



**M.Sc. COURSES
(Interdisciplinary)
National Institute of Ayurveda
(DU)**

IMPORTANT DATES

Sl.No.	Events	Date
1.	Date of Notification	05/07/2023, Wednesday
2.	Prospectus, Admission Form, online filling start at our website www.nia.nic.in	10/07/2023, Monday
3.	Closing date for receipt of application form	31/07/2023, Monday, 5.00 pm
4.	Date of Screening Test	06/08/2023, Sunday
5.	Grievance will be Received upto	06/08/2023, Sunday, 6.00 pm
6.	Final Result	08/08/2023,Tuesday
7.	Interview	14/08/2023, Monday
8.	Final Select List	16/08/2023, Wednesday
9.	Admission Window	31/08/2023, Thursday
10.	Session Start	01/09/2023 , Friday
Any other information will be updated on institute website " www.nia.nic.in ". Candidates are advised to visit the website regularly.		

NATIONAL INSTITUTE OF AYURVEDA

DEEMED TO BE UNIVERSITY (DE-NOVO)

(Ministry of AYUSH, Govt. of India)



PROSPECTUS

FOR ADMISSION

TO

M.Sc. Courses

FOR THE ACADEMIC SESSION 2023-2024



**NATIONAL INSTITUTE OF AYURVEDA
DEEMED TO BE UNIVERSITY (DE-NOVO)**

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Message from Vice-Chancellor's Desk...



Dear students, Ayurveda scholars and Ayurveda lovers, it is my pride privilege to greet you for showing interest in Ayurveda a 'Science of life' and Ayurvedic education. National Institute of Ayurveda (Deemed to be University) is an apex autonomous National Institute in the country under the Ministry of AYUSH, Govt. of India. Institute is having the mandate of Ayurvedic teaching, training, patient care and research. It is matter of extreme happiness that institute is performing its activities according to the mandate given and has a long track record of excellence and credibility at National and International platform. This is only Govt. of India Public Institute having Post-graduation (MD/MS Ayu.) and Fellowship programmes (Ph.D.) in all the specialties of Ayurveda & 6 Exclusive Interdisciplinary Post-graduation (M.Sc). With 125 in take sin UG (BAMS) it is also running Diploma in Pharmacy & Nursing (DANP), one-year Panchakarma Technician Course, Numerous certificate courses of short term and medium-term duration. NIA is not only famous within the country but also attracts good number of foreign students in UG, PG, and Ph.D. programs. The real strength of the Institute is highly qualified, experienced and dedicated faculty in good number with supporting technical and ministerial staff, best available infrastructure and well-behaved students.

NIA provides excellent environment for its students, scholars and researchers. **“Our mission is to provide positive catalytic impulses to every student/scholar to stretch his/her in herent learning competencies and develop himself as a best clinician, academician, researcher and entrepreneur in Ayurveda”**. For us each student is important and we focus on his all-round development to become a brand ambassador of Ayurveda and Institute.

Ministry of HRD on the recommendations of UGC notified that institute as Deemed to be University under De-novo category on 9th November 2020. Hon'ble Prime Minister Sh. Narendra Modi Ji dedicated the Institute as Deemed to be University to the nation on 13th November 2020.

The institute has achieved important landmarks viz. accreditation from National Assessment and Accreditation Council (NAAC), accreditation from National Board for Accreditation (NABH), Guinness world record, GMP certified Pharmacy, permission from NCISM, super-specialised OPD sin campus hospital and a starting of rural hospital in Jaisingpura Khor. Our goal is to achieve the status of Institute of National Importance. We hope that with the effort so four learned faculty, dedicated staff and students we shall achieve our aims. It is my sincere appeal to all the students to follow the rules, become disciplined and dedicated for studies. I wish all the students' Best luck'.

Jai Ayurveda !

**Prof. Sanjeev Sharma
Vice-Chancellor**

AN OVERVIEW

National Institute of Ayurveda (Deemed to be University) is an apex Institute under the Ministry of AYUSH, Government of India for promoting the growth and development of Ayurveda as a model Institute for evolving high standards of Teaching, Training, Research, Patient Care and also to invoke scientific outlook to the knowledge of Ayurvedic System of Healthcare.

The City of Jaipur was established 288 years back and by linking with it, the Institute has a glorious tradition of about 151 years when the Department of Ayurveda was started in 1865 in the Maharaja Sanskrit College, Jaipur which gained popularity as the "Jaipur School of Thought". An independent Ayurvedic College was established in August 1946 by the Government of Rajasthan and this College was merged to form National Institute of Ayurveda, known as NIA, in Ayurveda fraternity on 7th February 1976. This was one of the very few Ayurvedic Colleges in the country to introduce Post- Graduate Education in Ayurveda as early as in 1970. Now it has achieved as Deemed to be University status w.e.f 09/11/2020.

After its establishment in 1976, the Institute has grown tremendously in the field of Teaching, Training, Research, Patient Care etc., as a result of which it has now 20 specialties for Post-Graduate Education (14 M.D/M.S.(Ayu) & 6 Interdisciplinary) as well as Regular Fellowship Program leading to Ph.D. Apart from this, Graduation Course, Diploma Course in AYUSH Nursing & Pharmacy and various certificate courses are also there.

Since its existence, it has continuously been engaged in promoting reforms and development in Ayurveda System of Health care at National and International level. The Institute is not only a premier Institute under the Central Government but also amongst apex Institutions in the field of Ayurvedic education and training in the country and comparable to none as far as Ayurveda is concerned.

NIA has made a name of excellence in teaching, training and patient care activities and having in comparable academic standard in the field of Ayurveda at Graduation, Post-Graduation, Fellowship (Ph.D.), Diploma and Certificate levels.

LOCATION

The Institute is located in Jaipur, the Capital of 'Rajasthan State'. Jaipur, a heritage city, is one of the world's most picturesque cities and is also perhaps among the world's first 'planned cities'. It is popularly known as "The Pink City of India"; a name derived from its many pink sandstone buildings. The Institute is situated about 8 kilometres from the Railway Station and about 15 kilometres from the Air Port. Two National Highways, No. 8 from New Delhi to Bombay and No.11 from Agra to Bikaner in Western Rajasthan pass through Jaipur.

CAMPUS

The Main Campus of the Institute consists of a number of multi-storied buildings of Academic and Hospital complex. Academic complex is one of the housing 20 Teaching Departments, the attached Laboratories, Chambers of Teachers, Offices, Seminar Halls, Museums, Lecture Theaters and Classrooms fitted with modern teaching aids like DLP Projector, Audio-Visual Aids, Library, etc. Whereas Hospital Complex is the other one housing 300 Bedded Hospital, OPD, Panchakarma Unit, Central Laboratory, Animal House, Deluxe Wards, Cottage Wards, Yoga Unit etc. There are 5 separate multi-storied Hostels for Boys and Girls, Virtual Dissection Table, Regional Raw Drug Repository (Western-Region) Pharmacy equipped with heavy furnaces and machineries for manufacturing various Medicines, Staff Quarters for Essential Staff, Guest House, Water Tank and Reservoir, etc. There is also a well-furnished Auditorium with a capacity of 500 Seats. There is also a NIA City Hospital with 20 beds in the heart of the City, which is 4 kilometres away from the main Campus, A Separate Clinic of NIA, named as 'Satellite clinic' providing OPD services is also there which is situated in Jawahar Nagar, a popular residential-cum-commercial area of the City and Village Hospital at Gogunda, district Udaipur, providing OPD Services.

VISION

The major vision envisaged for the Institute is help and contribute Globalization of Ayurveda and upgrading the Institute to the level of National Importance and Centre of Excellence by providing following services:

1. Best quality of Ayurvedic education leading to Graduate, Post-Graduate and Post-Doctoral Degree levels.
2. Diploma Course in AYUSH-Nursing& Pharmacy.
3. Many Short-Term Certificate, Teaching and Training in various fields of Ayurveda.
4. Providing the best Treatment facilities including Specialized Treatments to the general public.
5. Undertaking Scientific Research in various aspects of Ayurveda.
6. To attain the status of “Institute of National Importance” is also one of the major visions of the Institute.

MISSION

- 1 Improving the quality of higher education in Ayurveda.
- 2 Introduction of more PG and Fellowship Programs, Training in various aspects.
- 3 To promote the interdisciplinary approach to achieve integrated education.
- 4 Implementing Practice Based Research in treatment in order to give ascient if ic outlook to the Patient Care Activities in Ayurveda to valid ate Ayurvedic Treatment.
- 5 Undertaking various Research Activities for the welfare of mankind.
- 6 Foreign Exposure Training Programs for Foreigners (Medical as well as Non-Medical) interested in the basic knowledge as well as higher knowledge in Ayurveda.
- 7 Providing expertise in Ayurveda to foreign students interested in Ayurveda.

OBJECTIVES

1. To promote the Growth and Development of Ayurveda;
2. To produce Graduates and Post-Graduate sin all Ayurveda& Interdisciplinary branches;
3. To conduct Research on various aspects of Ayurveda;
4. To provide Medical Care through Ayurvedic System of Medicine to the suffering humanity;
5. To provide and assist in providing service and facilities of highest order for Research, Evolution, Training, Consultation and Guidance to Ayurvedic System of Medicine; and
6. To conduct Experiments and eve lop Patterns of Teaching Under-Graduate and Post-Graduate Education in all branches of Ayurveda.

FUNCTIONS

1. Under-Graduate, Post-Graduate and Ph.D. level Programs, Teaching and Training leading to the Degrees of BAMS, MD/MS (Ayurved),M.Sc.and Ph.D.(Ayurved).
2. Training to Medical Officers and Teachers of Ayurveda as sought from other State Governments.
3. Diploma in AYUSH Nursing& Pharmacy and Panchakarma Technician course.
4. Certificate Courses for Ksharasutra, Standardization on Ayurvedic Medicinal Plant Material, Advanced course

on training for Beauty Care in Ayurveda, Training for Beauty care through Ayurveda, Nutrition and Dietetics in Ayurveda, Training on Ayurvedic Methods of cooking, Primary Health care through kitchen spices and local plants, Stree Roga Sthanika Chikitsa and Panchkarma Technician.

5. Conducting ROTP, CME, TOT and similar programs for the benefit of Teachers, Medical Officers and Physicians of the country for getting advanced and up dated knowledge.
6. Collaborative Research with National level institutions and also with foreign countries interested to adopt Ayurveda as a System of Medicine in their countries.
7. Foreign Exposure Training Programs.
8. Undertaking PPP Projects for Specialized Treatments, Training and Research.
9. Providing Ayurvedic treatment to general public through its OPD and IPD services.
10. Providing Ayurvedic treatment to SC and ST in habited are as of Rajasthan under the SCP/TSP Scheme subject to budgetary allocation.
11. Active participation in Arogya Melas, Exhibitions etc.
12. Conducting National and International level Seminars, Conferences & Webinars.

Important Officers:

	Designation	Name	Contact Number (91-141-2635816+ Ext)
1.	Director cum Vice-Chancellor (I/C)	Prof. Sanjeev Sharma	101
2.	Pro Vice-Chancellor (I/C)	Prof. Mita Kotecha	151
3.	Registrar (I/C)	Prof. A. Rama Murthy	152
4.	Joint Registrar (I/C)	Dr. Narinder Singh	
5.	Joint Director (Admn.)	Mr. Jai Prakash Sharma	102
6.	Deputy Director (Admn.)	Shri Chandra Shekhar Sharma	104
7.	Administrative Officer	Shri Naresh Kumar Gupta	
8.	Controller of Examination	Prof. Ram Kishore Joshi	131
9.	Dean UG	Prof. Mita Kotecha	151
10.	Dean PG	Prof. P. Hemantha Kumar	
11.	Dean Paramedical	Prof. Hari Mohan Lal Meena	132
12.	Dean Research	Prof. Chhaju Ram Yadav	201
13.	Dean Students' Welfare	Prof. Sunil Yadav	192
14.	Dean Ph.D.	Prof. Nisha Ojha	251
15.	Dean Interdisciplinary	Dr. Sudipt Rath	153

Important Contact Numbers	
Anti-Ragging	
National Anti-Ragging Helpline	18001805522
National Women Helpline	1091
SC-ST Cell	18001806025

INTERDISCIPLINARY POST-GRADUATE COURSE – M.Sc.

Aim and Objective:

The aim of the Interdisciplinary Post-Graduate course is to provide proper training to the scholars and make them competent teachers, research workers and specialist in the respective subjects.

P.G. Departments :

The Institute conducts Interdisciplinary Post-Graduate education for the award of M.Sc. Degree in the following 6 specialities-

Departments (Specialities)

- | | | |
|----|------------------------------------|---|
| 1. | Poshanahara | (Ayurvedic Diet and Nutrition) |
| 2. | Ayurveda Manuscriptology | (Ayurveda Manuscriptology) |
| 3. | Ayur-Yoga Preventive Cardiology | (Ayurveda Preventive Cardiology) |
| 4. | Marma Chikitsa evam Kreedha Bhesaj | (Marmalogy and sports medicine) |
| 5. | Saundarya Ayurveda | (Ayurveda Cosmetology) |
| 6. | Vrikshayurveda
Plants) | (Prevention, Cultivation & Development of medicinal |

Internal Faculty Members

1. Department of Ayurveda Diet and Nutrition

- i. Dr. Durgawati Devi, Professor & Head
- ii. Dr. Kashinath Samagandi, Associate Professor
- iii. Dr. Kamla Nagar, Associate Professor
- iv. Dr. Mukta, Assistant Professor

2. Department of Ayurveda Manuscriptology

- i. Prof. Nisha Gupta, Professor & Head
- ii. Dr. Asit Kumar Panja, Professor
- iii. Dr. Praveen Kumar B, Assistant Professor
- iv. Shri Anil Kumar Sharma, Assistant Professor (Sanskrit)

3. Department of Ayur-Yoga Preventive Cardiology

- i. Prof. Ram Kishore Joshi, Professor & Head
- ii. Dr. Udai Raj Saroj, Professor
- iii. Dr. Deepti Bisht, Associate Professor
- iv. Dr. Abhishek Upadhyay, Assistant Professor
- v. Dr. Devesh Jaiman, Assistant Professor

4. Department of Marmalogy and Sports Medicine

- i. Prof. P. Hemantha Kumar, Professor & Head
- ii. Dr. Suman Sharma, Associate Professor
- iii. Dr. Manorama Singh, Assistant Professor
- iv. Dr. Rahul Sharma, Assistant Professor

5. Department of Saundarya Ayurveda

- i. Prof. Mita Kotecha, Professor & Head
- ii. Dr. Sudipta Kumar Rath, Associate Professor
- iii. Dr. Jagriti Sharma, Associate Professor
- iv. Dr. Krutika Chaudhary, Assistant Professor
- v. Dr. Ankita Goyal, Assistant Professor

6. Department of Vrikshayurveda

- i. Prof. Mita Kotecha, Professor & Head
- ii. Prof. Aku. Ramamurthy, Professor
- iii. Dr. Sumit Kumar Nathani, Associate Professor
- iv. Dr. Tarun Sharma, Assistant Professor
- v. Dr. Vikram Sidhh, Assistant Professor
- vi. Shri Ramawatar Yadav, Assistant Professor

*Adjunct Faculty in respective Departments are appointed.

Seat Matrix :

The total seats available per year are 12 (2 in each Department). Out of them,

SEATS	UR	EWS	OBC	SC	ST
Poshanahara	-	01	-	-	01
Ayurveda Manuscriptology	01	-	-	01	-
Ayur-Yoga Preventive Cardiology	01	-	-	01	-
Marma Chikitsa evam Kreedha Bheshaj	01	-	01	-	-
Saundarya Ayurveda	01	-	01	-	-
Vrikshayurveda	01	-	01	-	-

Note: If suitable candidates are not available in any category, the same will be converted to Unreserved Seats.

Eligibility for Admission:

- 1. M.Sc. in Ayurveda Diet and Nutrition (Poshanahara)** - BAMS/BHMS/BUMS/BNYS/MBBS/ B.Sc in Dietetics/M.Sc in Dietetics/ B.Sc in Food and Nutrition from a recognized college affiliated with the recognized University. Aspirants must be registered in the state or central register.
 - 2. M.Sc. in Ayurveda Manuscriptology**- BAMS/BHMS/BUMS/BNYS/MBBS/ M.A in Sanskrit from a recognized college affiliated with the recognized University. Aspirants must be registered in the state or central register.
 - 3.M.Sc. in Ayur-Yoga Preventive Cardiology**- BAMS/BHMS/BUMS/**BNYS**/Other AYUSH graduates/MBBS graduates from a recognized college from their respective council who has completed compulsory internship. Aspirants must be registered in the state or central register.
 - 4.M.Sc. in Marmalogy and Sports Medicine (Marma Chikitsa evam Kreedha bhesaj)** - BAMS/BHMS/BUMS/BSMS/BNYS/MBBS/B.Sc (Sports Medicine)/B.PT from a recognized collegeaffiliated with the recognized University.
 - 5.M.Sc. in Saundarya Ayurveda (Ayurvedic cosmetology)**- BAMS/BUMS/BHMS/BYN/MBBS/ Or Equivalent Medical degree/ B.Sc. in skin care and Aestheticmedicine or any equivalent degree from recognized university/institution.
 - 6.M.Sc. in Vrikshayurveda**- B. A. M. S./B.Sc. (Agriculture) /B.Sc. (Horticulture)/ B.Sc. (Forestry)/ Any other Science Graduate passed with minimum 50% Marks from a recognizeduniversity.
- **Age Limit –**
 - a) Minimum – 18 years
 - b) Maximum – 40 years (Relaxable to In service, SC, ST, OBC and PH candidates as per government of India rules.)

The Critical date for age calculation will be the Last date for submission of Application forms that is 31 July 2023

Mode of Admission:

1. Application Form:-

Filling up of Application Form

- Application forms can be filled and submitted only online mode from our website <http://www.nia.nic.in/>
- Forms submitted in any other mode will not be considered and summarily rejected.
- Application Fee : Rs 500/- for GEN and OBC applicants.
Rs 300/- for SC, ST and EWS applicants.
- Application Fee once paid will not be refunded under any circumstances.

How to apply

- Candidates are required to apply in online application portal available on our website

<http://www.nia.nic.in/>

- Institute will not consider any another format or application proforma. Application completed in all respects uploading self-attested copies of all certificates, mark sheets, educational qualifications etc.

Invalid Applications: Candidates are advised to read all instructions carefully before applying for online portal otherwise their applications are likely to be rejected on one or more of the following reasons in terms of the notifications.

- Applications received after the closing date.
- Candidates not having the required qualification.
- Applications, which are incomplete/illegible in any manner.
- Applications without the prescribed Application Fee (as applicable).
- Applications send via any other mode other than online portal.

Last Date of receiving application:

Closing date of receipt of application form : 31th July 2023, 5.00 pm

2. Mode of Selection and Admission

Admission will be made on the basis of merit secured in the screening

test/Interview/Both to be conducted by National Institute of Ayurveda, Jaipur.

1. If the applications exceed 10 seats per seat, only then the screening test will be conducted. Otherwise, Selection will based on interview.
2. For screening test, 50% marks will be from the respective field and remaining 50% will be based on the general knowledge, current affairs and computer knowledge.
3. Detailed scheme of question paper and syllabus will be notified on the admission at a later date.

Fee Structure:

First Year M.Sc.	Rs. 37650/- (Includes Refundable Rs. 8000/-)
Second Year M.Sc.	Rs. 26650/-

Duration of the Course and Examination Policy:

(1) The student shall have to undergo study for a period of two years after the admission having two examinations as follows:

1st Year- The Preliminary Examination at the end of one academic year after admission.

2nd Year- The Final Examination at completion of one academic year, after passing the Preliminary Examination.

- (2) The student shall have to attend minimum seventy-five percent of total lectures, practical and clinical tutorials or classes to become eligible for appearing in the examination.
- (3) A candidate has to secure minimum 50 percent in both theory and practical for promotion to next academic year.
- (4) If any candidate fails to secure minimum passing marks, he/she will have to appear for supplementary exam.

Method of Training:

- The Scholars admitted will be given intensive training in classical knowledge along with comparative and critical study of the subject.
- The student of various specialties shall have to do duties in Hospital/ Pharmacy/ Herbal Garden/ Laboratory/ Field Work during the course of study as and when required, as per directions given by respective HOD/Supervisor.
- The student shall attend special lectures, demonstrations; seminars, and such other activities as may be arranged by the Institute.
- The student shall have to acquire the knowledge about the methods and techniques of research in the respective fields making use of information technology
- The student shall undertake training in teaching technology and research methods and shall participate in the teaching and training programs of nursing students, under-graduate students or interns in the respective subjects during the course of studies.
- In the clinical training, the student shall have to acquire knowledge of independent work as a specialist.
- The student shall undergo training of investigative procedures, techniques and surgical performance of procedures and management in the respective specialty.

Medium of Training:

Sanskrit / Hindi / English shall be the medium for the Post-Graduate training and dissertation. The question papers will be set in Sanskrit / Hindi / English and the candidate can answer in Sanskrit or Hindi or English.

Stipend:

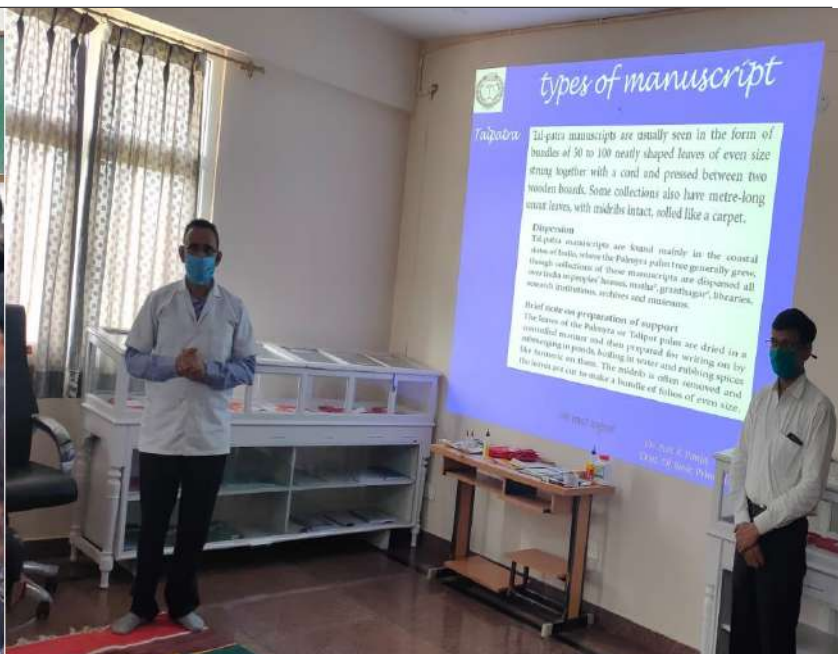
Currently, there will not be any stipend for the students. But, the institute may decide regarding the same in due course of time.

Leaves :

The following types of leave facilities are available to the post graduate scholars:

1. 24 days casual leaves in an academic year.
2. As per the notification of government of India, 6 months maternity leave to female scholars and 15 days paternity leave to male scholar once during the study period. The female scholar who avails any number of maternity leaves, her examination will be extended six months i.e., next scheduled examination of the Institute. However, the fellowship will be given only for total 24 months duration.
3. Ten days term leave after completion of 1st academic year.
4. On the recommendation of the Head of Department/Supervisor concerned, 20 days academic leaves may be granted during entire PG course for conducting research work/seminar/workshop at other Institution/ places.
5. Regarding participation& Presentation of Paper in any seminar/Workshop/conference, candidates shall be paid maximum of Rs 2000/- or the actual registration fee, maximum of 2 times in the entire course duration.
6. Any kind of Leave can be availed only after written application to HOD.
7. In case student remains absent for more than 30 days without prior intimation, admission in Interdisciplinary M.Sc course such student will stand terminated automatically without any notice.
8. The student undergoing interdisciplinary M.Sc. course is not permitted to any paid appointments / service / work or engages himself in self-employment. The candidate is directed to obtain N.O.C. for any interview while submitting an application for any new job/ appointments. The defaulters are liable for disciplinary action such as recovery of fellowship and termination of admission.

GALLERY



Syllabus: 1st Year**Paper 1: Basics of Ayurveda****Teaching Hours: 180 (Theory)****Max. Marks: 100**

Paper 1	Basics of Ayurveda	180 Hrs.
	Unit: 1	
1.	Definition and components of Ayu, definition and aim of Ayurveda, Brief introduction of Ayurveda Samhitas.	4
2.	Definition of Swasthapurush, introduction of parameters of Swasthya and Tray-upastambha.	6
3.	Introduction of concept of Panchmahabhuta theory, Tridosha theory and Lokasamyapurush.	6
4.	Introduction of concept of Saptadhatu, Mala and Ojus	4
5.	Introduction of concept of Srotas	3
6.	Introduction of concept of Prakriti, Mana and Atma	5
7.	Introduction of concept of Raspanchaka	7
8.	Introduction of Panchvidhakshayakalpana	2
9.	The concept of Roga, Main etiological factors, Chikitsa and its types	4
10.	Introduction of various sections/departments of Ayurveda and their specific activities	14
	Unit: 2	
11.	Definition of word research and classification of research – (pure/applied; qualitative/quantitative; observational and interventional)	5
12.	Historical background of research in Ayurveda	2
13.	Introduction to Classical methods of research-Aptopadesh, Pratyaksha Anuman and Yukti	6
14.	Research process- Brief introduction of Selection of topic, Review of literature, Formulation of hypothesis, Aims and objectives, Materials and methods, Observation and Results.	4
15.	Concept of ethics in research	2
16.	Publication of research, Structuring of article (IMRAD)	4
17.	Brief introduction of Medical Statistics	2
18.	Collection and presentation of data	4
19.	Definition of Average, Percentile, Arithmetic Mean, Median, Mode, Range, Standard Deviation and Standard Error	5
20.	Parametric and Non-parametric tests	6
	Unit: 3	
21.	Introduction to Swastha	2
22.	Introduction to Swasthavritta	2
23.	Importance of Swasthavritta	2
24.	Introduction to Dinacharya	4
25.	Introduction to Sandhya and Ritucharya	4
26.	Introduction to Madhyana Charya	3
27.	Introduction to Ratri Charya	3
28.	Introduction to Sadvritta	2
29.	Introduction to Achara Rasayna	2
30.	Introduction to Rasayna	3
31.	Introduction to Vajikarna	1
32.	Introduction to Vega dharna	3
33.	Introduction to Ahara	4
34.	Introduction to Food – Modern Concept	4
35.	Importance of Ahara / Food – Ayurved and Modern Concept	4

Paper 2: Ayurveda Lifestyle**Teaching Hours: 180 (Theory)****Max. Marks: 100**

Paper 2	Ayurveda Lifestyle	180 Hrs
1.	Concept of Swasthavritta, various definition of Swastha according to various classical texts.	20
2.	Shareerika Prakriti – Vataja, Pttaja, Kaphaja, Dwandwaja, Tridoshaja	20
3.	ManasikaPrakriti – Satvika, Rajasika, Tamasika	10
4.	Components of Dinacharya Introduction	10
5.	BramhaMuhurtaJagarana, Ushapana, MalamutraVisarjana, Achamana, Danthadhavana, JiwhaNirlekhana, Kavala, Gandusha, Nasya, Anjana, Dhumapana, Abhyanga, Vyayama, Snana, VastraDharana, Anulepana	30
6.	Physiological effect of Dinacharya Modules	20
7.	Detail description of components in various classical text of Ayurveda - Samhita	20
8.	Detail description of components in various classical text of Ayurveda - Nighantu	20
9.	Introduction and Classification of Ritucharya	10
10.	Hemantha Ritu, Shishira Ritu, Vasanta Ritu, Grishma Ritu, Varsha Ritu, Pravritt Ritu, Sharad Ritu	40
11.	Dharniya Vega & Adharanadharaniya,	5
12.	Definition, Importance, Types of Vega	5
13.	Adharaniya Vega: Types, Physiological effect of Vega, Adverse effect of ill practice of the concept	10
14.	Dharaniya Vega : Types, Physiological effect of Vega, Adverse effect of ill practice of the concept	10
15.	Definition, Types, Pramana , Yogya&Ayogya of Diva swapna, Ratrijagarana,	10
16.	Physiology of Sleep, Pathology of Insomnia	10
17.	Definition, Method to practice, Benefits and Advantage	10
18.	Definition, Types	
19.	Ayurveda and Modern concept of Immunity, Immunization	10
		180 Hrs

Paper 3: Ayurveda Food and Nutrition**Teaching hours: 180 (Theory)****Max. Marks: 100**

Paper 3	Ayurveda Food and Nutrition	180 Hrs
1.	Definition, Importance	5
2.	Concept of Ahara in various classics	10
3.	Agni	10
4.	Ahara Pachana Kriya	10
5.	Concept of Pathya, Satmya and Hitaahara	20
6.	Astahara Vidhivishesha Ayatana	30
7.	Dwadasha Ashana Pravicharana	30
8.	Virudha Ahara	30
9.	Various classification of the food articles	5
10.	Shukha Dhanya Varga	10
11.	Shami Dhanya Varga	10
12.	Shimbi Dhanya Varga	10
13.	Shaaka Varga	10
14.	Phala Varga	10
15.	Harita Varga	10

16.	Mamsa Varga	10
17.	KsheeraVarga	10
18.	Ikshu Varga	10
19.	Ahara Upayoga Varga	10
20.	Kritanna varga	20
		180 Hrs

Paper 4: Modern Food and Nutrition

Teaching hours: 180 (Theory)

Max. Marks: 100

Paper 4	Modern Food and Nutrition	180 Hrs
1.	Introduction, Importance, Classification	5
2.	Nutrients in Food - Macronutrients	5
3.	Nutrients in Food – Micronutrients	5
4.	Carbohydrates structure	5
5.	Carbohydrates classification	5
6.	Food sources	5
7.	Nutritional disorders of Carbohydrates	5
8.	Proteins structure	5
9.	proteins classification	5
10.	Food sources	5
11.	Nutritional disorders of proteins	5
12.	Lipids and Fats structure	5
13.	Lipids and Fats classification	5
14.	Food Source of Fats and Oil	5
15.	Vitamins – Introduction	5
16.	Classification	5
17.	Water soluble vitamins	5
18.	Fat soluble vitamins	5
19.	Sources and deficiency disorders	5
20.	Minerals Introduction	5
21.	Minerals classification	5
22.	Source	5
23.	Junk Food and fast Food	5
24.	Deficiency disorders	5
25.	Balance Diet	5
26.	Balanced Diet and Deficiency	5
27.	Nutrition Requirements for Susceptible Population	5
28.	Daily requirements (RDA)	5
29.	Adulteration	5
30.	Food Standards – AGMARK, ISI etc	5
31.	Basic Food Laws and Regulations	10
32.	Food Processing	10
33.	Cereals, Pulses, Vegetables, Fruits, Oils, Mellitus, Oils and Fats, Non-Vegetarians	10
		180

Practical of M.Sc. First Year**Teaching Hours: 360 Hrs.****Max. Marks: 100**

Sl.No	Title of the Work	360 Hrs.
1.	Assessment of Tridosha	10
2.	Assessment of Dhātu	10
3.	Assessment of Agni	10
4.	Assessment of Prakriti	10
5.	Collection of Data	4
6.	Assessment of Data	4
7.	Random Sampling Method demonstration	6
8.	Testing the Hypothesis	4
9.	Statistical Tests	6
10.	Dinachary Modalities	16
11.	Assessment of Ritu	6
12.	Assessment of Nidra	6
13.	Preparation of Modules according to Healthy Individuals	6
14.	Identification of Grains, Cereals, Pulses, Vegetables, Fruits, Oils & Fats etc.	30
15.	Visit to Fields – Food factories, Preservation centers etc	30
16.	Visit to Diet Institutes	30
17.	Preparation of List of Modern Food	10
18.	Adulteration Testing	20
19.	Visit to Food Industries	30
20.	Visit to Food Store house	20
21.	Visit to Milk Dairy	10
22.	Visit to Poultry Farm	20
23.	Diet Plan module according to Age, Sex, Occupation,	10
24.	Report preparation on the visit to various industries	10
25.	5 Proforma preparation, Case Sheet Preparation	7
26.	Also Includes Departmental Presentation, Case Presentation, Journal Presentation	35
Total		360

Syllabus: 2nd Year**Paper 1: Ayurveda Ahara and Seasonal Diet****Teaching Hours: 180 (Theory)****Max. Marks: 100**

Paper 1	Ayurveda Ahara and Seasonal Diet	180 Hrs.
1.	General concept of Diet according to the Seasons	5
2.	Importance of diet according to various seasons	5
3.	Diet according to Hemnata Ritu	20
4.	Diet according to Shishira Ritu	20
5.	Diet according to Vasanta Ritu	20
6.	Diet according to Grishma Ritu	20
7.	Diet according to Varsha Ritu	20
8.	Diet according to Pravrut Ritu	20
9.	Diet according to Sharad Ritu	20
10.	Diet during natural calamities	10
11.	Diet during Travelling to extreme climatical condition	10
12.	Diet during Jet lag	05
13.	Diet during the Night shift	05
		180 Hrs

Paper 2: Ahara Samskara and Kritanna Varga**Teaching Hours: 180 (Theory)****Max. Marks: 100**

Paper 2	Ahara Samskara and KritannaVarga	180 Hrs.
1.	Introduction to KritannaVarga	5
2.	Various method of cooking – Ayurveda and Modern Dietetics	10
3.	Preparation of Manda	5
4.	Preparation of Peya	10
5.	Preparation of Vilepi	10
6.	Preparation of Odhana	10
7.	Preparation of Raga	10
8.	Preparation of Shandava	10
9.	Preparation of Khala	10
10.	Preparation of Kambalika	10
11.	Preparation of Pupilika	10
12.	Preparation of Vataka	10
13.	Preparation of Rotika	10
14.	Preparation of Dhaal	10
15.	Preparation of Shaka	10
16.	Preparation of Yusha	5
17.	Preparation of Supa	5
18.	Preparation of Saktu Etc	10
19.	all preparation methods along with the benefits, indication and contraindication	10
20.	Setting up the Ayurveda Kitchen	10
		180 Hrs.

Paper 3: Diet according to Constitution, Age, Occupation and Diseases (Planning and Preparation)**Teaching Hours: 180 (Theory)****Max. Marks: 100**

Paper 3	Diet according to Constitution, Age, Occupation and Diseases (Planning and Preparation)	180 Hrs.
1.	Diet in Healthy individuals	10
2.	Diet according to Constitution	10
3.	Diet in Childhood	10
4.	Diet in Adolescent	10
5.	Diet in School going Children	10
6.	Diet in Pregnancy	10
7.	Diet for Lactating women	10
8.	Diet in Post Labour	10
9.	Diet according to occupation	10
10.	Diet in Geriatrics	10
11.	Diet in Youth	10
12.	Diet in Sports	10
13.	Diet pattern for preservation and promotion of health	10
14.	Diet for Yogies/Bramha chari	10
15.	Diet for Vegetarian Individual	10
16.	Diet for Non Vegetarian Individual	10
17.	Diet for Western Population	10
18.	Diet for Contemporary Food	10
		180 Hrs

Paper 4: Diet according to Diseases**Teaching Hours: 180 (Theory)****Max. Marks: 100**

Paper 4	Diet according to Diseases	180 Hrs.
1.	Diet and lifestyle according to disorders	5
2.	Diet and lifestyle in Communicable diseases in general	10
3.	Diet and lifestyle in Non-Communicable diseases in general	10
4.	Diet pattern and lifestyle in the Risk group individual	10
5.	Diet and lifestyle in Jwara	10
6.	Diet and lifestyle Rakta Pitta	10
7.	Diet and lifestyle Amla Pitta	10
8.	Diet and lifestyle Grhini Roga	10
9.	Diet and lifestyle Hrudaya Roga	10
10.	Diet and lifestyle Amavata	10
11.	Diet and lifestyle Kamala and Pandu Roga	10
12.	Diet and lifestyle Sandhi Vata	10
13.	Diet and lifestyle Sthaulya	10
14.	Diet and lifestyle Stri Roga	10
15.	Diet and lifestyle Prameha / Madhumeha	10
16.	Diet and lifestyle Renal calculi	5
17.	Diet and lifestyle Ano rectal disorders	5
18.	Diet and lifestyle Skin disorders in general	5
19.	Diet and lifestyle Arbudaroga (Cancer)	10
20.	Diet and lifestyle Nidra Nasha	5
21.	Diet in Pandemic /Infectious diseases	5
		180 Hrs

Practical of M.Sc. 2nd Year**Teaching Hours: 360 Hrs.****Max. Marks: 100**

Sl.No	Points of Practical	360 Hrs.
1.	Diet Preparation for Hemanta Ritu & Shishira Ritu	12
2.	Diet Preparation for Vasanta Ritu	12
3.	Diet Preparation for Grishma Ritu	22
4.	Diet Preparation for Pravrut Ritu & Varsha Ritu	22
5.	Diet Preparation for Sharad Ritu	22
6.	Various types of Manda	5
7.	Various types of Peya	5
8.	Various types of Vilepi	10
9.	Various types of Odhana	10
10.	Various types of Raga & Shandava	10
11.	Various types of Khala & Kambalika	10
12.	Various types of Pupilika	10
13.	Various types of Vataka	10
14.	Various types of Rotika	10
15.	Various types of Dhaal, Shaka	5
16.	Various types of Yusha, Supa, Saktu	5
17.	Diet Preparation for Vataja Prakriti	5
18.	Diet Preparation for PittajaP rakriti	5
19.	Diet Preparation for Kaphaja Prakriti	5
20.	Diet in Manasika Prakriti	5
21.	Diet preparation in Garbhini	10
22.	Diet preparation for Prasuta Avastha	5

23.	Diet preparation for Balya Avastha	10
24.	Diet preparation for Taruna Avastha	5
25.	Diet preparation for Yuva Avastha	10
26.	Diet preparation for Vrudda Avastha	5
27.	Diet preparation for Sports person	10
28.	Diet preparation for Yoga abhyasa	5
29.	Diet for Vegetarian and Non vegetarian person	10
30.	Diet Preparation for Santarpana Janya Vikara	5
31.	Diet Preparation for Apatarpana janya Vikara	5
32.	Diet Preparation for Diabetes	5
33.	Diet Preparation for Cancer	5
34.	Diet Preparation for Muculo- Skeletal Disorders	5
35.	Diet Preparation for cardiac Disorders	5
36.	Diet Preparation for Neural Disorders	5
37.	Diet Preparation for Psychological Disorders	5
38.	Diet Preparation for Skin disorder	5
39.	Diet in Post Operative condition	5
40.	Diet in Burn	5
41.	Visit to Diet unit of naturopathy center	5
42.	Visit to diet section of Cancer center	5
43.	Visit to diet section of Diabetic center	5
44.	Visit to diet section of Tuberculosis center	5
45.	Visit to diet section of AIDS/HIV center	5
46.	Diet module according to diseases	5
47.	OPD IPD Pathya Ahara Unit posting	5
		360 Hrs

Syllabus: 1st Year**Paper 1: Basics of Ayurveda****Teaching Hours: 150 (Theory)****Max. Marks: 100**

Paper 1	Basics of Ayurveda	180 Hrs.
	Unit: 1	
1.	Definition and components of Ayu, definition and aim of Ayurveda, Brief introduction of Ayurveda Samhitas.	4
2.	Definition of Swasthapurush, introduction of parameters of Swasthya and Traya-upastambha.	6
3.	Introduction of concept of Panchmahabhuta theory, Tridosha theory and Lokasamyapurush.	6
4.	Introduction of concept of Saptadhatu, Mala and Ojus	4
5.	Introduction of concept of Srotas	3
6.	Introduction of concept of Prakriti, Mana and Atma	5
7.	Introduction of concept of Raspanchaka	7
8.	Introduction of Panchvidhakshayakalpana	2
9.	The concept of Roga, Main etiological factors, Chikitsa and its types	4
10.	Introduction of various sections/departments of Ayurveda and their specific activities	14
	Unit: 2	
11.	Definition of Word Research and Classification of Research – (pure/applied; qualitative/quantitative; observational and interventional).	5
12.	Historical Background of research in Ayurveda	2
13.	Introduction to Classical methods of research-Aptopadesh, Pratyaksha Anuman and Yukti.	6
14.	Research Process - Brief Introduction of Selection of Topic, Review of literature, Formulation of Hypothesis, Aims and Objectives, Materials and Methods, Observation and Results.	4
15.	Concept of Ethics in Research	2
16.	Publication of Research, Structuring of Article (IMRAD)	4
17.	Brief Introduction of Medical Statistics.	2
18.	Collection and Presentation of Data.	4
19.	Definition of Average, Percentile, Arithmetic Mean, Median, Mode, Range, Standard Deviation and Standard Error.	5
20.	Parametric and Non-parametric Tests	6

Paper 2: Basic of Manuscriptology and Collection of Manuscripts**Teaching Hours: 150 (Theory)****Max. Marks: 100**

Paper 2	Basic of Manuscriptology and Collection of Manuscripts	Hrs.
1.	Introduction of Manuscriptology.	10
2.	Language Spoken and Written in Ancient India	20
3.	Detailed History of writing in various parts of India	10
4.	Detailed study and various aspects of Orientology.	10
5.	Indology and Manuscriptology.	10
6.	Descriptions of varieties of Manuscripts and Character of Varieties	20
7.	Brief outline of lithography (Printing on Stone Blocks), Xylography	10

	(Printing on Wooden Blocks), Epigraphy (Study of Writing on Rocks, Pillars, Utensils and Metal Plates), Palaeography (Study of Ancient Scripts their Origin, Development of Pictorial and Phonetic Symbols).	
8.	Importance and Utility of Sanskrit Language in Ayurveda Manuscriptology	15
9.	Collection of Manuscripts: Purpose and Goal.	10
10.	Description of Methods of Collection of Manuscripts	10
11.	Communications, Collection Reporting of Manuscripts	10
12.	Manuscript libraries of India and Brief Description of Their Collections.	10
13.	Major Collection of Ayurveda Manuscripts in India and Abroad.	5
	Total	150

Paper 3: Preservation, Cataloguing of Manuscripts**Teaching Hours: 150 (Theory)****Max. Marks: 100**

Paper 3	Preservation, Cataloguing of Manuscripts	Hrs
1.	Preserving, storage and cataloguing of manuscripts: Brief outline	5
2.	Details description of various aspects and methods of preservation	5
3.	Details description of various aspects and methods of storage of manuscripts.	15
4.	Repairing of manuscripts as per the condition	5
5.	Cataloguing of manuscripts: History of cataloguing of manuscripts	5
6.	Various methods of cataloguing	10
7.	Different catalogue on manuscripts	10
8.	Available catalogues on Ayurveda Manuscripts	5
9.	Catalogus catalogorum and new Catalogus Catalogorum.	10
10.	Preservation: of manuscripts ; Brief outline	10
11.	Lamination, photo copying, microfilming and digitalization	15
12.	Digitalization through Scanner, Digital camera	15
13.	Basic knowledge of hardware and software needed for digitalization, storage, editing and Mechanical reproduction of manuscripts	10
14.	Knowledge of specific software like html editor, OCR, image editor, palm leaf manuscript editor etc.	10
15.	National Database of Manuscripts, Kriti Sampada, of NMM	5
16.	Historical Survey and Current Practices	5
17.	Government Initiatives	5
18.	Description of various national and international rules and regulation regarding manuscript collection, communication, editing, publications etc.	5
	Total	150

Paper 3: Writing of Manuscripts**Teaching Hours: 150 (Theory)****Max. Marks: 100**

Paper 4	Writing of Manuscripts	Hrs
1.	Form of Manuscript – e.g. Size, Margin, Line Numbering, Paintings, Unconventional Form etc.	5
2.	Parts of Manuscript – Cover, Binding, Recto, Verso etc.	5
3.	Style of Composition of Manuscripts – Running Texts, Text and Commentary, Sub-Commentary etc.	5
4.	Writing in Manuscripts: - Brief Outline	2
5.	Various Styles and Techniques	5
6.	Marginalia and Pagination.	5
7.	Punctuation, Abbreviations.	5

8.	Prashasti, and Colophon.	5
9.	Scribal Remarks.	5
10.	Illustration and Decoration	5
11.	Corrections	10
12.	Description of Scribal Errors: Brief Outline	3
13.	Deletion /Omission	5
14.	Addition, Substitution	5
15.	Orthographic Confusion	5
16.	Transposition	5
17.	Brief Description of Prosody and Sanskrit Grammar (Sandhi, Samasa, Pratyaya, Sup-ting Prakarana)	15
18.	Brief Outline various aspects of Writing in Ancient India and the Scribe.	10
19.	Details Description of Writing Materials	5
20.	Details of Preparation of the Writing Materials	5
21.	Writing Instruments.	5
22.	Writing Ink	5
23.	Binding of Manuscripts	5
24.	Other Supporting Materials.	5
25.	Brief Description of Ethics and Code of Conduct of Writing	10
26.	Importance of Ethics and Principles Mentioned in Ayurveda Classics in the Purview of the Present Era.	5
	Total	150

Practical of M.Sc. First Year**Teaching Hours: 480 Hrs.****Max. Marks: 100**

S.No	Topic	360 Hrs.
1.	Assessment of Prakriti	10
2.	Determination of Rasa Panchaka in Some Common Dravyas	10
3.	Practical Uses of Tantrayukti in Understanding Ayurveda Text	10
4.	Practical Uses of Tachchilya in Understanding Ayurveda Text	10
5.	Practical Uses of Tantraguna, and Tantradosh in Composing Ayurveda Text.	10
6.	Practical Uses of Vadamarga in Understanding Ayurveda Text	10
7.	Practical Uses of Kalpana and Arthashraya in understanding Ayurveda Text	10
8.	Practical Uses of Trividha Gyanopayain Understanding Ayurveda Text.	10
9.	Practical Uses of Pada, Paada, and Shloka Methods of Learning	10
10.	Practical Uses of Vakya, Vakyartha in Ayurveda Teaching	10
11.	Clinical Protocol Writing Exercise on a Given Problem.	15
12.	Scientific Article Writing.	5
13.	Details of various Writing in various Parts of India	20
14.	Varieties of Manuscripts and Character of Varieties.	15
15.	Practical orientation on lithography, Xylography, Epigraphy, Palaeography	20
16.	Practical usages of Sanskrit in Ayurveda Manuscriptology	15
17.	Description of methods of collection of manuscripts	20
18.	Preparation of Communications sheets, collection reporting of Manuscripts.	30
19.	Various Methods of Storage of Manuscripts.	20
20.	Repairing of Manuscripts as per the Condition.	20
21.	Various Methods of Cataloguing	20
22.	Lamination, Photo Copying, Microfilming and Digitalization.	15
23.	Digitalization through Scanner, Digital Camera	15

24.	Basic knowledge of Hardware and Software needed for Digitalization, Storage, Editing and Mechanical Reproduction of Manuscripts.	5
25.	Basic Training of Specific Software like HTML Editor, OCR, image editor, palm leaf manuscript editor etc.	15
26.	Storage of Palm Leaf Manuscripts	10
27.	Training of forma, styles and parts of Manuscript –etc.	20
28.	Training in various aspects of Writing in manuscripts:	30
29.	Corrections of Manuscripts	10
30.	Reading and identifying of Scribal errors:	20
31.	Brief description of Prosody and Sanskrit grammar (Sandhi, Samasa, Pratyaya, Sup-ting Prakarana)	20
32.	Writing Materials,	20
33.	Training of forma, styles and parts of Manuscript– etc.	20
34.	Training in various aspects of Writing in Manuscripts:	30
35.	Corrections of Manuscripts.	10
36.	Reading and Identifying of Scribal Errors:	20
37.	Brief Description of Prosody and Sanskrit Grammar (Sandhi, Samasa, Pratyaya, Sup-ting Prakarana)	20
38.	Writing Materials	20

Syllabus: 2nd Year

Paper 1: Indian Scripts and Ayurveda Manuscripts

Teaching Hours: 150 (Theory)

Max. Marks: 100

Paper 1	Indian Scripts and Ayurveda Manuscripts	150 Hrs
1.	1. Introduction of Indian scripts	2
2.	i. The scope and significance of palaeography in language studies	5
3.	ii. Ancient Writings in India – Indus script, Brahmi, Kharosti, Devanagari	10
4.	iii. Evolution of alphabet and numerical	10
5.	iv. Evolution of Indian Scripts from Brahmi	10
6.	v. The period of Gupta and Nagari scripts and its variant eastern (Poorvanagari), western (Ardha nagari), southern (Nandinagari) and northern (Devanagari).	15
7.	vi. Outline of Nepali and Newari, Oriya, Saarada, Maithili,	10
8.	vii. Outline of Grantha, Old kannada, Malayalam, Modi, Sinhalese Telugu or Andhra scripts	10
9.	2. Nandi Nagari and Devanagari Scripts : brief outline	2
10.	i. Scripts in detail	10
11.	ii. Characteristics and different variant of Nandi Nagari and Devanagari Scripts	10
12.	iii. Development of other later characters – Sarada, Gurumukhi, Sidhamathruka, Nagari	10
13.	iv. Old documents in both Scripts	2
14.	3. Reading and writing of scripts : Brief Outline	2
15.	i. Illustration of the script from estampages	5
16.	ii. Printed Ayurveda books and prepared charts	5
17.	iii. Available Ayurveda manuscripts	10
18.	4. Transliteration rules and methods: Brief Outline	2
19.	i. Both Nagari Script to Roman and English characters	10
20.	ii. Roman and English characters to both Nagari	10
	Total	150

Paper 2: Textual Criticism**Teaching Hours: 150 (Theory)****Max. Marks: 100**

Paper 2	Textual Criticism	Hrs.
1.	Description of Collation and methods collating of reading of manuscripts and preparing collation sheets.	15
2.	Various kinds of texts in Ayurveda	10
3.	Details of Textual criticism i. Definition ii. Aim and Scope	5
4.	Conflated Manuscripts	5
5.	Textual criticism and Literary criticism	5
6.	Variants and errors	10
7.	Causes of corruption	5
8.	Remedies	5
9.	Transmitted texts	5
10.	Fundamental Aspects of Textual Criticism	5
11.	Heuristics /Recensio	5
12.	Emendation	10
13.	Higher criticism	3
14.	Problems of critical recensio	5
15.	Stemma Codicum	5
16.	Genealogy of Manuscripts	10
17.	Practical hints on Editing of texts	10
18.	Selection of Manuscripts	5
19.	Classification	3
20.	Description	2
21.	Pedigree	2
22.	Various aspects of Textual Criticism with respects to Ayurveda texts	15
	Total	150

Paper 3: Editing and Publication of Texts**Teaching Hours: 150 (Theory)****Max. Marks: 100**

Paper 3	Editing and Publication of Texts	Hrs.
1.	Editing scientific texts : Outline	10
2.	Rules and methods critical edition	20
3.	Rules of translation	15
4.	Preparation of texts : Outline	5
5.	Dating of undated manuscripts	10
6.	Evidence of Authorship	15
7.	Stylometric Analysis	10
8.	Publication of texts: Outline	5
9.	Presentation of texts	20
10.	Indexing methods	20
11.	Preparation of Annexure	20
	Total	150

Paper 4: Ayurveda Manuscriptology**Teaching Hours: 150 (Theory)****Max. Marks: 100**

Paper 4	Ayurveda Manuscriptology	Hrs.
1.	Description of various Published Editions of Vrihatrayee, Laghutrayee,	10
2.	Description of various Published Editions of Rasa-texts	10
3.	Description of various Published Editions of Nighantu	10
4.	Description of various Published Editions of other Classical Texts	10
5.	Details description of unpublished manuscripts of Vrihatrayee, Laghutrayee.	10
6.	Details description of Unpublished Manuscripts of Rasa-texts, Nighantu	10
7.	Details description of Unpublished Manuscripts of other classical texts	5
8.	Description of Unpublished Manuscripts of allied/Contemporary Ayurveda Manuscripts.	5
9.	Description of Unpublished Manuscripts of Super-specialty Ayurveda Manuscripts.	5
10.	Essential of Editing Vrihatrayee, Laghutrayee.	15
11.	Essential of Editing Rasa-texts, Nighantu and Other Classical Texts.	10
12.	Essential of Editing of Other Classical Texts	10
13.	Variant reading and Process of patha sudhi in Ayurveda Manuscripts	20
14.	Preparation of glossary of Technical Terms, Animal, Mineral, Plants and Products.	10
15.	Details of Works going on Ayurveda Manuscripts in various Institutions across the Globe.	10
	Total	150

Practical of M.Sc. 2nd Year**Teaching Hours: 480 (Theory)****Max. Marks: 100**

Sl.No.	Points of Practical	Hrs.
1.	Indus script, Brahmi, Kharosti,	10
2.	alphabet and numerical	10
3.	Indian Scripts from Brahmi	10
4.	Nagari scripts and its variant eastern (Poorvanagari), western (Ardha nagari), southern (Nandinagari) and northern (Devanagari).	20
5.	Nepali and Newari, Oriya, Saarada, Maithili.	5
6.	Outline of Grantha,, Old kannada , Malayalam, Modi , Sinhalese Teluguor Andhra scripts	5
7.	Nandi Nagari and Devanagari Scripts	10
8.	Characteristics and different variant of Nandi Nagari and Devanagari Scripts	5
9.	Characteristics and different variant of Sarada, Gurumukhi, Sidhamathruka, Nagari	5
10.	Script reading through Ayurveda manuscripts	20
11.	Transliteration of Both Nagari Script to Roman and English characters	10
12.	Transliteration of Roman and English characters to both Nagari	10
13.	Collation of manuscripts and preparing collation sheets	30
14.	Orientation of Various kinds of texts in Ayurveda	10
15.	Lower criticism	15
16.	Higher criticism	30
17.	Practical hints on Editing of texts	20

18.	Various aspects of Textual Criticism with respects to Ayurveda texts	15
19.	Methods critical edition	20
20.	Translation	15
21.	Dating of undated manuscripts	20
22.	Evidence of Authorship	15
23.	Presentation of texts	10
24.	Indexing of Texts	20
25.	Preparation of Annexure	20
26.	Practical Training on various published editions of Vrihatrayee, Laghutrayee, Rasa-texts, Nighantu and other classical texts	10
27.	Practical Training on various un-published Manuscripts of Vrihatrayee, Laghutrayee, Rasa-texts, Nighantu and other classical texts	10
28.	Practical Training on unpublished manuscripts of allied / contemporary and super-specialty ayurveda manuscripts	10
29.	Training of Editing Vrihatrayee, Laghutrayee,	20
30.	Training of Editing Rasa-texts, Nighantu and other classical texts	20
31.	Variant reading and Process of patha sudhi in Ayurveda manuscripts	30
32.	Preparation of glossary of technical terms, animal, mineral, plants and products	20

Syllabus: 1st Year**Paper 1: Fundamentals of Ayurveda, Research and Bio Statistics**

Teaching Hours: 135 Hrs (Theory)

Max. Marks: 100

Paper 1 PC : 101	Fundamentals of Ayurveda, Research and Bio Statistics	135 Hrs
1.	Definition and components of Ayu, definition and aim of Ayurveda, Brief introduction of Ayurveda Samhitas.	04 Hrs
2.	Definition of Swastha purush, introduction of parameters of Swasthya and Tray-upastambha.	06 Hrs
3.	Introduction of concept of Panchmahabhuta theory, Tridosha theory and Loka samyapurush.	06 Hrs
4.	Introduction of concept of Saptadhatu, Mala and Ojus	04 Hrs
5.	Introduction of concept of Srotas	03 hrs
6.	Introduction of concept of Prakriti, Mana and Atma, Chaturvinshati and Shaddhatuj Purush	05 Hrs
7.	Introduction of concept of Raspanchaka	07 Hrs
8.	Introduction of Panchvidha kshaya kalpana	02 Hrs
9.	The concept of Roga, Main etiological factors, Chikitsa and its types	04 Hrs
10.	Introduction of various sections/departments of Ayurveda and their specific activities	14 Hrs
11.	Understanding the fundamental concepts of Vridhhi and Kshaya of Dosha, Dushya, Mala with Amshaamsha Kalpana. Srotodushti, Khavaigunya, Agni, Ama (Saama and Nirama Dosha, Dhatu & Mala), Aavarana, Rogamarga, Ashayapakarsha, Dosha Gati, Kriyakala. Aushadha Sevana Kala, Anupana, Pathya-Apathya and their scientific relevance during health and disease.	08 Hrs
12.	Knowledge of Rogi Roga Pariksha including detailed history taking, systemic examination and detail description of Cardio vascular systemic examination.	10 Hrs
13.	Basics and need of preventive Cardiology through Ayurveda	04 Hrs
14.	Arista lakshana (Rationale of targeting high risk, life expectancy) in hridaya rogi.	02 Hrs
15.	Role of Graha vigyana (psycho-somatic risk factors) in preventive cardiology	03 Hrs
16.	Role of Sahaj roga vigyana (Genetics) in preventive cardiology.	03 Hrs
17.	Basic knowledge of Ashthang Yoga	04 Hrs
18.	Understanding physiology of Rasapanchaka-Rasa, Guna, Veerya, Vipaka, Prabhava in relation to hridya karma	06 Hrs
19.	Definition of word research and classification of research – (pure/applied; qualitative/quantitative; observational and interventional)	05 Hrs
20.	Historical background of research in Ayurveda	02 Hrs
21.	Introduction to Classical methods of research- Aptopadesh, Pratyaksha Anuman and Yukti	06 Hrs
22.	Research process- Brief introduction of Selection of topic, Review of literature, Formulation of hypothesis, Aims and objectives, Materials and	04 Hrs

	methods, Observation and Results	
23	Concept of ethics in research	02 Hrs
24.	Publication of research, Structuring of article (IMRAD)	04 Hrs
25	Brief introduction of Medical Statistics	02 Hrs
26.	Collection and presentation of data	04 Hrs
27.	Definition of Average, Percentile, Arithmetic Mean, Median, Mode, Range, Standard Deviation and Standard Error	05 Hrs
28.	Parametric and Non-parametric tests	06 Hrs

Paper 2: Comprehensive Fundamentals of Cardiac Anatomy and Physiology

Teaching Hours: 135 Hrs (Theory)

Max. Marks: 100

Paper 2	Comprehensive Fundamentals of Cardiac Anatomy and Physiology	135 Hrs
1.	Understanding of Surface and Gross Anatomy of Thorax (Heart, Lungs, Mediastinum),	15 Hrs
2.	Understanding and knowledge of Great vessels (Sira-Dhamani Vigyan)	12 Hrs
3.	Understanding of Lymphatic System and Nervous Regulation of Cardiovascular Physiology.	12 Hrs
4.	Knowledge and Understanding of Essentials of Cardiovascular Physiology – Action potential, Cardiac Cycle, Blood Pressure, Pulse, Heart Sounds.	16 Hrs
5.	Shat Chakra - Location and significance in Yoga. Description of Ida, Pingala, Sushumnanadi.	8 Hrs
6.	General description and understanding of Koshtanga Shareera and Aashya in relation to Cardiovascular system	5 Hrs
7.	Understanding of Marma shareera in relation to Cardiovascular system. Knowledge of importance of Hridaya, Basti and Shir (Trimarma) and their inter-relation	10 Hrs
8.	Comprehensive understanding of Detailed description of circulatory system (Rasa samvahana, hridayastha oja, Mana, Buddhi, Chetana and Tridosha varnan Arthedashmahamoola, Dasha Pranayatana).	12 Hrs
9.	Clinical Importance of Tridosha in maintaining structural and physiological Cardiovascular functions.	06 Hrs
10.	Panchabhautikatwa of Cardiovascular system and its clinical and applied importance in Prevention	05 Hrs
11.	Concept of srotas, their types specially Pranavaha, rasavaha, raktavaha, manovahi and their relation and importance to cardiac disorders.	08 Hrs
12.	Applied and clinical knowledge of Practices mentioned in Ayurveda text as a cause of congenital heart defects and its prevention. (Garbhavakranti Shaarira, features of Shukra and Shonita, description of Beeja, Beejbhaga, Beejbhagavyava and Garbhotpadaka bhava)	08 Hrs
13.	Concept of Vyadhi uttpati and its understanding in relation to Hrid roga.	10 Hrs
14.	Knowledge of different Nidanarthkara Roga for Hridaya Roga such as Udavarta, Pandu, etc.	08 Hrs

Paper 3: Comprehensive Cardiovascular Pathology

Teaching Hours: 135 Hrs (Theory)

Max. Marks: 100

Paper 3	Comprehensive Cardiovascular Pathology	135 Hrs.
1.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Coronary artery Disease	10 Hrs
2.	Epidemiology of Cardiac disorders	06 Hrs
3.	Detailed description of Hridroga according to their types (Vataj, Pittaj, Kaphaja, Sannipataja and Krimija) and its Chikitsa available in various Ayurvedic classics.	05 Hrs
4.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Heart Failure	10 Hrs
5.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Systemic Hypertension	10 Hrs
6.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Pulmonary thromboembolism and pulmonary hypertension	10 Hrs
7.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Peripheral vascular disorders	12 Hrs
8.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Cardiac arrhythmias.	12 Hrs
9.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Geriatric Cardiac disorders.	10 Hrs
10.	Valvular Heart Diseases and diseases of Myocardium and Pericardium.	10 Hrs
11.	Knowledge and comprehensive understanding of pathogenesis (Nidana Panchak) and diagnosis of Systemic diseases involving heart.	10 Hrs
12.	Understanding and knowledge of Peripheral Vascular Diseases.	10 Hrs
13.	Understanding and knowledge of Pregnancy and heart diseases	08 Hrs
14.	Knowledge and understanding of Congenital heart disease.	12 Hrs

Paper 4: Scope of Ayur-Yoga preventive Cardiology

Teaching Hours: 135 Hrs (Theory)

Max. Marks: 100

Paper 4	Scope of Ayur-Yoga preventive cardiology	135 Hrs
1.	Concept of Swasthaya rakshan of Ayurveda and ways to maintain and preserve health like Dinacharya, Ratricharya, Sadvritta, non suppression of natural urges, suppression of urges, Vyayama etc.	20 Hrs
2.	Approach to prevention & management of Hridaya Roga including Shodhana, Shamana and Naimittika Rasayana etc.	10 Hrs
3.	Role of Rasayana and Vajikarana in Preventive Cardiology.	15 Hrs
4.	Stress / Psychological management in Preventive Cardiology.	10 Hrs
5.	Interdisciplinary approach in palliative care of various Hridroga.	10 Hrs
6.	Scope and Role of Yoga in Preventive Cardiology	10 Hrs
7.	National Health Campaigns of AYUSH and components under NRHM.	10 Hrs

8.	Hospital management strategies, Infrastructure, use of IT technology, essential manpower, equipment, Patient care, management and coordination with contemporary health institutions and field Institutions.	10 Hrs
9.	Emergency in Cardiology: Myocardial infarction, Cardiac arrest, Cardiogenic Shock, Syncope, sudden onset Arrhythmia, hypertensive crisis and encephalopathy.	20 Hrs
10.	Basic knowledge of Panchkarma and its role in preventive Cardiology	20 Hrs

Practical of M.Sc. First Year

Teaching Hours: 540 Hrs

Max. Marks: 100

Sl. No.	Practical Examination	540 Hrs
1.	Assessment of Prakriti.	15 Hrs
2.	Practice Sessions of Yoga.	100 Hrs
3.	Clinical Demonstration of Assessment of Dosha.	30 Hrs
4.	Clinical Demonstration of Assessment of Dhātu Dushti Lakshana.	40 Hrs
5.	Clinical Demonstration of Assessment of Mala Dushti Lakshana	15 Hrs
6.	Clinical Demonstration of Pranavaha Srotas Dushti Lakshana and Cardiovascular System Examination.	50 Hrs
7.	Clinical Demonstration of Identification of Risk Factors Associated with Cardiac Disorders.	20 Hrs
8.	Clinical Demonstration of Nādi Pariksha (Pulse examination)	20 Hrs
9.	Clinical Demonstration of Other Components of Ashtavidha Pariksha.	25 Hrs
10.	Clinical Demonstration of Trividha, Shadvidha and Dashvidha Pariksha.	50 Hrs
11.	Clinical Demonstration of Roga Pariksha (Nidan Panchak).	30 Hrs
12.	Clinical Demonstration of Case Recording.	20 Hrs
13.	Clinical Demonstration of Aushadha Vyavastha and Sevana Kala.	10 Hrs
14.	Clinical Demonstration of Other Systems Examination (Respiratory, GIT, Renal and Urogenital).	50 Hrs
15.	Clinical Demonstration of Medicinal plants related to Cardiac Disorders	15 Hrs
16.	Clinical Demonstration of Panchavidha Kashaya Kalpana.	20 Hrs
17.	Clinical demonstration of various Panchkarma procedures like Shirodhara, Varti, Vaman, Virechana, Udvartana, Abhyanga, Hrid vasti, Swedana, Vasti etc	30 Hrs

2nd Year

Paper 1: Comprehensive Practical Cardiology (Hrid Roga–Rogi Pariksha)

Teaching Hours: 135 (Theory)

Max. Marks: 100

Paper 1	Comprehensive Practical Cardiology (Hrid Roga–Rogi Pariksha)	135 Hrs
1.	Detailed knowledge of Roga-Rogi Pariksha including detailed history taking, systemic examination and detail description of Cardiovascular systemic examination.	20 Hrs

2.	Clinical implementation of Dwividha Pariksha, Trividha Pariksha, Chaturvidha Pariksha, Panchavidha Pariksha, Shadvidha Pariksha, Ashtavidha Pariksha, Dashvidha Pariksha Bhavas and Prakrityadi Dashvidha Pariksha including detail of Nadi Pariksha.	20 Hrs
3.	Basic knowledge regarding interpretation of ECG, TMT, Echocardiography, vascular doppler studies, X-Ray chest, CT scan, MRI, PET, Angiography, Holter's monitoring.	25 Hrs
4.	Basic knowledge of Blood investigations related to cardiology like CBC, Blood sugar, Lipid profile, RFT, TFT, Cardiac enzymes etc and their interpretations.	15 Hrs
5.	Knowledge and identification of different risk factors related to cardiology.	10 Hrs
6.	Rogi Pariksha: Trividha pariksha, Ashtavidha pariksha with detailed Nadi pariksha, Dashvidhapariksha in the light of recent advances in cardiology.	15 Hrs
7.	Roga Pariksha - Detailed description of various Hridroga through Nidana-panchaka (Hetu, poorvarupa, rupa, Upashaya & Samprapti) and Vikriti pariksha.	15 Hrs
8.	Clinical methods-Detailed history taking, patient's general examination and cardio vascular system examination.	15 Hrs

Paper 2: Ayur-Yoga Cardiology – Treatment Principles and Therapeutic Approach

Teaching Hours: 135 (Theory)

Max. Marks: 100

Paper 2	Ayur Yoga Cardiology – Treatment Principles and Therapeutic Approach	135 Hrs
1.	Ayurvedic Treatment Principles in pervue of Cardiac Disorders.	10 Hrs
2.	Detailed description of Charakokta Hridya Mahakashaya, Jeevaniya Mahakashaya, Lekhaniya Mahakashaya, Phala Varga, Shaka Varga, Dugdha Vaga, Mootra Varga, Jala Varga and Susrutokta Utpaladi Gana, Parushakadi Gana and Shalsaradi Gana.	10 Hrs
3.	Knowledge of common Ayurvedic formulations and preparations indicated in Hridroga by various Acharyas including followings: Ekal Dravyas - Arjun, Rasona, Guduchhi, Pippali, Asana, Pushkarmool, Sarpagandha, Guggulu, Shilajit, Gokshura, Punarnava, Amlavetas, Dadima, Vacha, Brahmi, Jatamansi, Matulunga, Amrataka, Vrikshamla Churna - Dwiruttar Hingvadi churna, Nagbala churna, Haritkyadi churna, pippalyadi churna, Arjuntvak churna, Pushkarmool churna. Kashaya - Pushkarmuladi Kasaya, Kathaphaladi kasaya. Dashamula, Asanadi, Punarnavashtaka, , Drakshadi Kashaya. Asavas-Arista - Arjunarist Amritarishta, Ashwagandharishta Dasamula rista. Vati - Prabhakar Vati, Shankar vati, Amarsundari vati. Rasaushadhi - Hridyarnavarasa, Trinetra rasa. Makardhvaja rasa, Kasturi bhairav rasa, Jaharamohara pisti, Akik pisti, Muktapisti, Abhraka bhasma, sringa bhasma, Ghrita - Triushnadi ghrita, Arjun ghrita, Vallabha ghrita, Swadamstra ghrita, Brahmi Ghrita, , Dadimadya Ghrita, Lehya - Chyavanaprasha Avaleha, Brahma Rasayana, Amalaki	20 Hrs

	Rasayana. Ashwagandha Avaleha, Amrita-Bhallataka Rasayana.	
4.	Evidence based Knowledge of pharmacological action of various Ayurvedic drugs and formulations used in prevention and management of HridRoga.	15 Hrs
5.	Basic Knowledge of Common Allopathic Drugs used in Cardio-vascular Diseases.	20 Hrs
6.	Knowledge of Critical care medicine, Management of cardiac emergencies, CCU services, Field medical service.	20 Hrs
7.	Drug-drug interactions and adverse drug reactions, Iatrogenic disorders in relation to cardiac vascular system.	20 Hrs
8.	Indications and importance of pacemaker implantation, stent implantation, Valvular transplantation and cardiac transplantation, Ethical and legal issues involved.	15 Hrs
9.	Detailed knowledge of Cardiopulmonary resuscitation	5 Hrs

Paper 3 : Fundamentals of Ayurveda in Preventive Cardiology

Teaching Hours: 135 (Theory)

Max. Marks: 100

Paper 3	Fundamentals of Ayurveda in Preventive Cardiology	135 Hrs
1.	Ayurveda Dietetics: Importance of Pathya, Apathya and Anupana in prevention and management of Hridroga.	10 Hrs
2.	Basic knowledge of Drugs, Dietetics and Lifestyle modification in prevention of cardiac diseases.	10 Hrs
3.	Psychosocial and Behavioural Aspects of Cardiovascular disease.	5 Hrs
4.	Nutritional recommendations for patients with cardiovascular disease.	10 Hrs
5.	Concept and understanding of Pathya-Apathya described in Ayurveda	5 Hrs
6.	Aharaja - Viharaja- Mansika-pathya & apathya in relation to hridya roga.	5 Hrs
7.	Importance of Anupana in Hridaya roga. Various anupana used in cardiac disorders.	5 Hrs
8.	Concept of Viruddha ahara and its role in cause and prevention of various Hrid roga.	5 Hrs
9.	Concept and Importance of Asta ahara vidhi viseshayatana, Dwadasha ashana and Shat Padartha Vigyan in prevention of different Hrid roga.	10 Hrs
10.	Different Ahara varga described in Ayurveda like shukavarga, shamivarga, Mamsavarga, shaka-varga, Harita varga, phala varga, madya varga, jala varga, Go ras varga, kruttanna varga, aharyogi varga and their role and application in prevention and treatment of Hridya roga.	10 Hrs
11.	Importance of Selection of diet according to Desha, Prakriti, dosha-dushya along with Elementary Nutritional Value calculation / Calorie consumption.	10 Hrs
12.	Concept and Importance of Vihara (Lifestyle modifications) - Dinacharya, Ritucharya, Sadvritta, Dharniya-Adharniya vega, Achara Rasayana specific to Hrid roga.	10 Hrs
13.		5 Hrs

14.	Understanding of various Psychosomatic risk factors and Behavioral Aspects in cardiovascular disorders.	5 Hrs
15.	Knowledge regarding Importance of DASH diet, The Mediterranean Dietary Pattern, AHA Heart Healthy Eating Pattern Recommendations, The Vegetarian Dietary Pattern in CVD risk groups.	10 Hrs
16.	Selection of Aushadha Sevan kal in Hridaya Roga	5 Hrs
17.	Preventive measures during Janapadodhwamsa lakshana for Hridaya rogi.	10 Hrs
18.	Effective key components of smoking cessation (modules)	5 Hrs

Paper 4 : Principles of Yoga in Preventive Cardiology

Teaching Hours: 135 (Theory)

Max. Marks: 100

Paper 4	Principles of Yoga in Preventive Cardiology	135 Hrs
1.	Basic Knowledge of Ashtanga Yoga	5 Hrs
2.	Importance and Understanding of Ashtang Yoga (Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana, Samadhi in Preventive and Curative Cardiology.	10 Hrs
3.	Concept of Asanas and its importance in preventive cardiology.	5 Hrs
4.	Specific asana to be practiced & to be avoided in relation to cardiac disorders like Dhanurasana, Vakrsasana, Janushirshasana, Matsyasana, Shavasana, utthita trikonasana, paschimottasana, ardha-matsyendra asana, Gomukhasana, Setubandhasana, Salabha-sarvangasana, tadasana on maintaining health of heart.	10 Hrs
5.	Concept and Role of Pranayam in Preventive Cardiology.	5 Hrs
6.	Yoga and its body -mind relationship	5 Hrs
7.	Yoga and its importance on QOL of post-operative cardiac patients.	5 Hrs
8.	Mindfulness based stress reduction (MBSR) & Types of meditation in preventive cardiology specially in relation to substance abuse.	10 Hrs
9.	Transcendental Meditation & Behavioral modifications.	5 Hrs
10.	Effect of Yoga on Cardiac Circulatory system / Hemodynamics, Cardiac Musculature & Electrical conduction.	10 Hrs
11.	Yoga practices for preventive cardiology during gestational & postpartum period with special importance to Congenital Cardiac anomalies.	10 Hrs
12.	Specific Yoga practices for childhood, Adults, Old age in high risk groups of CVD.	5 Hrs
13.	Yoga according to Age, Gender, Occupation in relation to preventive and curative cardiology.	5 Hrs
14.	Types of Cardiac Strength exercise and importance of time duration of exercise according to Roga & Rogi bala.	10 Hrs
15.	Precaution during Yoga Practices in cardiac disorders and Latest research trends in yoga and preventive cardiology.	10 Hrs
16.	Comprehensive rehabilitation of patients with cardiovascular diseases.	5 Hrs

17.	Emerging trend of practicing Yoga in Preventive Cardiology.	5 Hrs
18.	Understanding exercise testing protocols and determination of functional capacity.	5 Hrs
19.	Understand physiology of exercise training in patients with cardiovascular disease.	10 Hrs

Practical of M.Sc. 2nd Year

Teaching Hours: 540 Hrs

Max. Marks: 100

S.No	Practical Examination	540 Hrs
1	Clinical Examination of Cardiovascular system	50 Hrs
2	Practical demonstration of various procedures like paracentesis, suction, nasogastric tube insertion, Per urethral catheterisation, Thoracocentesis, nebulization etc	60 Hrs
3	Practical demonstration and reading of recording of ECG	30 Hrs
4	Yoga demonstration	100 Hrs
5	Case recording	150 Hrs
6	Clinical examination of other systems	60 Hrs
7	Practical demonstration of different Panchkarma procedures like shirodhara, Vasti making and administration, Abhyanga etc	60 Hrs
8	Role and application of cardiac defibrillation	10 Hrs
9	Practical demonstration and understanding of Spirometry	20 Hrs

Syllabus: 1st Year**Paper 1: Basics of Ayurveda**

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 1	Basics of Ayurveda	180 Hrs
1.	Definition and components of Ayu, definition and aim of Ayurveda, Brief introduction of Ayurveda Samhitas.	4
2.	Definition of Swastha Purush, Introduction of parameters of Swasthya and Tray-upastambha.	6
3.	Introduction of concept of Panchmahabhuta theory, Tridosha theory and Loka Samya Purush.	6
4.	Introduction of concept of Saptadhatu, Mala and Ojus.	4
5.	Introduction of concept of Srotas.	3
6.	Introduction of concept of Prakriti, Mana and Atma	5
7.	Introduction of concept of Raspanchaka	7
8.	Introduction of Panchavidha Kashaya Kalpana	2
9.	The concept of Roga, main etiological factors, Chikitsa and its types	4
10.	Introduction of various sections/departments of Ayurveda and their specific activities.	14
11.	Description of Chikitsa Chatushpada and their importance in Sports Medicine	5
12.	Types of Vega- Dharniya and Adharniya Vega, diseases related to Vega-dharna and their Management.	5
13.	Pramana of Anga-Pratyanaga, Dhatu, Mala, Importance of Pramana Sharira, Calculation of Body Mass Index etc.	5
14.	Agni, classification of Agni, Types of Koshta, Description of Nirmana of Various Dhatus and Updhatus in the body.	5
15.	Trividha Pareeksha, Panchavidha Pareeksha, Shadavidha Pareeksha, Ashtavidha Pareeksha, Dashavidha Pareeksha and Pareekshya Bhava etc. in special relevance to Sports Medicine.	12
16.	Description of Roga Marga, Nija Roga and Agantuja Roga in relevance to Sports Medicine.	10
17.	General description of Pathya & Apathya and its importance in Sports Medicine. Virudhh Ahara - Concept, Types and Importance in Sports Medicine.	7
18.	Basic concept of Marma, etymological derivation, definition, number and Pramana, importance.	6
19.	Purva Karma, Pradhana Karma and Pashchat Karma.	6
20.	Principles of Sterilization, Asepsis, Antisepsis, Disinfection and Disposal of Biomedical waste	6
21.	Knowledge of handling of medico-legal cases and issuing MLCs and other certificates	6
	Fundamental Ethical Principles in Sports Medicine, Confidentiality, Conflicts of Interest, Ethical consideration for use of Analgesics, Ethics of Sports Medicine Research.	12
22.	Definition and Classification of Research - (pure/applied; qualitative/quantitative; observational and interventional)	5
23.	Historical background of research in Ayurveda	2
24.	Introduction to Classical methods of research- Aptopdesha, Pratyaksha Anuman and Yukti	6
25.	Research process- Brief introduction of Selection of topic, Review of literature, Formulation of hypothesis, Aims and objectives, Materials and methods, Observation and Results.	4
26.	Concept of ethics in research	2

27.	Publication of research, Structuring of article (IMRAD).	4
28.	Brief introduction of Medical Statistics.	2
29.	Collection and presentation of data	4
30.	Definition of Average, Percentile, Arithmetic Mean, Median, Mode, Range, Standard Deviation and Standard Error.	5
31.	Parametric and Non-parametric tests.	6

Paper 2: Basics of Anatomy (Sharira Rachana Vigyana) and Lifestyle and Personal Hygiene (Swasthavritta)

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 2	Basics of Anatomy (Sharira Rachana Vigyana) and Lifestyle and Personal Hygiene (Swasthavritta)	180 Hrs
Anatomy of Bones & Joints (Asthi Sandhi Sharira)	Classification and description of Asthi, Sandhi, Tarunasthi, Peshi, Dhamani, Sira, Kurcha, Kandra, Jala, Asthisanghata, Seemanta, Seevani, Rajju, Lasika, Snayu according to Ayurveda and Modern.	15
Musculoskeletal System	Physical Properties of bone, cartilage, muscle and functional adaptation under pathological conditions.	15
Applied Osteology (Asthi Vigyana)	General features of the following bones: Bones of skull, Vertebrae, Clavicle, Scapula, Ribs, Sternum, Humerus, Radius, Ulna, Hip bone, Femur, Tibia and Fibula, Bones of hands and feet.	15
Applied Syndesmology (Sandhi Vigyana)	Joints: Definition and Classification of joints: Shoulder, Elbow, Knee, Ankle, Inter-vertebral joints, Wrist joint, Small joints of hand and foot.	15
Applied Myology	Origin, insertion, nerve supply and action of all the important muscles related to human movement.	15
Anatomical Angles and Joints Biomechanics	Anatomical Angles and stiff joints - Anatomical Angles, Optimal attitude for stiff joints and Snapping joints.	10
Lifestyle, Dietetics and Personal Hygiene (Swasthavritta and Sadvritta)	Aahara and Vihara, Rasayana, Dinacharya, Ritucharya in context of Marma Vigyana and Kreedha Bhesaja.	15

Paper 3: Basics of Physiology (Sharira Kriya Vigyan) and Marma Vigyana

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 3	Basics of Physiology (Sharira Kriya Vigyan) and Marma Vigyana	180 Hrs
Physiology (Sharira Kriya Vigyana)	Introduction to Exercise Physiology	2
	Factors affecting Physiological Function, Energy Transfer and Exercise Performance.	8
	components Viscosity correlation, Oxyhemoglobin Dissociation curves, Interrelationship between pressure flow and resistance,	20

	Pressure volume curves, Stress relaxation of vessels	
	Cardiovascular System: Physical characteristics of systemic circulation, Pressure pulses, Oxygen demand theory of local blood flow circulation, Nervous control of blood circulation, Humorous control of blood circulation, Mechanisms of arterial pulse regulation, Hypertension, Cardiac output and its regulation, Cardiac output in normal stress conditions, Methods of measuring cardiac output, Normal coronary blood flow along with variations, Physiological basis of ischemic heart disease, The cardiac reserve, Physiological causes of shock.	25
	Pulmonary system: respiration, Pulmonary volumes and capacities, Composition of Alveolar air, Transport of oxygen in blood, Carbon dioxide in blood, Regulation of respiration, Methods of studying respiratory abnormalities.	20
	Endocrinology related to sports medicine: Pituitary hormones and their functions, Thyroid hormones, Glucagon hormones, Parathyroid hormones	25
	Body temperature regulation: Knowledge Body temperature in hot and cold environment, general aspects of haemostatic balance in different environments, regulation of blood volume, osmolality and pH during exercise.	10
Marma Vigyana	Applied aspect of individual Marma. Concept of Prana, Naadi, Srotas, Chakra and Anguli Pramana to locate Marma. Classification of Marma according to Structure, Region, Prognosis, Constitution, Dimension.	35
	Interpretation of each Marma in present context (Regional surgical anatomy). Detailed description of Tri-Marma	35

Paper 4: Fundamental Principles of Sports Medicine (Kreedha Bhesaja)

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 4	Fundamental Principles of Sports Medicine (Kreedha Bhesaja)	180 Hrs
Introduction to Sports Medicine	Etymology and Definition of Sports Medicine (Kreedha Bhesaja)	2
	Aim, Tasks and Characteristics of sports training	8
	Scope and Importance of Kreedha Bhesaja / Sports Medicine	5
	History of Sports Medicine	5
Wounds and Ulcer (Vrana Vigyana)	Vrana – Aetiology, classification, symptomatology, prognosis, complications and management principles of Nija and SadyoVrana. Knowledge of Shashti Upakrama, Seevana and Vrana Bandhana.	25
	Wounds and Ulcers – Etiology, classification, symptomatology, complications, prognosis, management	25

	principles of wounds and ulcers, mechanism of wound healing. Knowledge of suture materials, Suturing techniques, dressing / bandaging materials and techniques, advanced wound closure techniques.	
	Vranitopasniya - Management of Vranita /Wounded person.	15
	Knowledge of Sandhaniya and Ropaniya drugs.	15
Musculoskeletal Injuries (Bhagna Vigyan)	Bhagna - Aetiology, classification, symptomatology and investigations.	20
	Factors influencing the fracture healing according to Ayurvedic and Modern concept.	10
	Knowledge of Splints and Orthotics.	15
Radiological Techniques and their use in Sports Medicine	Basics of radiology and radiological imaging techniques (X-ray, CT scan, MRI, USG, Radioisotope scanning etc). Imaging of the head and neck, chest and abdomen, imaging of spine, imaging of pelvis, hip and thigh, imaging of knee joint, imaging of the lower leg, foot and ankle.	20
Concept of Pain	Concept of Pain in Ayurveda and Contemporary Health Science	15

Practical - First Year**Teaching Hours: 360 Hrs.****Max. Marks: 100**

Sl. No	Topic	360 Hrs.
1.	Cadaveric Dissection for Practical Osteology	50 Hours
2.	Cadaveric Study of Marma points.	20 Hours
3.	Measurement of Anatomical Angles	20 Hours
4.	Assessment of Vitals- Pulse, Blood Pressure, Temperature, Respiration etc.	40 Hours
5.	Practical Demonstration of Individual Marma	50 Hours
6.	Assessment of Wounds & Ulcers	20 Hours
7.	Bandaging	25 Hours
8.	Suturing Techniques and Suture Materials	25 Hours
9	Assessment of Radiographs	30 Hours
10	Assessment of Prakriti	15 Hours
11	Assessment of Pramana Sharira	15 Hours
12	Poorva Karma and Pashchata Karma	15 Hours
13	Practical Knowledge of Sterilization and Disinfection.	15 Hours
14	Principles of First Aid	20 Hours

Syllabus - 2nd Year**Paper 1: Applied Aspects of Sports Medicine (Kreedha Bhesaja)**

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 1	Applied Aspects of Sports Medicine (Kreedha Bhesaja)	180 Hrs
Applied Prakruti Pariksha (Body Constitution Examination) in Sports Medicine	Sharira Prakruti, Manas Prakruti and assessment of Prakruti, Importance of Knowledge of Prakruti in Sports Medicine	15
Kinesiology	Definition, aims, objectives and role of Kinesiology in sports medicine.	7
	Review of fundamental concepts (applied aspect), Centre of gravity, Line of gravity, Planes, Lever system in Body, Fundamental starting positions.	20
	Review of fundamental concepts (applied aspect), Centre of gravity, Line of gravity, Planes, Lever system in Body, Fundamental starting positions.	20
	Motion, type of motion, Distance and speed, Displacement and velocity, Acceleration, Angular distance and Angular displacement, Angular Speed, Angular Velocity, Angular Acceleration, Inertia, Mass, Weight, Newton's Laws of motion, Units in linear and angular motion.	25
	Force and its characteristics, internal and external forces, Classification of force system, Composition and resolution of forces, Friction, Impact, Elasticity, Principles of spin and rebound, Eccentric forces. Couple, Moment, Principles of Lever, Rotatory force, Gravity, Methods of finding center of gravity, Principles of Equilibrium, Fluid mechanics, Principles of projectile.	25
Assessment and Evaluation Medicine	Importance of assessment and evaluation, Methods of evaluation – Interview, Clinical Examination, Reliability and Validity of the tests, Investigative Procedures, Field Tests.	15
	Evaluation of Physical Fitness: Principles of assessment and prescription of exercise programs, Evaluation of Physical Fitness, Preliminary Health Screening and Classification of Risk Factors, Assessment of Body Composition, Assessment of Flexibility and designing stretching programs, Assessment of cardio-respiratory fitness, Assessing and Managing Stress, Assessing strength and muscular endurance.	20
	Assessment of Upper and lower limb complex	5
	Assessment of spinal column and Tests of neural tension	5
	EMG evaluation, diagnostic and kinesiological	5
	Pre- participation Evaluation of Participants in Sports.	5
Kinanthro-pometry	Introduction and Significance of Kinanthropometric knowledge in sports medicine.	5

	Age determination - Skeletal age and Dental age.	5
	Body measurements - Gross size and mass, Lengths or heights of body parts, Circumstances of body parts and Skinfold thickness.	4
	Kinanthropometric study group measurements	5
	Body proportions - Body mass index, The phantom stratagem, The Z - scores, The O - scale system.	3
	Body composition - Different Body composition and various methods to estimate body composition.	3
	Somatotyping: Methods of Somatotyping and Somatotype distribution.	3
	Growth, maturation and physical performance	5

Paper 2: Applied Sports Sciences (Kreedha Vigyana)

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 2	Applied Sports Sciences (Kreedha Vigyana)	180 Hrs
Biomechanics	Nature and importance of Biomechanics in Sports Physiotherapy.	5
	Principles of Biomechanics	5
	Introduction to biomechanical analysis. Recruitment & techniques – Isokinetic dynamometer, kinesiological EMG, electronic goniometer, force platform, videography.	5
	Biomechanics of shoulder and shoulder girdle motion, elbow motion, wrist and hand motion, pelvic motion, hip motion, knee motion, ankle and foot motion, spinal motion.	5
	Gait analysis.	5
	Biomechanics of rowing, throwing, swimming, jumping and landing, running and other sports.	5
Exercise Physiology	Energy Transfer for Physical activity: Energy transfer in Body, Energy transfer in exercise, Energy expenditure during various activities, Fatigue, Biochemical responses to endurance training.	10
	Cardio Vascular System and Exercise: Athletes Heart, Cardio Vascular adaptations to sustained aerobic exercises, Lipids and sports, protection from coronary heart disease, exercise and optimization of lipid profile, Sudden cardiac death in sports, Regulation of circulation during exercise.	20
	Respiratory System and Exercise: Air Conditioning, Second Wind, Oxygen Debt, Breathe Holding, High Pressure Ventilation, Scuba Diving, Athletes Lung, Regulation of Respiration during exercise.	20
	Skeletal System and Exercise: Growth and Exercise, Repair and adaptation during exercise, Pathophysiology of Back, raining for Muscular Strength and Endurance.	20

	Gastrointestinal Tract and Endocrine system and Exercise: Effect of Sports on GIT and Liver, Hormone regulation of fluid and electrolytes during exercise, Exercise and Menstrual Cycle, Stress Hormones in Exercise, Effects of exercise on various Hormones in the body, Opioids, Runners High.	20
Sports Psychology	Importance and current status of Sports Psychology, Personality Assessment and sports personality, Cognitive Process, Concentration training in sports, Motivational orientation in sports, Pre-competitive anxiety, Relaxation Training, Aggression in sports, Role of Psychology in Dealing with injuries, Eating disorders, Goal setting - Psychological aspect of doping, Psychological preparation of elite athletes, Concept of psychological preparation, Biofeedback training, Mental imagery and Stress, Team Behaviour and leadership, Emotion.	40

Paper 3: Clinical Sports Medicine (Kreedha Bhesaja)

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 3	Clinical Sports Medicine (Kreedha Bhesaja)	180 Hrs
Ayurvedic Principles of Treatment	Shamana Chikitsa- Langhan, Deepan, Paachan, Oushadh and Upanah Chikitsa. (5)	5
Panchakarma and its application in Sports medicine	Abhyang, Swedan, Shashtikashalipindaswed, Kaya seka, Patrapottalipindaswed, Janu vasti, Kati vasti, Anuvasan and Niruh vasti in various chronic ailments such as Post traumatic stiffness, Musculoskeletal and Neurological conditions, Shirodhar and Shiropichu in sports related anxiety.	20
Para surgical procedures (Anu Shalya Karma)	Para surgical procedures and their application in sports medicine- Role of Agni Karma and Raktavsechana.	10
Yoga and its application in Sports Medicine	Meaning and definition of Yoga. Ashtanga Yoga - Yama, Niyama, Pranayama, Pratyahar, Dharana, Dhyana, Samadhi	5
	Concept of Yoga Asanas, Pranayama - Types, methods and benefits and Shatchakras.	5
	Relaxation training through Yognidra and Meditation	5
	Role of Yoga in enhancing core strength, balance and coordination for improving exercise performance and prevention of injuries, flexibility and mental strength and concentration.	8
	The role of Specific Asanas in improving performance and rehabilitation.	8
Sports Nutrition	Introduction to Nutrition, Macronutrients, Micronutrients, Fluids and Electrolytes, Acid- Base Balance in special reference to sports nutrition.	5
	Role of Ayurveda in meeting specific nutrition need, instant energy, sustained energy etc.	5

	Nutritional supplements, macronutrient supplements, metabolites and botanical ergogenic supplements. Role of Ayurveda in nutrition supplementation.	10
	Sports specific nutrition – nutrition for popular team sports, Racket sports, Endurance sports, Weight- dependent balance sports, water sports etc.	10
	Clinical sports nutrition- Athletes with nutrition related disorders- osteoporosis, sports anaemia etc	5
	Athletes with gastrointestinal disorders, food allergies and food intolerance food related adverse reactions etc.	6
	Food psychology- effect of psychology on eating behavior and food choices, biological and learning influences and social influence on food choice.	5
	Nutrition for special groups- Paralympic athlete, sport injury and rehabilitation, nutrition for athletes with special dietary needs.	8
Management Principles of Tissue Injuries (Bones, Muscles, Ligaments, Tendons and Joints)	Bhagna - General management principles and Prognosis	5
	Modern concept of Bone and Joint injuries - General management principles.	10
	Individual Bone and Joint injuries – General management principles.	20
	External immobilization techniques - Classical and traditional Kusha - splints, Plaster of Paris Technique, Knowledge of different splints and Plasters.	15
	Rehabilitation of trauma patient and Principles of Sukhchestrachara - Physiotherapy and its use in skeletal injuries.	10

Paper 4: Marma Chikitsa and Sports Physical Therapy

Teaching Hours: 180 (Theory)

Max. Marks: 100

Paper 4	Marma Chikitsa and Sports Physical Therapy	180 Hrs
Sports Traumatology	Causes, Mechanism and Prevention of Sports injuries	5
	Common acute and overuse injuries of - Shoulder, arm, elbow, forearm, wrist and hand, pelvis, hip, thigh, knee, leg, ankle and foot Spine, head, Sporting emergencies and first aid and pharmacological treatment of injuries in the athletes.	10
	Sports specific injuries, with special emphasis on the specific risk factor, nature of sports, kind of medical intervention anticipated and prevention with respect to individual sports - Individual events: Field and Track, Team events: Hockey, Cricket, Football, Contact and Non-contact sports, Water sports specific injuries.	15
Sports Injuries and their Management Principles	Vascular, Nerve, Head, Chest, Abdomen, Pelvis and Spine	20

Marma Chikitsa in Sports Injury	Clinical features, prognosis of Marmaghata during sports and its Marma Chikitsa.		10
Varmology	Fundamentals, general and specific rules of Varmam treatment in various musculoskeletal and neurological conditions.		10
Physical Medicine in sports	Rehabilitation and Therapeutic Exercises	Goals and Objectives of Rehabilitation in Sports, Clinical Evaluation phases of rehabilitation. (multidisciplinary approach).	5
		Prehabilitation	4
		Effects and uses of therapeutic exercises - Dynamic Exercises, Plyometric Exercises, Isokinetic Exercises, Manipulative Techniques and Kinetic chain exercises.	10
	Neuromuscular Training	Neuromuscular control, methods for improving neuromuscular control, proprioception and kinaesthetic sensation following different sport injuries.	5
		Principles and application of neuromuscular facilitation techniques including PNF in sports.	5
		Health club and fitness: Concept, group therapy.	5
		Physical Therapy and law: Medico legal aspects of physiotherapy, liability, negligence, malpractice, licensure, work man compensation.	5
		Morale and Ethics: Ethical Analysis of moral problem, ethical issues in physiotherapy.	5
	Emergency Care	Cardiopulmonary resuscitation, Shock management, Internal and External bleeding, Splinting, Stretcher use - Handling and transfer, Management of Cardiac arrest, Acute asthma, Epilepsy, Drowning, Burn, Medical management of mass participation, Heat stroke and Heat illness.	
Sports Physical Therapy	Massage – Classification, Physiological effects, Therapeutic applications and Contraindications.		5
	Heat Therapy - Classification, Physiological effects, Therapeutic applications and Contraindications and specific uses in sports of the following: Infrared rays, Parafin Wax Bath, Steam Bath, Sauna Bath, Moist Heat Pack, Fluid therapy, Mud Bath and Pelloids.		10

	Hydrotherapy - Effects of simple baths, raising temperature baths, baths with additives, Aromatic baths, Mineral baths, Physical baths, Hydroelectric baths, Stammer baths, Whirl pool bath, Showers and Steam showers.	5
	Electrotherapy - Classification, Physiological effects, Therapeutic applications and Contraindications and the specific uses in Sports Physiotherapy.	5
	Frequency Current, Alternative Current, Diadynamic Current, Iontophoresis TENS, High Voltage, Pulsed Galvanic Stimulation.	4
	Medium Frequency Current: IFT, Russian Currents	3
	High Frequency Currents: SWD, MWD, Ultrasound, Pulsed Electromagnetic Energy.	4
	Radiations: LASER, UVR. Recent Advancement in Electrotherapy, Electrodiagnosis and its implications to Sports Physiotherapy.	4
	Functional Bandages and Orthotic Aids - Uses of functional bandages, types of bandages, bandaging techniques and bandaging material, indications, contraindications athletic shoes and modifications, common orthotic aid and appliances in Sports.	5
	Cryotherapy - Physiological effects, use of cold therapy in acute phase, rehabilitative phase, preventive phase of athletic injury, methods of application, indications and contraindications.	5
	Manual Therapy - Introduction to manual therapy techniques, joint techniques, manual joint therapy, traction, basic principles of manipulation for various disorders of the spine and extremities.	6

Practical - Second Year

Teaching Hours: 360 Hrs.

Max. Marks: 100

Sl. No.	Practical	360 Hrs.
1	Assessment of Prakruti	20
2	Practical Kinesiology	20
3	Assessment and Evaluation of Physical Fitness	25
4	Practical Kinanthro-Pometry	25
5	Practical demonstration of Sports Physiotherapy	20
6	Practical Training of Physiotherapy in Trauma Patients	20
7	Gait Analysis	10
8	Demonstration of Biomechanical Techniques	20
9	Assessment of Sports Personality	20
10	Practical Demonstration of Panchakrama Procedures	20
11	Training of Anushalya Karma like Agni Karma , Rakta Mokshana	20
12	Practical Demonstration of Yoga Techniques	20
13	Assessment of Sports Nutrition	10

14	Demonstration of Management of Tissue Injuries	20
15	Practical Demonstration of Management of Sports Injuries	20
16	Practical Demonstration of Marma Chikitsa	20
17	Practical Demonstration of Varmam Treatment	20
18	Demonstration of Rehabilitation and Therapeutic Exercises	10
19	Demonstration of Various techniques of Sports Physical Therapy	20

SYLLABUS**PAPER 1 – FUNDAMENTALS OF AYURVEDA****Teaching Hours: 135****Max. Marks- 100**

Sl. No.	Basics in Ayurveda	130 Hrs
	Unit: 01	
1.	Definition and Components of Ayu, Definition and Aim of Ayurveda, Brief introduction of Ayurveda Samhitas.	2
2.	Definition of Swasthapurush, introduction of parameters of Swasthya and Tray-upastambha.	3
3.	Introduction of concept of Panchmahabhuta theory, Tridosha theory and Lokasamyapurush.	6
4.	Introduction of concept of Saptadhatu, Mala and Ojus	4
5.	Introduction of concept of Srotas	3
6.	Introduction of concept of Prakriti, Mana and Atma	5
7.	Introduction of concept of Raspanchaka	7
8.	Introduction of Panchvidhakshayakalpana	2
9.	The concept of Roga, Main etiological factors, Chikitsa and its types	4
10.	Introduction of various sections/departments of Ayurveda and their specific activities	14
	Unit: 02	
11.	Definition of word research and classification of research – (pure/applied; qualitative/quantitative; observational and interventional)	5
12.	Historical Background of Research in Ayurveda	2
13.	Introduction to Classical methods of research-Aptopdesh, PratyakshaAnuman and Yukti	6
14.	Research process- Brief introduction of Selection of topic, Review of literature, Formulation of hypothesis, Aims and objectives, Materials and methods, Observation and Results.	4
15.	Concept of Ethics in Research.	2
16.	Publication of research, Structuring of Article (IMRAD)	4
17.	Brief introduction of Medical Statistics	2
18.	Collection and Presentation of Data	4
19.	Definition of Average, Percentile, Arithmetic Mean, Median, Mode, Range, Standard Deviation and Standard Error	5
20.	Parametric and Non-parametric Tests	6
	Unit: 03	
21.	Clinical approach and relevance of Tridosh Siddhant	5
22.	Clinical approach and relevance of Dhatu.	5
23.	Clinical approach and relevance of Srotas.	3
24.	Clinical approach and relevance of Rog rogipareeksha .	3
25.	Clinical approach and relevance of Rog marg .	2
26.	Clinical approach and relevance of Shadvidha Upkrama.	10
27.	Basic knowledge of diagnostic tools like CBC,LFT,KFT etc .	10
28.	Basic information of Siravedhana,Ksharkarma,Agnikarma,ViddhaChikitsa etc .	2
29.	Basic concept of Lifestyle according to Ayurveda .	5

PAPER 2 - BASIC CONCEPTS OF COSMETOLOGY IN AYURVEDA**Teaching Hours: 135****Unit-1 Introduction to Beauty (10 Hrs)****Max. Marks - 100**

Sl. No.	Topic	Duration
1.	Introduction to <i>Saundarya Ayurveda</i> <ul style="list-style-type: none"> Definitions and different interpretations of <i>Saundarya Ayurveda</i> Interrelation between health (<i>swasthya</i>) and beauty. 	1 Hr
2.	Historical aspects of <i>Saundarya Ayurveda</i> <ul style="list-style-type: none"> Evolution of cosmetology in ancient world. Development of beauty care in ancient India. Historical background of beauty care in <i>vedic period</i>, <i>samhitaperiod</i>, <i>modern period</i> Introduction to the important texts related to beauty care. 	1 Hr
3.	Concept of beauty and cosmetology- Ayurveda and Modern aspect <ul style="list-style-type: none"> Extensive study of <i>pancamahabhutasiddhanta</i> and <i>tridoshasiddhanta</i> in relation to <i>saundarya</i>. Theoretical and practical approach to <i>prakruti</i> analysis Study of <i>sarapariksha</i> Internal beauty through <i>acara rasayana</i> Introduction to the modern cosmetology 	4 Hrs
4.	Introduction to beauty care routines <ul style="list-style-type: none"> Dental care routines Importance of <i>dinacarya</i> and <i>ritucarya</i> in beauty care Skin care routines Hair, nail, and lip care routines Eye care 	4 Hrs

Unit-2 Anatomy and Physiology of Skin (50 Hrs.)

Sl.No.	Topic	Duration
1.	<i>TwachaSharira</i> (Skin anatomy)- Ayurveda and Modern aspect <ul style="list-style-type: none"> Detailed anatomy of skin according to Ayurveda and modern Physiological functions related skin according to Ayurveda and modern Recommendations of diet and nutrition for healthy skin 	15 Hrs
2.	Immunology, molecular biology and genetics in relation to the skin. <ul style="list-style-type: none"> Concept of immunology Immunological functions of skin Fundamentals of molecular biology Applied aspect of molecular biology in beauty care Introduction to genetics Mechanisms of gene mutation and its effects on skin Concept of <i>vyadhikshamatva</i> and its role in beauty care 	15 Hrs
3.	<i>SwedavahaSrotas</i> - Anatomy and Physiology <ul style="list-style-type: none"> Detailed anatomy and physiology of <i>swedavahasrotasa</i> Biology of eccrine and apocrine sweat glands Importance of sweat glands in beauty care 	10 Hrs

4.	Assessment of skin type based on <i>AyurvedicPrakriti</i> (Body constitution). <ul style="list-style-type: none"> Analysis of skin types by <i>pancaindriyapariksha</i> based on <i>prakruti</i> Modern techniques to use in skin analysis 	10 Hrs
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Unit-3 Anatomy and Physiology of hair, nail, eye etc. beauty segments (35hrs)

Sl.No.	Topic	Duration
1.	Concept of <i>Keshayurveda</i> -Ayurveda and Modern aspect <ul style="list-style-type: none"> Anatomy and physiology of hair Hair types Hair growth Recommendations of diet and nutrition for healthy hair 	15 Hrs
2.	Biology of hair follicles, sebaceous glands	5 Hrs
3.	Nail and eye -Anatomy and physiology <ul style="list-style-type: none"> Nail growth Recommendations of diet and nutrition for healthy nails and eyes. 	15 Hrs

Unit-4 Metabolism & Beauty (40 hrs)

S.No.	Topic	Duration
1.	Role of Metabolism in Beauty <ul style="list-style-type: none"> Study on <i>agni, ama</i> and <i>koshta</i> <i>Aharapaka</i> and <i>Poshanasiddhanta</i> 	15 Hrs
2	Principles of nutrition and health	5 Hrs
3	Detailed knowledge of <i>Ahara</i> according to <i>Prakriti</i> . <ul style="list-style-type: none"> <i>Satmya</i> and <i>asatmya</i> concept 	5 Hrs
4	Metabolism of carbohydrates, proteins, fats and steroids by the skin	5 Hrs
5	Effect of <i>Ahara- Vihara</i> in prevention and maintenance of beauty	5 Hrs
6	<i>Viruddhaahara</i>	5 Hrs

PAPER-3 HERBS FOR BEAUTY

Teaching Hours: 135

Max. Marks- 100

Unit-1 *Aushadha Karma* (15 Hrs)

S.No.	Topic	Duration
1	Knowledge of <i>Karma</i> related to skin and beauty- <i>Varnya, Keshya, Vayahsthapana, Lekhaneeya, Swedapanayana, Vishaghna, Raktaprasadan, Kandughna, Krimighna, Vayahsthapan, Rasayana, Balya, Jivaniya</i> etc.	15 Hrs

Unit-2 Herbs (120 Hrs)

Identification, properties and actions of Herbs related to skin and hair like-

Sl. No.	Topic	Duration
1.	Varnya Herbs - (Chandana – Santalum album – Heart wood, Tunga – Calophylluminophyllum – Stem bark/Seeds, Padmaka – Prunuscercasoides – Heart wood, Ushira – Vetiver – Vetiveriazizanioides – Roots, Madhuka – Licorice – Glycyrrhizaglabra – Rhizome, Manjistha – (Rubiocordifolia Linn). – Whole plant, Sariva – Indian Sarsaparilla – Hemidesmusindicus – Roots, Payasya – Ipomoea paniculata – Tubers, Sita -(Shweta durva) – white variety of Cynodondactylon – Whole plant, Lata (black variety of Cynodondactylon Pers.) – Whole plant)etc.	10 Hrs
2.	Keshya Herbs - Vibhitak –Terminaliabellirica Roxb., Yashthinadhu - Glycyrrhizaglabra Linn., Bakuchi -Psoraleacorylifolia Linn., Bhallatak - Semicarpusanacardium, Gambhari - Gmelinaarborea, Nirgundi -Vitexnegundo Linn. Gunja -Abrusprecatorius Linn., Neeli -Indigoferatinctoria, Bhringraaj -Ecliptaalba, Saireyak -Barleriaprionitis, Japapushpa -Hibiscus rosasinensis, Beejak -Pterocarpusmarsupium, Kashisham , Tila - Sesamumindicum, Kadali -Musa sapientum, Avidugdh - Sheep milk etc.	10 Hrs
3.	Vayahsthapana Herbs - Amruta (Tinsporacordifolia) – Stem, Abhaya – Terminaliachebula – Fruit rind, Dhatri (EmblicaofficinalisGaertn.) – Fruits, Mukta (pearl) – Organic ash/Bhasma, Shveta (white variety of Clitoriaternatea Linn.) – Roots, Jivanti – Leptadeniareticulata – Roots, Shatavari – Asparagus root – Asparagus racemosus – Roots, Mandukaparni (Centellaasiatica Urban) – Whole plant, Sthira – Desmodiumgangeticum – Roots, Punarnava (Boerhaaviadiffusa Linn.) – Rootsetc.	10 Hrs
4.	Lekhaneeya Herbs - Musta (Cyperusrotundus Linn.) – Rhizome, Kushta – Saussurealappa – Rhizome, Haridra (turmeric – Curcuma longa) – Rhizome, DaruHaridra – Tree Turmeric (stem) – Berberisaristata – Roots, Vacha (Acoruscalamus Linn.) – Rhizome, Ativisa (Aconitum heterophyllum Wall.) – Roots, Katurohini – Picrorhizakurroa – Rhizome, Chitraka – Leadword – Plumbagozeylanica – Roots, Chirabilva – Holopteliaintegrifolia –Stem bark, Haimavati – Iris versicolor – Rhizome etc.	10 Hrs
5.	Swedapanayana Herbs- Shobhanjanaka - Moringa (Moringaoleifera)-Seeds and leaves, Eranda – Castor (Ricinuscommunis Linn.)-Seeds and roots, Arka – Calotropisgigantia- Leaves and roots, Vrischira (white variety of Boerhaaviadiffusa Linn.)-Roots or whole plant, Punarnava (red variety of Boerhaaviadiffusa Linn.)-Roots or whole plant, Yava – Barley (Hordeumvulgare)-Seeds, Tila – Sesame (Sesamumindicum)-Seeds, Kulattha (Dolichosbiflorus Linn.)- Horse gram Seeds, Masha (Phaseolusmungo Linn.) -Seeds, Badara – Zizyphus jujube-Fruits and seeds.	10 Hrs
6.	Vishaghna Herbs - Haridra (Curcuma longa) Rhizome, Manjishtha (RubiocordifoliaRootLinn), Suvaha Roots (Plunchealanceolataoliver&hiern), Sukshmaela seeds (Elettariacardamomum, Palindi Root(Operculinatorpethum), Chandana (Santalum album), Kataka (StrychnospotatoriumLinn.f), Sirish (Albizzialebeckbenth). Sinduvara (Vitexnergundo), Sleshmataak (Cordiadicotoma) etc.	10 Hrs

7.	Raktaprasadan Herbs- Madhu – Honey, Madhuka – Licorice – Glycyrrhizaglabra – Root, Rudhira (Crocus sativa Linn.) – Gall, Mocharasa (Salmaliamalabarica Schott & Endl.) – Resin/ exudate, Mritkapala – Earthen pot pieces, Lodhra (Symplocos racemosa) – Stem bark, Gairika (Ferrumhaematite) – Red ochre, Priyangu (Callicaramacrophylla) – Seeds, Khanda Sharkara – Organic sugar candy, Laja – fried paddy/ parched rice etc.	10 Hrs
8.	Kandughna Herbs- Chandana – Sandalwood – Santalum album-Heart wood, Nalada (Nardostachys jatamansi DC.)-Root, Kritamala (Cassia fistula Linn.)-Stem bark/Fruits, Naktamala – Karanja (Pongamiapinnata Merr.)- Stem bark, Nimba – Neem (Azadirachta indica)-Stem bark, Kutaja – Connessi (Holarrhena antidysenterica Wall.)-Bark, Sarshapa – Mustard – (Brassica nigra Koch.)-Seeds, Madhuka – Licorice – Glycyrrhizaglabra -Roots, Daru Haridra – Tree Turmeric (stem) – Berberis aristata -Roots, Musta (Cyperus rotundus) – Rhizome etc.	10 Hrs
9.	Krimighna Herbs- Aksheeva (Moringa oleifera Lam.)-Seeds/Stem bark, Maricha – Black pepper fruit – Piper nigrum-Seeds, Gandira (Euphorbia antiquorum Linn.)-Stem bark, Kebuka – Costus speciosus -Roots, Vidanga – False Black Pepper (Embeliaribes Burm. f.)-Seeds, Nirgundi (Vitex negundo) – Leaves/Root, Kinihi – Apamarga (Achyranthes aspera Linn.)-Whole plant, Shwadamstra – Gokshura – (Tribulus terrestris)-Seeds, Vrisaparnika (Ipomoea sp.)- Tubers, Akhuparnika (Ipomoea reniformis Choisy)-Whole plant) etc.	10 Hrs
10.	Vayahsthapan Herbs- Amruta (Tinospora cordifolia) – Stem, Abhaya – Terminalia chebula – Fruit rind, Dhattri (Emblica officinalis Gaertn.) – Fruits, Mukta (pearl) – Organic ash/Bhasma, Shveta (white variety of Clitoria ternatea Linn.) – Roots, Jivanti – Leptadenia reticulata – Roots, Shatavari – Asparagus root – Asparagus racemosus – Roots, Mandukaparni (Centella asiatica Urban) – Whole plant, Sthira – Desmodium gangeticum – Roots, Punarnava (Boerhaavia diffusa Linn.) – Roots etc.	10 Hrs
11.	Rasayana Herbs – Balya – Aindri (Citrullus colocynthis) – Root, Rishabhi – Rishabhaka – Manilkara hexandra-Root, Atirasa – Asparagus – Asparagus racemosus-Root, Rishyaprokta – Teramnus labialis, Payasya – Ipomoea paniculata – Rhizome, Ashwagandha – Winter Cherry / Indian ginseng – Withania somnifera-Root, Sthira – Desmodium gangeticum – Root, Katukarohini – Picrorhiza kurroa-Root, Bala – Country mallow – Sidacordifolia-Root, Atibala – Abutilon indicum – Root etc.	10 Hrs
12.	Jivaniya Herbs- Jeevaka – Malaxis acuminata-Root, Rishabhaka – Manilkara hexandra-Root, Meda – Polygonatum cirrhifolium-Root, Mahameda – Polygonatum verticillatum-Root, Kakoli – Fritillaria roylei-Root, Kshira Kakoli – Roscoeapurpurea / Lilium polyphyllum-Root, Mudgaparni – Phaseolus trilobus -Root and whole plant, Mashaparni – Teramnus labialis -Root and whole plant, Jivanti – Leptadenia reticulata –Root, Madhuka – Licorice – Glycyrrhizaglabra-Root etc.	10 Hrs

PAPER-4 BASIC PROCEDURES OF BEAUTY**Teaching Hours: 135****Max. Marks- 100****Unit-1 Knowledge of Basic Procedures for Beauty (60 hrs)**

	Topic	Duration
1.	Skin cleansing, toning, tanning removal, face packs and moisturizing techniques based on Ayurvedic <i>doshic</i> analysis and <i>prakriti</i> with specific Ayurvedic herbs and preparations.	20 Hrs
2.	Customization of Hair conditioning in daily care according to individual with <i>keshya</i> Herbs and further Ayurvedic herbs and preparations.	15 Hrs
3.	Body massage techniques with specific Ayurvedic herbs and preparations based on different <i>doshic</i> condition and related skin disease	15 Hrs
4.	<i>Hasta-paadaprasadhana</i> (Ayurveda pedicure and manicure with specific Ayurvedic herbs and preparations with <i>doshic</i> analysis.)	10 Hrs

Unit-2 Aromatherapy (Sugandhachikitsa) (20hrs)

S.No.	Topic	Duration
1.	Basic concept of <i>Sugandhachikitsa</i>	2 Hrs
2.	Types of <i>Sugandhachikitsa</i>	2 Hrs
3.	Herbs of <i>Sugandhachikitsa</i> like <i>Ajmoda</i> (<i>Carum roxburghianum</i>), <i>Choraka</i> (<i>Angelica glauca</i>), <i>Brahmi</i> (<i>Bacopa monnieri</i>), <i>Brihat Ela</i> (<i>Amomum subulatum</i>), <i>Twak</i> (<i>Cinnamomum zeylanicum</i>), <i>Kumkum</i> (<i>Crocus sativus</i>), <i>Tagar</i> (<i>Valeriana wallichii</i>), <i>Aardra Dhanyaka</i> (fresh leaves of <i>Coriandrum sativum</i>), <i>Mishreya</i> (<i>Foeniculum vulgare</i>), <i>Nimba</i> (<i>Azadirachta indica</i>), <i>Taruni</i> (<i>Rosa centifolia</i>), <i>Madyantika</i> (<i>Lawsonia inermis</i>), <i>Ketaka</i> (<i>Pandanus odoratissimus</i>) - although it is <i>Ushna Virya</i> but by virtue its <i>rasa</i> and <i>prabhava</i> it is potent <i>Pitta shamak</i> , <i>Ushir</i> (<i>Vetiveria zizanioides</i>), <i>Shunthi</i> (<i>Zingiber officinale</i>), <i>Hapusha</i> (<i>Juniperus communis</i>), <i>Karpoor</i> (<i>Cinnamomum camphora</i>), <i>Tulsi</i> (<i>Ocimum sanctum</i>), <i>Kankola</i> (<i>Piper cubeba</i>), <i>Jatiphala</i> (<i>Myristica fragrans</i>), <i>Sarshapa</i> (<i>Brassica campestris</i>), <i>Vacha</i> (<i>Acorus calamus</i>) etc.	10 Hrs
4.	Aesthetic Uses	3 Hrs
5.	Therapeutic uses	3 Hrs

Unit-3 Introduction of Modern Aesthetic Medicine (30hrs)

Sl. No.	Topic	Duration
1.	Epidemiology of Skin Disease	15 Hrs
2.	General Aspects of Treatment of aesthetic medicine like - Injections of Neurotoxins and Dermal Fillers, Chemical Peels, Cosmetic Dermatology treatments, Microdermabrasion, Body Contouring and Treatment of Cellulite, Nutrition, Hair Transplant, Hair Reduction, Fat Grafting/Platelet Rich Plasma, Laser and IPL, Scar Management, Venous Treatment, Cosmetic Gynecology	15 Hrs

Unit-4 Instruments in cosmetology (25 hrs)

S.No.	Topic	Duration
1	Primary information of modern instruments and techniques used in cosmetology like Microdermabrader, Radiofrequency and cautery, Cryotherapy, Mesotherapy, Jet Peel or hydrafacial, Microcurrent, Electroporation, Dermatoscope and photography equipment etc.	25 Hrs

PRACTICAL OF M.Sc. FIRST YEAR**Teaching hours: 540 Hrs****Max. Marks: 100**

- Assessment of Prakriti: 2 Hrs
- Determination of rasa panchaka in some common dravyas 4 Hrs
- Drug identification-
 - 1. Plant identification 75 hrs
 - 2. Crude drug identification 75 hrs
- Herbarium preparation 45 hrs
- Beauty procedures-
 - 1. Techniques of skin assessment on the basic of *Prakriti* (4 Hrs)
 - 2. Cleansing procedure (5Hrs)
 - 3. Toning procedure (5Hrs)
 - 4. Moisturizing procedure (5Hrs)
 - 5. Tan removal techniques (5Hrs)
 - 6. Face pack formulation & application techniques (20 Hrs)
 - 7. Different types of Ayurveda facials (35 Hrs)
 - 8. Body Massage (15 Hrs)
 - 9. Hair oil techniques (15 Hrs)
 - 10. Keshaprakshalan (Hair wash techniques) (10Hrs)
 - 11. Hair pack formulation & application techniques (20 Hrs)
 - 12. Different types of Ayurvedic Hair Spa (35 Hrs)
 - 13. Dhoopan (5Hrs)
 - 14. Swedan (5Hrs)
 - 15. Ayurvedic pedicure (15 Hrs)
 - 16. Ayurvedic manicure (15 Hrs)
 - 17. Lip scrub & moisturizing techniques (5 Hrs)
 - 18. Gandusha&Kawal (Oral care) (5Hrs)
 - 19. Kajal application technique as per Ayurveda (5Hrs)
 - 20. Aromatherapy techniques (10 hrs)
- Instrument Handling-
 - Microdermabrader, Radiofrequency and cautery, Flash lamp, Cryotherapy, Mesotherapy, Jet Peel or hydrafacial, Microcurrent, Electroporation, Dermatoscope and photography equipment etc. (80 Hrs)
- Clinical protocol writing exercise on a given problem 15 Hrs
- Scientific article writing 5 Hrs

2nd Year**PAPER-1 SKIN CARE & DISEASES****Teaching Hours: 135****Unit-1 Diseases related to Skin (30 Hrs)****Max. Marks- 100**Diagnosis and treatment of *Kshudraroga*

S.No.	Skin Care & Diseases	Duration
1.	Yuvanpidika - Etiological factors, Predisposing factors, Types, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs
2.	Vyanga -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections.	2 Hrs
3.	Nilika - Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections.	2 Hrs
4.	Nyachh -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections.	2 Hrs
5.	Pashaangardabh -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs
6.	Valmika -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections.	2 Hrs
7.	Kaksha -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs
8.	Agni-rohini -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections.	2 Hrs
9.	Chippa -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs
10.	Kunakha -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs
11.	Anushayi -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections.	2 Hrs
12.	Vidari -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections.	2 Hrs
13.	Padadaari -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs
14.	Kadar -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs
15.	Alasaka -Etiological factors, Predisposing factors, Clinical features, Treatment, Dietary regulations and Lifestyle corrections	2 Hrs

Unit-2 Introduction to Skin Treatments as per Modern (25 Hrs)

S.No.	Topic	Duration
1	Introduction to Lasers and Flash lamps in the Treatment of Skin Disorders <ul style="list-style-type: none"> □ Selective photo thermolysis treatment of <ul style="list-style-type: none"> ▪ Vascular lesions ▪ Pigmented lesions ▪ Tattoos ▪ Ulcerated infant hemangiomas ▪ Hair follicles. 	10

	<ul style="list-style-type: none"> □ Risks and side effects of any laser or flashlamp (intense pulsed light) 	
	<ul style="list-style-type: none"> ● Minimally invasive procedures Ageing Skin. <ul style="list-style-type: none"> □ Development and use of minimally invasive Treatments and procedures incorporated into outpatient dermatology practice with low overhead expenditure. □ Treatments and procedures like <ul style="list-style-type: none"> ▪ Chemical peels ▪ Intradermal fillers ▪ Botulinum toxin □ Diagnosis and Treatment of main aspects of facial ageing, namely <ul style="list-style-type: none"> ▪ Photodamage ▪ Volume loss ▪ Dynamic lines ▪ Acne scars ▪ Skin laxity ▪ Hyperkinetic facial wrinkles ▪ Repair of tissue defects after earlobe piercing. □ Minimal invasive treatments- <ul style="list-style-type: none"> ▪ Innovations ▪ Complications and their management 	15 Hrs

Unit-3 Cutaneous Drug Reactions (40 Hrs)

S.No.	Topic	Duration
1	Introduction to Drug Reactions, Cutaneous manifestations of Drug Abuse, Cutaneous reactions to Cytokines and Growth Factors	10 Hrs
2	Drug reaction- Classification, Epidemiology, Causes, Location, Seriousness, Mechanisms and Monitoring Bodies.	10 Hrs
3	Cutaneous manifestations of Drug Abuse <ul style="list-style-type: none"> ● Morphology and Arrangement of skin lesions associated with drug use, ● Its relation to the drug itself, mode of drug delivery, and/or adulterants or infectious agents mixed with the drug, ● Drug addiction-related bacterial infections involving the skin and soft tissue 	20 Hrs

Unit-4 Skin Allergies & Sun Burn (40 Hrs)

S.No.	Topic	Duration
1.	Introduction Sun burn & photodamage	10 Hrs
2.	Eczema - overview, symptoms, risk factors, diagnosis, management and treatment	15 Hrs
3.	Contact dermatitis - overview, symptoms, risk factors, diagnosis, management and treatment.	5 Hrs
4.	Urticaria - overview, symptoms, risk factors, diagnosis, management and treatment.	5 Hrs
5.	Angioedema - overview, symptoms, risk factors, diagnosis, management and treatment.	5 Hrs

PAPER-2 HAIR CARE & DISEASES**Teaching Hours: 135****Max. Marks- 100****Unit- 1 Diseases Related to Hair and Scalp (60Hrs)**Diagnosis and treatment of *Kshudraroga* related to head along with modern aspect

Sl.No.	Hair care & Diseases	Duration
1.	Khalitya - etiological factors, predisposing factors, types, clinical features, treatment, dietary regulations, lifestyle correction	12 Hrs
2.	Palitya - etiological factors, predisposing factors, clinical features, treatment, dietary regulations, lifestyle correction	12 Hrs
3.	Darunaka - etiological factors, predisposing factors, clinical features, treatment, dietary regulations, lifestyle correction	12 Hrs
4.	Arunshika - etiological factors, predisposing factors, clinical features, treatment, dietary regulations, lifestyle correction	12 Hrs
5.	Itchy & painful scalp - etiological factors, predisposing factors, clinical features, treatment, dietary regulations, lifestyle correction	12 Hrs

Unit-2 Hairwash Technique(15 Hrs)

Sl. No.	Topic	Duration
1.	Ayurvedickeshaparakshalanavidhi - Basic concept of <i>keshaparakshalana</i> in Ayurveda, Steps of <i>keshaparakshalana</i> , Agents/ Herbs for <i>keshaparakshalana</i> , precautions during <i>keshaparakshalana</i> .	15 Hrs

Unit-3 Ayurvedic Hair Spa, Ayurvedichairdyes and Hairpacks (35 Hrs)

Sl. No.	Topic	Duration
1.	Ayurvedic Hair Spa - What is Ayurvedic hair spa, steps and techniques of Ayurvedic hair spa, Herbs used in various steps of Ayurvedic hair spa, Instruments used in Ayurvedic hair spa, assessment criteria to choose Herbs in Ayurvedic hair spa, precautions during Ayurvedic hair spa.	15 Hrs
2.	Ayurvedic Hair Dyes - Basic concept of hair-dyeing, types of hair dyes, difference between synthetic and natural hair dyes, Hair dyes for different types of hairs according to Ayurveda, Natural dyeing agents	10 Hrs
3.	Hair Packs - Basic concept of hair packs, types of hair packs, procedure to apply hair pack, Herbs used in various hair packs, How to formulate hair pack for different conditions.	10 Hrs

Unit-4 Hair Care Techniques (25 Hrs)

S.No.	Topic	Duration
1	Shiroabhyanga - Meaning of <i>Shiroabhyanga</i> , Concept of <i>Murdhni Tail</i> , Indications of <i>Shiroabhyanga</i> , therapeutic value of different oils used for <i>Shiroabhyanga</i> , Procedure of <i>Shiroabhyanga</i> , Knowledge of <i>Marmapoints</i> involved in <i>Shiroabhyanga</i> . <i>Paschat karma</i> after <i>Shiroabhyanga</i> , precautions during and after <i>Shiroabhyanga</i> .	10Hrs
2	Shirah Swedan - Introduction to <i>Swedan</i> , Types of <i>ShirahSwedan</i> , Procedure of <i>ShirahSwedan</i> , <i>Paschat karma</i> after <i>ShirahSwedan</i> , precautions during and	5 Hrs

	after <i>ShirahSwedan</i>	
3	<i>Dhupana</i> - Basic concept of <i>Dhupana</i> , Herbs used in <i>Dhupana</i> , procedure of <i>Dhupana</i> , aesthetic and therapeutic uses of <i>Dhupana</i> , precautions during and after <i>Dhupana</i> .	5 Hrs
4	Other Hair Care Techniques - Knowledge of Basic Concept and Practical Application of <i>ShiroDhara</i> , <i>shirobasti</i> , <i>Pichudharan</i> etc.	5 Hrs

PAPER-3 BEAUTY PRODUCTS AND PANCHKARMA

Teaching Hours: 135

Max. Marks- 100

Unit-1 Lipcare, Nail Care, Eye Care, Dental Care through Ayurveda (20 hrs)

S.No.	Beauty products and Panchkarma	Duration
1	Routine Care related to lips, eyes, nails and teeth etc. including <ul style="list-style-type: none"> ○ Cleansing ○ Scrubbing ○ Moisturizing with <i>prakriti</i> specific ayurvedic herbs and preparations. 	2 hrs
2	Knowledge about Clinical features, Treatment and Lifestyle corrections of various problems of <ul style="list-style-type: none"> ○ Lips- Chapped/ Dry lips and Dark lips ○ Eyes- Tired eyes, Dried eyes and Dark Circles under eyes ○ Nails- Poor nail growth, Pale nails and Brittle nails ○ Teeth- Bad breath, Yellow teeth, Dental decay, Toothache and Bleeding gums etc. 	8 hrs
3	Procedures related to lips, eyes, nails and teeth including <ul style="list-style-type: none"> ○ <i>Akshitarpana</i> ○ <i>Dhantapavan</i> (<i>Dhantuna</i>) ○ <i>Jhihwanirlekhana</i> ○ <i>Kavala</i> ○ <i>Gandusha</i> 	10 Hrs

Unit-2 Panchvidhakashayakalpana for Beauty Care (30 hrs)

Sl. No.	Topic	Duration
1.	Introduction of classical formulations related to cosmetics: Discussion of ingredients and therapeutic uses	10 Hrs
2.	<i>PanchvidhakashayaKalpana</i> of various <i>ayurvedic</i> herbs for beauty care <ul style="list-style-type: none"> ○ <i>Swaras</i> ○ <i>Kalka</i> ○ <i>Kwatha</i> ○ <i>Shita</i> ○ <i>Phanta</i> 	5 Hrs
3.	Preparation of classical and cosmetic formulations for aesthetic purposes based on <i>prakriti</i> specific ayurvedic herbs and preparations including <ul style="list-style-type: none"> ○ <i>Churan</i>/ powder 	15 Hrs

	<ul style="list-style-type: none"> ○ Oil ○ Balm ○ Arka ○ Cream ○ Gel. 	
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Unit-3 Ayurveda Procedures for Beauty Care (85 hrs)

S.No.	Topic	Duration
1.	Importance of <i>Panchkarma</i> in <i>KshudraRoga</i> treatment	4 Hrs
2.	<i>Vamana</i> -Types, procedures, uses in management of <i>Kshudraroga</i>	9 Hrs
3.	<i>Virechana</i> - Types, procedures, uses in management of <i>Kshudraroga</i>	9 Hrs
4.	<i>Basti</i> - Types, procedures, uses in management of <i>Kshudraroga</i> .	9 Hrs
5.	<i>Nasya</i> - Types, procedures, uses in management of <i>Kshudraroga</i>	9 Hrs
6.	<i>Shirovirechana</i> - Types, procedures, uses in management of <i>Kshudraroga</i>	9 Hrs
7.	<i>Shirobasti</i> - Types, procedures, uses in management of <i>Kshudraroga</i>	9 Hrs
8.	<i>Raktamokshana</i> - Types, procedures, uses in management of <i>Kshudraroga</i> .	9 Hrs
9.	<i>Snehana</i> of various types using various <i>prakriti</i> specific ayurvedic herbs and preparations	9 Hrs
10.	<i>Swedana</i> of various types using various <i>prakriti</i> specific ayurvedic herbs and preparations.	9 Hrs

PAPER-4 YOGA AND ENTREPRENEURSHIP SKILLS

Teaching Hours: 135

Unit-1 Yoga in cosmetology (100 hrs)

Max. Marks- 100

Sl.No.	Yoga and Entrepreneurship Skills	Duration
1.	Introduction of yoga- Definition and basic knowledge of <i>Ashtanga Yoga</i> , types of <i>Yoga</i> , <i>Yoga</i> therapy	20 Hrs
2.	Yogic techniques of Body cleansing- <i>ShatKriya</i>	5 Hrs
3.	Yoga for beauty in <i>Vata</i> , <i>Pitta</i> , <i>Kapha</i> Dosha	10 Hrs
4.	Principles of <i>Yoga</i> Practices	5 Hrs
5.	Introduction of <i>Prana</i> , <i>Nadi</i> , <i>Kundlini Chakras</i>	10 Hrs
6.	practical knowledge of various <i>Yogasanas</i> like- <i>Suryanamskar</i> , <i>Adhomukhasvanasana</i> , <i>Vakrasana</i> , <i>Tadaasana</i> , <i>Chakraasan</i> , <i>Trikonasana</i> , <i>Ushtrasana</i> , <i>Bhujangasana</i> , <i>Sarvangasana</i> , <i>Halasana</i> , , etc.	20 Hrs
7.	Theoretical and practical knowledge of <i>Pranayama</i> , <i>Dhyana</i> , <i>Mudras</i> , <i>Mantra</i> , <i>YogNindra</i>	10 Hrs
8.	Development of guided <i>Yoga</i> practice sessions	10 Hrs
9.	Professional mentoring	10 Hrs

Unit 2- Skill Development (25 hrs)

Sl. No.	Topic	Duration
1.	Introduction to personality development- Definition and basics of personality, body language, analyzing strengths and weaknesses	2 Hrs
2.	Techniques of personality development- communication skills, confidence building, working on attitudes, leadership quality development, team building	5 Hrs
3.	Relationship and stress management- Analysis of ego states, causes of stress and its management, conflict management	2 Hrs
4.	Time management- Importance and need, steps of time management	2 Hrs
5.	Entrepreneurship skills- Introduction to Entrepreneurship, knowledge of achievement motivation and positive psychology, risk assessments, SWOT analysis etc.	7 Hrs
6.	Finance management- banking and sources of finance, working capital management, costing and pricing, Insurance etc.	7 Hrs

Unit-3 Legal Aspects related to cosmetology (10 hrs)

Sl. No.	Topic	Duration
1.	Drugs & Cosmetic act	1 Hr
2.	Legal terms of cosmetology & cosmetics	1 Hr
3.	Approval of herbs, minerals, preservatives, etc. used in cosmetics	2 Hrs
4.	Cosmetic law and regulations	2.5 Hrs
5.	Cosmetic labelling guidelines	0.5 Hrs
6.	Licenses	1 Hr
7.	IPR & Patents	1 Hr
8.	Pharmacovigilance	1 Hr

PRACTICAL OF M.Sc. SECOND YEAR**Teaching Hours: 540 Hrs****Max. Marks: 100**

- Formulation preparations- 100hrs
 1. Classical formulations- tail paka, Malhar, Churna, Lepa, arka etc.- 50 Hrs
 2. Cosmetic preparations like- gel, ointment, cream, lotion, kajal, lip balm etc.- 50 hrs
- Yoga- 150 Hrs
 1. *Asana- Suryanamskar, Adhomukhasvanasana, Vakrasana, Tadaasana, Chakraasan, Trikonasana, Ushtrasana, Bhujangasana, Sarvangasana, Halasana, , etc* (75 Hrs)
 2. *Pranayam&Dhyana- Anulom- vilom, Bhramrai, Sheetali, Bhastrika*etc. (50 hrs)
 3. *Mudra-Pran mudra, Kaki mudra, Aadi mudra* etc. (25 Hrs)
- OPD duty (including *Panchkarma*)- 290 hrs
 - Students have to submit a dissertation or case reports of at least 50 patients to fulfill the criteria for degree.

Syllabus:**1st Year**

SL.No	Paper 1	Basics of Ayurveda	135 Hrs
1	Unit: 01	Definition and Components of Ayu, definition and aim of Ayurveda, Brief introduction of Ayurveda Samhitas.	4
2		Definition of Swastha Purush, Introduction of Parameters of Swasthya and Tray-upastambha.	6
3		Introduction of Concept of Panchmahabhuta Theory, Tridosha Theory and Loka Samya Purush.	6
4		Introduction of Concept of Saptadhatu, Mala and Ojus.	4
5		Introduction of Concept of Srotas.	3
6		Introduction of Concept of Prakriti, Mana and Atma.	5
7		Introduction of Concept of Raspanchaka.	7
8		Introduction of Panchvidha Kshaya Kalpana.	2
9		The concept of Roga, Main Etiological Factors, Chikitsa and its Types.	4
10		Introduction of Various Sections/Departments of Ayurveda and their Specific Activities.	14
11	Unit:02	Definition of Word Research and Classification of Research – (pure/applied; qualitative/quantitative; observational and interventional)	5
12		Historical Background of Research in Ayurveda.	2
13		Introduction to Classical Methods of Research- Aptopdesh, Pratyaksha Anuman and Yukti	6
14		Research Process- Brief Introduction of Selection of Topic, Review of Literature, Formulation of Hypothesis, Aims and Objectives, Materials and Methods, Observation and Results.	4
15		Concept of Ethics in Research.	2
16		Publication of Research, Structuring of Article (IMRAD).	4
17		Brief Introduction of Medical Statistics	2
18		Collection and Presentation of Data.	4
19		Definition of Average, Percentile, Arithmetic Mean, Median, Mode, Range, Standard Deviation and Standard Error.	5
20		Parametric and Non-Parametric Tests.	6
21	Unit : 03 History of Vrikshayurveda	History and Scope of Vrikshayurveda.	3
22	Unit :04 Ethno- botany and folklore medicine	Ethnobotany, its scope, interdisciplinary approaches	2
23		Ethnic groups of India : major and minor tribes, life styles of ethnic tribes, conservation practices of biodiversity, taboos and totems.	3
24		World centers of Ethnobotany with special reference to India	2
25		Role of Ethnobotany in national priorities specifically health care	2
26	Unit:05	Dravyaguna Shastra Paribhasa- Lakshana of	1

	Introduction to Dravyagunavigyan	SaptaPadartha of DravyagunaVijnanavizDravya- Rasa- Guna- Virya- Vipaka- Prabhava and Karma.	
27		Dravya: Etymological derivation, definition, panchbhoutikatwa. Classification of Dravya according to Samhitas and Nighantus Taxonomical classification.	3
28		Guna: Etymological derivation, definition and Classification of Guna. Detailed knowledge of Gurvadi Guna & Paradigunas.	5
29		Rasa: Etymological derivation, definition, Meaning of "Rasa" in various contexts. Shad Rasas (Madhura, Amla, Lavana, Katu, Tikta, and Kashaya), Panchabhautik constitution of Rasas, Nirvritivisheshakrama (manifestation in general and particular), Ritu and shad rasa Rasanurasayohbheda (Difference between rasa and anurasa), Lakshana (characteristics),Guna and Karma of shad Rasas, Kopana and Shamana of Dosha and dushya by Shad rasas. Effects of excess usage of Rasa. Rasopalabdhi, Rasaskandha.	5
30		Vipak- Etymological derivation, definition, swaroop, types, guna and karma, vipakopalabdhi, difference between rasa and vipak, importance of vipak	4
31		Veerya - Etymological derivation, definition, swaroop, number of veerya, panchbhautika composition, actions, veeryopalabdhi, veeryanirdharana, importance of veerya	2
32		Prabhav - Etymological derivation, definition, swaroop	2
33		Karma - Etymological derivation, definition, swaroop, brief knowledge of different types of karma mentioned in ayurveda	6

Sl.No.	Paper 2 Unit 1 Plant Systematic	Plant Systematic, Pharmacognosy and Cell Biology	135 Hrs
1.		Angiosperm Morphology, structural units and floral symmetry, dicot and monocot flower; structure, diversity origin and evolution of stamen, carpels; placentation types and evolution. Floral adaptation to different pollinators.	10
2.		Angiosperm Taxonomy: Scope, aims, principles of taxonomy, historical development of plant taxonomy, Taxonomic structure: taxonomic hierarchy, concept of taxa, concept of species, concept of genus and family.	5
3.		Classification of angiosperms: Natural, Artificial, Phylogenetic system of classification	2
4.		Systems of classification: Linnaeus, Bentham & Hooker and Hutchinson (merits and demerits)	2
5.		Taxonomic tools: herbarium, floras, monographs, botanical gardens, biochemical and molecular techniques, computers and GIS.	3
6.		Plant nomenclature: Salient features of ICBN Probable ancestors of angiosperms, primitive living angiosperms, speciation and extinction, IUCN categories of threat, distribution and global pattern of biodiversity.	3

7.		Study of Families (Dicot): Ranunculaceae, Fabaceae (Papilionoideae, Caesalpinioideae, Mimosoidae) Cucurbitaceae, Lamiaceae, Asteraceae, Apocynaceae, Euphorbiaceae, Amaranthaceae	10
8.		Study of Families (Monocot): Liliaceae, Poaceae, Orchidaceae	5
9.	Unit 2 Pharmacognosy	General introduction - History, definition and scope of pharmacognosy, ,	1
10.		Classification of crude drugs	1
11.		Scheme of pharmacognostic studies of crude drug,	1
12.		Phytopharmaceutical	2
13.	Analytical pharmacognosy	Drug adulteration ,	2
14.		Methods of drug evaluation - Biological testing of herbal drugs, Phytochemical investigations	3
15.	Unit 3 Namroopgyan	Definition and importance	2
16.		Ancient way of nomenclature of plants	3
17.	Unit 4 Cell and molecular biology	Cell wall: Structure; function; biogenesis and growth; cell differentiation	3
18.		Plasma membrane: Membrane architecture (fluid mosaic model); sites for ATPases; membrane transport - ion carriers, channels, pumps and aquaporins; receptors.	7
19.		Plasmodesmata: Structure, role in movement of molecules and macromolecules; comparison with gap junction.	4
20.		Cellular organelles: Ultra-structure and function of golgi complex, lysosomes, peroxisomes, Endoplasmic reticulum, mitochondria, chloroplast and plant vacuoles.	6
21.		Cell shape and motility: The cytoskeleton; organization and role of microtubules and microfilaments; motor movements, implications in flagellar & other movements, cell division	5
22.		Protein sorting: Machinery involved, vesicles, coat proteins; protein targeting to plastids, mitochondria, peroxisomes, nucleus, vacuoles; modification during transport.	5
23.		Nucleus- Ultra structure and functions, Chromosome structure and types,	4
24.		DNA- Denaturation and Renaturation, C-value paradox, DNA replication - polymerases, primers and mechanism - molecular methods of DNA replication.	5
25.		RNA - Types, molecular organization, genetic code, transcription mechanism in prokaryotes and post transcription processing, enzyme system in transcription, transcription process in eukaryotes. Ribosomes and Translation in Prokaryotes and Eukaryotes	5
26.		Cell cycle and apoptosis: Control mechanisms, role of	5

		cyclins and cyclindependentkinases; retinoblastoma and E2F proteins; cytokinesis and cell plate formation; programmed cell death in plants; regulation in plant growth and development.	
27.		Signal transduction: Overview, receptors and G- proteins, phospholipid signaling, role of cyclic nucleotides, calcium-calmodulin cascades, diversity in protein kinases and phosphatases, specific signaling mechanisms e.g. two-component sensor-regulator system in bacteria and plants, sucrose sensing mechanism	7
28.		Techniques: Electrophoresis, immunotechniques, FISH, GISH, confocal microscopy, Gene amplification - PCR, DNA finger printing.	4
			135 Hrs

Sl.No	Paper 3	Plant-Biochemistry, Metabolism and Pathology	135 Hrs
1.	Unit 1 Plant Biochemistry	Biochemical organisation of the cell and transport processes across cell membrane.	3
2.		The concept of free energy, determination of change in free energy from equilibrium constant and reduction potential, bioenergetics, production of ATP and its biological significance.	10
3.		Introduction to 3D structure of protein, stability and denaturation of protein, allosteric proteins.	4
4.		Enzymes : Nomenclature, enzyme kinetics and its mechanism of action, mechanism of inhibition, enzymes and iso-enzymes in clinical diagnosis.	6
5.		Co-enzymes : Vitamins as co-enzymes and their significance, Metals as coenzymes and their significance	5
6.		Lipids Metabolism : Oxidation of fatty acids, α -oxidation & energetic, β -oxidation, μ -oxidation, Biosynthesis of ketone bodies and their utilization, Biosynthesis of saturated and unsaturated fatty acids, Control of lipid metabolism, Essential fatty acids & eicosanoids (prostaglandins, thromboxanes and leukotrienes) phospholipids, and sphingolipids.	12
7.		Biological Oxidation : Redox-Potential, enzymes and co-enzymes involved in oxidation reduction & its control, The respiratory chain, its role in energy capture and its control, Energetic of oxidative phosphorylation, Inhibitors of respiratory chain and oxidative phosphorylation, Mechanism of oxidative phosphorylation.	10
8.	Unit 2 Plant metabolism and development	Plant-water relations: Properties of water, diffusion, diffusion pressure deficit and its significance; Osmosis: Concept, types, osmotic potential and its significance; Imbibition: concept and significance Water conduction through xylem: Root pressure theory, cohesion-adhesion theory; transpiration; stomatal opening mechanism with reference to K ⁺ -malate hypothesis Phloem transport: Munch hypothesis	10
9.		Mineral nutrition: Role and deficiency symptoms of macro- and micro- nutrients (N, P, Fe, Mn, B, Ca); Solute	10

		transport: passive (Donnan's equilibrium), active (carrier concept) Respiration: Structure of ATP, types (aerobic and anaerobic respiration), respiratory substrates and Respiration quotient, glycolysis, Krebs' cycle, oxidative phosphorylation (ETS), chemiosmotic potential theory; fermentation (alcohol and lactic acid), photorespiration	
10.		Photosynthesis: concept, definition, significance, photosynthetic pigments and their role, action spectra, Emerson's enhancement effect, red drop mechanism; photolysis of water (Hill's reaction), cyclic and non-cyclic photophosphorylation, Light independent reactions: C3, C4 and CAM pathways and their significance; factors affecting photosynthesis Nitrogen metabolism: Mechanism of biological nitrogen fixation, importance of nitrate reductase	10
11.		Phytochromes: Pr and Pfr forms, their role, Circadian rhythms and biological clock	4
12.		Plant growth regulators: Role of auxin, cytokinins, gibberilins, ABA and ethylene	4
13.		Plant movements: Tropic and nastic movements Photoperiodism: physiology of flowering, photoperiodism and vernalization, role of florigen	4
14.		Senescence and abscission	1
15.		Seed dormancy: Causes and role, methods to break seed dormancy	3
16.		Plant defence: Definition: Hypersensitive response and Systemic acquired resistance; Role of secondary metabolites (Terpenes and phenolic compounds)	4
17.	Unit 3 Plant pathology	Importance, definitions and concepts of plant diseases, history and growth of plant pathology, biotic and abiotic causes of plant diseases.	4
18.		Growth, reproduction, survival and dispersal of important plant pathogens, role of environment and host nutrition on disease development.	4
19.		Host parasite interaction, recognition concept and infection, symptomatology, disease development- role of enzymes, toxins, growth regulators; defense strategiesoxidative burst	4
20.		Phenolics, Phytoalexins, PR proteins, Elicitors. Altered plant metabolism as affected by plant pathogens	2
21.		Genetics of resistance; 'R' genes; mechanism of genetic variation in pathogens; molecular basis for resistance; marker-assisted selection; genetic engineering for disease resistance.	4
22.		Disease management strategies	2
23.	Unit 4 Basics of cultivation	Fundamentals of cultivation methods - Agro-climatic parameters, Propagation methods, Nursery Methods, Plant Protection Measures, Harvesting & Post Harvesting Management, etc.	15
Total			135

Sl.No	Paper 4	Phytochemistry, Herbal Drug related technologies and development	135 Hrs
1.	Unit 1 Natural plant products & Phyto-chemistry-	Carbohydrates – Introduction, Definition, Classification, Nomenclature, Sources	4
2.		Glycosides – :Introduction, Definition, Classification, Nomenclature, Sources, importance, Structure , chemistry	5
3.		Vitamins – :Introduction, Definition, Classification, Nomenclature, Source, importance, Structure , chemistry , structural elucidation of Ascorbic acid	4
4.		Steroids - Introduction, Definition, Classification, Nomenclature, Source, importance, Structure, chemistry, structural elucidation of cholesterol.	4
5.		Terpenoids – Introduction, Definition, Classification, Nomenclature, Source, importance, Structure, chemistry , structural elucidation of Citral, Menthol and Zingiberene. Isoprene and Special Isoprene rule. Anti-bioti	5
6.		Plant harmones - Introduction, Definition, Classification, Nomenclature, Source, importance, Structure, chemistry, structural elucidation of Auxins.	4
7.		Natural pigments - Introduction, Definition, Classification, Nomenclature, Sources, importance, Structure , chemistry ,	3
8.		Amino acid - Introduction, Definition, Classification , Nomenclature, Source, importance, Preparation and Properties of amino acids.	3
9.		Alkaloids – Introduction, Definition, Classification, Nomenclature, Sources, importance, Structure, chemistry,	5
10.		Lipids (Fixed oils, Fats & Waxes) - Introduction, Definition, Classification, Nomenclature, Sources enzymes and protein drugs	4
11.		Volatile Oils - Introduction, Definition, Classification, Nomenclature, Sources	3
12.		Tannins-Introduction, Definition, Classification, Nomenclature, Sources	3
13.		Resins - Introduction, Definition, Classification, Nomenclature, Sources	3
14.	Unit 2 - Drug standardization - in terms of Phyto-chemistry and Pharmacology		
15.		General Introduction: Definition, source of herbal raw materials, identification, authentication, standardization of medicinal plants as per WHO guidelines & different herbal pharmacopoeias.	4
16.		Standardizations: Determination of physical and	4

		chemical constants such as extractive values, moisture content, volatile oil content, ash values, bitterness value and foreign matters applicable to the various herbal drugs.	
17.		Drug Research (Laboratory-based)- Basic knowledge of the following: Drug sources: plant, animal and mineral.	2
18.		Methods of drug identification	2
19.	Unit 3 Safety issues and Quality Control Measures.	Quality control and standardization aspects: Basic knowledge of Pharmacopoeial standards and parameters as set by Ayurvedic Pharmacopoeia of India.	4
20.		Safety aspects: Protocols for assessing acute, sub-acute and chronic toxicity studies. Familiarization with AYUSH guidelines (Rule 170), CDCSO and OECD guidelines.	4
21.	Unit 4. Herbal drug related Technologies and Development	Methods of extraction, isolation and purification of phyto-constituents.	3
22.		HPLC, HPTLC and other advanced techniques	3
23.		General methods of processing a herb - Definition, sources, identification and authentication of herbs; Different methods of processing of herbs like collection, harvesting, garbling, packing and storage conditions; Methods of drying – Natural and artificial drying methods with their merits and demerits	8
24.		Methods of preparation of herbal extract and essential oils - Principles of extraction and selection of suitable extraction method; Different methods of extraction including maceration, percolation, hot continuous extraction, pilot scale extraction and supercritical fluid extraction with their merits and demerits; Purification and Recovery of Solvents.	8
25.		Isolation and estimation of phyto-constituents	3
26.	Unit 5. Modern analytical techniques		
27.	Spectroscopic techniques	UV-Visible Spectroscopy: Principle of UV-Visible Spectroscopy, Chromophores and their interaction with UV-visible radiation and their utilization in structural, qualitative and quantitative analysis of drug molecules. Fundamentals of Optical Rotatory Dispersion. Cotton effect curves, octant rule, circular dichroism.	8
28.		Infrared Spectroscopy: Infrared radiation and its interaction with organic molecules, vibrational mode of bonds, instrumentation and applications, interpretation of IR spectra. FTIR and ATR, X-ray diffraction methods	6

29.		Nuclear magnetic resonance spectroscopy: Magnetic properties of nuclei, field and precession, chemical shift concept, isotopic nuclei, reference standards and solvents. ¹ H NMR spectra, chemical shifts, multiplicity, coupling constants, integration of signals, interpretation of spectra, decoupling-double resonance and shift reagent methods; APT and DEPT techniques.	8
30.	Chromatographic techniques	Chromatographic techniques: Principles of separation and application of Column, Paper, Thin layer and Gas chromatography, HPLC, HPTLC, Size exclusion chromatography, Affinity chromatography, Electrophoresis. Instrumentation of HPLC, Preparative and micropore columns, Reverse phase columns, Mobile phase selection and detectors in HPLC.	8
31.	Unit 6. Basic knowledge pharmacology especially experimental pharmacology.	Introduction to pharmacology- Pharmacodynamics, pharmacokinetics, Natural Product Pharmacology.	5
32.		Introduction to experimental pharmacology- knowledge of different animal models for assessing the plant safety and efficacy	5
Total			135 Hrs

Sl.No	Practical	540 Hrs
1.	Assessment of Prakriti	2
2.	Determination of rasa panchaka in some common dravyas	4
3.	Introduction of various sections/departments of Ayurveda	14
4.	Clinical protocol writing exercise on a given problem	15
5.	Scientific article writing	5
6.	Identification of medicinal plants (medicinal plant garden visits 3 hrs per week)	90
7.	Microscopy of 30 medicinal plants	90
8.	Pharmacognostic and phytochemical evaluation of 15 plants	90
9.	Practical related with plant pathology	10
10.	Different laboratory visits to understanding different techniques HPLC, HPTLC, Spectroscopic and chromatographic techniques	50
11.	Experiments with minimum 5 animal model	30
12.	Field visits for understanding cultivation techniques- 5 plants	50
13.	Practical training of extraction of different phytochemicals	50
14.	Practical training regarding different physicochemical parameters of plants	40

2nd Year

Sl.No	Paper 1	Basics of plant production & breeding techniques – Ancient and modern methods	135 Hrs
1.	Unit 1. Principles of Crop Production	- Definition and scope of Agronomy,	3
2.		Classification of Crops on Different basis,	3
3.		General principles of Crop production : Climate, soil and its preparation, seed and seed sowing, post-sowing tillage, water management, nutrition, plant protection measures, harvesting, threshing and storage,	15
4.		Crop sequences and systems with emphasis on mixed cropping and inter cropping, etc.	5
5.	Unit 2 Fundamentals of Soil Science -		
6.		Definition of Soil, Components of Soil and their role in agriculture, ,	3
7.		Soil forming rocks and minerals, Development of Soil profile, Soil formation, factors affecting soil formation, soil forming processes	5
8.		Soil reaction and its measurements and significance,	5
9.		Physical properties of soil, and their significance, Chemical properties of soil, cation and anion exchange phenomenon and their importance in agriculture, etc.	10
10.		Principles and Practices of Soil Fertility and Nutrient Management	5
11.	Unit 3. Agricultural Meteorology	- Different meteorological variables related to agriculture, ,	10
12.		Rainfall- Hydrologic cycle and it's components, Types and forms of precipitation	8
13.		Humidity, definition, windvane, Anemometer.	5
14.		Indian Agro Climatic Zones Elementary idea of weather forecasting,	5
15.	Unit 4. Elementary Crop Physiology	- Role of plant physiology in agriculture, Cell structure and function,	10
16.		Bio-Physico-chemical phenomenon-diffusion, osmosis plasmolysis and imbibitions, Absorption of water and mineral salts,	10
17.		Photosynthesis - light and dark reactions, etc.	5

18.	Unit 5. Principles of Plant Breeding	- Plant Breeding-history, objectives and scope,	5
19.		Mode of reproduction in crop plants in relation to breeding techniques,	20
20.		Plant variation kind and causes, Genetic consequences of self and cross pollinated crops, etc	5
Total			135 Hrs.

Sl.No	Paper 2	Medicinal Plants Cultivation, Collection and Conservation	135 Hrs
1.	Unit 1. Conservation of medicinal Conservation	Need of conservation of medicinal plants, Types of conservation – in situ, ex situ	5
2.		Knowledge of Extinct, Endangered, Vulnerable species of medicinal plants and their conservation method	5
3.	Unit 2.	Cultivation & Conservation techniques of 100 selected medicinal plants	100
4.	Unit 3.	Good Agricultural & Collection Practices – GACP guidelines	5
5.	Unit 4. Organic farming- Ancient and modern techniques	Definition, History, scope, and importance	5
6.		Different Methods of organic farming	5
7.	Unit 5. Collection practices – Ancient and modern aspects	Ancient method of plant collection - according to season and according to maturity of plant parts	5
8.		Modern methods of plant collection and storage of raw material	5

Sl.No.	Paper 3	Medicinal Plants Improvement and Legal Issues	135 Hrs.
1.	Unit 1. Improvement of medicinal plants -	Ancient and modern methods for improvement of medicinal plants.	40
2.	Unit 2. Biotechnological Approaches and Agro-techniques for Medicinal Plants		
3.	Cell and Tissue Culture	Plant tissue culture media, plant hormones and growth regulators in tissue culture, preparation of suitable explants - Immunodiagnosics and molecular diagnostics in selection of elite plant species - Callus culture, suspension cultures, embryo culture; anther, pollen and ovary cultures. Micropropagation of plants - somatic embryogenesis, protoplast culture, somatic hybridization and synthetic seeds.	30

4.	Genetic engineering in plants	Genetic engineering in plants, selectable markers, reporter genes and promoters used in plant vectors - direct transformation of plants by physical methods	15
5.		Application of DNA technology - transgenic plants with reference to virus and pest resistances - herbicidal resistance - stress tolerance (heat & salt) - cytoplasmic male sterility - resistance to fungi and bacteria - delay of fruit ripening - secondary metabolite production	15
6.	Unit 3. Introduction to organizations	National Medicinal Plants Board, Central Institute of Medicinal and Aromatic Plants, Food and Agriculture Organization etc.	10
7.		Contribution of national research laboratories (CDRI, CIMAP, RRC, AND NBRI) in medicinal plants	10
8.	Unit 4. Legal issues regarding collection and cultivation practices.	Biopiracy	5
9.		Intellectual Property Rights and patents	5
10.		Pharmacovigilance	5
Total			135 Hrs.

Sl.No	Paper 4	Medicinal Plants - Trading, Funding, Entrepreneurship	135 Hrs.
1.	Unit 1. Trading and Economics of medicinal plants.	Marketing and utilization - Export of medicinally important plants (General aspects),	4
2.		Market intermediaries and their role - Need for regulation in the present context	4
3.		Problems in medicinal plant Marketing from Demand and Supply and Institutions sides. - Marketing Efficiency -	10
4.		Structure Conduct and Performance analysis - Vertical and Horizontal integration - Integration over space, time and form-Vertical co-ordination,	10
5.		Direct marketing, - Contract farming and Retailing - Supply Chain Management - State trading, Warehousing and other Government agencies	10
6.		Performance and Strategies - Market infrastructure needs, performance and Government role	10
7.		Performance analysis of Regulated market and marketing societies. Analysis on contract farming and supply chain management of different medicinal plants	10
8.		Chain Analysis - quantitative estimation of supply chain efficiency - Market Intelligence - Characters, Accessibility, and Availability Price forecasting.	10
9.		Online searches for market information sources and interpretation of market intelligence reports	10

10.	Unit 2. Knowledge of funding sources	Banking and sources of finance, working capital management, costing and pricing, Insurance etc	10
11.	Unit 3. Entrepreneurship and management.		
12.	Entrepreneurship	Introduction to Entrepreneurship, Concept, characteristics of entrepreneur, types and functions of entrepreneur, difference between entrepreneur and a manager. knowledge of achievement motivation and positive psychology, risk assessments, SWOT analysis etc.	12
13.	Management	The Business – Its Nature and Scope Meaning, characteristics, objectives and scope of business, difference between business and profession, interrelationship between industry, commerce and trade	10
14.		Fundamentals of Management : Meaning, characteristics, difference between management and administration, management process, working capital management, inventory management, human resource management, production and operation management, marketing management. Accounting need, meaning, objectives, journal, ledger, trial balance, final accounts- profits and loss accounts,	15
	Total		135 Hrs

Sl.No	Practical	540 Hrs.
1.	Dissertation on Selected Topic	300
2.	Crop Field Visits for Minimum 15 Plants	150
3.	Practical for Conservation Techniques for Minimum 15 Plants	75
4.	Practical Training regarding Collection of Medicinal Plants	15
	Total	540 Hrs

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