

**MD/MS AYU FINAL YEAR EXAMINATION TO BE HELD IN YEAR NOV/DEC 2023,  
2024, 2025**

**MD/MS AYU FINAL YEAR SYLLABUS: DURATION 2 YEAR**

S. No.	Subjects	Paper/ Part	Theory		Practical Hrs		Total	
			Marks	Hrs	Marks	Hrs	Marks	Hrs
1	KRIYA SHARIR	4 – I,II,III,IV	400	--	100	--	500	--
2	KAYACHIKITSA	4 – I,II,III,IV	400	--	100	--	500	--
3	SHALYA TANTRA- SAMANYA	4 – I,II,III,IV	400	--	100	--	500	--

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**MD/MS (Ayd) Course-Final Year**

**Subject: KRIYA SHARIR**

**Subject code: 2-MD/MS (AYD)-2001**

1.	Course No	MD/MS (Ayd) 1st year	6.	Theory marks	400
2.	Subject Code	2001	7.	Paper I	100
				Paper II	100
				Paper III	100
				Paper IV	100
3.	Course title	Kriya Sharir	8.	Practical marks	100
4.	Category	Compulsory	9.	Total Marks	500
5.	Examination Duration	3 Hrs for each Paper			

3. KRIYA SHARIR

**Paper- I (Dosa-Dhātu-Mala Vijñāna)**

Contribution of different Ayurveda Samhita in Kriya Sharir

- Theory of Pancamahābhūta
- Principle of Loka-Purusa Sāmāya
- Importance of Sāmānya - Viśesa principle.
- Different views on the composition of Purusa and the importance of Cikitsya Purusa.
- Importance of Gurvādi Guna in Ayurveda.
- General description of Tridosa theory
- Mutual relationship between Triguna-Tridosa-Pancamahābhūta-Indriya.
- Mutual relationship between Rtu-Dosa-Rasa-Guna.
- Biological rhythms of Tridosa on the basis of Day-Night-Age-Season and Food intake.
- Role of Dosa in the formation of Prakrti of an individual.
- Role of Dosa in maintaining health.
- **Vāta Dosa:** General locations (Sthāna), general attributes (Guna) and general functions (Sāmānya Karma). Five subdivisions of Vāta with their specific locations, specific properties, and specific functions (Prāna, Udāna, Samāna, Vyāna, Apāna)
- **Pitta Dosa:** General locations (Sthāna), general attributes (Guna) and general functions (Sāmānya Karma). Five subdivisions of Pitta with their specific locations, specific properties, and specific functions (Pācaka, Ranjaka, Ālocaka, Bhrājaka, Sādhaka). Similarities and differences between Agni and Pitta.
- **Kapha Dosa:** General locations (Sthāna), general attributes (Guna) and general functions (Karma) of Kapha. Five subdivisions of Kapha with their specific locations, specific properties, and specific functions (Bodhaka, Avalambaka, Kledaka, Tarpaka, Ślesaka).
- Applied physiology of Tridosa principle: Kriyākāla, Dosa Vrddhi-Dosa Ksaya.
- **Dhātu Posana:** Process of nourishment of Dhātu. Description of various theories of Dhātu Posana (Ksira-Dadhi, Kedāri-Kulya, Khale Kapota etc).
- **Dhātu:** General introduction and definition of Dhātu. Formation, Definition (Nirukti), Distribution, Attributes, quantity, classification, Pāñcabhautika composition and Functions of all seven Dhātus in detail: Rasa, Rakta, Mamsa, Meda, Asthi, Majjā, Śukra.
- Applied physiology of Dhātu: Manifestations of Ksaya and Vriddhi of each Dhātu. Description of Dhātu Pradosaja Vikāra.
- Description of Āśraya and Āśrayī kind of relationship between Dosa and Dhātu.
- Description of the characteristic features of Astavidha Sāra. Description of Rasavaha, Raktavaha, Mamsavaha, Medovaha, Asthivaha, Majjavaha and Śukravaha Srotāsi.
- **Ojas:** Definition, locations, synonyms, Formation, Distribution, Properties, Quantity, Classification and Functions of Ojas. Description of Vyādhiksamitva. Bala Vrddhikara Bhāva. Classification of Bala. Relation between Ślesmā, Bala and Ojas.
- Applied physiology of Ojas: Etiological factors and manifestations of Ojaksaya, Visramsā and Vyāpat. Physiological and clinical significance of Ojas.
- **Upadhātu:** General introduction and Definition of the term 'Upadhātu'. Formation, Nourishment, Quantity, Properties, Distribution and functions of each Upadhātu.
- **Stanya:** Characteristic features and methods of assessing Śuddha and Dūsita Stanya, Manifestations of Vrddhi and Ksaya of Stanya.

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- **Ārtava:** Characteristic features of Śuddha and Dūsita Ārtava. Differences between Raja and Ārtava, physiology of Ārtavavaha Srotāmsi.
- Study of Tvak
- Physiology of Mala - Definition of the term 'Mala'. Definition, Formation, Properties, Quantity and Functions of Purīsa, Mutra. Manifestations of Vrddhi and Kshaya of Purīsa and Mūtra.
- Sveda – Definition, Formation, Properties, Quantity and Functions of Svedavaha Srotāmsi. Formation of Sveda. Manifestations of Vrddhi and Kshaya of Sveda.
- **Dhātumala** – Definition, Formation, properties, Quantity, Classification and Functions of each Dhātumala .

**Paper-II - Prakrti- Sattva Vijñāna**

- Deha-Prakrti: Various definitions and synonyms for the term 'Prakrti'. Factors influencing the Prakrti. Classification of Deha-Prakrti. Characteristic features of the individuals belonging to each kind of Deha-Prakrti. Recent advances in understanding the Prakrti.
- Pancajnanendriya: Physiological description of Pancajnanendriya and physiology of perception of Śabda, Sparśa, Rūpa, Rasa, Gandha. Indriya-panca-pancaka; Physiological description of Karmendriya.
- Manas – Definition, location (sthana), Properties, Functions and Objects of Manas.
- **Ātmā** – Definition, Properties of Ātmā. Difference between Paramātmā and Jīvātmā; Characteristic features of Ātmā.
- Buddhi – Location, Types, Functions of Buddhi; Physiology of Dhī, Dhrti and Smrti.
- **Nidrā** – Definition of Nidrā, Classification of Nidrā. Tandra, physiological and clinical significance of Nidra; Svapnotpatti and Svapnabheda.
- Physiology of special senses. Intelligence, Memory, Learning and Motivation.
- Physiology of sleep.
- Physiology of speech and articulation;
- Physiology of Pain and temperature.

**Paper-III - Kosthanga Kriya Vijñāna**

- Āhāra: Definition and significance of Āhāra. Classification of Āhāra. Āhāra-vidhi-vidhāna. Asta āhāra-vidhi viśeṣāyatana, Āhāraparināmakara bhāva.
- Āhārapāchana: Āhāra Pāka Prakriyā, Description of Annavaha Srotās. Description of Avasthāpāka and Nishthapāka. Role of doṣha in Āhārapāka. Sāra and Kitta Vibhajana. Absorption of Sāra. Utpatti and Udieeran of Vāta-Pitta-Kapha.
- Definition of the term Kostha. Physiological classification of Kostha and the characteristics of each kind of Kostha.
- Agni: Description of the importance of Agni. Classification of Agni. Locations, properties and functions of Jātharāgni, Bhūtāgni, and Dhātvaṅni.
- Applied physiology of Agni in Kriyā Śārīra and Cikitsā.
- Description of the aetiology and features of Annavaha Srotodusti. Applied physiology of Annavaha Srotās: Arocaka, Ajīrna, Atisāra, Grahānī, Chardi, Parināma Śūla Agnimāndya.
- Description of the process of digestion of fats, carbohydrates and proteins in human gastrointestinal tract. Different digestive juices, their enzymes and their mechanisms of action. Functions of Salivary glands, Stomach, Pancreas, Small intestine, Liver and large intestine in the process of digestion and absorption.

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- Movements of the gut (deglutition, peristalsis, defecation etc.) and their control. Role of neuro-endocrine mechanisms in the process of digestion and absorption. Enteric nervous system.
- Applied physiology of gastrointestinal tract: Vomiting, Diarrhoea, Malabsorption etc.
- Recent understandings related to the gut microbiota and their role in health and disease.
- Introduction to biochemical structure, properties and classification of proteins, fats and carbohydrates.
- Description of the processes involved in the metabolism of proteins, fats and carbohydrates.
- Vitamins: sources, daily requirement and functions. Physiological basis of signs and symptoms of hypo and hyper-vitaminosis.

**Paper-IV - Modern Physiology and its applied aspect**

**Physiology of Neuro-Immune-Endocrine Mechanisms:**

- Physiology of Nervous System. General introduction to nervous system: neurons, mechanism of propagation of nerve impulse.
- Study of CNS, PNS and ANS. Sensory and motor functions of nervous system. Functions of different parts of brain and spinal cord, Hypothalamus and limbic system
- Physiology of Endocrine system. Classification and characteristics of different hormones. Description of hormones secreted by Hypothalamus, Pituitary gland, Thyroid gland, Parathyroid glands, Pancreas, Adrenal glands and their physiological effects. Effects of hypo and hyper-secretion of various hormones.
- Male and female reproductive physiology. Spermatogenesis and oogenesis. Hormonal regulation of uterine and ovarian cycles. Physiology of pregnancy and lactation. Parturition.
- Adipose tissue and its Function. Circulating lipids. Description of lipoproteins like VLDL, LDL and HDL and their composition.
- Physiology of immune system. Definition and classification of immunity: Innate, acquired and artificial. Mechanisms involved in humoral and cell mediated immunity.

**Cardiovascular physiology, Respiratory physiology and Blood:**

- Physiology of Cardio-Vascular system: Functional anatomy of cardiovascular system. Cardiac cycle. Heart sounds. Regulation of cardiac output and venous return. Physiological basis of ECG. Heart-rate and its regulation. Arterial pulse. Systemic arterial blood pressure and its control. Regional circulations. Physiology of lymphatic circulation.
- Physiology of Respiratory system: Functional anatomy of respiratory system. Ventilation. Mechanism of respiration. Exchange and transportation of gases. Neural and chemical control of respiration. Spirometry and lung function tests. Artificial respiration.
- Functions of Haemopoetic system: Composition and functions of blood and blood cells. Haemopoiesis- (stages and development of RBCs, WBCs and platelets); Introduction to bone marrow: composition and functions of bone marrow. Structure and functions of haemoglobin, mechanism of blood clotting, study of platelets. physiological basis of blood groups. Principles of blood transfusion, plasma proteins-synthesis and functions. Applied physiology: Anaemia, Jaundice.

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**Musculoskeletal Physiology:**

- Physiology of muscles. Classification of muscles. Electrical and mechanical properties of Cardiac, skeletal and smooth muscles.

**Physiology of Excretion:**

- Physiology of excretion. Functional anatomy of urinary tract. Functions of kidneys. Mechanism of formation of urine. Control of micturition. Renal function tests.
- Structure and functions of skin, sweat glands and sebaceous glands.

Learners should be well versed with the following instruments-

- Physiograph, Computerised spirometry, Biochemical Analyzer, Pulse oxymeter, Elisa Reader, Hematology Analyzer, Tread mill

Bridge areas including recent advances:

- Recent studies in biorhythms.
- Recent advances in Neuro-Immune-Endocrine physiology.
- Recent advances in stem cell research

**PRACTICAL**

**Ayurvedic practicals**

- Assessment of Prakrti
- Assessment of Sāra
- Assessment of Dosa Vrddhi Ksaya Laksana
- Assessment of Dhātu Vrddhi – Ksaya Laksana
- Assessment of Agni
- Assessment of Kostha
- Assessment of Śarīra Bala through Vyāyāma Śakti
- Mūtra Parīksa
- Nāḍī Parīksā
- Anguli Pramāna
- Assessment of Sātmya

**Hematology**

- Use and care of Compound microscope
- Histological study of different organs
- Hemoglobin estimation
- Total RBC count
- Total WBC count
- Differential leukocyte count
- Packed cell volume (PCV)
- ESR
- Bleeding time
- Clotting time
- Blood grouping and Rh typing

**Urine examination**

**Physical examination**

- Specific gravity and reaction of urine
- Detecting the presence of Albumin in urine

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- Detecting the presence of Sugar in urine
- Detecting the presence of Ketone bodies in urine
- Detecting the presence of Bile salts and bile pigments in urine

**Cardio-Vascular system**

- Clinical methods of examining cardiovascular system
- Examination of Arterial Pulse
- Arterial blood pressure measurement: Effect of posture, exercise and cold pressor test on Blood Pressure
- ECG recording and its interpretation
- Heart Sounds

**Respiratory system**

- Clinical examination of Respiratory System
- Lung Function Tests including Spirometry

**Nervous System**

- Clinical examination of nervous system
- Examination of higher mental functions
- Examination of cranial nerves
- Examination of reflexes
- Examination of sensory functions
- Examination of motor functions
- Examination of Autonomic Nervous System
- EEG recording (Demonstration)

**Reference Books**

- |  |                               |
|--|-------------------------------|
| • Ayurvediya Kriyasharir               | - Ranjit rai Desai            |
| • Kayachikitsa Parichaya               | - C. Dwarikanath              |
| • Prakrit Agni Vigyan                  | - C. Dwarikanath              |
| • Sharir Kriya Vigyan                  | - Shiv Charan Dhyani          |
| • Abhinava Sharir Kriya Vigyana        | - Acharya Priyavrata Sharma   |
| • Doshha Dhatu Mala Vigyana            | - Shankar Gangadhar Vaidya    |
| • Prakrita Doshha Vigyana              | - Acharya Niranjana Dev       |
| • Tridosha Vigyana                     | - Shri Upendranath Das        |
| • Sharira Tatva Darshana               | - Hirlekar Shastri            |
| • Prakrita Agni Vigyana                | - Niranjana Dev               |
| • Deha Dhatvagni Vigyana               | - Vd. Pt. Haridatt Shastri    |
| • Sharir Kriya Vigyana (Part 1-2)      | - Acharya Purnchandra Jain    |
| • Sharir Kriya Vigyana                 | - Shri Moreswar Dutt. Vd.     |
| • Sharira Kriya Vijnana (Part 1 and 2) | - Nandini Dhargalkar          |
| • Doshha Dhatu Mala Vigyana            | - Basant Kumar Shrimal        |
| • Abhinava Sharir Kriya Vigyana        | - Dr. Shiv Kumar Gaur         |
| • Pragyogik Kriya Sharir               | - Acharya P.C. Jain           |
| • Kaya Chikitsa Parichaya              | - Dr. C. Dwarkanath           |
| • Concept of Agni                      | - Vd. Bhagwan Das             |
| • Purush Vichaya                       | - Acharya V.J. Thakar         |
| • Kriya Sharir                         | - Prof. Yogesh Chandra Mishra |

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- Sharir Kriya Vigyana - Prof. Jayaram Yadav & Dr. Sunil Verma.
- Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) - Dr. Srikant Kumar Panda
- Sharir Kriya – Part I & Part II – Dr. Ranade, Dr. Deshpande & Dr. Chobhe
- Human Physiology in Ayurveda - Dr Kishor Patwardhan
- Sharirkriya Vignyan Practical Hand Book – Dr. Ranade, Dr. Chobhe, Dr. Deshpande
- Sharir Kriya Part 1 – Dr. R.R. Deshpande, Dr. Wavhal
- Sharir Kriya Part 2 – Dr. R.R. Deshpande, Dr. Wavhal
- Textbook of Physiology - Gyton & Hall
- Review of medical physiology – William Ganong
- Essentials Of Medical Physiology - Sembulingam, K.
- Concise Medical Physiology - Chaudhari, Sujit. K.
- Fundamental of Anatomy & Physiology - Martini
- Principals of Anatomy & Physiology - Tortora & Grabowski
- Human Physiology - Richards, Pocock
- Samson Wrights Applied Physiology, Keele, Neil, joels
- Brainstem Control of Wakefulness And Sleep- Steriade, Mirce
- An Introduction to Human Physiology - Green, J.h.
- Ancient Indian Medicine - Kutumbiah P.
- Biographical History of Indian Medicine - Srikanthamurthy KR
- Ayurveda Kriya Sharira - Yogesh Chandra Mishra
- Textbook of Medical Physiology - Indu Khurana
- Tridosha Theory - Subrahmanya Shastri
- Statistics in Medicine - K. Syamalan

Important journals to refer:

1. Advances in Physiology Education
2. Academic Medicine
3. Indian journal of Physiology and Pharmacology
4. Journal of Ayurveda and Integrative Medicine
5. Evidence-based Complementary and Alternative Medicine
6. AYU
7. All journals of American Physiological Society
8. Journal of Physiology

Important research papers to refer:

1. Hong KW, Oh B. Overview of personalized medicine in the disease genomic era. BMB Rep. 2010 Oct;43(10):643-8.
2. Prasher B, Negi S, Aggarwal S, Mandal AK, Sethi TP, Deshmukh SR, Purohit SG, Sengupta S, Khanna S, Mohammad F, Garg G, Brahmachari SK; Indian Genome Variation Consortium, Mukerji M. Whole genome expression and biochemical correlates of extreme constitutional types defined in Ayurveda. J Transl Med. 2008 Sep 9;6:48.
3. Patwardhan B, Bodeker G. Ayurvedic genomics: establishing a genetic basis for mind-body typologies. J Altern Complement Med. 2008 Jun;14(5):571-6. Review. PubMed PMID: 18564959.

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4. Bhushan P, Kalpana J, Arvind C. Classification of human population based on HLA gene polymorphism and the concept of Prakriti in Ayurveda. *J Altern Complement Med.* 2005 Apr;11(2):349-53.
5. Ghodke Y, Joshi K, Patwardhan B. Traditional Medicine to Modern Pharmacogenomics: Ayurveda Prakriti Type and CYP2C19 Gene Polymorphism Associated with the Metabolic Variability. *Evid Based Complement Alternat Med.* 2009 Dec 16. [Epub ahead of print]
6. Aggarwal S, Negi S, Jha P, Singh PK, Stobdan T, Pasha MA, Ghosh S, Agrawal A; Indian Genome Variation Consortium, Prasher B, Mukerji M. EGLN1 involvement in high-altitude adaptation revealed through genetic analysis of extreme constitution types defined in Ayurveda. *Proc Natl Acad Sci U S A.* 2010 Nov 2;107(44):18961-6. Epub 2010 Oct 18.
7. Tav Pritesh Sethi, Bhavana Prasher and Mitali Mukerji. Ayurgenomics: A New Way of Threading Molecular Variability for Stratified Medicine. *ACS Chemical Biology.* 2011(6):875-880
8. Marchetti B, Morale MC, Gallo F, Batticane N, Farinella Z, Cioni M. Neuroendocrineimmunology (NEI) at the turn of the century: towards a molecular understanding of basic mechanisms and implications for reproductive physiopathology. *Endocrine.* 1995 Dec;3(12):845-61.
9. Licinio J, Frost P. The neuroimmune-endocrine axis: pathophysiological implications for the central nervous system cytokines and hypothalamus-pituitary-adrenal hormone dynamics. *Braz J Med Biol Res.* 2000 Oct;33(10):1141-8.
10. Turrin NP, Rivest S. Unraveling the molecular details involved in the intimate link between the immune and neuroendocrine systems. *Exp Biol Med (Maywood).* 2004 Nov;229(10):996-1006
11. Sewlall S, Pillay V, Danckwerts MP, Choonara YE, Ndesendo VM, du Toit LC. A timely review of state-of-the-art chronopharmaceuticals synchronized with biological rhythms. *Curr Drug Deliv.* 2010 Dec;7(5):370-88.
12. Ohdo S. Chronopharmaceutics: pharmaceutics focused on biological rhythm. *Biol Pharm Bull.* 2010 Feb;33(2):159-67
13. Humes HD. Stem cells: the next therapeutic frontier. *Trans Am Clin Climatol Assoc.* 2005;116:167-83; discussion 183-4.
14. Bianco P, Robey PG. Stem cells in tissue engineering. *Nature.* 2001 Nov 1;414(6859):118-21
15. Bhattacharya J. The Knowledge of Anatomy and Health in Ayurveda and Modern Medicine: Colonial Confrontation and Its Outcome
16. Wujastyk D. Interpreting the image of the human body in premodern India. *Int J Hindu Studies* 13: 189–228, 2009.
17. Kristina Harris, Amira Kassis, Geneviève Major, Chieh J. Chou. Is the Gut Microbiota a New Factor Contributing to Obesity and Its Metabolic Disorders? *J Obes.* 2012; 2012: 87915

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**Subject: KAYACHIKITSA**

**Subject code: 2-MD/MS (AYD)-2002**

1.	Course No	MD/MS (Ayd) Ist year	6.	Theory marks	400
2.	Subject Code	2002	7.	Paper I Paper II Paper III Paper IV	100 100 100 100
3.	Course title	KAYACHIKITSA	8.	Practical marks	100
4.	Category	Compulsory	9.	Total Marks	500
5.	Examination Duration	3 Hrs for each Paper			

11. KAYACHIKITSA

PAPER- I Fundamentals of Kayachikitsa

100 marks

1. Rogi-Roga Pariksha: Nidan Panchak, Trividha pariksha, Ashtavidhpariksha, Dashvidhpariksha in the light of recent advances. Clinical methods-Detailed history taking and patient examination, Systemic examination as per ayurveda and recent advances.
2. Interpretation of common investigations: ECG, Echo cardiography, TMT, Spirometry, X-ray, USG, CT-Scan, MRI, EEG, EMG, in different pathological conditions.
3. Detailed Knowledge of Principles of Chikitsa in Ayurveda. Types of Chikitsa. Principles and practices of Rasayana and Vajikarna.
4. National Health Programmes and prospective role of Ayurveda services and therapeutics in them.
5. Medical ethics, Common laws and regulations applicable to clinical practice.
6. Elaborate knowledge of undertaking common medical procedures like Ryle's tube feeding, tapping, transfusions, catheterization, tractions.
7. Ayurveda Dietetics: importance of Pathya, Apathya and Anupana.
8. Drug-drug interactions and adverse drug reactions, Iatrogenic disorders.

PAPER – II Samanya Roga Chikitsa

100 marks

Nidana/ Chikitsa including Nidana Parivarjana, Pathya, Apathya, Chikitsa siddhanta, Shamana, Shodhana, Panchakarma, Rasayana and Atyayika Chikitsa (Anupana, Drug/Non-drug) as per Ayurvedic and conventional therapeutics of following Srotogata vyadhi:

1. Pranavahasrotas: Shwasa, Hikka, Kasa, Rajayakshma, Hridroga, Parshwashoola, Urakshata, Svarabheda  
Cardio-respiratory system: Bronchitis, Bronchiectasis, Bronchial asthma, COPD, Cor-pulmonale, Pneumonias, Occupational lung diseases, Pulmonary tuberculosis, Congenital Heart disorders, IHD, RHD- Valvular diseases, Cardiac failures, Cardiomyopathy, Pericarditis, Endocarditis, Hypertension,.
2. Annavahasrotas: Agnimandya, Ajirna, Aruchi, Amadosha, Amlapitta, Chhardhi, Shoola, Grahani.  
Gastrointestinal disorders: GERD, APD, Malabsorption Syndrome,
3. Udakavahasrotas: Trishna, Shotha, Udararoga, water and electrolyte imbalance
4. Rasavaha srotas: Jwara, Amavata, Pandu, Madatyaya, Anaemias, Rheumatoid arthritis, Substance abuse disorders.
5. Raktavaha Srotas: Raktapitta, Kamala, Vatarakta, Kushtha, Kshudrarooga, Sheetpitta, Udarda, Kotha, Visarpa, Shvitra. Haemopoietic disorders, Bleeding and Coagulation disorders, Leukaemias, Thrombocytopenia, Disorders of Bone Marrow, Hepatobiliary disorders, Hepatitis, Cirrhosis, Cholecystitis, Liver abscess, Jaundice, Dermatological disorders, Parasitic, Infective, Allergic, Autoimmune skin disorders, Eczemas,
6. Mamsa-Medovahasrotas: Medoroga, Sthaulya, Prameha, Galaganda, Gandamala, Urustambha, Diabetes mellitus, over weight .
7. Asthi-Majjha vahasrotas: Asthikshaya, Sandhigatavata, Osteoarthritis, Osteopenia
8. Shukravahasrotas: Such as Kalibya, Dwajabhanga. Impotence
9. Mutravahasrotas: Mutrakricchra, Mutraghata, Ashmari, Urinary disorders: UTI, Lithiasis, ARF, CRF, Uraemia, BPH.
10. Purishvaha srotas: Atisara, Pravahika, Anaha, Adhamana, Krimi, Udavarta, Enteritis, Dysenteries, Ulcerative colitis, IBS, Worm infestation.

PAPER – III Vishishta Roga Chikitsa

100 marks.

Comprehensive knowledge of etiology, demography, pathogenesis, symptomatology, complications, investigations, diagnosis and drug/non-drug management of following diseases as per Ayurveda/ Conventional therapeutics:

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1. Vata-Vyadhi- Pakshavadha, Adharanga Vata, Sarvanga Vata, Ananta Vata, Gata Vata, Gridhrasi, Ardita, Akshepaka, Apatantraka, Ekangvata, Vishvachi, Avabahuka, Avarana.  
Musculoskeletal disorders: Myopathies, G B Syndrome, Muscular dystrophies, Lumbago  
Neurological disorders: Neurodegenerative disorders like Alzeimer's, Parkinsonism, CVA, Neuropathies, Facial palsy, Motor Neuron Diseases, Epilepsy, Sciatica.
2. Sankramakroga: Sheetala, Masoorika, Updansa, Phiranga, Gonorrhoea, Chancroids, Syphilis,
3. Manasa vyadhi; Unmada, Apasmara, Atatvavinivesha, Mada, Moorcha, Sanyasa.  
Common psychiatric disorders: Classification of psychiatric ailments. Disorders of thought like Schizophrenia. Disorders of Mood like Mania, Depression. Neurosis, personality disorders, psychosexual disorders.
4. Metabolic disorders: Gout, Dyslipidaemia, Atherosclerosis, Obesity.
5. Endocrinal disorders; Disorders of Pituitary, Thyroid, Adrenal Medulla, Reproductive hormones.
6. Parasitic/Infective/Communicable disorders: Shlipada, Filariasis, Vishama Jvara, Malaria, Manthara Jwara, Enteric Fever, Dengue, Chickenpox, Measles, Influenza, Kalazar, Mumps, Rabies, Poliomyelitis, Plague, Meningitis, Encephalitis, Chickungunya, HIV/AIDs, Common worm infestations.
7. Common neoplastic disorders and their management strategies. Role of Ayurveda medicines in cancer care including palliative care.
8. Autoimmune diseases: Myopathies, Rheumatic fever, SLE.
9. Common poisonings and their management like Insecticide/Pesticide poisoning, Snake poisoning, Vegetable and chemical poisoning.
10. Janapadodhvamsa Vikara. Environmental diseases and their management.

**PAPER – IV Advances in Kayachikitsa**

**100 Marks.**

**Critical care medicine, Management of medical emergencies, ICU services, Field medical services**

1. Hospital management strategies, Infrastructure, use of IT technology, essential manpower, equipment, Patient care, management and coordination with contemporary health institutions and field institutions.
2. National Health Campaigns of AYUSH and components under NRHM.
3. Clinical Research in Kayachikitsa and its application in clinical medicine as per new evidence base in different systemic disorders.
4. New emerging health challenges and ayurvedic medicines: Chickangunya, HIV/AIDs, Swineflu, Chickenflu, Dengue, Restless leg syndrome, Sick building syndrome, Fibromyalgia.
5. Role of Ayurveda in immune-protection, immuno-modulation and in management of other allergies and immunological disorders.
6. Indications and importance of Organ transplantation, Ethical and legal issues involved.
7. Knowledge of Geriatric care and terminal care medicine.
8. Basic knowledge of Gene therapy, Stem cell therapy, Genetic modeling and chromosomal disorders in different disease conditions.
9. Radio-isotopes, disease and tumor markers in diagnosis and assessment of therapy.
10. Scope and methods of independent and collaborative research in Kayachikitsa.
11. Disaster management strategies.
12. Application of advances in Rasayana and Vajikarana therapies
13. Application of emerging trends in Panchakarma in medical management.
14. Physical medication and rehabilitation.

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**Subject: KAYACHIKITSA**

**Subject code: 2-MD/MS (AYD)-2002**

**PRACTICALS**

Practicals shall be held to evaluate the patient care, diagnostic and treatment expertise of the student. It should also be taken as a chance to evaluate the clinical skills.

Clinical Ability Evaluation-60 marks based on

- |  |           |
|--|-----------|
| 1. Case records of 40 IPD Patients in Detail               | 10 marks  |
| 2. Long case History-1:                                    | 20 Marks  |
| 3. Short Case history-1 :                                  | 10 Marks  |
| 4. Medical procedures demonstration/ Panchakarma procedure | 20 Marks. |
- Academic Competence evaluation- 40 marks based on:
- |                                       |           |
|---------------------------------------|-----------|
| 1. Viva                               | 30 Marks. |
| 2. Teaching and communication skills: | 10 Marks. |

**Reference Books**

- |   |                             |
|---|-----------------------------|
| 1. Relevant portions of Brihatrayi and Laghutrayi with commentaries |                             |
| 2. Cikitsadarsha- Pandit Rajeshvar Dutta Shastri                    |                             |
| 3. Kayachikitsa   | - Ramaraksha Pathak         |
| 4. Rog Pariksha Vidhi   | - Priyavrat Sharma          |
| 5. Panchakarma Vigyan   | - Haridas Sridhar Kasture   |
| 6. Ayurvediya Nidana- Chikitsa Siddhanta                            | - Prof. R.H.Singh.          |
| 7. Kayachikitsa Vol. 1 and 2  | - Prof. R.H.Singh.          |
| 8. The Holistic Principles of Ayurvedic Medicine                    | - Prof. R.H.Singh.          |
| 9. Essentials of Kayachikitsa -II, Vol. 1                           | - Dr. Aruna                 |
| 10. Kayachikitsa Vol. I-IV.   | - Prof. Ajay Kumar          |
| 11. Panchakarma Therapy   | - Prof.R.H.Singh            |
| 12. Panchakarma Illustrated   | -Prof.G.Shrinivasa Acharya  |
| 13. Practice of Ayurvedic Medicine(Kayachikitsa)                    | -Prof.A.K.Tripathi          |
| 14. Nidanachikitsa Hastamalaka                                      | - Prof. R.R.Desai           |
| 15. Clinical Methods in Ayurveda                                    | - Prof. K.R. Srikantamurthy |
| 16. Aushadhi Gunadharm Shastra                                      | - Gangadhar shastri Gune    |
| 17. Introduction to Kayachikitsa                                    | - Prof. C. Dwarakanath      |
| 18. Samprapti lakshnanayoh Sambandhah                               | - Prof.Sadashiv Sharma      |
| 19. Nidana Panchak  | - Prof.S.C.Dhyani           |
| 20. Kayachikitsa  | - Prof.S.C.Dhyani           |
| 21. Davidson's Principles and Practice of Medicine.                 |                             |
| 22. API Text Book of Medicine.                                      |                             |
| 23. Harrison's Text Book of Medicine.                               |                             |
| 24. Cecil Text Book of Medicine.                                    |                             |
| 25. Relevant texts of concerned subjects.                           |                             |

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**Subject: SHALYA TANTRA – GENERAL SURGERY**

**Subject code: 2-MD/MS (AYD)-2003**

1.	Course No	MD/MS (Ayd) Ist year	6.	Theory marks	400
2.	Subject Code	203	7.	Paper I Paper II Paper III Paper IIII	100 100 100 100
3.	Course title	Shalya Tantra – General Surgery	8.	Practical marks	100
4.	Category	Compulsory	9.	Total Theory Marks	500
5.	Examination Duration	3 Hrs for each Paper			

**POST GRADUATE FINAL YEAR  
13. MS (AYU) SHALYA TANTRA – GENERAL SURGERY**

**PAPER – I Shalya Tantra Vangmaya – Literature, Research and Development**

**100 Marks  
100 Hours**

1. Thorough study of the Sushruta Samhita including other relevant portions of Brihatrayee and Laghutrayee.
2. Knowledge and importance of Surgical Audit and Research.
3. Medico legal issues – Understanding the implications of acts of omission and commission in practice. Issues regarding Consumer Protection Act, medical profession, national health policy - Implications in a medico-legal case like accidents, assaults etc.
4. Surgical ethics including Informed consent.
5. Yogya Vidhi – Practical and Experimental training on different types of Surgical Models for Research in Surgery.
6. Clinical and diagnostic methods in Shalya Tantra - X-rays, U.S.G., Endoscopies (for diagnostic and treatment purposes), MRI, CAT scanning and other recent diagnostic tools.
7. Concept of Sandhana Karma – Plastic reconstructive and cosmetic surgery. Fundamentals of Sandhana Karma –
  - i. Karna Sandhana – Auroplasty
  - ii. Nasa Sandhana – Rhinoplasty
  - iii. Ostasandhana – Cheiloplasty
  - iv. Grafts and Flaps – Techniques and applications.
  - v. Vascular anastomosis and grafts.
8. Recent development on Sushruta's surgical principles and practices.

**PAPER – II - SHALYA TANTRA VIGYAN**

**100 Marks  
100 Hours**

1. Vrana – Wound management
  - i. Management of Nija Vrana, Dushta Vrana and Nadi Vrana.
  - ii. Vrana Chikitsa – Shasti upakramas, Pathya-apathya.
  - iii. Wound and Ulcer.
  - iv. Dagdha Vrana – Burns, scalds, Dhumopaghata, Ushnavata, Frost bite, electric burns and their management.
  - v. Prameha Pidaka – Diabetic carbuncle, Diabetic wound and its management.
  - vi. Kotha – Gangrene and Principles of Amputation.
  - vii. Sadyo Vrana - Traumatic wounds – Nidana, Prakara, Lakshana, Upadrava and Chikitsa, Bites and stings and its management.
2. Pranasta Shalya – Diagnosis and management.
3. Vranashopha-Inflammation, Vidradhi – Abscesses and Pidika – Boils.
4. Granthi – Cyst and Arbuda – Benign and malignant Neoplasm.
5. Bhagna - Classification, Clinical features, Complications and Management.
6. Sandimoksha – Classification, Clinical features, Complications and Management.
7. Udara Roga - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.

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8. Gulma Roga - Nidana, Prakara, Lakshana, Upadrava and Chikitsa.
9. Shoola vyadhi - Nidana, Prakara, Lakshana, Upadrava and Chikitsa.
10. Diseases of Rectum and Anal Canal – Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Arshas, Parikartika, Bhagandara, Guda Vidradi, Gudabhramsas and Sanniruddaguda.
11. Ashmari - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.
12. Mutraghata and Mutrakrichhra - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.
13. Niruddhaprakasha - Phimosis, Parivartika – Paraphimosis and Avapatika - Prepuceal ulcer.
14. Vriddhi Roga - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.

**PAPER – III - ADHUNIK SHALYA KARMA - MODERN SURGERY**

**100 Marks  
100 Hours**

1. Fundamentals of modern surgery and treatment of surgical disorders including surgical anatomy, physiology and pathology.
2. Diagnosis and Surgical treatment of head and spine injury, thoracic trauma and abdominal trauma. Blast injuries and Management.
3. Diagnosis and surgical measures for disorders of Artery, Vein, Ligaments, Muscles and Tendons.
4. Diagnosis and Surgical management of neck disorders e.g. salivary glands, thyroid, Thyroglossal cyst and Fistula, Branchial cyst and fistula, Cystic hygroma and Lymphadenopathies.
5. Diagnosis and Surgical management of breast diseases, Benign and Malignant breast tumours.
6. Diagnosis and Surgical measures of diseases of Gastrointestinal system -
  - i. Oral cavity - Oral ulcers, Oral cancer, Precancerous conditions, Submucosal fibrosis, Leukoplakia, Cleft lip and palate, Lip tumours, Mucosal cyst, Nasopharyngeal cancer, Tongue ulcer and cancer.
  - ii. Oesophagus - Oesophageal varices, Dysphagia, Neoplasm, Strictures and Gastro oesophageal reflux.
  - iii. Stomach and duodenum – Congenital anomalies, Injuries, Inflammation, Ulcer, Neoplasm, Pyloric stenosis, Acute dilatation, Hiatus hernia and Foreign bodies.
  - iv. Pancreas - Congenital anomalies, Acute and Chronic pancreatitis, Calculi Neoplasm and Cysts of pancreas.
  - v. Peritoneum, Omentum, Mesentery, Retroperitoneal Space – Peritonitis, Abscess, Neoplasm, Mesenteric cyst, Torsion of mesentery, Vascular thrombosis, Retroperitoneal cyst and Fibrosis.
  - vi. Abdominal mass - Diagnosis and Management.
  - vii. Small intestine - Congenital anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Injuries, Foreign bodies, Diverticuli, Peutz-jeghers syndrome, Chron's disease, Carcinoid tumours, Enteric perforation and Intestinal fistula.
  - viii. Large intestine - Congenital anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Injuries, Foreign bodies, Diverticuli, Faecal fistula, Amoebiasis and Familial polyposis coli.
  - ix. Caecum and Vermiform appendix- Appendicitis, Appendicular abscess, Appendicular mass, Perforation, Carcinoid Tumor and other Neoplasm.
  - x. Gastrointestinal bleeding – Haemetemesis, Malaena, Haemobilia, Bleeding per anum - Causes, Diagnosis and Management.

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- xi. Rectum and anal canal - Diagnosis and Surgical management of Congenital Anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Prolapse, Haemorrhoids, Fistula-in-ano, Fissure-in-ano, Anorectal Abscess, Incontinence, Injuries, Foreign bodies and Pilonidal sinus.
7. Umbilicus and abdominal wall – Congenital anomalies, Umbilical infections, Sinus, Neoplasm and Desmoid tumor.
8. Diagnosis and surgical measures of diseases of Hepatobiliary system -
  - i. Liver – Abscess, Cyst - Hydatid cyst, Primary and Secondary malignant tumours, Portal Hypertension and Budd-Chiari Syndrome.
  - ii. Gall bladder and Bile duct - Congenital anomalies, Acute and Chronic Cholecystitis, Cholelithiasis, Neoplasm, Cholangitis, Stenosis, Choledocholithiasis, Choledochal cyst and Cholangiocarcinoma.
  - iii. Spleen – Splenomegaly and Splenic Injury.
9. Diagnosis and surgical management of Hernias – Inguinal, Femoral, Umbilical, Incisional, Abdominal wall and other hernias.
10. Endoscopic procedures - Oesophagogastroduodenoscopy, Sigmoidoscopy and Colonoscopy.
11. Principles of laproscopic surgery - Diagnostic and therapeutic laparoscopy.

**PAPER – IV**

**VISHISHTA SHALYA VIGYAN – SPECIALITY**

The Scholar has to choose the any one of the Specialities amongst the following based on research area

**PAPER – IV - Speciality No - 01 Anushastra Vigyan – Parasurgical Therapeutics**  
**100 Marks**  
**100 Hours**

**1. Kshara Karma and Prayoga – Caustic therapy**

- i. Introduction of different types of Kshara, Method of preparation, Standardization, pH value, Application, Complications and its management.
- ii. Surgical Anatomy and Physiology of Anus and Rectum.
- iii. Arshas - Nidana, Purvaroop, Roopa, Samprapti, Prakara and Chikitsa.
- iv. Haemorrhoids - Aetio-pathogenesis, types and its surgical management. Knowledge of different methods of treating Haemorrhoids - Rubber band ligation, D.G.H.A.L, Radiofrequency, Ablation, Cryo-surgery, Cautery, Laser, Infrared coagulation and other advanced techniques.
- v. Bhagandara - Nidana, Purvaroop, Roopa, Samprapti, Prakara, Chikitsa and application of Kshara Sutra.
- vi. Fistula-in-ano - Definition, Aetio-Pathogenesis, Types, Diagnostic methods and its Surgical and parasurgical management including knowledge of Fibrin Glue, Advanced Flap Therapies and other recent techniques.
- vii. Parikartika - Nidana, Samprapti and its Chikitsa.
- viii. Fissure-in-ano - Aetio-pathogenesis, types and its management.
- ix. Sannirudhaguda and its Chikitsa.
- x. Anal Stenosis - Aetio-pathogenesis and its management.
- xi. Gudavidradhi - Nidana, Purvaroop, Roopa, Samprapti, Prakara and its Chikitsa.
- xii. Anorectal abscesses – Aetio- pathogenesis, types, complications and its management.
- xiii. Foreign body in rectum and anal canal - Method of diagnosis and its management.
- xiv. Congenital Anorectal disorders and its management.
- xv. Anorectal tumour - Types and its management.

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**2. Agnikarma – Thermo therapy**

- i. Introduction, definition and importance of Agnikarma.
- ii. Agnikarma - Poorva, Pradhana and Paschat karma, various substances and Shalakas used for Agnikarma and their indications, contra-indications and complications.
- iii. Knowledge of modern thermal equipment - Diathermy, Laser therapy, Microwave, Ultracission technique, Cryo Technique and its uses.
- iv. Effect of Agnikarma on skin, muscle tissue, nerves, metabolism, blood circulation and infective lesions.

**3. Raktamokshana – Bloodletting Procedures**

- i. Indications, contraindications and importance of Raktamokshana.
- ii. Justification of usage of different types of Raktamokshana in various therapeutic applications.
- iii. Different types of Raktamokshana – Sastrakritha - Siravyadhana, Prachana and Asastrakritha - Shringa, Jaluka, Alabu and Ghati.
- iv. Jalauka - Nirukti, Paryaya, Bhedha, Sangrahana, Samrakshana, Jalaukavacharana Vidhi - Poorva, Pradhana and Paschat karma.
- v. Knowledge of Leeches - Morphology, Anatomy, Physiology, Bio-chemical effects of its various constituents present in its saliva.

**PAPER – IV - SPECIALITY NO-02  
ASTHI SANDHI EVAM MARMA VIGYAN – ORTHOPAEDICS**

**100 marks  
100 Hours**

1. Asthi Sharira - Etymology, Embryology, Applied Anatomy and Physiology of Asthi. Its Panchbhautik constitution, Poshan (Nutrition), Asthivaha Srotas, Upadhatu and Mala. Total Number and classification of Asthi. Concept of Dhatwagni in Ayurveda. Asthi Dhatu Kshaya and Vriddhi lakshana. Knowledge about Tarunasthi. Embryology, Ossification, Histology, Metabolism, Blood Supply, Types and Biomechanics of Bone and cartilage.
2. Healing mechanism of bone and factors influencing the bone healing according to Ayurvedic and Modern concept. Biological and Biophysical technologies for the Enhancement of Fracture Repair. Knowledge of Sandhaniya and Ropaniya drugs.
3. Sandhi Sharira – Classification, Applied Anatomy and Physiology of Asthi Sandhi. Classification, Applied Anatomy and Physiology of Joints and Healing Mechanism of a joint.
4. Knowledge of Splints, Orthotics & Prosthetics.
5. Knowledge of Orthopedic implants (*e.g. wires, screws, plates, nails*) and Instruments. Knowledge of equipments (*e.g. C-arm image intensifier and drill machines etc*).
6. Concept of Pain according to Ayurved and Modern Medical science.
7. Principles of Reconstruction, Transplantation, Bone grafting, Bone Banking, Bone transportation and Amputation.
8. Vata Vikara – Asthi, Sandhi and Marma related Vata Vikara like Gridhrasi, Bisvachi, Avabahuka, Manyastambha, Khalvi, Dhatugata vata, Snayugata vata, Katishoola, Katigraha.
9. Diseases pertaining to Muscles, Tendons, Ligaments, Fascia and Bursae.
10. Diseases and Congenital anomalies of Spine *e.g.* Ankylosing spondylitis, Infective conditions, Tuberculosis, Spondylolisthesis, Inter-vertebral Disc Prolapse,

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- Spondylosis, Scoliosis, Kyphosis, spina bifida, Hemivertebra, Block vertebra, Sacralisation and Lumbrisation.
11. Diseases and Congenital anomalies of Cervical Spine
  12. Diseases and Congenital anomalies Sacroiliac Joint and Bony Pelvis.
  13. Diseases and Congenital anomalies of Hand.
  14. Diseases and Congenital anomalies of Foot.
  15. Diseases and Congenital anomalies of Limbs.
  16. Orthopedic Neurological Disorders. Post Polio Paralysis & Cerebral Palsy.
  17. Snehana, Swedana and Panchakarma in Marma, Asthi and Sandhi Vyadhi.
  18. Yogic Practices in Orthopedics.
  19. Principles of Arthroplasty- Joint Replacement.
  20. Introduction of Peripheral Vascular Diseases.
  21. Bhagna - Etiology, classification and General Management principles and Prognosis.
  22. Modern concept of Bone and Joint injuries - Etiology, Epidemiology, Classification and General management principles.
  
  23. Individual Bone and Joint injuries - Etiology, Epidemiology, Classification and management principles.
  24. External immobilization techniques - Classical and traditional Kusha -splints, Plaster of Paris Technique, Knowledge of different splints and Plasters.
  25. Pathological Fractures including Fragility fractures, Stress Fractures and Peri-prosthetic Fractures.
  26. Fractures in Children – Etiology, Epidemiology, Diagnosis, management and complications.
  27. Prognosis of skeletal injuries, Complications of Fractures and Joint Injuries e.g. Myositis ossificans, Volkman's ischemic contracture, Compartment syndrome, Crush Syndrome, DVT, Thromboembolism, Fat Embolism.
  28. Rehabilitation of trauma patient and Principles of Sukhchestaprachara - Physiotherapy and its use in skeletal injuries.
  29. Treatment Principles of Asahanta Bhagna - Non-unions, Vishmolvana Sahanta - Malunions and Ignored or un-reduced dislocations.
  30. Diagnosis and management principles of injuries of Vessels, Nerves, Tendons and Ligaments.
  31. Head, Chest and Abdominal Injuries and management principles.
  32. Pelvis and Spine injuries and their management principles.
  33. Sports medicine and sports injures – Sports medicine and sports related Shoulder injuries, Elbow injuries, Knee injuries, Ankle Injuries, Recurrent Dislocations and other sports related injuries.
  34. Knowledge of Conventional and advanced procedures being done for Different Bone and Joint Injuries e.g. Open Reduction and Internal Fixation, Closed Reduction and Internal Fixation, External fixators and other operative techniques.
  35. Knowledge of Plastic Surgery in orthopedics and Bone grafting techniques.
  36. Knowledge of various surgical procedures being done for Different Bone and Joint Diseases.
  37. Hand Surgery for Diseases, Deformities and Injuries.
  38. Foot Surgery for Diseases, Deformities and Injuries.
  39. Amputations and Arthrodesis – General Principles of Amputations /Arthrodesis and regional Amputations.
  40. Knowledge of Diagnostic and Therapeutic Arthroscopy.



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**Subject code: 2-MD/MS (AYD)- 2003**

**PAPER – IV - SPECIALITY NO-03  
SANGYAHARAN VIGYAN – ANAESTHESIOLOGY**

**100 MARKS  
100 HOURS**

1. Knowledge of disorders like Unmada, Apasmara, Mada, Murrcha, Sanyasa and Stabdhatta etc.
2. Madataya, Stages of Madataya and its management.
3. Pharmacology of Medhya, Vednasthapak, Madkari, Sangyasthapak, Nidrajanan, Akshepjanan and shamana, Svedjanan, Hridaya, Hridayotejak, Raktbharshamak, Shoolprashaman, Vaman and hrillashar (Antiemetic) dravya as mentioned in Ayurvedic samhita and their application in Sangyahan.
4. Aroma therapy as complementary and alternative therapy in pain management and Palliative care.
5. Sangyahan Bhesaja Vigyan (Pharmacology related to Anesthesia)  
Pharmacology of:
  - Drugs acting on Autonomic nervous system:
    - a. Cholinergic system and drugs- Agonist and antagonist
    - b. Adrenergic system and drugs- Agonist and antagonist
  - Autocoids and related drugs:
    - a. Histamine and Antihistaminic
    - b. 5HT and antagonist
    - c. NSAID'S
    - d. Prostaglandins and leukotrienes
  - Drugs acting on Respiratory system
  - Drugs acting on Somatic nervous system
    - a. Skeletal muscle relaxants – Depolarizer and Non-Depolarizer.
    - b. Local anesthetics
  - Drugs acting on central nervous system
    - a. General Anesthetics- Fixed and Volatile anesthetic agents.
    - b. Sedative and hypnotics
    - c. Anti epileptics
    - d. Anti psychotic and anti-maniacs
    - e. Opioids Analgesics and antagonists
  - Drugs acting on cardiovascular system
    - a. Cardiac glycosides
    - b. Anti arrhythmic drugs
    - c. Anti anginal and other anti ischemic drugs
    - d. Anti hypertensive drugs
  - Drugs acting on Kidneys
    - a. Diuretics
    - b. Anti diuretics
  - Coagulants and anti coagulants
6. Airway management- Intubation, failed intubation drill, LMA, Bag and mask ventilation.
7. Anesthesia For: General surgery, Obstetric and Gynecology, E.N.T. and Ophthalmic, Orthopedic, Dental, Pediatric, Urology, Plastic and Outpatient / Day care surgery.
8. Anesthesia for patients with: Diabetes mellitus, Thyroid diseases, inherited metabolic diseases, Obesity, Respiratory diseases, Cardiac diseases, Renal diseases, Geriatric problems and neuromuscular diseases.
9. Regional anesthesia:
  - Sub-arachnoid and epidural anesthesia, analgesia
  - Plexus and nerve blocks for upper and lower limb
  - Regional anesthesia for thorax and abdomen
  - Surface anesthesia, infiltration and field blocks

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10. Complications of Regional and general anesthesia, morbidity, mortality and medico-legal aspects.
11. Anesthesia for Endoscopic, laparoscopic Surgery and Laser Surgery
12.
  - a. Monitoring in anesthesia:
    - Cardiovascular, Respiratory, Renal function, Neurologic and neuromuscular monitoring.
    - Peri- operative Thermo- regulation and monitoring
    - Peri- operative awareness and monitoring depth of anesthesia with BIS.
    - Peri- operative acid-base balance
    - Pt's positioning in anesthesia, its hazards and management
    - Peri- operative Fluid management and Blood transfusion.
    - Risks and hazards of anesthesia
  - b. Anesthesia equipments –
    - Medical gas systems
    - Breathing systems
    - Ventilators
    - Anesthesia machine
  - c. Post operative management-
    - Post anesthesia care
    - Post operative nausea and vomiting
    - Post operative Intra-Venous fluid therapy
    - Acute post operative pain
  - d. Miscellaneous-
    - HDU, ICU, CCPR- BLS & ACLS.
    - Parenteral nutrition.
    - Environmental factor and electrical safety
  - e. Management of Acute / Chronic Pain-
    - Assessment of pain
    - Peri-operative pain
    - Chronic pain syndrome-detection and prevention
    - WHO regime for Cancer pain
    - TENS, Behavioral therapy
  - f. Anesthesia in remote locations
  - g. Clinical care in extreme environments (At high and low pressure and space).
  - h. Relevance of Sammohana (Hypnosis), Acupressure and Acupuncture in Sangyahrana.
  - i. Recent advances in research in Sangyahrana, Pain Management and Palliative Care. Scope and Application of principles of Ayurveda in Sangyahrana Research.

**PAPER – IV - SPECIALITY NO – 04  
MUTRA ROGA – UROLOGY**

**100 MARKS  
100 HOURS**

1. Anatomical and physiological knowledge of kidney, ureter, urinary bladder, prostate, seminal vesicles, urethra and penis.
2. Investigations of Mutravaha Srotas – Urinary tract.
3. Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and management of Ashmari – Urinary stone diseases.
4. Kidney and ureter – Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Neoplasm, Hydronephrosis, Hydroureter and Haematuria.
5. Urinary bladder - Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Neoplasm, Diverticulum, Vesico-vaginal

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**Subject: SHALYA TANTRA – GENERAL SURGERY**

**Subject code: 2-MD/MS (AYD)- 2003**

- fistula, Atony, Schistosomiasis, Urinary diversions, Retention of urine – Mutraghata and Mutrakruccha.
6. Urethra - Clinical presentation, Investigations and Management of Congenital anomalies – Hypospadias, Epispadias, Posterior urethral valve, Trauma, Infection, and Neoplasm.
  7. Prostate and seminal vesicles – Benign and malignant enlargement of prostate, Prostatitis, Prostatic abscess and Calculi.
  8. Penis – Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Phimosis, Paraphimosis, Peyronie's disease and Neoplasm.
  9. Testis and scrotum-Clinical presentation, Investigations and Management of Congenital anomalies, Ectopic testis, Trauma, Infection, Neoplasm, Testicular torsion, Hydrocele, Varicocele, Spematocele, Chylocele, Pyocele, Haematocele, Epididymal cyst and Fournier's gangrene.
  10. Renal failure – Causes, Diagnosis, Investigations and Management.

## **PRACTICALS**

### **Content:**

1. Identification, uses, demonstration of surgical instruments and methods of sterilization.
2. Training of case taking, bed side clinicals and case presentation.
3. Training of Surgery related Diagnostic imaging techniques.
4. Training of Surgery related Pre-operative, Operative and Post-operative procedures.
5. Demonstration and Practical training in Anaesthesia.
6. P.G. Scholars shall develop the skills by observing, assisting and performing independently all surgical and parasurgical procedures.
7. P.G. Scholars shall develop the skills by observing, assisting and performing independently concerned specialities like Anushastra Vigyan - Parasurgical therapeutics, Asthi Sandhi Evam Marma Vigyan – Orthopaedics, Sangyahan Vigyan – Anaesthesiology, Mutra Roga – Urology etc.
8. Training of Surgical Emergencies and Trauma Management.

### **METHODS OF TRAINING AND TEACHING FOR M.S. (AYU) SHALYA TANTRA**

• Case Presentation	Once a Week
• Seminar	Once a Week
• Classroom Lectures	Thrice a Week
• Morbidity / Mortality	Once a Week
• Surgical Audit	Once a month
• Journal Club	Once a month
• Emergency Drills / Protocols	Once a Week
• Interesting Cases	Once a Month
• Assessment of Scholar	Once a Month

**MD/MS AYU FINAL YEAR EXAMINATION TO BE HELD IN YEAR NOV/DEC 2023,  
2024, 2025**

**Subject: SHALYA TANTRA – GENERAL SURGERY**

**Subject code: 2-MD/MS (AYD)- 2003**

**Minimum Academic Requirements For PG Scholars**

Case Presentation	Ten per year
Seminar	Five per year
Journal club	One per year

**Distribution of marks (practical):**

1. Dissertation Presentation and Teaching demonstration	- 20 marks
2. Bedside clinical case taking-	
Long case	- 20 marks
Short case	- 10 marks
3. Identification of instruments, images etc	- 10 marks
4. Demonstration of Surgical and Parasurgical Procedures	- 10 marks
5. Viva voce	- 30 marks

**REFERENCE BOOKS:**

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanyaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Sushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa - Dr. Prabhakar Janardhan Deshpande
13. Kshara sutra management in anorectal ailments - Dr. S.K. Sharma, Dr. K.R. Sharma and Dr. Kulwant Singh.
14. A manual on Fistula-in-ano and Ksharasutra Therapy – Dr. Manoranjan Sahu
15. Recent trends in the management of Arshas / Haemorrhoids - Dr. P. Hemantha Kumar
16. Anorectal diseases in Ayurveda - Dr. Sizoria and Dr. Praveen Kumar Chowdary.
17. Adhunika Shalya Chikitsa Siddanta - Dr. Katil Narshingam Udupa
18. Agnikarma Technology Innovation - Dr. P.D. Gupta
19. Shalya Tantra Ke Siddhant - Dr. K.K.Takral
20. Arsha Evum Bhagander Mein sutra Avacharan - Vd. Kanak Prasad Vyas
21. Recent advances in Kshara Sutra - Dr. M. Bhaskar Rao
22. Leech application in Ayurveda - Dr. M. Bhaskar Rao
23. Kshara Sutra - Dr. S.N.Pathak
24. Text book of Shalya Tantra (Ayurvedic Surgery) - Dr. P. Hemantha Kumar
25. Shalya Shalakya Tantra - Vd. S.G. Joshi
26. Surgical ethics of Ayurveda - Dr. D.N. Pande
27. Anushastra Karma - Dr. D.N. Pande
28. Concept of Vrana is Ayurveda - Dr. Lakshman Singh
29. Significance for Poorva Karma in Surgical Patient - Dr. Lakshman Singh
30. Sangyahan Prakash - Dr. D.N. Pande
31. Marma Science and Principles of Marma Therapy – Dr. Sunil Kumar Joshi
32. Recent trends in the management of Bhagandara / Fistula-in-ano - Dr. P. Hemantha Kumar
33. Principles and Practice of Agnikarma - Dr. Anand Kumar and

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| 34. Shalya Vigyan (Sachitra)                      | Dr. Kanchan Shekokar.                                    |
| 35. Text book of Surgery                          | - Anantram Sharma  |
| 36. Operative Surgery                             | - Sabistan   |
| 37. Bailey and Love's Short Practice of Surgery   | - Rob and smith  |
|   | - Norman.S. Williams, Charles.V. Mann and R.C.G. Russell |
| 38. Text books of Operative Surgery               | - Farquharson's  |
| 39. Principles of Surgery                         | - Schwartz   |
| 40. Emergency Surgery                             | - Hamilton Bailey's                                      |
| 41. Manipal Manual of Surgery                     | - Dr. Rajgopal Shenoy                                    |
| 42. SRB's Manual of Surgery                       | - Sriram Bhat M  |
| 43. Surgery of the Anus, Rectum and Colon         | - John Goligher  |
| 44. Surgical pathology                            | - Willing Worth  |
| 45. Clinical methods in surgery                   | - S. Das   |
| 46. Textbook of Operative Surgery                 | - S. Das   |
| 47. A concise Text Book of Surgery                | - S. Das   |
| 48. A manual on Clinical Surgery                  | - S. Das   |
| 49. A System of Surgical Diagnosis                | - T.N. Patel   |
| 50. Clinical Anatomy/ Surgical Anatomy            | - John E.Skandalakis                                     |
| 51. A Practical Guide to Operative Surgery        | - S. Das   |
| 52. Manual of Surgical Instruments                | - M.M. Kapur   |
| 53. Ward Procedures                               | - Patel Mansukh. B                                       |
| 54. Drugs and Equipment for Anaesthesia           | - Arun kumar   |
| 55. Primary Anaesthesia                           | - Maurice King   |
| 56. Synopsis of Anaesthesia                       | - Lee  |
| 57. Miller's Anesthesia                           | - Ronald D Miller  |
| 58. Synopsis of Anesthesia                        | - Alfred Lee   |
| 59. Practice of Anesthesia and Resuscitation      | - Dr.P.K. Gupta et al.                                   |
| 60. Essentials of Anesthesiology                  | - Prof. A.K. Paul  |
| 61. Clinical Anesthesia                           | - Prof. A.K. Paul  |
| 62. Textbook of Anesthesia                        | - Aitkenhead   |
| 63. Practice of Anesthesia                        | - Churchill Davidson                                     |
| 64. Anesthesia and co-existing disease            | - Stoelting's  |
| 65. Outline of Orthopedics                        | - John Crawford Adams and David Hamblen. L               |
| 66. Fractures and Joint Injuries                  | - Watson-Jones   |
| 67. Outline of Fracture                           | - John Crawford Adams                                    |
| 68. Practical Fracture Treatment                  | - R.McRae  |
| 69. Clinical Orthopedic Examination               | - R.McRae  |
| 70. Apleys System of Orthopedics                  | - Apley Louis Solomon                                    |
| 71. Orthopedics – Principles & their Application  | - Vol. I-II – Samuel L. Turek                            |
| 72. Text book of Orthopedics and Trauma Vol. I-IV | - G.S. Kulkarni  |
| 73. Campbell's Operative Orthopedics              | - Vol. I-IV  |
| 74. Urology                                       | - Campbell-Walsh   |
| 75. Urology Instrumentation:A comprehensive guide | - Sabnis Ravindra B                                      |
| 76. Text book of Operative Urology                | - F.F.Marshall, J.W.McAninch                             |
| 77. Oxford Hand book of Urology                   | - John Reynard, Simon Brewster                           |
| 78. Smith and Tanagho's General Urology           | - Jack W. McAninch, Tom F.Lue                            |
| 79. Urological Emergencies in Clinical Practice   | - Hashim, John Reynard                                   |

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