

**Syllabus for Siddha Maruthuva Arignar (BSMS) Course
(2013 scheme)**

3rd Professional BSMS

NOI NAADAL PAPER – I

(PRINCIPLES OF SIDDHA PATHOLOGY)

Total Hours : 200

1. Introduction to Siddha Pathology

[Page No. 1-4, 107-108, 117-124, Text Book S. No. 1; 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 Noi intri vazha kadai pidikka vendiya vithi muraikal , maruthuvanin kadamaikal according to Thiruvalluvar

1.5 Noi intri vazha Kaayakalpam- mani manthira avizhtham

2. Interrelations between five elements, six tastes and three humours – abnormalities during derangements. [Page No. 21-25, Text Book S. No. 1; 5 Hrs]

3. Mukkutra iyal (Vatham – Pitham – Kapham)

[Page No. 232-245, Text Book S. No. 1; 15 Hrs]

3.1 Predominant locations – properties – Functional varieties – physiological role

3.2 Pathological conditions (increased & decreased features)

3.3 Thanilai valarchi – Vetrunilai valarchi – Thannilai adaithal).

4. Thega ilakkanam correlated with diseases

[Page No. 245-248, Text Book S. No. 1; 10 Hrs]

5. Derangements of Uyir thathukal,

[Page No. 255-259, Text Book S. No. 1; 20 Hrs]

6. **Naadi:** [Page No. 82-107, 124-156, 167-195 , Text Book S. No. 1; 20 Hrs]

6.1 Definition – locations

6.2 Vatha Naadi, Pitha Naadi, Kapha Naadi, ratio of Naadi , Conjoined Naadi

6.3 Pulse variations according to seasons

6.4 Preponderant period of Vatha, Pitha & Kapha Naadi – conditions responsible for irregular pulse rhythm – prognosis of a disease based on Naadi.

6.5 Boothha naadi and Pancha Boothha Naadi

6.6 Guru Naadi and its abnormalities

7. Fourteen Natural Urges and the Pathological features manifested due to their suppression. [Page No. 260-265, Text Book S. No. 1; 5 Hrs]

8. Asaathiya, Marana Naadikal and Kurigunangal (Fatal signs & symptoms)

[Page No. 195-232, Text Book S. No. 1; 7 Hrs]

9. Ennvagai Thervukal, [Page No. 269-272, 282-325, Text Book S. No. 1; 15 Hrs]

9.1 Examination through Naadi

9.2 Examination through Sparism

9.3 Examination through Naa

9.4 Examination through Niram

9.5 Examination through Mozhi

9.6 Examination through Vizhi

9.7 Examination through Malam

9.8 Examination through Moothiram- Neerkkuri , & Neikkuri .

9.8.1 Neerkkuri: (Urine general examination) – Alavu (Quantity), Niram (colour), Manam (odour), Nurai (froth), Edai (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

10. Special Diagnostic Methods in Siddha System

[Page No. 339-352, Text Book S. No. 1; 3 Hrs]

10.1 Manikkadai Nool (Wrist circumetric findings)

10.2 Thoothuvan Ilakkanam.

11. Seven physical constituents (Udal thathukkal) & Malangal (feaces, Urine & sweat increased & decreased features).

[Page No. 255-259, Text Book S. No. 1; 5 Hrs]

12. Digestive fire (Udal thee) -Geographical Classifications & Seasonal variations (Nilamum pozhuthum) – Appropriate time for medications.

[Page No. 265-268, Text Book S. No. 1; 3 Hrs]

13. Primary aetiology of various diseases according to Theraiyar. [Page No. 363-364, Text Book S. No. 1; 2 Hrs]

14. Worms and infectious diseases (Ottu noigal)

[Page No. 353-359, 365-366, Text Book S. No. 1; 10 Hrs]

Diseases: [Text Book S. No. 2]

The following headings should be covered for the following diseases. Veru peyar , Noi kaaranam, mukutra verubadu, Noyin murkurigal, pothukkurigal , Naadi nadai,, Theerum Theeratha Nilai (Prognosis).

Sl. No.	Topics	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 (Nina Kazhichal)	2 hrs
12.	Seetha Kazhichal	2 hrs
13.	Kalleeral Noi	2 hrs
14.	Manneeral 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 Arukkal Noi	5 hrs
20.	Vatha Noigal	10 hrs
21.	Pitha Noigal	5 hrs
22.	Kapha Noigal	5 hrs
23.	Keel Vatham	3 hrs

PRACTICALS

Total Hours : 100

Major:

- Clinical applications of Three Humours (Vatham, Pitham, Kapham) **(15 hours)**
- Interpretation of Enn vagai Thervukal **(30 hours)**
- Examination of Ezhu Udal Thathukkal **(5 hours)**

Minor:

- Manikkadai Nool **(5 hours)**
- Neerkkuri and Neikkuri **(15 hours)**
- Clinical applications of individual humours **(15 hours)**
- Clinical applications of individual Udal Thaathu **(5 hours)**
- Clinical applications of Enn vagai Thervu **(10 hours)**

TEXT BOOK

1. Shanmugavelu 2003, Noi Naadal Noi Mudal Naadal Thirattu / Part - I 2nd Edition. Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
2. Shanmugavelu 2003, Noi Naadal Noi Mudal Naadal Thirattu / Part - II 2nd Edition. Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.

REFERENCES

1. Prof. Dr. P.M.VENU GOPAL H.P.I.M. 2014, Udal Thathuvam, Department of Indian

Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.

2. Dr.Kuppusamy Mudaliar, H.P.I.M. 2012 Siddha Maruthuvam Pothu, Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
3. Dr.K.S.Uthamarayan H.P.I.M. 2003, Siddha Maruthuvanga Churukkam, 3rd Edition, Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
4. Periya Gnana Kovai -- Dhasa vayu's Pancheeharanam
5. Dr.Kannan Rajaram B.S.M.S, ATSVS Siddha Medical College, Munchirai
 1. 2008 Varma Maruthuvam
 2. 2008 Atharam thoondum muraikalum Noi kanippum
 3. 2007 Varma Maruthuvathin Adipadaikal

Distribution of Marks (Mark Weightage) for University Theory

Examination

Chapter – 1	5 Marks
Chapter – 2 & 3	10 Marks
Chapter – 4 & 5	5 Marks
Chapter – 6	15 Marks
Chapter – 7	5 Marks
Chapter – 8	5 Marks
Chapter – 9	20 Marks
Chapter – 10, 11, 12, 13 & 14	15 Marks
Chapter – Diseases	20 Marks
Total	100 Marks

Distribution of Marks for University Clinical Examination

Clinical	70 Marks
Viva Voce	20 Marks
Record	10 Marks
Total	100 Marks

Syllabus for Siddha Maruthuva Arignar (BSMS)
Course -2013 SCHEME
3rd Professional BSMS

NOI NADAL PAPER- II

Total Hours : 150

(Principles of Modern Pathology including Clinical Pathology)

1. Introduction of Pathology [5 hrs]

1.1 Advances of Pathology

1.2 Classification of Pathology

2. Lab Techniques, equipments, study of Pathogenesis (Instrumental Technique) [6 hrs]

3. Cell [15 hrs]

Cell injury , Cell response to injury – Degeneration – Common Causes – Fatty changes , Atrophy, Hypertrophy – Metaplasia , Hyperplasia – Aplasia etc.

4. Immunopathology, [10 hrs]

5. Haemodynamics – Shock , oedema , embolism , thrombosis , ischemia , infarction , congestion [20 hrs]

6. Inflammation and wound healing [7 hrs]

7. Infectious diseases (Pathogenesis of the bacteria, virus and fungal infections) [15 hrs]

8. Gene and chromosomal Pathology – Diseases due to abnormalities of Gene, Diagnosis [10 hrs]

9. Nutrition (Proteins, vitamins and minerals) [15 hrs]

10. Haematology [7 hrs]

Abnormalities RBC, WBC, Platelets

11. Neoplasm [10 hrs]

Etiology – Classification – Pathogenesis - Para neoplastic syndromes and complications -
Diagnosis

12. Metabolic and life style disorders [30 hrs]

Diabetes, Obesity, Hypertension COPD, Jaundice, Arthritis and Ill effects of radiation etc.

Practicals	Total Hours :100
CLINICAL PATHOLOGY	
1. Haematology	(30 hours)
2. Examination of Sputum for AFB.	(5 hours)
3. Examination of Urine	(4 hours)
4. Examination of Faeces	(2 hours)
5. Blood smear examination	(5 hours)
6. Widal Test	(3 hours)
7. Vaginal Smear.	(3 hours)
8. Serological test- VDRL – Elisa Test – Hbs Ag, RA factor – ASO Titre	(10 hours)
9. Skin – Skin clipping procedure.	(2 hours)
10. Liver Function Tests, Renal Function Tests.	(6 hours)
Histopathology slides & specimens (minimum 10 nos.)	(10 hours)
Liver-fatty, cirrhosis & carcinoma	
Lung – Tuberculosis, Bronchitis, Bronchiectasis & carcinoma	
Stomach – Gastritis, Ulcer & carcinoma	
Uterus &Ovary – Endometritis, PCOD, Fibroid, Ovarian cyst & carcinoma.	
Fibro adenoma breast	
Colloidal Goiter	
Osteoclastoma	
Other slides	

Haematology slides**(10 hours)**

Iron deficiency Anaemia

Acute Myeloid leukaemia

Chronic Myeloid leukaemia

Acute lymphoblastic leukaemia

Chronic lymphoblastic leukemia

Radiology**(10 hours)**

Basic Principles

Respiratory System – Tuberculosis, COPD, Pleural effusion etc.

Cardio-vascular System – Enlargement, etc.

Osteology - Fracture, Dislocation, Tumor etc.

Text Books:

1. Harsh Mohan 2010, Text Book Of Pathology, 6th Edition, Jitinder P Vij, Jaypee Brothers Medical Publishers (p) Ltd., EMCA House, 22/23B Ansari Road Danyaganj.
2. Robbins and Cotran 2008, Pathologic Basis of Disease, 7th Edition Elsevier adivision of Reed Elsevier India private Limited, Logix Park, First Floor, A4 &A5 Sector -16 Noida 201301, U.P> India. Vinay Kumar MD, FRC Patho, Abul K. Abbas MBBS & Nelson Fausto,MD.
3. CK. Jayaram Panikar 2007, Text Book of Medical parasitology, 6th Edition, Jaypee Brothers Medical Publishers (p) Ltd. EMCA House, 22/23B Ansari Road Danyaganj.
4. Sanyal & Battacharya 2011, Clinical Pathology, A Practical Manual, 2nd Edition Elsevier, a division of Reed Elsevier. India private Ltd.
5. Harsh Mohan 2010, Clinical Pathology, 6th Edition, Jitinder P Vij, Jaypee Brothers Medical Publishers (p) Ltd. EMCA House, 22/23B Ansari Road Danyaganj.

Distribution of Marks (Marks Weightage) for University Theory

Examination

Chapter – 3	10 Marks
Chapter – 4	10 Marks
Chapter – 5	15 Marks
Chapter – 6	20 Marks
Chapter – 7, 8 & 9	10 Marks
Chapter – 10	10 Marks
Chapter – 11	10 Marks
Chapter –12	15 Marks
Total	100 Marks

Distribution of Marks for University Practical Examination

Practical	70 Marks
Viva Voce	20 Marks
Record	10 Marks
Total	100 Marks

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SATTAM SARNTHA MARUTHUVAMUM NANJU MARUTHUVAMUM

(Forensic Medicine and Toxicology)

Total Hours : 150

SATTAM SARNTHA MARUTHUVAM (Forensic Medicine)

1) Introduction :- (Page No: 21-49, Ref.Book- S.No.1 , 3hours)

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

2) Medical Law and Ethics: (Page No: 29,32,35,49,53,- Ref.Book-S.No.3 , Page No.45- S.no: 4 , 3hours)

Duties of Medical Practitioners-Professional Secrecy-Professional Negligency -Mercy killing-Organ Transplantation.

3) Identity :- (Page No: 50-110, Ref.Book- S. No.1 , 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 – age determination from teeth and bones – general development and stature -complexion features of individuality – hair- external peculiarities-scars –Moles- malformation-Tattoomarks – Anthropometry – Dactylography – poroscopy-occupational marks.

4) Medico legal Autopsy :- (Page No: 113-134, 163-164- Ref.Book- S. No.1 , 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 :- (Page No 130-145, Ref.Book- S No.3 , 3hours)

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

6) Post-mortem Changes :- (Page No: 146, 170, Ref.Book- S. No.3 , 147-162- Ref.Book- S. No.1 , 3hours)

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

7) Asphyxia :- (Page No.165-207 - Ref.Book- S. No.1 , 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 of 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 confirm the cause of death — first aid – smothering –Suffocation- medico legal aspects – choking – traumatic asphyxias – autopsy findings.

8) Wounds and classification :- (Page No: 208--283, Ref.Book- S. No.1 , 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.

9) Sexual offences : (Page No: 392-416- Ref.Book- S.No.3, 6 hours)

Classifications-Rape-Incest – procedure for examination of the accused and victim – Findings of the examination – Important point to be noted in accused and victim – 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 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: (Page No: 364-370- Ref.Book- S.No.3, 4 hours)

Impotence and Sterility- Sterilization-Artificial Insemination-Surrogate Motherhood.

11) Virginity :- (Page No: 371-373- Ref. Book- S.No.3 and Page No.399- S. no: 4 , 2 hours)

Anatomy of Female genitalia – Hymen – Causes for the Rupture of hymen – Medical legal importance.

12) Pregnancy :- (Page No: 327-347, Ref. Book- S. No.1 and Page No: 378- Ref. Book- S.No.3, 3 hours)

Fertilization — Confirmatory findings for pregnancy – Presumptive signs – Probable signs – Positive signs – Biological Tests-Medico legal Importance-Legitimacy and Paternity.

13) Delivery :- (Page No: 379-380- Ref. Book- S.No.3, 3hours)

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

14) Abortion :- (Page No: 381-391- Ref. Book- S.No.3, 3 hours)

Definition – Natural abortion –Cause of Abortion-Artificial Abortion- Justifiable abortion – Abortion on the basis of health condition – Rules to be followed by the physician – Procedures – Criminal abortion – complications – Cause of death.

15) Infanticide :- (Page No: 417-427- Ref. Book- S.No.3, 3 hours)

Infanticide & its criminal proceedings – Still born babies – 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 :- (Page No: 394-411, Ref. Book- S. No.1 , 5 hours)

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

17) Death from Lightning, Electricity, Hot & Cold :- (Page No: 412-422, Ref. Book- S. No.1 , 6hours)

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 :- (Page No: 320-321- Ref. Book- S.No.3, 3 hours)

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

19) Forensic Psychiatry :- (Page No: 457-472- Ref. Book- S.No.3, 8 hours)

Insanity – Delirium – Delusion – Medico legal aspects – Hallucination – illusion –Lucid interval– impulse – obsession – Phobia- idiocy – Mental Subnormality-Diagnose insanity- Imbecility – feeblemindedness – 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.

NANJU MARUTHUVAM (TOXICOLOGY)

Section: 1 Introduction (Page No: 473-493- Ref. Book- S.No.3, 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.

Section: 2 Corrosive poisons (Acids strong alkalis) (Page No: 525-529- Ref.Book- S.No.1 and Page No: 505-508,528,529 Ref.Book- S.No.3, 3 hours)

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

Organic Acids: Carbolic Acid-Oxalic acid.

Strong Alkalis: Sodium, Potassium, Ammonium Hydroxides and Carbonates

Section: 3 Irritant Poisons

I. Agricultural poisons: Organo Phosphorous- Organo Chlorine- Carbamates. (Page No: 494-498,500- Ref.Book- S.No.3, 2 hours)

II. Inorganic Irritant Poisons: (Page No: 510-520- Ref.Book- S.No.3 and Page No.611--612, S.No.1 4hours)

Metals: Arsenic Compounds-Antimony-Lead-copper-Mercury compounds-Zinc

Non Metals: Phosphorous--Sulphur-Mica.(PageNo.530-32 -S.No.1 and Page No.27,35-S.No.2 2 hours)

Mechanical Irritants: Glass powder-Diamond powder-Animal and vegetable Hairs. (PageNo.612 -S.No.1, 2 hours)

III. Inorganic Irritant Poisons: (Page No: 524-528- Ref.Book- S.No.3 and Page No.46-63, S.No.2 10 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: (Page No: 639-664- Ref.Book- S.No.1 - Page No.74-134, S.No.2-Page No.528-536-S.No.3 3 hours)

Ants-Scorpion-Wasps-Spider-Snakes- Centlipedes-Bees-Rats-Onan-Lizards-Leech-Frog-Dog-Cat-Monkey-Horse-Fox-Unknown bite-Crocodile-Beetle-Pig-Animal bites treated with palagarai parpam.

Section: 4 Systemic Poisons

I. Neurotic or Cerebral Poisons:

Inebriant and CNS depressants: Opium-Morphine - Pethidine- Alcohol-Ethyl ,Methyl Alcohol-Toddy-Country Arrack. (page no.580-85,615-17,630-39–S.No.1 and page No.59-S.No.2, 4 hours)

CNS Stimulants: Amphetamine. (Page No: 562- Ref.Book- S.No.3, 1hour)

Deliriant: Datura fastuosa- Cannabis sativa--Cocaine. (Page No: 566-571- Ref.Book-S.No.3 and Page No.58-60, S.No.2, **2 hours**)

Spinal Poison: Strychnosnux vomica. (Page No: 585-590- Ref.Book- S.No.1 - Page No.59-S.No.2, 1 hour)

II. Cardiac Poisons: - (Page No: 583-587- Ref.Book- S.No.3 and Page No.57,58,60-62, S.No.2 (**3hours**)

Nerium odorum – Cerbera thevitea- Aconitum ferox – Nicotiana tobaccum- Cleistanthus collinus- Digitalis Purprea. (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: (Page No: 588-594- Ref.Book- S.No.3 , **3hours**) Carbon

Monoxide-Carbon Dioxide-Hydrogen Sulphide and War Gases.

Section: 5 Food Poisonings and Poisonous Foods (Page No: 603-608- Ref.Book- S.No.3 and Page No.46-63, S.No.2 , **11 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.

Section: 6 Drug Dependence (Page No: 572-574- Ref.Book- S.No.3 , **3 hours**)

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

Section: 7 House hold Poisons (Page No: 475- Ref.Book- S.No.3 and Page No.599-602, S.No.1, **2hours**)

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

Practicals

Total Hours : 100

Topics:

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

(Practical work - 18 hours).

Microscope Findings: Stains, Animal and Human Hairs, Semen, Blood, Fibers etc. (Practical work - 9 hours).

Photos: Injury Cases, Burning, Drowning, Hanging, Strangulation.(Practical work -19 hours)

Weapons: Knife, Stone, Ligature, Stick, Blunt and Sharp edged weapons, Fire arms

(Practical work - 14 hours).

Certificates: Medical Certificate, Physical Fitness, Wound Certificate, Age

Certificate, Drunkenness, Death certificate.(Practical work - 20 hours).

Instruments: stomach wash tube and Ryles tube

(Practical work - 5 hours)

Examinations: Bones, X rays, Dental.

(Practical work - 15 hours)

Text Books:

3. Sattam Saarntha Maruthuvamum Nanju Maruthuvamum, Second Edition 1999, P.A. Muhammed Iqbal, MD (Siddha), Published by Department of Indian Medicine and Homeopathy, Chennai 106,
4. Nanju Murivu Nool, Third Edition, 1998, K.S. Murukesa Mudaliyar, Published by Department of Indian Medicine and Homeopathy, Chennai 106,
5. Dr.K.S.Narayan Reddy, 2013-The Essentials of Forensic Medicine and Toxicology, 32nd Edition, Published by K.Suguna devi, H.No.16-11-15/2/2, Saleem nagar colony, No.1 malakpet, Hyderabad-36.
6. Dr. Apurba Nandy, 2013-Nandys's Hand Book of Forensic Medicine and Toxicology, 1st published, New Central Book Agency (P)Ltd., 8/1,Chintamoni Das lane, Kolkota-9.

Reference Books:

1. C.A.Franklin, 1988-Modi's Text Book of Medical Jurisprudence and Toxicology 21st

Edition.

2. Dr.K.M.Natkarni.1993- Materia Medica vol-I and II, 3rd Edition, K.M.Popular Prakashan PVT Ltd, Bombay.
3. Vishavaidhya Arooda Noolkal, First edition, 2000, Thamarai Noolakam, Chennai 26
4. Sarabendra Vaidhya Muraikal, Visha Roga Chikitchai, Fifth edition 2005, Dr.S. Venkata Rajan, Saraswathy Mahal Library, Thanjavur
5. Visha Vaidhya Chintamani, Sirumanavoor Munisamy Mudhaliyar, 1995, B.R. Balakrishnan Nayakar, Chennai- 79
6. Theran Yamaka Venba , Second edition, 1973, Dr.P.A. Muhamed Abdullah Sahib
7. Gunapadam, Thathu Jeevam, Fourth Edition, 1992, Dr. R. Thyagarajan, Published by Department of Indian Medicine and Homeopathy, Chennai 106

Distribution of Marks (Mark Weightage) for University Theory Examination

Chapter – 1 & 2	5 Marks
Chapter – 3	10 Marks
Chapter – 4, 5, 6 & 8	10 Marks
Chapter – 7 & 9	10 Marks
Chapter – 10 & 11	5 Marks
Chapter – 12, 13, 14 & 15	5 Marks
Chapter – 16, 17 & 18	5 Marks
Chapter –19	10 Marks
Toxicology	40 Marks
Total	100 Marks

Distribution of Marks for University Practical Examination

Practical	70 Marks
Viva Voce	20 Marks
Record	10 Marks
Total	100 Marks

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NOI ANUGAVITHI OZHUKKAM **Total Hours : 100**
(HYGIENE AND COMMUNITY MEDICINE INCLUDING NATIONAL HEALTH POLICIES)

CHAPTER – 1 (Hour - 1)

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

CHAPTER – 1 (A) (Hour - 1)

The ways to lead a disease free life as said by ancient siddhar Theriyar

CHAPTER – 2 (Hour - 2)

The five Geographical Classifications - description and occurrence of diseases

CHAPTER – 3 (Hours - 2)

Ancient town planning – modern town planning

CHAPTER – 4 (Hours - 3)

Industries – occupational diseases and its preventions – Occupational hazards.

CHAPTER – 5 (Hours - 4)

Oorthooimai – waste management – Excreta disposal – modern sewage treatment and other methods of sewage disposal. Recycling Methods

CHAPTER -6 (Hours - 2)

Modern house and vaasthu, Modern Construction Techniques which prevent natural calamities.

CHAPTER – 7 (Hour - 1)

Burial and Cremation.

CHAPTER – 8 (Hours - 4)

Seasons (Perumpozhuthu, Sirupozhuthu) – Principles to be followed in the above seasons and the specific food.

Imporikal Kappu, Seasonal Food habits, Uthrayanam, Thachayanam, Uttama, Mathima, Athama Kaala Ozhukam.

CHAPTER – 9 (Hours - 5)

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 Values

Waterfalls, Pond water and Well water – types and therapeutic Values

Nandu Kuzhi neer, Naaval mara neer, Karunkalli neer, Vaazhai neer, Ella neer – types and therapeutic Values.

CHAPTER – 10 (Hours - 3)

Neruppu (or) thee – Atmospheric temperature – Effects of heat stress – Effects of cold stress – Preventive measures of global warming – humidity

CHAPTER – 11 (Hours - 5)

Air pollution – Health aspects, Prevention and control, ventilation – Types, Effects of different types of fumes

CHAPTER – 12 (Hours - 2)

Noise – effects of noise pollution and its control.

CHAPTER – 13 (Hours - 3)

Habits – Personal hygiene and daily routines– Costumes – gems and pearls –. Pancha Karpam

CHAPTER – 14 (Hours - 4)

Food – Six tastes – Three types of food – Toxicity – Adulteration – Food borne diseases – Prevention and control – Food standards- Food Digestion time, Patiyam, Selection of food based on uyir thathukal. Junk foods and health hazards.

CHAPTER – 15 (Hours - 2)

Beverages – Drinking water- Effects of water depending on the utensils – fruit juices - Neerakaram, Kaadi neer.

CHAPTER – 16 (Hours - 2)

Uses of Betel leaf and nut. Ill effects of Tobacco products

CHAPTER – 17 (Hours - 2)

Rest and sleep – Types of bed

CHAPTER – 18 (Hours - 4)

Nutritious and balanced diet – Role of fibers, cereals, vegetables – Greens – fruits – animal proteins – fish – birds – pickles etc. – Diseases –Thritoda sama porulgal –, Nutritional Disorders and public health

CHAPTER – 19 (Hour -3)

Serving procedures – types of vessels and their effect on food preparation.

CHAPTER – 20 (Hours - 14)

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 diarrheal diseases – Typhoid – Food poisoning – Amoebiasis – Ascariasis – Hook worm infestation etc

Vector borne infection:

Causes, Symptoms, Prevention and Control of; Dengue – Malaria – Filariasis – Chi-gun- gunia, Lepto Spirosis, SARS.

Surface infection:

Causes, Symptoms, Prevention and Control of; Trachoma – Tetanus - Leprosy – STD – AIDS/ HIV.

CHAPTER – 21 (Hours - 12)

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.

CHAPTER – 22 (Hours - 5)

Mental Health – Counseling and eradication of social stigma.

CHAPTER – 23 (Hours - 5)

Siddha concept of preventive measures – immunology and personnel hygiene.

Vaccination & Immunization Schedule

CHAPTER – 24 (Hours - 5)

Hospital Acquired Infections, Preventive methods.

CHAPTER – 25 (Hours - 4)

Hospital & Bio Medical Waste – Types and Disposal management.

Text Books:

- 1) Noi illa neri by Dr. Durairajan, H.P.I.M., Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
- 2) Park's Textbook of Preventive and Social Medicine by K. Park, 21st Edition, Banarsidas Bhanot Publishers

Reference books:

- 1) Pathartha Guna Chintamani – Published by Ratna nayakar & Sons, Chennai 1932.
- 2) Agathiyar Gunavagadam
- 3) Siddha Maruthuvanga Surukkam – Dr. C. S. Uthamarayan – H.P.I.M., Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
- 4) A Treatise on Hygiene and Public Health by Birendra Nath Ghosh, Scientific Publishing Company, 1953.

Distribution of Marks (Mark Weightage) for University Theory

Examination

Chapter – 1 & 1 (A)	5 Marks
Chapter – 2, 3, 4, 5, 6 & 7	25 Marks
Chapter – 8	5 Marks
Chapter – 9, 10, 11, 12 & 13	20 Marks
Chapter – 14	5 Marks
Chapter – 15, 16 & 17	5 Marks
Chapter – 18 & 19	5 Marks
Chapter –20, 22, 24 & 25	20 Marks
Chapter –21	5 Marks
Chapter –23	5 Marks
Total	100 Marks

Syllabus for Siddha Maruthuva Arignar (BSMS) Course (2103 SCHEME)
3rd Professional BSMS

RESEARCH METHODOLOGY AND MEDICAL STATISTICS

Total Hours : 100

1. Research Methodology [10 hrs]

i) Introduction

- ☐ Objectives of research
- ☐ Types of research
- ☐ Research methods
- ☐ Research process (Sources of data and data collection, Developing hypothesis and formulating research question, Extensive research survey, Preparing research design, Determining sample design, Execution of project, Analysis of data, Hypothesis testing, Generalisation and interpretation, Preparation of the report or the thesis)
- ☐ Problems encountered by researchers in India.

ii) Areas of Research Interest in Siddha [5 hrs]

- ☐ Alavaigal and its interpretation with contemporary research
- ☐ Literary research / Fundamental research (especially Siddha research methodologies)
- ☐ Product/Drug/Pharmaceutical research
- ☐ Epidemiological/Clinical research.
- ☐ SWOT(Strength, Weakness, Opportunity & Threat)

2. Literary Review [5 hrs]

- ☐ Reviewing in research / Search for research Hypothesis/ Historical evidences / published papers

3. Protocol [5 hrs]

- ☐ Designing a Protocol
- ☐ Various Templates in Protocol

4. Epidemiological studies and its application in clinical research [10 hrs]

- ☐ **Observational studies:**
 - i) Descriptive studies
 - ii) Analytical studies: Ecological, Cross sectional, Case-control (Retrospective) and Cohort study (Prospective, Retrospective and Combined)
- ☐ **Experimental studies:**
 - i) Randomization (Randomized Controlled Trial and its varieties & Non randomized trial and its varieties)
 - ii) Blinding

5. Pre-clinical studies [10 hrs]

- ☐ Traditional methods to identify the quality of raw materials and preparations
 - ☐ Authentication and Standardization of Siddha drugs
 - ☐ Pharmacological screening for Safety and efficacy (in vivo and in vitro)
 - ☐ Nanotechnology.
- (Ref: Protocol for testing by PLIM/ OECD Guidelines / GMP Guidelines)

6. Pre requisite for clinical study [5 hrs]

- ☐ Investigational pharmaceutical product
- ☐ Pre- clinical supporting data & pilot study etc.
- ☐ Research Protocol (Relevant components of protocol)
- ☐ Case Report Form (CRF)
- ☐ Informed consent process
- ☐ Interim review.

7. Ethical guidelines [10 hrs]

- ☐ Ethical and safety considerations (Ethics committee)
- ☐ Composition
- ☐ Submission of application
- ☐ IEC approval

8. Clinical trial designs and AYUSH GCP [15 hrs]

- ☐ Clinical research /trial – introduction
- ☐ AYUSH GCP guidelines
- ☐ Types of clinical trials
- ☐ Phases of clinical trial

- ❑ Data collection, Processing, and Data analysis
- ❑ Interpretation-Reporting method of clinical trial
- ❑ Clinical data management (CDM)
- ❑ Responsibilities of Sponsor, Monitor and Investigator
- ❑ Clinical Trial Registry of India –CTRI

9. Bio- Statistics [15 hrs]

- ❑ Introduction
- ❑ Measures of Central Tendency and Dispersion
- ❑ Normal distribution
- ❑ Sampling-Probability- Sampling variability
- ❑ Tests of significance- difference in means - difference in proportions of large samples -Chi-square test, t-test
- ❑ Demography and vital statistics
- ❑ Dataanalysis& Interpretation of results
- ❑ Tabulation- Diagrams (Bar charts, Histogram, Pie charts, Pictogram)- Statistical maps- Sources and presentation of data- Statistical averages
- ❑ Scientific writing.
- ❑ Hospital information Systems and hospital management system.
- ❑ Qualitative and quantitative data
- ❑ Statistical Analysis of SPSS, Epi info and Epi data

10. Pharmacovigilance [5 hrs]

- ❑ Introduction&importance
- ❑ Siddhaliterature and Pharmaco vigilance
- ❑ Difficulties in Pharmacovigilance (Re challenging & dechallenging)
- ❑ Adverse Drug reactions- Regulations
- ❑ Identification of ADR- Prevention of ADR.

11. Intellectual Property Right (IPR),TKDL [5 hrs]

12. Glossary of selected terms in research methodology and statistics.

Text Books:

1. Introduction to Biostatistics and Research Methods - P. S. S. Sundar Rao, J. Richard
2. Biostatistics, Principles and Practices, Antonisamy.B et al, Tata Mcgrawhiil Education Private Limited, New Delhi,2010

Sources for Reference:

1. Good Clinical Practices published by CDSCO, GoI. (<http://rgcb.res.in/wp-content/uploads/2014/07/Good-Clinical-Practice-Guideline.pdf>)
2. Becoming a Successful Clinical Trial Investigator by Dr.P.K. Julka DNA Press 2nd Edn. 2009.
3. ETHICAL GUIDELINES FOR BIOMEDICAL RESEARCH ON HUMAN PARTICIPANTS by Indian Council for Medical Research, New Delhi on (http://icmr.nic.in/ethical_guidelines.pdf)
4. 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 (<http://indianmedicine.nic.in/writereaddata/linkimages/5110899178-Final%20Book%2028-03-13.pdf>)
5. Handbook for good clinical research practice (GCP): Guidance for implementation World Health Organization 2002 (http://apps.who.int/prequal/info_general/documents/GCP/gcp1.pdf)

Distribution of Marks (Mark Weightage) for University Theory Examination

Chapter – 1, 2, 3, 4, 5, 6 , 7, 8, 10, 11 & 12	80 Marks
Chapter – 9	20 Marks
Total	100 Marks

**Syllabus for Siddha Maruthuva Arignar (BSMS) Course
(2013 scheme)**

3rd Professional BSMS

NOI NAADAL PAPER – I

(PRINCIPLES OF SIDDHA PATHOLOGY)

Total Hours : 200

1. Introduction to Siddha Pathology

[Page No. 1-4, 107-108, 117-124, Text Book S. No. 1; 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 Noi intri vazha kadai pidikka vendiya vithi muraikal , maruthuvanin kadamaikal according to Thiruvalluvar

1.5 Noi intri vazha Kaayakalpam- mani manthira avizhtham

2. Interrelations between five elements, six tastes and three humours – abnormalities during derangements. [Page No. 21-25, Text Book S. No. 1; 5 Hrs]

3. Mukkutra iyal (Vatham – Pitham – Kapham)

[Page No. 232-245, Text Book S. No. 1; 15 Hrs]

3.1 Predominant locations – properties – Functional varieties – physiological role

3.2 Pathological conditions (increased & decreased features)

3.3 Thanilai valarchi – Vetrunilai valarchi – Thannilai adaithal).

4. Thega ilakkanam correlated with diseases

[Page No. 245-248, Text Book S. No. 1; 10 Hrs]

5. Derangements of Uyir thathukal,

[Page No. 255-259, Text Book S. No. 1; 20 Hrs]

6. **Naadi:** [Page No. 82-107, 124-156, 167-195 , Text Book S. No. 1; 20 Hrs]

6.1 Definition – locations

6.2 Vatha Naadi, Pitha Naadi, Kapha Naadi, ratio of Naadi , Conjoined Naadi

6.3 Pulse variations according to seasons

6.4 Preponderant period of Vatha, Pitha & Kapha Naadi – conditions responsible for irregular pulse rhythm – prognosis of a disease based on Naadi.

6.5 Boothha naadi and Pancha Boothha Naadi

6.6 Guru Naadi and its abnormalities

7. Fourteen Natural Urges and the Pathological features manifested due to their suppression. [Page No. 260-265, Text Book S. No. 1; 5 Hrs]

8. Asaathiya, Marana Naadikal and Kurigunangal (Fatal signs & symptoms)

[Page No. 195-232, Text Book S. No. 1; 7 Hrs]

9. Ennvagai Thervukal, [Page No. 269-272, 282-325, Text Book S. No. 1; 15 Hrs]

9.1 Examination through Naadi

9.2 Examination through Sparism

9.3 Examination through Naa

9.4 Examination through Niram

9.5 Examination through Mozhi

9.6 Examination through Vizhi

9.7 Examination through Malam

9.8 Examination through Moothiram- Neerkkuri , & Neikkuri .

9.8.1 Neerkkuri: (Urine general examination) – Alavu (Quantity), Niram (colour), Manam (odour), Nurai (froth), Edai (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

10. Special Diagnostic Methods in Siddha System

[Page No. 339-352, Text Book S. No. 1; 3 Hrs]

10.1 Manikkadai Nool (Wrist circumetric findings)

10.2 Thoothuvan Ilakkanam.

11. Seven physical constituents (Udal thathukkal) & Malangal (feaces, Urine & sweat increased & decreased features).

[Page No. 255-259, Text Book S. No. 1; 5 Hrs]

12. Digestive fire (Udal thee) -Geographical Classifications & Seasonal variations (Nilamum pozhuthum) – Appropriate time for medications.

[Page No. 265-268, Text Book S. No. 1; 3 Hrs]

13. Primary aetiology of various diseases according to Theraiyar. [Page No. 363-364, Text Book S. No. 1; 2 Hrs]

14. Worms and infectious diseases (Ottu noigal)

[Page No. 353-359, 365-366, Text Book S. No. 1; 10 Hrs]

Diseases: [Text Book S. No. 2]

The following headings should be covered for the following diseases. Veru peyar , Noi kaaranam, mukutra verubadu, Noyin murkurigal, pothukkurigal , Naadi nadai,, Theerum Theeratha Nilai (Prognosis).

Sl. No.	Topics	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 (Nina Kazhichal)	2 hrs
12.	Seetha Kazhichal	2 hrs
13.	Kalleeral Noi	2 hrs
14.	Manneeral 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 Arukkal Noi	5 hrs
20.	Vatha Noigal	10 hrs
21.	Pitha Noigal	5 hrs
22.	Kapha Noigal	5 hrs
23.	Keel Vatham	3 hrs

PRACTICALS

Total Hours : 100

Major:

- Clinical applications of Three Humours (Vatham, Pitham, Kapham) **(15 hours)**
- Interpretation of Enn vagai Thervukal **(30 hours)**
- Examination of Ezhu Udal Thathukkal **(5 hours)**

Minor:

- Manikkadai Nool **(5 hours)**
- Neerkkuri and Neikkuri **(15 hours)**
- Clinical applications of individual humours **(15 hours)**
- Clinical applications of individual Udal Thaathu **(5 hours)**
- Clinical applications of Enn vagai Thervu **(10 hours)**

TEXT BOOK

1. Shanmugavelu 2003, Noi Naadal Noi Mudal Naadal Thirattu / Part - I 2nd Edition. Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
2. Shanmugavelu 2003, Noi Naadal Noi Mudal Naadal Thirattu / Part - II 2nd Edition. Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.

REFERENCES

1. Prof. Dr. P.M.VENU GOPAL H.P.I.M. 2014, Udal Thathuvam, Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
2. Dr.Kuppusamy Mudaliar, H.P.I.M. 2012 Siddha Maruthuvam Pothu, Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
3. Dr.K.S.Uthamarayan H.P.I.M. 2003, Siddha Maruthuvanga Churukkam, 3rd Edition, Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
4. Periya Gnana Kovai -- Dhasa vayu's Pancheeharanam
5. Dr.Kannan Rajaram B.S.M.S, ATSVS Siddha Medical College, Munchirai
 1. 2008 Varma Maruthuvam
 2. 2008 Atharam thoondum muraikalum Noi kanippum
 3. 2007 Varma Maruthuvathin Adipadaikal

Syllabus for Siddha Maruthuva Arignar (BSMS)
Course -2013 SCHEME
3rd Professional BSMS

NOI NADAL PAPER- II

Total Hours : 150

(Principles of Modern Pathology including Clinical Pathology)

1. Introduction of Pathology [5 hrs]

- 1.1 Advances of Pathology
- 1.2 Classification of Pathology

2. Lab Techniques, equipments, study of Pathogenesis (Instrumental Technique) [6 hrs]

3. Cell [15 hrs]

Cell injury , Cell response to injury – Degeneration – Common Causes – Fatty changes , Atrophy, Hypertrophy – Metaplasia , Hyperplasia – Aplasia etc.

4. Immunopathology, [10 hrs]

5. Haemodynamics – Shock , oedema , embolism , thrombosis , ischemia , infarction , congestion [20 hrs]

6. Inflammation and wound healing [7 hrs]

7. Infectious diseases (Pathogenesis of the bacteria, virus and fungal infections) [15 hrs]

8. Gene and chromosomal Pathology – Diseases due to abnormalities of Gene, Diagnosis [10 hrs]

9. Nutrition (Proteins, vitamins and minerals) [15 hrs]

10. Haematology [7 hrs]

Abnormalities RBC, WBC, Platelets

11. Neoplasm [10 hrs]

Etiology – Classification – Pathogenesis - Para neoplastic syndromes and complications -
Diagnosis

12. Metabolic and life style disorders [30 hrs]

Diabetes, Obesity, Hypertension COPD, Jaundice, Arthritis and Ill effects of radiation etc.

Practicals	Total Hours :100
CLINICAL PATHOLOGY	
1. Haematology	(30 hours)
2. Examination of Sputum for AFB.	(5 hours)
3. Examination of Urine	(4 hours)
4. Examination of Faeces	(2 hours)
5. Blood smear examination	(5 hours)
6. Widal Test	(3 hours)
7. Vaginal Smear.	(3 hours)
8. Serological test- VDRL – Elisa Test – Hbs Ag, RA factor – ASO Titre	(10 hours)
9. Skin – Skin clipping procedure.	(2 hours)
10. Liver Function Tests, Renal Function Tests.	(6 hours)
Histopathology slides & specimens (minimum 10 nos.)	(10 hours)
Liver-fatty, cirrhosis & carcinoma	
Lung – Tuberculosis, Bronchitis, Bronchiectasis & carcinoma	
Stomach – Gastritis, Ulcer & carcinoma	
Uterus &Ovary – Endometritis, PCOD, Fibroid, Ovarian cyst & carcinoma.	
Fibro adenoma breast	
Colloidal Goiter	
Osteoclastoma	
Other slides	

Haematology slides**(10 hours)**

Iron deficiency Anaemia

Acute Myeloid leukaemia

Chronic Myeloid leukaemia

Acute lymphoblastic leukaemia

Chronic lymphoblastic leukemia

Radiology**(10 hours)**

Basic Principles

Respiratory System – Tuberculosis, COPD, Pleural effusion etc.

Cardio-vascular System – Enlargement, etc.

Osteology - Fracture, Dislocation, Tumor etc.

Text Books:

1. Harsh Mohan 2010, Text Book Of Pathology, 6th Edition, Jitinder P Vij, Jaypee Brothers Medical Publishers (p) Ltd., EMCA House, 22/23B Ansari Road Danyaganj.
2. Robbins and Cotran 2008, Pathologic Basis of Disease, 7th Edition Elsevier adivision of Reed Elsevier India private Limited, Logix Park, First Floor, A4 &A5 Sector -16 Noida 201301, U.P> India. Vinay Kumar MD, FRC Patho, Abul K. Abbas MBBS & Nelson Fausto,MD.
3. CK. Jayaram Panikar 2007, Text Book of Medical parasitology, 6th Edition, Jaypee Brothers Medical Publishers (p) Ltd. EMCA House, 22/23B Ansari Road Danyaganj.
4. Sanyal & Battacharya 2011, Clinical Pathology, A Practical Manual, 2nd Edition Elsevier, a division of Reed Elsevier. India private Ltd.
5. Harsh Mohan 2010, Clinical Pathology, 6th Edition, Jitinder P Vij, Jaypee Brothers Medical Publishers (p) Ltd. EMCA House, 22/23B Ansari Road Danyaganj.

**Syllabus for Siddha Maruthuva Arignar (BSMS)
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3rd Professional BSMS**

SATTAM SARNTHA MARUTHUVAMUM NANJU MARUTHUVAMUM

(Forensic Medicine and Toxicology)

Total Hours : 150

SATTAM SARNTHA MARUTHUVAM (Forensic Medicine)

1) Introduction :- (Page No: 21-49, Ref.Book- S.No.1 , 3hours)

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

2) Medical Law and Ethics: (Page No: 29,32,35,49,53,- Ref.Book-S.No.3 , Page No.45- S.no: 4 , 3hours)

Duties of Medical Practitioners-Professional Secrecy-Professional Negligency -Mercy killing-Organ Transplantation.

3) Identity :- (Page No: 50-110, Ref.Book- S. No.1 , 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 – age determination from teeth and bones – general development and stature -complexion features of individuality – hair- external peculiarities-scars –Moles- malformation-Tattoomarks – Anthropometry – Dactylography – poroscopy-occupational marks.

4) Medico legal Autopsy :- (Page No: 113-134, 163-164- Ref.Book- S. No.1 , 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 :- (Page No 130-145, Ref.Book- S No.3 , 3hours)

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

6) Post-mortem Changes :- (Page No: 146, 170, Ref.Book- S. No.3 , 147-162- Ref.Book- S. No.1 , 3hours)

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

7) Asphyxia :- (Page No.165-207 - Ref.Book- S. No.1 , 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 of 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 confirm the cause of death — first aid – smothering –Suffocation- medico legal aspects – choking – traumatic asphyxias – autopsy findings.

8) Wounds and classification :- (Page No: 208--283, Ref.Book- S. No.1 , 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.

9) Sexual offences : (Page No: 392-416- Ref.Book- S.No.3, 6 hours)

Classifications-Rape-Incest – procedure for examination of the accused and victim – Findings of the examination – Important point to be noted in accused and victim – 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 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: (Page No: 364-370- Ref.Book- S.No.3, 4 hours)

Impotence and Sterility- Sterilization-Artificial Insemination-Surrogate Motherhood.

11) Virginity :- (Page No: 371-373- Ref. Book- S.No.3 and Page No.399- S. no: 4 , 2 hours)

Anatomy of Female genitalia – Hymen – Causes for the Rupture of hymen – Medical legal importance.

12) Pregnancy :- (Page No: 327-347, Ref. Book- S. No.1 and Page No: 378- Ref. Book- S.No.3, 3 hours)

Fertilization — Confirmatory findings for pregnancy – Presumptive signs – Probable signs – Positive signs – Biological Tests-Medico legal Importance-Legitimacy and Paternity.

13) Delivery :- (Page No: 379-380- Ref. Book- S.No.3, 3hours)

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

14) Abortion :- (Page No: 381-391- Ref. Book- S.No.3, 3 hours)

Definition – Natural abortion –Cause of Abortion-Artificial Abortion- Justifiable abortion – Abortion on the basis of health condition – Rules to be followed by the physician – Procedures – Criminal abortion – complications – Cause of death.

15) Infanticide :- (Page No: 417-427- Ref. Book- S.No.3, 3 hours)

Infanticide & its criminal proceedings – Still born babies – 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 :- (Page No: 394-411, Ref. Book- S. No.1 , 5 hours)

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

17) Death from Lightning, Electricity, Hot & Cold :- (Page No: 412-422, Ref. Book- S. No.1 , 6hours)

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 :- (Page No: 320-321- Ref. Book- S.No.3, 3 hours)

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

19) Forensic Psychiatry :- (Page No: 457-472- Ref. Book- S.No.3, 8 hours)

Insanity – Delirium – Delusion – Medico legal aspects – Hallucination – illusion –Lucid interval– impulse – obsession – Phobia- idiocy – Mental Subnormality-Diagnose insanity- Imbecility – feeblemindedness – 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.

NANJU MARUTHUVAM (TOXICOLOGY)

Section: 1 Introduction (Page No: 473-493- Ref. Book- S.No.3, 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.

Section: 2 Corrosive poisons (Acids strong alkalis) (Page No: 525-529- Ref.Book- S.No.1 and Page No: 505-508,528,529 Ref.Book- S.No.3, **3 hours**)

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

Organic Acids: Carbolic Acid-Oxalic acid.

Strong Alkalis: Sodium, Potassium, Ammonium Hydroxides and Carbonates

Section: 3 Irritant Poisons

I. Agricultural poisons: Organo Phosphorous- Organo Chlorine- Carbamates. (Page No: 494-498,500- Ref.Book- S.No.3, **2 hours**)

II. Inorganic Irritant Poisons: (Page No: 510-520- Ref.Book- S.No.3 and Page No.611--612, S.No.1 **4hours**)

Metals: Arsenic Compounds-Antimony-Lead-copper-Mercury compounds-Zinc

Non Metals: Phosphorous--Sulphur-Mica.(PageNo.530-32 -S.No.1 and Page No.27,35-S.No.2 **2 hours**)

Mechanical Irritants: Glass powder-Diamond powder-Animal and vegetable Hairs. (PageNo.612 -S.No.1, **2 hours**)

III. Inorganic Irritant Poisons: (Page No: 524-528- Ref.Book- S.No.3 and Page No.46-63, S.No.2 **10 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: (Page No: 639-664- Ref.Book- S.No.1 - Page No.74-134, S.No.2-Page No.528-536-S.No.3 **3 hours**)

Ants-Scorpion-Wasps-Spider-Snakes- Centlipedes-Bees-Rats-Onan-Lizards-Leech-Frog-Dog-Cat-Monkey-Horse-Fox-Unknown bite-Crocodile-Beetle-Pig-Animal bites treated with palagarai parpam.

Section: 4 Systemic Poisons

I. Neurotic or Cerebral Poisons:

Inebriant and CNS depressants: Opium-Morphine - Pethidine- Alcohol-Ethyl ,Methyl Alcohol- Toddy-Country Arrack. (page no.580-85,615-17,630-39–S.No.1 and page No.59-S.No.2, 4 hours)

CNS Stimulants: Amphetamine. (Page No: 562- Ref.Book- S.No.3, 1hour)

Deliriants: Datura fastuosa- Cannabis sativa--Cocaine. (Page No: 566-571- Ref.Book- S.No.3 and Page No.58-60, S.No.2, **2 hours**)

Spinal Poison: Strychnosnux vomica. (Page No: 585-590- Ref.Book- S.No.1 - Page No.59-S.No.2, 1 hour)

II. Cardiac Poisons: - (Page No: 583-587- Ref.Book- S.No.3 and Page No.57,58,60-62, S.No.2 (**3hours**)

Nerium odorum – Cerbera thevitea- Aconitum ferox – Nicotiana tobaccum- Cleistanthus collinus- Digitalis Purprea. (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: (Page No: 588-594- Ref.Book- S.No.3 , **3hours**) Carbon

Monoxide-Carbon Dioxide-Hydrogen Sulphide and War Gases.

Section: 5 Food Poisonings and Poisonous Foods (Page No: 603-608- Ref.Book- S.No.3 and Page No.46-63, S.No.2 , **11 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.

Section: 6 Drug Dependence (Page No: 572-574- Ref.Book- S.No.3 , **3 hours**)

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

Section: 7 House hold Poisons (Page No: 475- Ref.Book- S.No.3 and Page No.599-602, S.No.1, **2hours**)

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

Practicals

Total Hours : 100

Topics:

Spotters: Toxic Plants-Toxic Metals and Minerals-Toxic Animals and household poison.
(Practical work - 18 hours).

Microscope Findings: Stains, Animal and Human Hairs, Semen, Blood, Fibers etc. (Practical work - 9 hours).

Photos: Injury Cases, Burning, Drowning, Hanging, Strangulation.(Practical work -19 hours)

Weapons: Knife, Stone, Ligature, Stick, Blunt and Sharp edged weapons, Fire arms (Practical work - 14 hours).

Certificates: Medical Certificate, Physical Fitness, Wound Certificate, Age Certificate, Drunkenness, Death certificate.(Practical work - 20 hours).

Instruments: stomach wash tube and Ryles tube

(Practical work - 5 hours)

Examinations: Bones, X rays, Dental.

(Practical work - 15 hours)

Text Books:

3. Sattam Saarntha Maruthuvamum Nanju Maruthuvamum, Second Edition 1999, P.A. Muhammed Iqbal, MD (Siddha), Published by Department of Indian Medicine and Homeopathy, Chennai 106,
4. Nanju Murivu Nool, Third Edition, 1998, K.S. Murukesa Mudaliyar, Published by Department of Indian Medicine and Homeopathy, Chennai 106,
5. Dr.K.S.Narayan Reddy, 2013-The Essentials of Forensic Medicine and Toxicology, 32nd Edition, Published by K.Suguna devi, H.No.16-11-15/2/2, Saleem nagar colony, No.1 malakpet, Hyderabad-36.
6. Dr. Apurba Nandy, 2013-Nandys's Hand Book of Forensic Medicine and Toxicology, 1st published, New Central Book Agency (P)Ltd., 8/1,Chintamoni Das lane, Kolkota-9.

Reference Books:

1. C.A.Franklin, 1988-Modi's Text Book of Medical Jurisprudence and Toxicology 21st Edition.
2. Dr.K.M.Natkarni.1993- Materia Medica vol-I and II, 3rd Edition, K.M.Popular Prakashan PVT Ltd, Bombay.
3. Vishavaidhya Arooda Noolkal, First edition, 2000, Thamarai Noolakam, Chennai 26
4. Sarabendra Vaidhya Muraikal, Visha Roga Chikitchai, Fifth edition 2005, Dr.S. Venkata Rajan, Saraswathy Mahal Library, Thanjavur
5. Visha Vaidhya Chintamani, Sirumanavoor Munisamy Mudhaliyar, 1995, B.R. Balakrishnan Nayakar, Chennai- 79
6. Theran Yamaka Venba , Second edition, 1973, Dr.P.A. Muhamed Abdullah Sahib
7. Gunapadam, Thatthu Jeevam, Fourth Edition, 1992, Dr. R. Thyagarajan, Published by Department of Indian Medicine and Homeopathy, Chennai 106

**Syllabus for Siddha Maruthuva Arignar (BSMS)
Course (2013 SCHEME)
3rd Professional BSMS**

**NOI ANUGAVITHI OZHUKKAM Total Hours : 100
(HYGIENE AND COMMUNITY MEDICINE INCLUDING NATIONAL HEALTH POLICIES)**

CHAPTER – 1 (Hour - 1)

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

CHAPTER – 1 (A) (Hour - 1)

The ways to lead a disease free life as said by ancient siddhar Theriyar

CHAPTER – 2 (Hour - 2)

The five Geographical Classifications - description and occurrence of diseases

CHAPTER – 3 (Hours - 2)

Ancient town planning – modern town planning

CHAPTER – 4 (Hours - 3)

Industries – occupational diseases and its preventions – Occupational hazards.

CHAPTER – 5 (Hours - 4)

Oorthooimai – waste management – Excreta disposal – modern sewage treatment and other methods of sewage disposal. Recycling Methods

CHAPTER -6 (Hours - 2)

Modern house and vaasthu, Modern Construction Techniques which prevent natural calamities.

CHAPTER – 7 (Hour - 1)

Burial and Cremation.

CHAPTER – 8 (Hours - 4)

Seasons (Perumpozhuthu, Sirupozhuthu) – Principles to be followed in the above seasons and the specific food.

Imporikal Kappu, Seasonal Food habits, Uthrayanam, Thachayanam, Uttama, Mathima, Athama Kaala Ozhukam.

CHAPTER – 9 (Hours - 5)

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 Values

Waterfalls, Pond water and Well water – types and therapeutic Values

Nandu Kuzhi neer, Naaval mara neer, Karunkalli neer, Vaazhai neer, Ella neer – types and therapeutic Values.

CHAPTER – 10 (Hours - 3)

Neruppu (or) thee – Atmospheric temperature – Effects of heat stress – Effects of cold stress – Preventive measures of global warming – humidity

CHAPTER – 11 (Hours - 5)

Air pollution – Health aspects, Prevention and control, ventilation – Types, Effects of different types of fumes

CHAPTER – 12 (Hours - 2)

Noise – effects of noise pollution and its control.

CHAPTER – 13 (Hours - 3)

Habits – Personal hygiene and daily routines– Costumes – gems and pearls –. Pancha Karpam

CHAPTER – 14 (Hours - 4)

Food – Six tastes – Three types of food – Toxicity – Adulteration – Food borne diseases – Prevention and control – Food standards- Food Digestion time, Patiyam, Selection of food based on uyir thathukal. Junk foods and health hazards.

CHAPTER – 15 (Hours - 2)

Beverages – Drinking water- Effects of water depending on the utensils – fruit juices - Neerakaram, Kaadi neer.

CHAPTER – 16 (Hours - 2)

Uses of Betel leaf and nut. Ill effects of Tobacco products

CHAPTER – 17 (Hours - 2)

Rest and sleep – Types of bed

CHAPTER – 18 (Hours - 4)

Nutritious and balanced diet – Role of fibers, cereals, vegetables – Greens – fruits – animal proteins – fish – birds – pickles etc. – Diseases – Thritoda sama porulgal –, Nutritional Disorders and public health

CHAPTER – 19 (Hour -3)

Serving procedures – types of vessels and their effect on food preparation.

CHAPTER – 20 (Hours - 14)

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 diarrheal diseases – Typhoid – Food poisoning – Amoebiasis – Ascariasis – Hook worm infestation etc

Vector borne infection:

Causes, Symptoms, Prevention and Control of; Dengue – Malaria – Filariasis – Chi-gun-gunia, Lepto Spirosis, SARS.

Surface infection:

Causes, Symptoms, Prevention and Control of; Trachoma – Tetanus - Leprosy – STD – AIDS/ HIV.

CHAPTER – 21 (Hours - 12)

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.

CHAPTER – 22 (Hours - 5)

Mental Health – Counseling and eradication of social stigma.

CHAPTER – 23 (Hours - 5)

Siddha concept of preventive measures – immunology and personnel hygiene.

Vaccination & Immunization Schedule

CHAPTER – 24 (Hours - 5)

Hospital Acquired Infections, Preventive methods.

CHAPTER – 25 (Hours - 4)

Hospital & Bio Medical Waste – Types and Disposal management.

Text Books:

- 1) Noi illa neri by Dr. Durairajan, H.P.I.M., Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
- 2) Park's Textbook of Preventive and Social Medicine by K. Park, 21st Edition, Banarsidas Bhanot Publishers

Reference books:

- 1) Pathartha Guna Chintamani – Published by Ratna nayakar & Sons, Chennai 1932.
- 2) Agathiyar Gunavagadam
- 3) Siddha Maruthuvanga Surukkam – Dr. C. S. Uthamarayan – H.P.I.M., Department of Indian Medicine & Homoeopathy, Chennai, Govt. of Tamil Nadu.
- 4) A Treatise on Hygiene and Public Health by Birendra Nath Ghosh, Scientific Publishing Company, 1953.

Syllabus for Siddha Maruthuva Arignar (BSMS) Course (2103 SCHEME)
3rd Professional BSMS

RESEARCH METHODOLOGY AND MEDICAL STATISTICS

Total Hours : 100

1. Research Methodology [10 hrs]

i) Introduction

- ☐ Objectives of research
- ☐ Types of research
- ☐ Research methods
- ☐ Research process (Sources of data and data collection, Developing hypothesis and formulating research question, Extensive research survey, Preparing research design, Determining sample design, Execution of project, Analysis of data, Hypothesis testing, Generalisation and interpretation, Preparation of the report or the thesis)
- ☐ Problems encountered by researchers in India.

ii) Areas of Research Interest in Siddha [5 hrs]

- ☐ Alavaigal and its interpretation with contemporary research
- ☐ Literary research / Fundamental research (especially Siddha research methodologies)
- ☐ Product/Drug/Pharmaceutical research
- ☐ Epidemiological/Clinical research.
- ☐ SWOT(Strength, Weakness, Opportunity & Threat)

2. Literary Review [5 hrs]

- ☐ Reviewing in research / Search for research Hypothesis/ Historical evidences / published papers

3. Protocol [5 hrs]

- ☐ Designing a Protocol
- ☐ Various Templates in Protocol

4. Epidemiological studies and its application in clinical research [10 hrs]

- ☐ **Observational studies:**
 - i) Descriptive studies
 - ii) Analytical studies: Ecological, Cross sectional, Case-control (Retrospective) and Cohort study (Prospective, Retrospective and Combined)
- ☐ **Experimental studies:**
 - i) Randomization (Randomized Controlled Trial and its varieties & Non randomized trial and its varieties)
 - ii) Blinding

5. Pre-clinical studies [10 hrs]

- ☐ Traditional methods to identify the quality of raw materials and preparations
 - ☐ Authentication and Standardization of Siddha drugs
 - ☐ Pharmacological screening for Safety and efficacy (in vivo and in vitro)
 - ☐ Nanotechnology.
- (Ref: Protocol for testing by PLIM/ OECD Guidelines / GMP Guidelines)

6. Pre requisite for clinical study [5 hrs]

- ☐ Investigational pharmaceutical product
- ☐ Pre- clinical supporting data & pilot study etc.
- ☐ Research Protocol (Relevant components of protocol)
- ☐ Case Report Form (CRF)
- ☐ Informed consent process
- ☐ Interim review.

7. Ethical guidelines [10 hrs]

- ☐ Ethical and safety considerations (Ethics committee)
- ☐ Composition
- ☐ Submission of application
- ☐ IEC approval

8. Clinical trial designs and AYUSH GCP [15 hrs]

- ☐ Clinical research /trial – introduction
- ☐ AYUSH GCP guidelines
- ☐ Types of clinical trials
- ☐ Phases of clinical trial

- ❑ Data collection, Processing, and Data analysis
- ❑ Interpretation-Reporting method of clinical trial
- ❑ Clinical data management (CDM)
- ❑ Responsibilities of Sponsor, Monitor and Investigator
- ❑ Clinical Trial Registry of India –CTRI

9. Bio- Statistics [15 hrs]

- ❑ Introduction
- ❑ Measures of Central Tendency and Dispersion
- ❑ Normal distribution
- ❑ Sampling-Probability- Sampling variability
- ❑ Tests of significance- difference in means - difference in proportions of large samples -Chi-square test, t-test
- ❑ Demography and vital statistics
- ❑ Dataanalysis& Interpretation of results
- ❑ Tabulation- Diagrams (Bar charts, Histogram, Pie charts, Pictogram)- Statistical maps- Sources and presentation of data- Statistical averages
- ❑ Scientific writing.
- ❑ Hospital information Systems and hospital management system.
- ❑ Qualitative and quantitative data
- ❑ Statistical Analysis of SPSS, Epi info and Epi data

10. Pharmacovigilance [5 hrs]

- ❑ Introduction&importance
- ❑ Siddhaliterature and Pharmaco vigilance
- ❑ Difficulties in Pharmacovigilance (Re challenging & dechallenging)
- ❑ Adverse Drug reactions- Regulations
- ❑ Identification of ADR- Prevention of ADR.

11. Intellectual Property Right (IPR),TKDL [5 hrs]

12. Glossary of selected terms in research methodology and statistics.

Text Books:

1. Introduction to Biostatistics and Research Methods - P. S. S. Sundar Rao, J. Richard
2. Biostatistics, Principles and Practices, Antonisamy.B et al, Tata Mcgrawhill Education Private Limited, New Delhi,2010

Sources for Reference:

1. Good Clinical Practices published by CDSCO, GoI. (<http://rgcb.res.in/wp-content/uploads/2014/07/Good-Clinical-Practice-Guideline.pdf>)
2. Becoming a Successful Clinical Trial Investigator by Dr.P.K. Julka DNA Press 2nd Edn. 2009.
3. ETHICAL GUIDELINES FOR BIOMEDICAL RESEARCH ON HUMAN PARTICIPANTS by Indian Council for Medical Research, New Delhi on (http://icmr.nic.in/ethical_guidelines.pdf)
4. 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 (<http://indianmedicine.nic.in/writereaddata/linkimages/5110899178-Final%20Book%2028-03-13.pdf>)
5. Handbook for good clinical research practice (GCP): Guidance for implementation World Health Organization 2002 (http://apps.who.int/prequal/info_general/documents/GCP/gcp1.pdf)