS

SUBJECT: NOI ANUGAVITHI OZHUKKAM

(HYGIENE AND COMMUNITY MEDICINE INCLUDING NATIONAL HEALTH POLICIES AND STATISTICS)

The contents of this syllabus are to be imparted to students by lectures, demonstrations and field studies wherever possible. The importance of preventive medicine and the measures for the promotion of preventive health shall be emphasized. The students shall be made well conversant with the national health programs in rural and urban areas, so that they can also be assigned responsibilities in the field of preventive and social medicine including family planning.

- | | |
|--|-----------------|
| CHAPTER – 1 | [1 hour] |
| Introduction to preventive and social medicine, concept of man and society, aim and scope of preventive and social medicine, relations between economic factors and environment in health and disease, The ways to lead a disease free life as said by siddhar Theraiyar | |
| CHAPTER – 2 | [1 hour] |
| The five landscapes- description and occurrence of diseases | |
| CHAPTER – 3 | [1 hour] |
| Ancient town planning – modern town planning | |
| CHAPTER – 4 | [1 hour] |
| Industries – occupational diseases and its preventions – occupation hazards – occupation classifications | |
| CHAPTER – 5 | [1 hour] |
| Oor thoomai – waste management – Excreta disposal – modern sewage treatment and other methods of sewage disposals | |
| CHAPTER -6 | [1 hour] |
| Modern house and vaasthu, Specifications of Siddha Hospital according to Therayar Tailavarga Surukkam | |
| CHAPTER – 7 | [1 hour] |
| Disposal of human corpses, History and types, Electric crematorium and related regulations, Organ donation | |

CHAPTER – 8**[1 hour]**

Seasons (Perumpozhuthu, Sirupozhuthu) – Principles to be followed in the above seasons and the specific food. Imporikal Kappu, Healthy sleep habits related to seasons, Uthrayanam, Thachayanam, Uttama, Mathima, Athama Kaala Ozhukam, Outbreaks of seasonal diseases like Dengue, Malaria, Chicken pox etc

CHAPTER – 9**[1 hour]**

Healthy Environment-causes and impact of climate change of health- preventive measures to combat climate change- Malé declaration and other international Conventions on Climate Change- “Day Zero”- Basics of Bio-climatology, Organic Farming, Ethical consumption and Conservation of natural resources

CHAPTER – 10**[1 hour]**

- Water – uses – sources – pollution and its related diseases, Purification and distribution. Water treatment methods
- Rain water, Snow water – Collection methods and Application types
- River Water – types and therapeutic uses
- Waterfalls, Pond water and Well water – types and therapeutic uses
- Nandu Kuzhineer, Naavalmaraneer, karunkalineer, Vaazhaineer, ila neer (tender coconut water) – types and therapeutic uses.
- Neerakaram, Kaadineer, Kainthaariyaneer, Ulogathirathil vaithaneer (Gold, Silver, Copper, Panchalogam, Iron)
- Water testing methods, quality of potable and drinking water, rain water harvesting

CHAPTER – 11**[1 hour]**

Neruppu (or) thee – Atmospheric temperature – Effects of heat stress – Effects of cold stress – Preventive measures of global warming – humidity, Fire safety, Mock drill and types of fire extinguishers

CHAPTER – 12**[1 hour]**

Air pollution – Health aspects, Prevention and control, ventilation – Types, Lighting, Pugai – types Good and adverse reaction, Control of air pollution in hospitals like fumigation, preventive aspects of traditional fumigation methods (Agil, Santhanam, Devadaru, Sambirani, Karpuram etc.)

CHAPTER – 13**[1 hour]**

Noise –noise pollution – Effects and control

CHAPTER – 14**[1 hour]**

Good habits – Personal hygiene (oil bath etc.) – Dressing – gemstones and their medicinal effects. Pancha Karpam, Nalungu maa and Diseases, Bio Cleansing and Detoxification procedures in Siddha Medicine

CHAPTER – 15	[1 hour]
Food – Six tastes – Three types of food – Toxicity – Adulteration – Food borne diseases – Prevention and control – Food standards- Food Digestion time	
CHAPTER – 16	[1 hour]
Drinks – Properties of hot water linked with utensils – fruit juices	
CHAPTER – 17	[1 hour]
Uses of beetle leaf and nut, over usage of areca nut, Tobacco control,	
CHAPTER – 18	[1 hour]
Rest and sleep – Types of bed – Sleeplessness	
CHAPTER – 19	[1 hour]
Nutritious and balanced diet – Role of fibers, cereals, vegetables – Greens – fruits – animal proteins – fish – birds – pickles etc. – Diseases – Thrithoda samaporulgal – Nutritional problems in public health	
CHAPTER – 19	[1 hour]
Principles of Diet regimen (Patthiyam), Daily diet regimen for Vali (Vatha), Azhal (Pitha) and Iyam (Kapham) body constitutions, Diet regimen (Patthiyam and Apatthiyam) for Oil bath, Purgation, Piles etc. Antidote for drug and diet (Patthiyam) adverse reactions, Food Serving procedures – types of vessels and their effect on food preparation.	
CHAPTER – 20	[1 hour]
<ul style="list-style-type: none"> • Communicable diseases: Causes – Symptoms – Prevention and control of Chicken pox – Measles – Mumps – Influenza – Diphtheria – Whooping cough – Tuberculosis – Plaque – Rubella, etc • Intestinal infections: Causes, symptoms, prevention and control of poliomyelitis – Viral hepatitis – Cholera – Acute Gastro Enteritis – Typhoid – Food poisoning – Amoebiasis – Ascariasis – Hook worm infestation etc. • Arthropod borne infection: Causes, symptoms, prevention and control of Dengue – Malaria – Filariasis – Chikungunya-Lepto Spirosis, SARS. • Surface infection: Causes, symptoms, prevention and control of Trachoma – Tetanus - Leprosy – STD – AIDS/ HIV. • Traditional methods of Control and prevention of communicable diseases like Chicken pox, measles, Dengue, Chickungunya, Swineflu, Ebola etc 	
CHAPTER – 21	[1 hour]
Primary Health Care, Maternity and Child Health Services, Immunization of children, Control of communicable diseases, Nutritional disorders, Health checkup of school children, National & Regional health programmes – NMEP – NFCP – NLCP – NTP – National Aids control programme – National	

programme for control of blindness – Iodine deficiency disorders programme – National cancer control programme – National mental health programme – National diabetes control programme – Child survival and safe motherhood programme – National family welfare programme – National water supply and sanitation programme – Minimum needs programme – Health and missions, Health statistics, Drinking water quality, Environmental sanitation, Disaster management, Control of STD and Notifiable diseases-Role of Siddha Medicine in public health

CHAPTER – 22

[1 hour]

Siddha Lifestyle Medicine

Definition of Life style diseases, Evidence based behavioral interventions to treat and manage chronic life style diseases, Health and Life style Medicine interventions, Life style counseling, Mental Health and adapting Thirumular Attanga Yogam

CHAPTER – 23

[1 hour]

Siddha Primordial preventions of diseases- Definition and importance of primordial preventions-Levels of prevention – Primordial, primary, secondary and tertiary level, Siddha concept of prophylaxis – immunology and personnel hygiene -Vaccination & Immunization Schedule

CHAPTER – 24

[1 hour]

Siddha Culinary Medicine

Introduction -Relation between diet and health life – Siddhars concept-Preventive care through culinary medicine-Siddha cutlery; Ancient and Modern perspective, do's and don'ts-Siddha diet for controlling specific diseases (e.g: Diabetes, Hypertension, Mother and Child Health)-Longevity through diet-High energy Siddha diet-Home gardening, Techniques for building a health soil-Siddha healthy cookery

CHAPTER – 25

[2 hour]

Principles of hospital management, Clinical Establishment act, Medical records Maintenance, Hospital Acquired Infection Control and Preventive methods, Bio Medical Waste Management – Types and Disposal management

Field Work

1. Visit to the nearby water purification plant of the local municipal authority.
2. Visit to the nearby co-operative organisation to understand the preparation of Karuppatti, Vellam (Jaggery), Milk products, Honey, Tribal foods, Organic/traditional foods etc.
3. Hands on training on Control of Infectious diseases in Hospitals
4. Practical demonstration/training on Siddha culinary medicine:
 - a. Usage of Siddha Cutlery
 - b. Prevention and management of diseases through classical siddha diet therapy
 - c. Preparation of Siddha kayakalpam
5. Health Statistics:

Medical statistics deals with applications of statistics to medicine and the health sciences, including epidemiology, public health, forensic medicine, and clinical research.

By identifying statistical trends and trails, health care providers can monitor local conditions and compare them to state, national, and international trends. Health statistics provide empirical data to assist in the allocation of public and private funds and help to determine how research efforts should be focused.

6. Special OPD for Social and Public health to deliver awareness (Drugless Therapies) and to Conduct a statistical research with the guidance of teaching/clinical faculty to assess the effectiveness of Siddha Primary / primordial prevention methods. Family counseling on primordial primary preventive methods also has to be done by the student in the supervision of faculty.

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

TEXT BOOKS:

1. துரைராசன், கோ., நோயில்லா நெறி, முதல் பதிப்பு, சென்னை, இந்தியமருத்துவம் மற்றும் ஓமியோபதி துறை, தமிழ்நாடு அரசு, 2007

REFERENCE BOOKS:

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5. Achaya, K. T., Everyday Indian Processed Foods, 5th Edn., New Delhi, National Book Trust, 2017, ISBN:978-8123710358
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10. ஃபுகோகோ, மசானபு., (ஆசிரியர்), கயல்விழி (தமிழில் மொழி பெயர்த்தவர்), இயற்கை வழியில் வேளாண்மை, பொள்ளாச்சி-தமிழ்நாடு, எதிர் வெளியீடு, 2017, ISBN:978-9384646004
11. மிஸ்ரா, அதுல்ய., சாம்பலிலிருந்து பசுமைக்கு :ஆக்சிஜன் மேனிஃபெஸ்டோ, சென்னை, கிழக்கு பதிப்பகம், 2019, ISBN:978-9351350194
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13. நாச்சாள், நா., தமிழர் நெல், 2^{ம்} பதிப்பு, சென்னை, ஓம் பதிப்பகம், 2016
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20. பகவதி கு., தமிழர் அளவைகள், சென்னை, உலகத் தமிழாராய்ச்சி நிறுவனம், 2003[#]
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[#] available in public domain at <https://tamildigitallibrary.in>

^{*}available in public domain at <http://noolaham.org>

⁺Available in public domain from <http://faunaofindia.nic.in/>

CENTRAL COUNCIL OF INDIAN MEDICINE

NEW DELHI

SYLLABUS FOR SIDDHA MARUTHUVA ARIGNAR (BSMS) COURSE

(as per the Indian Medicine Central Council (Minimum Standards of Education in Indian Medicine) amendment Regulations, 2016)

THIRD PROFESSIONAL BSMS

SATTAM SARNTHA MARUTHUVAMUM NANJU MARUTHUVAMUM (FORENSIC MEDICINE AND TOXICOLOGY)

Section 1. Sattam Sarntha Maruthuvam (Forensic Medicine)

(60 Marks)

1) Introduction :

(3hours)

Definitions – unnatural deaths – inquest – courts – power of courts – proceedings of the courts -
Summons – medical evidences – dying declaration – witness –Sentences- professional secrets of
a doctor – doctors and proceedings of the courts- Medical Certificate.

2) Introduction to Medical Law and Ethics:

(3hours)

Duties of Medical Practitioners-Professional Secrecy-Professional misconduct-Professional
Negligency -Mercy killing-Organ Transplantation. (Detailed Study to be done as per Chapter 20)

3) Identity :

(10 hours)

Useful factors for identity- identity in civil and criminal cases - identity in dead person - racial
characters and religion– sex – sex determination from bones -age – medico legal importance of
age- age determination from teeth and bones – general development and stature -complexion
features of individuality – hair- external peculiarities-scars –Moles- malformation-Tatoomarks –
Anthropometry – Dactylography – poroscopy-occupational marks.

4) Medico legal Autopsy :

(3hours)

Type of Autopsy- Conditions – Important points to be noted – External and Internal examination
– preparation of specimens for analysis – Issue of death certificate-exhumation.

5) Death and Its Causes :

(3hours)

Definition -Medico legal importance – Modes of death and classification – sudden death – signs
of death- Suspended animation

6) Post-mortem Changes :

(3hours)

Post Mortem Hypostasis-Algor mortis-Cadaveric changes in the muscle – primary relaxation –
rigidity – Secondary relaxation – Decomposition – Putrefaction-Adipocere formation –
Mummification – Estimation of time of death.

- 7) Asphyxia :** (10hours)
Definition-Asphyxia and Asphyxial death – causes – features of asphyxia and asphyxial death – Autopsy findings common to all asphyxias – Hanging – Complete and Incomplete Hanging-causes for death – autopsy findings – judicial hangings – medico legal aspects – Accidental-Suicidal-Homicidal Hanging-strangulation – autopsy findings – medico legal aspects – differences between hanging and strangulation – Throttling – autopsy findings – Drowning – causes – Autopsy findings – How to conform the cause of death — first aid – smothering –Suffocation-medico legal aspects – choking – traumatic asphyxias – autopsy findings.
- 8) Wounds and classification:** (10 hours)
Wounds –classification- abrasions – contusion – lacerated wounds – incised wound – stab wound – firearm wound and their medico legal importance – Ante mortem and post mortem wounds – Internal and external changes of wounds – Age of the wounds – death due to wounds – fatal injuries - Grievous injuries – Defense wound – varieties of firearm and its function. Causes for death due to firearm – Hemorrhage – fat embolism – Systemic embolism-Bomb Explosive Wounds-Transportation injury, types and mechanism of skull fractures-types of intra cranial hemorrhages.
- 9) Sexual offences:** (6 hours)
Classifications-Rape-Incest – procedure for examination of the accused and victim – Findings of the examination – Important point the accused & victim to be noted – Examination of the place where the offence takes place- blood stains – general examination–age and sex identification from blood stains-blood groups-dna –finger printing- chemical examination – Semenology – acid phosphatase test – alizarin test & etc. ; Serological examinations – Microscopic examination – Difference test between semen & other substances- **Unnatural sexual offences** :Sodomy- Examination of the accused and Victim- Bestiality – Examination of the accused and animal - Buccal Coitus – Tribadism – **Sexual Perversions:** Transveritism – Sadism – Masochism – Exhibitionism-Fetchism – Necrophilia-Froteurism- masturbation-undinism-lust murder.
- 10) Impotence and Sterility, Sterilization, Artificial Insemination:** (4 hours)
Impotence and Sterility- Sterilization-Artificial Insemination-Surrogate Motherhood.
- 11) Virginitiy :** (2 hours)
Anatomy of Female genitalia – Hymen – Causes for the Rupture of hymen – Medical legal importance.
- 12) Pregnancy :** (3 hours)
Fertilization — Confirmatory findings for pregnancy – Presumptive signs – Probable signs – Positive signs – Biological Tests-Medico legal Importance-Legitimacy and Paternity.
- 13) Delivery :** (3hours)

Signs of delivery in the living – Sign of remote delivery in the living – Signs of delivery in the non living Woman– Supposititious child.

14) Abortion : (3 hours)

Definition – Natural abortion –Cause of Abortion-Artificial Abortion- Justifiable abortion – Abortion on the basis of health condition – Rule to follow by the physician – Procedures – Criminal abortion – complications – Cause of death- MTP act, 1971- PCPNDT Act, 1994

15) Infanticide : (3 hours)

Infanticide & its criminal proceedings – Still born babes – Features – Dead born – features – mummification – Causes of death – To confirm whether still born or birth after death – Accidental causes –Natural Causes-Criminal Causes- Precipitate Labor – Medico legal Importance- Concealment of Birth-Sudden Infant death syndrome-Battered baby syndrome.

16) Burns and Scalds : (3hours)

Burns – Scalds – Stages of Burns & scalds – signs & symptoms – causes of death – Autopsy findings.

17) Death from Lightning, Electricity, Hot & Cold: (4hours)

Lightning and its effects – Medication – Autopsy findings – Electricity and its effect – Causes for death – Medication – Autopsy findings – Hot – Effects – cold and its effects – Autopsy findings.

18) Starvation : (3 hours)

Definitions – signs & Symptoms – Cause of death– Autopsy findings.

19) Forensic Psychiatry : (8 hours)

Insanity – Delirium – Delusion – Medico legal aspects – Hallucination – illusion –Lucid interval– impulse – obsession – Phobia- idiocy – Mental Sub-normality-Diagnose insanity-Imbecility – feeble-mindedness – Dementia – Schizophrenia – Psychic epilepsy – melancholia – Psychiatry due to alcohol abuse – Feigned insanity – laws related to psychiatry – court and psychiatrics – somnambulism – Automatism-Hypnotism and mesmerism-Medico legal Importance-Civil and criminal responsibility of insane-restraint of insane.

20) Laws regulating Medical practice in India

Acts of Medico-Legal Importance in India (3 hours)

Important provisions of Constitution of India– Important provisions of Indian Evidence Act- The National Medical Commission Act, 2019-Indian Medicine Central Council Act, 1970 -Drugs and cosmetics Act 1940 -Drugs and magic remedies (objectionable) advertisements Act 1954-Drugs control Act 1950

Important provisos of Indian Penal Code (IPC) and Code of Criminal Procedure (CrPC) (2 hours)

IPC Section 31 – A Will

IPC Section 39 – A person is said to cause an effect “voluntarily”

IPC Section 82 – Act of a child under 7 years of age.

IPC Section 83 – Act of a child above 7 years and under 12 years

IPC Section 84 – Mc Naughten’s Rule or legal test.

IPC Section 85 – Act under intoxication.

IPC Section 87 – Below 18 years – no valid consent for physical examination.

IPC Section 88-93 – Legal protection to Medical Doctors.

IPC Section 89 – Consent from Guardians for age below 12.

IPC Section 90 – Validity of Consent – fear, Intoxication etc.

IPC Section 118 – Concealing design to commit offence punishable with death or imprisonment for life.

IPC Section 176 – Omission to give notice or information to public servant by person legally bound to give it

IPC Section 177 – Furnishing false information.

IPC Section 178 – Refusing Oath or affirmation when duly required by public servant to make it.

IPC Section 179 – Refusing to answer public servant authorised to question.

IPC Section 182 – False information, with intent to cause public servant to use his lawful power to the injury of another person.

IPC Section 190 – Threat of injury to induce person to refrain from applying for protection to public servant

IPC Section 191 – Giving false evidence.

IPC Section 192 – Fabricating false evidence.

IPC Section 193 – Punishment for false evidence.

IPC Section 194 – Giving or fabricating false evidence with intent to procure conviction of capital offence.

IPC Section 195 – Giving or fabricating false evidence with intent to procure conviction of offence punishable with imprisonment for life or imprisonment

IPC Section 197 – Issuing or signing false certificate.

IPC Section 201 – Causing disappearance of evidence of offence, or giving false information to screen offender.

IPC Section 202 – Not informing Police

IPC Section 203 – Giving false information respecting an offence committed.

IPC Section 204 – Destruction of document or electronic record to prevent its production as evidence.

IPC Section 228A – Disclosure of identity of the victim of certain offences

IPC Section 272 – Adulterating Food or Drink

IPC Section 273 – Selling adulterated food or drink

IPC Section 274 – Adulteration of drugs

IPC Section 275 – Selling Adulterated drugs

IPC Section 276 – Selling a different drug

IPC Section 277 – Fouling Water / Spring / Reservoir
IPC Section 278 – Making Atmosphere noxious
IPC Section 284 – Punishment for negligent conduct with respect to poisonous substance
IPC Section 294 – Punishment for Exhibitionism
IPC Section 299 – Defines Culpable Homicide
IPC Section 300 – Culpable homicide is murder
IPC Section 302 – Punishment for murder
IPC Section 304 – Punishment for culpable homicide not amounting to murder
IPC Section 304A – Causing death by negligence
IPC Section 304B – Dowry death
IPC Section 306 – Abetment of Suicide
IPC Section 309 – Attempt to commit suicide
IPC Section 312-316: Criminal Abortions
IPC Section 313 – Causing miscarriage without woman’s consent
IPC Section 317 – Abandoning Infant
IPC Section 318 – Concealment of birth by secret disposal of dead body.
IPC Section 319 – Hurt, Hurt means bodily pain, disease or infirmity caused to any person
IPC Section 320 – Grievous Injury Any of the following injuries are grievous. (Read more about this on Platinum access. This is an important topic)
IPC Section 323 – Punishment for Hurt
IPC Section 324 – Dangerous weapons / Poisons / Corrosives
IPC Section 325 – Describes Punishment for Voluntarily Causing Grievous Hurt.
IPC Section 351 – Defines Assault: Threat/attempt to apply force
IPC Section 354 – Punishment for Indecent Assault
IPC Section 361 – Kidnapping from lawful guardianship
IPC Section 362 – Abduction
IPC Section 363 – Punishment for kidnapping
IPC Section 366A – Kidnapping an Indian girl below 18 for Prostitution
IPC Section 366B – Importing any foreign girl below 21 for Prostitution
IPC Section 369 – Kidnap a child below 10 years for movable property
IPC Section 374 – Unlawful compulsory labour
IPC Section 375 – Rape, Unlawful sexual intercourse by a man
IPC Section 376 – Punishment for Rape
IPC Section 377 – Unnatural offences
IPC Section 497 – Adultery / Artificial Insemination
IPC Section 498A – Dowry death

Important provisos of Code of Criminal Procedure (CrPC) (1 hour)

CrPC Chapter 5 Section 41 to 51 – Arrest of Persons

CrPC Section 53. Examination of accused by medical practitioner at the request of police officer.

CrPC Section 54. Examination of arrested person by medical practitioner at the request of the arrested person.

CrPC Section 174. Police to enquire and report on suicide, etc.

CrPC Section 291. Deposition of medical witness.

CrPC Section 328. Procedure in case of accused being lunatic.

CrPC Section 329. Procedure in case of person of unsound mind tried before Court.

CrPC Section 338. Procedure where lunatic detained is declared fit to be released.

Basic Provisions of the following Laws related to Medical Practice

(2 hours)

1. Air (prevention and control of pollution) act 1981
2. Anatomy Act 1957
3. Arms Act 1950
4. Atomic energy regulatory body approval for radiology Act 1962
5. Atomic energy (safe disposal of radioactive waste) rules 1987
6. Biomedical medical waste management handling rules 1998
7. Birth and death and marriage registration act 1886
8. Blood bank regulations under Drugs and cosmetic rules 1999
9. Breeding of and Experiments on Animals Amendment Rules 2005
10. Consumer protection Act 1986
11. Dentists Act 1948
12. Disaster Management Act 2005
13. Electricity rules 1956
14. Environment protection Act 1986
15. Epidemic disease Act 1897
16. Eyes (Authority for Use for Therapeutic Purposes) Act 1982
17. Fire Prevention and Fire Safety Act 1986
18. Guardians and wards Act 1890
19. Homoeopathy Central Council Act 1973
20. Indian fatal accidents Act 1955
21. Indian lunacy Act 1912
22. Indian medical degrees Act
23. Indian nursing council Act 1947
24. Information Technology Act 2000
25. Insecticide Act 1968
26. Insurance Act 1938
27. Mental Health Act 1987
28. Narcotics and psychotropic substances Act 1985
29. Noise Pollution (Regulation and Control Amendment) Rules 2000,
30. Noise pollution control Rules 2000
31. Nursing council Act 1997

32. Persons With Disabilities Act 1995
33. Pharmacy Act 1948
34. Poisons Act 1919
35. Prevention of Cruelty to Animals Act, 1960
36. Prevention of food adulteration Act 1954
37. Prohibition of smoking in public places Rules 2008
38. Prohibition of Violence against Medicare Service Institutions Act 2009
39. Protection of Human Rights Act 1993
40. Public Liability Insurance Act 1991/1992/ 1993
41. Registration of birth and deaths act 1969
42. Rehabilitation Council of India Act 1992
43. Water (Prevention and Control of Pollution) Act 1974
44. The surrogacy (regulation) bill, 2018
45. Transplantation of human organ Act 1994
46. Vaccination Act 1880
47. Water (prevention and control of pollution) Act 1974
48. The Food Safety and Standards Act, 2006

Important aspects of regulatory compliance for a medical practitioner (2 hours)

State Boards/Councils acts for Medical Registration

State/central regulations on professional conduct and etiquette

Procedures for obtaining License for patented drug (State/central regulations)

Clinical Establishments (Registration and Regulation) Act, 2010

Consumer protection Act 1986

Laws regulating Emergency medical care given by AYUSH medical Practitioner

Rights and privileges of AYUSH medical Practitioner

Section 2. NANJU MARUTHUVAM (TOXICOLOGY)

(40 Marks)

1 Introduction

(3 hours)

Definition – History of poison-Law of Poisons- classification of poisons – Factors Modifying the Effect of Poison- Action of Poison-Biotransformation – Route of administration –Route of Excretion- diagnosis of poisoning in Living and dead – Duties of a doctor in case of poisoning – Treatment of poisoning-ideal homicidal and suicidal poisoning-Poison centres.

2 Corrosive poisons (Acids strong alkalis)

(3 hours)

Inorganic Acids: Sulphuric Acid-Nitric Acid-Hydrochloric Acid.

Organic Acids: Carboic Acids-Oxalic acid.

Strong Alkalis: Sodium, Potassium, Ammonium Hydroxides and Carbonates

3 Irritant Poisons

I. **Agricultural poisons:** Organo Phosphorous- Organo Chlorine- Carbamates.

(2 hours)

II. **Inorganic Irritant Poisons:**

Metals: Arsenic Compounds-Antimony-Lead-copper-Mercury compounds-zinc (3hours)

Non Metals: Phosphorous--Sulphur-Mica. (2 hours)

Mechanical Irritants: Glass powder-diamond powder-animal and vegetable Hairs. (2 hours)

III. **Organic Irritant Poisons:**

(8 hours)

Plants: Abrus precatorius – Calotropis gigantea – Semecarpus anacardium – Capsicum annum – Croton tiglium – Ricinus communis – Euphorbia antiquorum – Excoearia agallocha- Gloriosa Superba-Plumbago zeylanica (Parts used, Chemical Compounds, Signs and Symptoms, Fatal dose, Fatal Period, Siddha and Modern method of Treatment, Postmortem Examination and Medico legal Importance)

Animal Bites and Stings:

(3 hours)

Types of Animal Poisons (Chemical Compounds, Signs and Symptoms, Fatal dose, Fatal Period, Siddha and Modern method of Treatment, Postmortem Examination and Medico legal Importance)
Ants-Scorpion-Wasps-Spider-Snakes-Centepedes-Bees-Rats-Onan-Lizards-Leech-Frog-Dog-Cat-Monkey-Horse-Fox-Unknown bite-Crocodile-Beetle-Pig-Animal bites treated with palagarai parpam.

4 Systemic Poisons

I. **Neurotic or Cerebral Poisons:**

Inebriant and CNS depressants: Opium-Morphine - Pethidine- Alcohol-ethyl, Methyl Alcohol-Toddy-Country Arrack. (4 hours)

CNS Stimulants: Amphetamine, Caffeine (1hour)

Deliriant: Datura fastuosa-Cannabis sativa--Cocaine. (2 hours)

Spinal Poison: Strychnos Nux Vomica- Peripheral nerve poison – Hemlock poison(1 hour)

II. Cardiac Poisons: - (3hours)

Nerium odorum – Cerbera thevitea- Aconitum ferox – Nicotiana Tobaccum- Cleistanthus Collinus-Digitalis Purpurea. (Parts used, active principles, Signs and Symptoms, Fatal dose, Fatal Period, Siddha and Modern method of Treatment, Postmortem Examination and Medico legal Importance)

III. Asphyxiants: (3hours)

Carbon Monoxide-Carbon Dioxide-Hydrogen Sulphide and War Gases.

5 Food Poisonings and Poisonous Foods (8 hours)

Definition-poisoning due to Micro organisms(Bacteria, Protozoa, fungus) - Botulism-poison due to chemical - Vegetable Origin (Lythyrus Sativus, Rye, Oats, Barely, Ground nut, Argemone Mexicana, Mushrooms, Ulunthu, Thuvarai, kadali, motchai, Cocconut, Banana fruit, Jack fruit, Bombax Malbaricum, Naval kottai, Sivanar root, Nungu, Magilam poo, wheet, Gingily oil)-Fish Poisoning—Ghee-Honey-Curd rice-Rice- Egg- Kudineer Thodam- Idu Marunthu -Neer Thodam-Features of Poisonous food-Examination of Poisonous Food-Signs and Symptoms-Treatment. Food Adulteration and its medico-legal importance-Food Safety and Standards Authority of India (FSSAI)-Detection of Food adulteration- Dart: Detect Adulteration with rapid test - FSSAI

6 Drug Dependence (3 hours)

Definition-Causes-Types of Drug Dependence-Treatment Protocol-Investigations of drug abuse deaths.

7 House hold and Miscellaneous Poisons (2hours)

Analgesics, Anti-pyretics, Kerosene, Camphor, Ant powder-Match Box-Rat Poison

Theory Examination Scheme

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

Practical Classes

Identification of Spotters (10 hours)

Toxic Plants-Toxic Metals and Minerals-Toxic Animals and household poison.

Identification of Weapons: (10 hours)

Ligature material, Blunt and Sharp edged weapons (Knife, Stone, Stick etc.), Fire arms

Microscope Findings: (10 hours)

Stains (blood & Semen), Animal and Human Hair, Fibers etc.

Identification of cases by seeing Photos/videos : (10 hours)

Injury Cases, Burning, Drowning, Hanging, Strangulation, Animal / insect Bites etc.

Certificates: (10 hours)

Medical Certificate, Physical Fitness, Death certificate.

Practical usage of Instruments: (4 hours)

Stomach wash tube and Ryles tube etc -

Examinations: (16 hours)

Examination of skeletal remains, Age estimation from dentition, Age estimation from ossification, Accident register (wound certificate), Examination of drunkenness, Preservation of viscera in various poisoning.

Dart: Detect Adulteration with rapid test prescribed by FSSAI (20 hours)

Visit to De-addiction centers for acquaintance of treatment protocols (10 hours)

Visit to the causality OPD at District HQ hospital for acquaintance of treatment protocols for Snake bite / Suicide attempt /Poisoning cases

Visit to Nearby Hospital to attend Post-Mortem Examination classes (not less than 2)

Visit to the Nearby Civil and Criminal Court to understand the Court proceedings

Practical Examination Scheme

Total Time 2 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Time (minutes)
Spotters: Toxic Plants-Toxic Metals and Minerals-Toxic Animals and household poison, Ryles tube, stomach wash tube etc. (Candidate has to identify and write the name /type of the spotter)	5	2	10
Microscope Findings: Stains, Animal and Human Hairs, Semen, Blood, Fibers etc. (Candidate has to identify and write the name/type/ nature of the Microscope Findings)	5	2	10
Photos: Injury Cases, Burning, Drowning, Hanging, Strangulation (Candidate has to identify and write the name/type/nature of the case)	5	2	10
Weapons: Knife, Stone, Ligature material, Stick, Blunt and Sharp edged weapons, Fire arms (Candidate has to identify and write the name of the Microscope Findings)	5	2	10
Certificates: Medical Certificate, Physical Fitness, Wound Certificate, Age Certificate, Drunkenness, Death certificate. (candidate has to fill up the certificate)	1	5	15
Examinations: Bones, X rays, Dental, Age determination etc. (Candidate has to examine and write the inference of not less than 100 words)	1	5	15
Dart: Detect Adulteration with rapid test – FSSAI (Candidate has to perform the test and write the inference of not less than 100 words)	2	10	50
Viva Voce	-	30	-
Total		100	120

Text Books:

1. முருகேசமுதலியார், க. ச., நஞ்சு முறிவு நூல், மூன்றாம் பதிப்பு, சென்னை, இந்திய மருத்துவம் மற்றும் ஓமியோபதி துறை, 1998;
2. Nandy, Apurba., Nandy's Hand Book of Forensic Medicine and Toxicology, Kolkota, New Central Book Agency, 2013;
3. Pillay, VV., Textbook of Forensic Medicine & Toxicology, 18th Edn., Paras Medical Publishers, 2017;
4. இக்பால், பு.அ. முகமது, சட்டம் சார்ந்த மருத்துவமும் நஞ்சு மருத்துவமும், இரண்டாம் பதிப்பு, சென்னை, இந்திய மருத்துவம் மற்றும் ஓமியோபதி துறை, 1999

Sources of Reference:

1. Reddy, K.S. Narayan, The Essentials of Forensic Medicine and Toxicology, 34th Edn., JAYPEE Brothers Medical Publishers, 2017
2. Kannan, Modi's Text Book of Medical Jurisprudence and Toxicology, 25th Edn., Lexis Nexis, 2015
3. Natkarni, K.M., Materia Medica vol-I and II, 3rd Edn., Bombay, K.M.Popular Prakashan, 1993
4. இராமச்சந்திரன், எஸ்.பி., விஷவைத்திய ஆருட நூல்கள், முதல் பதிப்பு, சென்னை, தாமரை நூலகம், 2000
5. வெங்கட்டராஜன், எஸ்., சரபேந்திரர் வைத்திய முறைகள் (விஷரோக சிகிச்சை) 5^{ம்} பதிப்பு, தஞ்சாவூர், சரசுவதி மஹால் நூலகம், 2005
6. முதலியார், சிறுமணவூர்-முனிசாமி, விஷவைத்திய சிந்தாமணி, சென்னை, டி.சு.பாலகிருஷ்ண நாயகர், 1995
7. தியாகராஜன், ஆர்., தேரையர் யமக வெண்பா, முதல் பதிப்பு (முதல் - மூன்றாம் பாகம்), சென்னை, 1997
8. தியாகராஜன், ஆர்., குணபாடம் தாது-சீவம், நான்காம் பதிப்பு, சென்னை, இந்திய மருத்துவம் மற்றும் ஓமியோபதி துறை, 1992
9. Whitaker, Romulus, Common Indian Snakes: A Field Guide, Macmillan, 2006, ISBN: 9781403929556
10. Whitaker, Romulus and Ashok Captain, Snakes of India: The Field Guide, Draco Books; 2016, ISBN: 978-9385724237
11. Pocock, R.I., "Arachnida." *The Fauna of British India, including Ceylon and Burma*, London, Secretary of State for India in Council, 1900
12. Tikader, B. K, and D. B Bastawade, "Scorpions - Scorpionida : Archnida." *The Fauna of India, Vol. 3.*, Calcutta: Zoological Survey of India, 1983.*
13. Tikader, B. K, Handbook: Indian spiders, Calcutta: Zoological Survey of India, 1987.*
14. Dart: Detect Adulteration with rapid test, Food Safety and Standards Authority of India (FSSAI),
15. <https://fssai.gov.in/dart/> (Food Safety and Standards Authority of India)

*Available in public domain from <http://faunaofindia.nic.in/>

CENTRAL COUNCIL OF INDIAN MEDICINE

NEW DELHI

SYLLABUS FOR SIDDHA MARUTHUVA ARIGNAR (BSMS) COURSE

(as per the Indian Medicine Central Council (Minimum Standards of Education in Indian Medicine) amendment Regulations, 2016)

THIRD PROFESSIONAL BSMS

RESEARCH METHODOLOGY AND MEDICAL STATISTICS

Learning objectives

To provide foundational knowledge on research methods. At the end of the course, the students will be understanding and conversant with the application of research methodology and medical statistics. The students are expected to be applying and analyzing the topics learnt through demonstration / training on (1) oral/poster presentation, (2) demonstration on literature search, (3) journal critique

Research methodology		Hours
1	Introduction to research methods	
	Objectives of research	1
	Types of research	1
	Clinical/pre-clinical research/qualitative research methods	1
	Research process (Formulating research question; Statement of objectives; Framing research hypothesis; Choosing study designs; Sampling and sample size; Recruitment; Data collection; Data analysis and Data interpretation)	2
2	Literature search	
	Systematic literature search in bio-medical databases (published and unpublished reports), including palm scripts	1
	Search strategy (including use of Medical Subheading- MeSH, databases)	1
	Demonstration on literature search on specific topic using PubMed (Class room training)	5
3	Epidemiological methods and its application in clinical research	
	Measurements in epidemiology	2
	Disease frequency	
	Measures of association/impact	
	Reliability and validity	4
	Diagnostic validity	
	Agreements	
	Biases	
	Introduction to Observational and Experimental studies	1
	Descriptive studies	4
	Case-report	
	Case-series	

	Cross-sectional study	
	Ecological study	
	Analytical studies	6
	Case-control study	
	Cohort study	
	Clinical trials [Design issues (blinding; randomization; comparators); Types; Phases; Guidelines]	
	Systematic review/Meta analysis	1
	Evidence-based medicine/Levels of evidence	1
	Data collection methods (data collection instrument/case report form; quality assurance; methods of data collection)	2
	Orientation to templates/guidelines for protocol and report writing	1
4	Research ethics/guidelines involving humans and animals	
	Principles of research ethics	1
	Ethics review process (IEC/IAEC)	1
	Orientation to research guidelines/regulatory bodies [CDSCO/DCGI/NABH/QCI/ICMR/GCP-AYUSH; Drug standardization as per Pharmacopoeial Laboratory for Indian Medicine (PLIM)]	1
	National Pharmacovigilance programme - AYUSH (Importance; AYUSH; Identification and reporting ADR)	2
	Intellectual Property Right (IPR)/Patent/TKDL	1
5	Introduction to research in Siddha system of medicine	
	Current status and scope for research in Siddha system	1
	Siddha research concepts (e.g., <i>Alavaigal</i>)	2
	Validity and reliability studies as relevant to Siddha system [e.g., Siddha classification of diseases; <i>Envagai thervu</i> and <i>96 Thathuvangal</i> ; <i>Yakkai ilakkanam</i>]	3
	Literary research (including classical text)	1
6	Scientific communication	
	Writing protocols for various study designs	2
	Writing scientific reports (Manuscripts based on case report/cases series)	2
	Writing and citing references	1
	Principles and practice of oral/Poster scientific presentation	3
	Oral/Poster presentation on case report/case-series (demonstration & training)	5
	Total hours for Research Methodology	60
Medical statistics		Hours
1	Introduction to biostatistics	5
	Types of data	
	Probability	
	Parametric (Normal) and non-parametric distribution	
	Demography and vita statistics	
2	Sources of data	2
	Health programme/surveillance data	

	Hospital information systems [A-HIMS; National AYUSH Morbidity and Standardized Terminologies Electronic Portal (NAMASTE)]	
	Data from special surveys	
3	Descriptive statistics	4
	Measures of central tendency	
	Measure of dispersion	
4	Inferential statistics (Tests of significance)	4
	Comparing means (t test; ANOVA)	
	Comparing proportions (Chi-square)	
	Basics of multivariate analysis	
5	Presentation of data	2
	Diagrammatic presentation (Charts/graphs)	
	Tabular presentation	
	Maps	
6	Sampling	2
	Sampling distribution	
	Types of sampling	
7	Sample size	3
	Estimation; Testing hypothesis	
	Type 1 and Type 2 errors; confidence intervals; precision	
	Calculating sample size	
8	Data analysis and interpretation	3
	Analysis plan	
	Steps	
	Use of statistical software	
	Interpreting statistical analysis	
9	Journal critique (as journal club activities: Practical)	
	1 Class room presentation on pre-clinical study	5
	2 Class room presentations on case-report or case-series	5
	3 Class room presentation on clinical research	5
	Total hours for Medical statistics	40

Theory Examination Scheme*

Total Time 3 Hours

Total Marks: 100

Topic	Units	Marks/Unit	Total marks
Long answer (Essay type)	2	15	30
Notes	10	5	50
Short answer	10	2	20
Grand Total			100

***Question Pattern for examination:**

70% from Research methodology; 30% from Medical statistics;

Note: Scientific calculators shall not be used in the examination but ordinary calculator can be used.

Text books:

1. Rao PSSS, Richard J., Introduction to biostatistics and research methods, PHI Learning Pvt. Ltd.; 2012 Jan 9.
2. Health research methodology: A Guide for Training in Research Methods, Second Edn., World Health Organization, Manila; 2001. Available from http://www.wpro.who.int/publications/docs/Health_research_edited.pdf

References/resource materials

1. National Ethical Guidelines for Biomedical and Health Research Involving Human Participants, Indian Council for Medical Research, New Delhi, 2017, ISBN: 978-81-910091-94. Available from https://www.icmr.nic.in/sites/default/files/guidelines/ICMR_Ethical_Guidelines_2017.pdf
2. Good clinical Practice for Clinical trials of Ayurveda, Siddha and Unani Medicine (GCP-ASU) Department of AYUSH, Ministry of Health & Family Welfare, Government of India, New Delhi, 2013, ISBN: 978-81-910195-8-2. Available from http://ayush.gov.in/sites/default/files/5110899178-Final%20Book%2028-03-13_0.pdf
3. Handbook for good clinical research practice (GCP): Guidance for implementation, World Health Organization, 2002. Available from https://www.who.int/medicines/areas/quality_safety/safety_efficacy/gcp1.pdf
4. Lohar DR., Protocol for testing of Ayurvedic, Siddha & Unani medicines, Government of India, Department of AYUSH, Ministry of Health & Family Welfare: Pharmacopoeial laboratory for Indian medicines, Ghaziabad., 2007;35.