

**ORDINANCE GOVERNING REGULATIONS AND CURRICULUM OF AYURVEDA  
DHANVANTRI MS(Ay) POST GRADUATE DEGREE COURSE IN  
SHALAKYA TANTRA  
2017**



Rajiv Gandhi University of Health Sciences, Karnataka

**4<sup>th</sup> 'T' Block, Jayanagar, Bangalore 560041**

## The Emblem



The emblem of the Rajiv Gandhi University of Health Sciences is a symbolic expression of the confluence of both eastern and western health sciences. A central wand with entwined snakes symbolizes Greek and roman gods of health called Hermis and Mercury is adopted as symbol of modern Medical sciences. The pot above depicts Amrutha Kalasham of Dhanvanthri the father of all health sciences. The wing above it depicts human soul called Hamsa (Swan) in Indian philosophy. The rising sun at the top symbolizes olive branches, which is an expression of peace, love and harmony. In Hindu philosophy it depicts the vanaspathi (also called as oushadi) held in the hands of Dhanvanthri, which is an expression of piece, love and Harmony. In Hindu Philosophy it depicts the Vanaspati (also called as Oushadi) held in the hands of Dhanvantri which are the source of all medicine. The lamp depicts human energy (Kundali). Does script “Devahitham Yadayahu” Inside the lamp taken from Upanishath Shanti Manthram (Bhadram Karnebhi Shrunuyanadev...) which says “May we live the full span of our lives allotted by god in perfect health” which is the motto of the Rajiv Gandhi University of Health Sciences.

Rajiv Gandhi University of Health Sciences, Karnataka Bangalore.

## Vision Statement

**The Rajiv Gandhi University of health Sciences, Karnataka aims at brining about a confluence of both Eastern and Western health Sciences to enable the humankind “Live the full span of our lives allotted by God Prefect Health”.**

**It would strive for achievement of academic excellence by educating and training health professionals who**

**Shall recognize health needs of community.**

**Carry out professional obligations ethically and equitably and in keeping with National Health Policy.**

**It would promote development of scientific temper and Health Sciences Research.**

**It would encourage inculcation of Social Accountability amongst students, teachers and institutions.**

**It would support quality assurance of all its educational programmes**

### **Motto**

**Right for Rightful Health Sciences Education**



ರಾಜೀವ್ ಗಾಂಧಿ ಆರೋಗ್ಯ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕರ್ನಾಟಕ, ಬೆಂಗಳೂರು  
RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, KARNATAKA, BENGALURU  
4<sup>th</sup> T Block, Jayanagar, Bengaluru - 560 041

ACA/DCD/PG-Ayur/400/2020-2021

Dt:13/10/2020

### NOTIFICATION

Sub: Ordinance pertaining to merger of Shalakyia Tantra Netra Roga and Shalakyia Tantra Shiro Nasa-Karna Avum into Shalakyia Tantra of MS Degree Ayurveda Course as per CCIM guidelines.

Ref: 1. Proceedings of the CAC meeting held on 01/10/2020.  
2. Minutes of the 152<sup>nd</sup> Syndicate meeting held on 09/10/2020.

In pursuance to the decision of the Syndicate in its 152<sup>nd</sup> meeting held on 09/10/2020 and in exercise of the powers conferred under section 35(1) of RGUHS Act, 1994, approval is accorded for merger of Shalakyia Tantra Netra Roga and Shalakyia Tantra Shiro Nasa-Karna Avum into Shalakyia Tantra of MS Degree Ayurveda Course as per CCIM guidelines, the ordinance of which is annexed herewith.

This ordinance is applicable for 2017-2018 batch onwards and will be referred as RS4.

By Order,

  
**REGISTRAR**

Copy to :

1. The Principal Secretary to Governor, Raj Bhavan, Bangalore - 560001
2. The Principal Secretary Medical Education, Health & Family Welfare Dept., M S Building, Dr.B.R. Ambedkar Veedhi, Bangalore - 01
3. The Principals of all affiliated PG Ayurveda medical colleges of RGUHS, Bangalore.
4. PA to Vice - Chancellor/PA to Registrar/Registrar (Eva.)/Finance Officer, Rajiv Gandhi University Health Sciences, Bangalore
5. All Officers of the University Examination Branch/ Academic Section.
6. Guard File / Office copy.

# **ORDINANCE GOVERNING REGULATIONS AND CURRICULUM OF AYURVEDA DHANVANTRI MS(Ay) POST GRADUATE DEGREE COURSE IN SHALAKYA TANTRA**

## **INTRODUCTION**

### **SECTION I**

#### **REGULATIONS**

1. Title of Course : **AYURVEDA DHANVANTRI MS(Ay) POST GRADUATE DEGREE COURSE IN SHALAKYA TANTRA**

2. Eligibility for Admission

A person possessing a degree in Ayurveda of a University or Board or Medical institution specified in the Second Schedule of Indian Medicine Central Council Act 1970 shall be eligible for admission to Post-graduate degree course.

Further, sponsored/deputed candidate (Ayurveda Teachers or Physicians) will be required to possess qualification essential for admission.

3. Mode of admission

- 1) The University shall constitute an admission Committee, which shall supervise the admission procedure.
- 2) Selection of candidates shall be made strictly on the basis of final merit index calculated out of total of 100 marks based on written test.
- 3) The written test of 100 Marks shall consist of one common written test of MCQ.
- 4) The minimum eligibility marks of the entrance test for admission in the case of general candidates shall be 50 percent of the total marks and in case of candidates belonging to the Schedule Castes, Scheduled Tribes and regular Government service candidates shall be 40 percent.
- 5) The sponsored/deputed candidates shall also be required to possess the percentage of marks specified under sub-regulation (4) mentioned above except foreign nationals.
- 6) Reservation of all categories shall be applicable as per State Government/Central Government policies
- 7) Change of subject shall be permissible within a period of two months from the date of admission, subject to availability of vacancy and guide in the concerned Department.

4. Obtaining Eligibility Certificate

No candidate shall be admitted to any Post-graduate degree course in Ayurveda, unless the candidate has obtained and produced eligibility certificate issued by the University. The candidate has to make an application to the University with following documents along with prescribed fee:-

- 1) B.A.M.S. pass or degree certificate issued by the University.
- 2) Marks card of all University examinations passed (First to Final year of B.A.M.S. Course) 3) Attempt certificate issued the Principal.
- 4) Certificate regarding the recognition of College by CCIM.

- 5) Completion of internship certificate from a recognized institution.
- 6) Registration by State of Ayurveda practitioners registration Board/Ayurveda Council.
- 7) Proof of SC/ST or Category I, as the case may be.

Candidates should obtain the eligibility certificate before the last date for the admission as notified by the University. A candidate who has been admitted to the Post-graduate degree course shall register his/her name in the University within a month after paying the registration fee.

#### 5. Intake of students

The intake of students to each course shall be in accordance with the Regulations of the CCIM.

#### 6. Period of study and attendance

- a. The student shall have to undergo the study for a period of three years after the admission.
- b. The student pursuing Post-graduate degree should work in the concerned department of the institution for the full period as full time student. No candidate is permitted to run a clinic or work in other clinic or laboratory or Nursing home or medical centers while studying in the post-graduate course. No candidate should join any other course of study or appear for any other examination conducted by this university or any other university in India or abroad during the period of studying this course.
- c. The student should attend the hospital and other duties as may be assigned to them during the course of study.
- d. The student should do house job duties and Clinical registrar's duties in their respective departments during preliminary and final course.
- e. The student should attend special lectures, demonstrations, seminars, study tours and such other activities as may be arranged by the teaching department.
- f. The student should attend a minimum of 80% of training in each subject in all theory and practical classes separately during each academic year of the course.

#### 7. Method of training:-

1. Intensive training shall be provided on classical knowledge along with comparative and critical study in the respective specialty.
2. The emphasis shall be given on intensive applied and hand on training.
3. The students shall have to acquire the knowledge about the methods and techniques of research in respective fields making use of information technology.
4. In clinical subjects the students shall undertake responsibility in management and treatment of patients independently and deal with emergencies.
5. The students shall undertake training in teaching technology and research methods and shall have to participate in the teaching and training programs of under graduate students or interns in the respective subjects during the course of studies.
6. In the first year of the course, the students shall have to acquire knowledge in the applied aspects of the fundamentals of Ayurveda.
7. In clinical training the student shall have to acquire the knowledge of independent work as specialist.

8. In the specialties of Shalakyas, the student shall have to undergo training of investigative procedures, techniques and surgical performance of procedures and management in the respective specialty.

8. Medium of Instruction:-

Medium of instruction shall be in English with a working knowledge of Sanskrit.

9. Monitoring Progress of Studies:-

Every candidate shall maintain a work diary and record of his/her participation in training programmes conducted by the department such as journals reviews, seminars, etc. (please see section IV for model checklist and log book specimen copy). The work diary shall be scrutinized and certified by the Head of the Department and head of the institution, and presented in the university practical examination, if called for. Special mention may be made of the presentations by the candidate as well as details of experiments or laboratory procedures conducted by the candidate. The presentation will be assessed by the faculty members and peers using relevant checklist given on section IV.

10. Vacation:

There will be a vacation of 15 days with stipend at the end preliminary examination only. In addition to the vacation, each student is eligible for 12 days casual leave with stipend. Any leave enjoyed without prior approval or in excess limit mentioned above shall be treated, as willful absence and no stipend will be granted for such period.

12. Dissertation

1. The title of dissertation along with synopsis, with approval of the ethics committee constituted by the institute as per regulations of concerned university, shall be submitted to the university **with in a period of six months** from the date of admission to PG course.
2. If the student fails to submit the title of dissertation and synopsis within the period specified under sub regulation (1) as above, his term for final exams will be extended for six months or more in accordance with time of submission of the synopsis to the university.
3. The synopsis of the proposed scheme of work should indicate the familiarity of the student with proposed theme of work, the name of the department and the name and designation of the the guide or supervisor and co-guide, if any. The university should approve the synopsis not later three months after submission of the synopsis.
4. For approving the title, a scrutiny committee shall be constituted by the university.
5. The university should display the approved synopsis on its website.
6. The subject of every dissertation shall be research, practical oriented, innovative and helpful in the development of Ayurveda. **The subject of the dissertation shall be related to the subject matter of the respective specialty.**
7. Once the title for the dissertation is approved by the scrutiny committee of the university, the student shall not be allowed to change the title of the proposed theme work without permission of the university.
8. No students shall be allowed to submit the dissertation before six months of the final year. However, the student shall continue his or her regular study in the institution after submission of dissertation to complete three years.
9. The dissertation shall contain the methods and data of the research carried out by the student on the problem selected by him and completed under the guidance of the teacher approved by the universality.

10. The dissertation shall consist critical review of literature, methodology, results of the research, discussion on the basis of research findings of the study summary conclusion. And references cited in the dissertation should be suitable for the publication.
11. The dissertation shall consist of not less than forty thousand words.
12. The dissertation shall contains, at the end, a summary of not more than one thousand five hundred words and the conclusion not exceeding one thousand words.
13. The **Guide** shall be a person of status of a Professor or a Reader/ Asst. Professor, Lecturer with **minimum five** years university approved teaching experience in the concerned subject or three years as Co-guide.
14. A **Co-guide** may be included provided the work requires substantial contribution from a sister department or from other institution recognized for teaching or training by RGUHS. The Co-guide shall be recognized Postgraduate teacher of RGUHS.
15. Online submission of dissertation along with a certificate from the Guide should be uplodaded six months before the final examination.
16. The dissertation shall be valued by two external and two internal examiners appointed by the university.
17. Approval of dissertation work is an essential precondition for a candidate to appear for the final examination. The dissertation shall be accepted only after approval of the four examiners appointed and in case of disapproval by one examiner, the same shall be referred to fifth examiner. If it is not approved by the fifth examiner also, the same shall be returned to the student with the remarks of the examiner and the student can resubmit the dissertation after making the necessary improvement in the light of examiner's report to the university within a further period of six months.
18. If the dissertation is not accepted by two examiners, the same shall be returned to the student with the remarks of the examiners and the student can resubmit the dissertation after making the necessary improvement in the light of examiners report to the university within a further period of six months.
19. **The dissertation should be written under the following headings:**

Introduction

Aims and Objectives of study

Review of literature

Methodology (Materials & Methods)

Results

Discussions

Summary

Conclusion

Bibliography/References

Annexures

Guide Students ratio:-

The teacher student ratio shall be such that the number of post graduates teachers to the number of post graduate students admitted per year is maintained at 1:3 in case of Professor 1:2 in case of Reader and 1:1 in case of Lecturer/Asst. Professor having **minimum 5 years** concerned PG subject teaching experience.



## Change of Guide

In the event of a registered guide leaving the college for any reason including transfer or in the event of death of guide, guide may be changed with prior permission from the university with in a period of 2 months.

### 13. Scheme of Examination

1. The post graduate degree course shall have two examinations in the following manners:-
  - a. The preliminary examination shall be conducted at the end of one year after admission;
  - b. The final examination shall be conducted on completion of three academic years after the admission to PG course;
  - c. Examination ordinarily held in the month of June or July and November or December every year;
  - d. For being declared successful in the examination, students shall have to pass all the subjects separately in the preliminary examinations;
  - e. The post-graduate degree shall be conferred after the dissertation accepted and the student passes the final examination.
2. The examination shall be aimed to test the clinical acumen, ability and working knowledge of the students in practical aspect of the specialty and his/her fitness to work independently as specialist.
3. The clinical examination shall aim at a careful assessment of the competence of the student, so that his/her familiarity with Ayurveda and scientific literature in the specialty could be judged.
4. The viva-voce part of the practical examination shall involve extensive discussion on any aspect of subject/specialty.

### Eligibility for attending the examination

The following requirements shall be fulfilled by every candidate to be eligible to appear for preliminary or final examinations:

- I. Every candidate shall fulfill the attendance prescribed by the university during each academic year of the post graduate course.
- II. Progress and conduct: every candidate shall have participated in the seminars, journal review meeting, symposia, conference, case presentation, clinics/ practicals and lectures during each year as designed by the concerned department.
- III. Work diary/ log book: every candidate shall maintain a work diary and log book for recording his/her participation in the training program conducted by the department.
- IV. The work diary and log book shall be verified and certified by the head of the department and head of the institution (please see section IV for model checklist and log book specimen copy). The certification of satisfactory progress shall be issued by the head of the department.

### 14. Schedule for Examination – for First year (Preliminary) & Final year PG Course:-

#### **There shall be two examinations as follows:**

- 1) Preliminary examination shall be conducted at the end of the one year after commencement of the course as notified in the calendar of events issued by the University.

**Subjects for Preliminary examinations:**

Paper- I Part A: Research methodology & Part B: Biostatistics – The number of teaching hours and allotment of marks for theory examination shall be as per revised CCIM syllabus for Preliminary subjects as given here under Section III.

- . **Practical examination shall be conducted as class examination by the respective institution and the results of the same shall not be considered for the preliminary examination.**

Paper – II with Part-A & Part-B: Applied aspects and basics of concerned Subject as per CCIM revised syllabi. The number of teaching hours for theory shall be 100 hours and practicals shall be 100 hours in an academic year. Allotment of marks for theory and practicals/Clinical & Viva voce examination shall be as per revised CCIM syllabus for Preliminary subjects.

- 2) Final examination shall be conducted at the end of the three years after commencement of the course as notified in the calendar of events issued by the University.

The university shall conduct two examinations. Not more than two examinations shall be conducted in an academic year.

The student shall have to publish at least one Research paper on the basis of his dissertation in one Journal and one paper presentation in Regional level seminar.

The total theory classes in Paper-I, Paper-II, Paper-III, Paper-IV shall be 100 hours each. The total number of Practical/Clinics classes in 2<sup>nd</sup> year & 3<sup>rd</sup> year shall be 200 hours each year.

Examinations shall consist of (a)Dissertation, (b)written paper (Theory), (c)Practical/Clinical and Viva voce.

**(a) Dissertation:** Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

**(b)Written Examination (Theory):** Written examination shall consist of four question papers pertaining to Paper-I, Paper-II, Paper-III & Paper-VI each of three hours duration. Total marks for each paper will be 100 marks and shall be 10 questions with 10 marks each.(Ref.ACA/DCD/PG/400/2021 dated05/10/2020)

**(c) Practical / Clinical and Viva voce Examination:**

In case of practical examination, it should be aimed at assessing competence and skills of techniques and procedures. It should also aim at testing student's ability to make relevant and valid observations, interpretation and inference of laboratory or experimental or clinical work relating to his/her subject for undertaking independent work as a specialist.

The actual format of Practical/clinical and Viva voce examination & distribution of marks for each specialty subject is given in the syllabus of CCIM and the same has to be followed.

**15. Appointment of Examiners:-**

The Preliminary examination shall be conducted by two examiners, one internal and one external both for theory and Practical/Viva voce examinations.

The final examination shall be conducted by a team of 4 examiners out of which two shall be external & two shall be internal examiners who should be possessing the post of Professor or Reader/Asst. Professor level or a Lecturer having minimum 8 years PG teaching experience.

**Marks distribution for Theory Examination:-**

**1. Preliminary:- (First year) Two Papers**

a. 10 Questions carrying 10 marks each in every paper.

(5 Questions from Research Methodology and 5 Questions from Bio-statistics)

**2. Final Examination:- Four Papers**

a. 10 Questions carrying 10 marks each in every Paper.

**Marks distribution for Practical examinations:**

**Preliminary:-[First year]**

**Practical 1 – 100 Marks**

1. Instrumental spotting test – 20 marks
2. Clinical protocol writing exercise on a given problem – 20 marks
3. Records :
  - a. Research methodology -10 Marks
  - b. Medical statistics -10 marks
4. Viva- Voce - 40 Marks

**Practical 2 – 100 Marks**

1. Case record -20 marks.
2. Bed side examination:-
  - (a) One Long case: -20 marks

- (b) One Short case -10 marks
3. One Kriyakalpa Procedure -15 marks.
4. Identification of specimens and Instruments-15 marks.
5. Viva voce - 20 marks.

**Final Year Practical Examination:- 100 Marks**

1. Bed side examination
  - a. Short case 2 of 10 marks each-20 marks.
  - b. Long case-20 marks.
2. Identification of specimen/Instrument-10 marks.
3. Thesis presentation-10 marks.
4. Teaching skill-10 marks.
5. Viva Voce-30 marks.

**16. Criteria for declaring results:**

The candidate has to score 50% of marks in Theory and Practical separately to pass in First and Final Year.

Above 75% will be declared as Distinction.

Above 65% and below 75% will be declared as First Class.

Above 50% and below 65% will be declared as Pass Class.

Number of chances for appearing final year examination

Failed students in the preliminary examination should pass in all subjects six months before taking up the final year examination. Otherwise the student shall not be allowed to take up the final year examination.

The maximum duration for completion of the course shall not exceed beyond the period of six years from the date of admission to the course.

## **Syllabus for Preliminary Examination**

### **I. RESEARCH METHODOLOGY AND BIOSTATISTICS**

### **II. SHALAKYA TANTRA**

#### **PAPER-I**

#### **RESEARCH METHODOLOGY AND MEDICAL STATISTICS**

#### **PART-A 60 Marks**

#### **RESEARCH METHODOLOGY 1**

#### **Introduction to Research**

#### **Definition of the term research**

#### **Definition of the term anusandhan**

#### **Need of research in the field of Ayurveda 2**

#### **General guidelines and steps in the research process**

Selection of the research problem

Literature review: different methods (including computer database) with their advantages and limitations

Defining research problem and formulation of hypothesis

Defining general and specific objectives

Research design: observational and interventional, descriptive and analytical, preclinical and clinical, qualitative and quantitative

Sample design Collection

of the data

Analysis of data.

Generalization and interpretation, evaluation and assessment of hypothesis.

Ethical aspects related to human and animal experimentation.

Information about Institutional Ethics Committee (IEC) and Animal Ethics Committee (AEC) and their functions. Procedure to obtain clearance from respective committees, including filling up of the consent forms and information sheets and publication ethics.

3. Preparation of research proposals in different disciplines for submission to funding agencies taking EMRAYUSH scheme as a model.

4. Scientific writing and publication skills.

Familiarization with publication guidelines- Journal specific and CONSORT guidelines.

Different types of referencing and bibliography.

Thesis/Dissertation: contents and structure

Research articles structuring: Introduction, Methods, Results and Discussions (IMRAD)

5 Classical Methods of Research.

Concept of Pratyakshadi Pramana Pariksha, their types and application for Research in Ayurveda.

Dravya-, Guna-, Karma-Parikshana Paddhati

Aushadhi-yog Parikshana Paddhati

Swastha, Atura Pariksha Paddhati

Dashvidha Parikshya Bhava

Tadvidya sambhasha, vadmarga and tantrayukti

6 Comparison between methods of research in Ayurveda (Pratigya, Hetu, Udaharana, Upanaya, Nigaman) and contemporary methods in health sciences.

PG 1st Year Syallabus-2

7. Different fields of Research in Ayurveda

Fundamental research on concepts of Ayurveda

Panchamahabhuta and tridosha.

Concepts of rasa, guna, virya, vipak, prabhav and karma

Concept of prakriti-saradi bhava, ojas, srotas, agni, aam and koshtha.

#### 8. Literary Research-

Introduction to manuscriptology: Definition and scope. Collection, conservation, cataloguing.

Data mining techniques, searching methods for new literature; search of new concepts in the available literature.

Methods for searching internal and external evidences about authors, concepts and development of particular body of knowledge.

#### 9. Drug Research (Laboratory-based)- Basic knowledge of the following:

Drug sources: plant, animal and mineral. Methods of drug identification.

Quality control and standardization aspects: Basic knowledge of Pharmacopoeial standards and parameters as set by Ayurvedic Pharmacopoeia of India.

Information on WHO guidelines for standardization of herbal preparations. Good Manufacturing Practices (GMP) and Good Laboratory Practices (GLP).

10. Safety aspects: Protocols for assessing acute, sub-acute and chronic toxicity studies. Familiarization with AYUSH guidelines (Rule 170), CDSCO and OECD guidelines.

#### 11. Introduction to latest Trends in Drug Discovery and Drug Development

-Brief information on the traditional drug discovery process

-Brief information on the latest trends in the Drug Discovery process through employment of rational approach techniques; anti-sense approach, use of micro and macro-arrays, cell culture based assays, use of concepts of systems biology and network physiology

-Brief introduction to the process of Drug development

#### 12. Clinical research:

Introduction to Clinical Research Methodology identifying the priority areas of Ayurveda

Basic knowledge of the following:- Observational

and Interventional studies

Descriptive & Analytical studies

Longitudinal & Cross sectional studies

Prospective & Retrospectives studies

Cohort studies

Randomized Controlled Trials (RCT) & their types

Single-case design, case control studies, ethnographic studies, black box design, cross-over design, factorial design.

Errors and bias in research.

New concepts in clinical trial- Adaptive clinical trials/ Good clinical practices (GCP)

Phases of Clinical studies: 0,1,2,3, and 4.

### **Survey studies -**

Methodology, types, utility and analysis of Qualitative Research methods. Concepts of in-depth interview and Focus Group Discussion.

13. Pharmacovigilance for ASU drugs. Need, scope and aims & objectives. National Pharmacovigilance Programme for ASU drugs.

14. Introduction to bioinformatics, scope of bioinformatics, role of computers in biology. Introduction to Data base- Pub med, Medlar and Scopus. Accession of databases.

15. Intellectual Property Rights- Different aspect and steps in patenting. Information on Traditional Knowledge Digital Library (TKDL).



**PART-B** 40 marks

## MEDICAL STATISTICS

Teaching hours: 80

- 1 Definition of Statistics : Concepts, relevance and general applications of Biostatistics in Ayurveda
- 2 Collection, classification, presentation, analysis and interpretation of data (Definition, utility and methods)
- 3 Scales of Measurements - nominal, ordinal, interval and ratio scales.  
Types of variables – Continuous, discrete, dependent and independent variables. Type of series – Simple, Continuous and Discrete
- 4 Measures of Central tendency – Mean, Median and Mode.
- 5 Variability: Types and measures of variability – Range, Quartile deviation, Percentile, Mean deviation and Standard deviation
- 6 Probability: Definitions, types and laws of probability,
- 7 Normal distribution: Concept and Properties, Sampling distribution, Standard Error, Confidence Interval and its application in interpretation of results and normal probability curve.
- 8 Fundamentals of testing of hypotheses:  
Null and alternate hypotheses, type I and type 2 errors.

Tests of significance: Parametric and Non-Parametric tests, level of significance and power of the test, 'P' value and its interpretation, statistical significance and clinical significance

9 Univariate analysis of categorical data:

Confidence interval of incidence and prevalence, Odds ratio, relative risk and Risk difference, and their confidence intervals

10 Parametric tests: 'Z' test, Student's 't' test: paired and unpaired, 'F' test, Analysis of variance (ANOVA) test, repeated measures analysis of variance

11 Non parametric methods: Chi-square test, Fisher's exact test, McNemar's test, Wilcoxon test, Mann-Whitney U test, Kruskal – Wallis with relevant post hoc tests (Dunn)

12 Correlation and regression analysis:

Concept, properties, computation and applications of correlation, Simple linear correlation, Karl Pearson's correlation co-efficient, Spearman's rank correlation.

Regression- simple and multiple.

13 Sampling and Sample size computation for Ayurvedic research:

Population and sample. Advantages of sampling, Random (Probability) and non random (Non-probability) sampling. Merits of random sampling. Random sampling methods- simple random, stratified, systematic, cluster and multiphase sampling. Concept, logic and requirement of sample size computation, computation of sample size for comparing two means, two proportions, estimating mean and proportions.

14 Vital statistics and Demography: computation and applications - Rate, Ratio, Proportion, Mortality and fertility rates, Attack rate and hospital-related statistics

15 Familiarization with the use of Statistical software like SPSS/Graph Pad

**PRACTICAL 100 marks**

**I. RESEARCH METHODOLOGY -Teaching hours 120**

**PRACTICAL NAME**

1 Pharmaceutical Chemistry

Familiarization and demonstration of common lab instruments for carrying out analysis as per API

2 Awareness of Chromatographic Techniques

Demonstration or Video clips of following:

3 Thin-layer chromatography (TLC).

Column chromatography (CC).

Flash chromatography (FC)

High-performance thin-layer chromatography (HPTLC)

High Performance (Pressure) Liquid Chromatography (HPLC)

Gas Chromatography (GC, GLC)

4 Pharmacognosy

Familiarization and Demonstration of different techniques related to:-

Drug administration techniques- oral and parenteral.

Blood collection by orbital plexuses puncturing.

Techniques of anesthesia and euthanasia.

Information about different types of laboratory animals used in experimental research

Drug identification as per API including organoleptic evaluation

## 5 Pharmacology and toxicology

Familiarization and demonstration of techniques related to pharmacology and toxicology

## 6 Biochemistry (Clinical)

Familiarization and demonstration of techniques related to basic instruments used in a clinical biochemistry laboratory – semi and fully automated clinical analyzers, electrolyte analyzer, ELISA- techniques, nephelometry.

Demonstration of blood sugar estimation, lipid profiles, kidney function test, liver function test.

HbA1c, cystatin and microalbumin estimation by nephelometry or other suitable techniques.

Interpretation of the results obtained in the light of the data on normal values.

## 7 Clinical Pathology

Familiarization and demonstration of techniques related to basic and advanced instruments used in a basic clinical pathology lab. Auto cell counter, urine analyzer, ESR, microscopic examination of urine.

## 8 Imaging Sciences

Familiarization and demonstration of techniques related to the imaging techniques.

Video film demonstration of CT-Scan, MRI-scan and PET-scan.

## 9 Clinical protocol development

## II. MEDICAL STATISTICS

Practical hours:20

Statistical exercise of examples from Topic number 4, 5, 8-12, 14, 15.

Records to be prepared.

### **Distribution of marks (practical):**

Instrumental spotting test	– 20 marks
Clinical protocol writing exercise on a given problem	– 20 marks
Records: Research methodology	-10 Mark
Medical statistics	-10 marks
Viva- Voce	-40 Marks

## **SYLLABUS FOR 1<sup>ST</sup> YEAR MS SHALAKYA TANTRA**

**THEORY – 100 MARKS (3 HOURS)**

### **Part A– 50 Marks**

1. History and chronological development of Shalaky Tantra.
2. Establishment and importance of ‘Shirasouttamangatwam’, ‘Nasa Hi shirsodwaram’, and ‘Sarvendriyanam Nayanam Pradhanam’.
3. Applied Anatomy and physiology of Netra, Karna, Nasa, Mukha with related marmas and disease classification as per Ayurvedic classics.
4. Knowledge of Agropaharaniya in Shalaky Tantra.
5. Fundamental knowledge of Sterilization and Anaesthesia in Shalaky Tantra.
6. Swasthvritta related to Shalaky Tantra.
7. Description of Yantra, Shastra and anushastra related to Shalaky Tantra.
8. Application of Panchakarma chikitsa in UrdhvajatrugataVikaras.
9. Applied knowledge of various therapeutic procedures used in Netra rogas.
10. Applied knowledge of various therapeutic procedures used in Karna-Nasa-MukhaDanta and Shirorogas, like Karnaprakshalana, Karnadhoopana, Karnapichu , Karnapoorana , Nasaprakshalan, Nasapichu, Kavala, Gandusha, Pratisarana, Dhoomapana, Shiroabhyanga, Shiropichu, Shirodhara, Shirobasti etc.
11. Knowledge of Vranabandhana (bandaging of wounds) in Shalaky Tantra.
12. Common classical yogas and single drug therapy in Shalaky Tantra.
13. Pathyapathya in Shalaky Tantra.

### **Part B – 50 Marks**

14. Critical analysis of nidana of Urdhwajatruvikaras.
15. Fundamentals of optics and refraction.
16. Clinical methods of eye examination and application of various aids and techniques with their respective interpretation viz. Retinoscopy, Refraction, Tonometry, Slit lamp examination, Pachymetry, Direct and Indirect Ophthalmoscopy, Gonioscopy, Perimetry, A scan, B scan, FFA (Fundus Fluorescein Angiography), OCT (Optical Coherence Tomography)etc.
17. Clinical methods of Ear examination with special reference to hearing and balance.
18. Fundamentals of Acoustics and Audiology.
19. Clinical methods of examination of Nose and Para nasal sinuses with various aids and techniques.
20. Clinical methods of Oro-Dental examination with various instruments and techniques.
21. Basic pharmacology of common drugs required in diagnostic and therapeutic procedures in Eye, ENT and Oro-Dentistry.
22. Eye donation and Eye banking.

23. Knowledge of handling of Bio-medical waste.

## **Syllabus for Final Year MS Shalaky Tantra**

### **PAPER I– SHALAKYA - NETRA ROGA**

**THEORY – 100 MARKS (3 HOURS)**

**Part A – 50 marks**

1. Nidanapanchaka and samanya chikitsa of netrarogas.
2. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Sandhigata, Vartmagata and Pakshmagata rogas with their comparative knowledge of modern science.
3. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Shuklagata and Krishnagatarogas with their comparative knowledge of modern science.
4. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Drishtigata and Sarvagata rogas with their comparative knowledge of modern science.

5. Descriptive knowledge of Ashtavidha shastrakarma (eight types of surgical procedures) and Chaturvidha chikitsa (Bheshaja, Shastra, Kshara and Agni) and post operative care of the patient with respect to Netrarogas.
6. Diseases of eyelids and lacrimal apparatus and their Modern and Ayurvedic Management.
7. Disorders of conjunctiva, cornea and sclera and their Modern and Ayurvedic Management.

**PART B – 50 marks**

8. Disorders of uveal tract and lens and their Modern and Ayurvedic Management.
9. Disorders of vitreous, retina, optic nerve, visual pathway and visual cortex and their Modern and Ayurvedic Management.
10. Benign and malignant tumours of the eye and their Ayurvedic Management.
11. Study of Nayanabhighata with prevention and management.
12. Concept of congenital, developmental disorders of eye and prevention and management through Ayurveda and modern science.
13. Ocular motility disorders and their management as per Ayurvedic and modern science.
14. Neurological and systemic disorders affecting Eyes and their Modern and Ayurvedic Management.

## **Paper II- Shiro-Nasa-Karna and Kanta rogas**

### **THEORY – 100 MARKS (03 HOURS)**

**PART A – 50 MARKS**

1. Nidanapanchaka and samanya chikitsa of shiro-nasa-karna and kantharogas.
2. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Shiro and kapalgatha rogas with their comparative knowledge of modern science.
3. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Nasarogas with their comparative knowledge of modern science.
4. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Karna rogas with their comparative knowledge of modern science.



5. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Kantharogas with their comparative knowledge of modern science.

**PART B – 50 MARKS**

1. Descriptive knowledge of Ashtavidhashastrakarma (eight types of surgical procedures) and Chaturvidha chikitsa (Bheshaja, Shasthra, kshara and Agni) and post-operative care of the patient with respect to ENT disorders.
2. Study of various types of Headache and their Modern and Ayurvedic Management.
3. Diseases of the Nose and paranasal sinuses and their Modern and Ayurvedic Management.
4. Diseases of the Ear and their Modern and Ayurvedic Management.
5. Diseases of the Throat and Larynx and their Modern and Ayurvedic Management.

**Paper III – SHALAKYA –MUKHA DANTA ROGA**

**THEORY – 100 MARKS (03 HOURS) PART A – 50 MARKS**

1. Nidanapanchaka and samanyachikitsa of Mukha-Dantarogas.
2. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Oshthagata rogas with their comparative knowledge of modern science.
3. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Dantamulgata rogas with their comparative knowledge of modern science.

4. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Danta rogas with their comparative knowledge of modern science.
5. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Jiwhagata rogas with their comparative knowledge of modern science.
6. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Talugata rogas with their comparative knowledge of modern science.

#### **PART B**

1. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Sarvasara mukha rogas with their comparative knowledge of modern science.
2. Jalandhar bandha and its importance and application in painless tooth extraction.
3. Diagnostic Methodology in oral and dental diseases.
4. Oro- Dental diseases with their Modern and Ayurvedic management.
5. Knowledge of essential modern drugs and anaesthetic agents for diagnosis and surgical procedures in orodentistry.
6. Updated knowledge of modern instruments of Oro-Dental Disorders.

### **PAPER IV – SHALAKYA – SHALAKYA VISHISHTHA CHIKITSA VIGYAN**

#### **THEORY – 100 MARKS (03 HOURS)**

#### **PART A – 50 MARKS**

1. Detailed study of Netra kriyakalpas and vishishta aushadhikalpas with their standard operative procedures and their critical analysis.

2. Critical analysis of classical treatment procedures and vishishta aushadhikalpas with their standard operative procedures and their critical analysis in the context of Anya Urdhwajatrugata vikaras .
3. Role of Panchakarma chikitsa in Urdhwajatrugata vikaras.
4. Descriptive knowledge of common ocular surgical procedures like DCT, DCR, Pterygium, Entropion, Ectropion, Chalazion surgery, Cataract surgery, Evisceration, Enucleation, surgical procedures of glaucoma etc.
5. Descriptive knowledge of common ENT surgical procedures like Tympanoplasty, Mastoidectomy, Septoplasty, Septorhinoplasty, antral puncture, Turbinectomy, Polypectomy, Tonsillectomy etc.
6. Applied aspects of Imaging in ENT and head disorders 7. Speech therapy and rehabilitation of the deaf and mute.
8. Recent advances in the medical and surgical management of Eye, ENT and OroDental diseases.
9. Karna sandhana, Nasasandhana, Oshthasandhana with their recent advances.
10. Scope of researches in Shalaky Tantra in present era.

## **PART B**

- 11.** Ocular emergencies and their management.
- 12.** Knowledge of preventive and community ophthalmology -WHO and National Programme for control of blindness and role of Ayurveda in these Programmes.
- 13.** Knowledge of National Programme for deafness and tinnitus and role of Ayurveda in these Programmes.
- 14.** Knowledge of National Programme for prevention of oral cancer and role of Ayurveda in these Programmes. .
- 15.** Effects of environmental hazards, and life style disorders of Eye, ENT and Oro dental disorders and their Modern and Ayurvedic preventive and therapeutic measures.
- 16.** Management of emergencies in ENT, Head and Oro-Dental disorders.
- 17.** Effects of systemic diseases on Eye, ENT, Head and Oro-dental diseases and their Modern and Ayurvedic management.
- 18.** Removal of foreign bodies from Eye, ENT and Oro-Dental disorders.
- 19.** Importance of Yogic kriyas, Yogasana and pranayama in Shalaky tantra.
- 20.** Knowledge of rules, regulations and medico-legal aspects of Ophthalmic, ENT and Oro-dental practice.

## **21. Pattern of Practical Examination 100 Marks**

- |  |           |
|--|-----------|
| 1. Bed side examination                    |           |
| Short case 2 of 10 marks each              | -20 Marks |
| Long Case                                  | -20 Marks |
| 2. Identification of specimen / Instrument | -10 Marks |
| 3. Thesis Presentation /Viva               | -10 Marks |
| 4. Teaching skill                          | -10 Marks |
| 5. Viva Voce                               | -30 Marks |

## **Reference Books**

1. Charka Samhita with commentaries
2. Sushrut Samhita and vaghbhata with commentaries
3. Astanga hridaya and Astanga sangraha with commentaries
4. Madhava nidan with commentaries
5. Bhavaprakasha with commentaries
6. Sarangadhara Samhita with commentaries
7. Sahstrayoga Sangraha
8. Relevent part of Chakradhatta, Bhel Samhita, Harita Samhita
9. Shalaky Tantra - Ramanath Dwivedi

10. Shalaky Tantra - R.C. Chaudhary
11. The Actions and uses of Indigenous Ophthalmic Drugs - N.Srikanth
12. Clinical Examination of Ophthalmic Cases - Agarwal and Gupta
13. Alder's Physiology of the Eye and Clinical Applications - Cotlier, St. Louis 14  
Disease of the Lens and Vitreous, Glaucoma and Hypotony - Duke Elder, St.

Louis

15 A Text Book of Ophthalmology - Ahmed E.

16 A Text book of clinical ophthalmology - Dhanda

17 Modern Ophthalmology - Dutta, L.C. Jaypee

Brothers

18 Manual of the Diseases of the Eye - May, C. and Worth,

19 Diseases of Nose Throat and Ear - Bhargav Shah 20 Diseases of Nose Throat and Ear, Head and Neck  
EB Edr.

21 A Text book of otorhinolaryngology - Scott Browns editions.

21. Text book of Ear Nose Throat diseases – Dhingra

22. Text book on ENT – Mohd. Maqbool

23 Logan Turner's book on ENT

24. Ballengers text book of ENT

25. Kumin's text book of ENT

26. Rob Smith's book of ENT surgery

27. Dental Anatomy Histology - Dr. S.I. Bhalajhi

28. Essentials of Preventive and Community Dentistry - Dr. Soben Peter

29. Complete Denture Prosthodontics - Dr. J.J. Manappallil

30. Orthodontics the Art and Science - Dr. S.I. Bhalajhi

31. Text book of Pediatric Dentistry - Dr. S.G. Damle

32. Text book of Oral and Maxillofacial surgery - Dr. Vinod Kapoor

33. Clinical Periodontology - Dr. B.R.R. Varma

