

**Fellowship Course
in
Ayurvedic Drug Manufacturing.**

The course is intended to train personnel mainly for meeting requirements of manufacturing techniques of Ayurvedic drugs. They will be acquainted with all the manufacturing procedures required for production of Ayurvedic drugs with basic principles behind it. They will also be trained to perform basic quality controls required during the manufacturing, maintaining stores, maintaining record, maintaining samples etc. as per FDA GMP Standards of Ayurvedic drugs production of both Raw materials and finished products.

Duration of Course	- One Year
Educational Qualification for admission	- BAMS B.Pharm
Age Limit	- Above 20 years
No. of seats	- 30

Subjects For Fellowship Course in Ayurvedic Drug Manufacturing

Sr.No	Subject	Teaching Hrs.	Theory	Practical
1.	Ayurved Siddhant Evam Itihas	110	100	-----
2.	Rasa Shastra	110	100	100
3.	Bhaishjya Kalpana	110	100	100
4.	Ayurvedic Pharmaceutics & Selected Topics in Pharmacy	110	100	100
		Total	400	300
		Total Marks	700	

List of recommended Books

1. Ayurvediya Rasa Shastra (Sachitra)	Chandrabhusan Jha
2. Ayurvediya Rasa Shastra	Badrinarayan Pandey
3. Rasa Bhaishajya Paribhasa	Sureshananda Thapaliya
4. Ayurvediya Rasa Shastra	Prof. Siddhi Nandan Mishra
5. Drugs and Cosmetic Act	Vijay Malik
6. Bharatiya Bhaishajya Kalpana Vigyana	Vishwanath, Gananath Dwivedi
7. Bhaishajya Kalpana Vijnanam	Dr. K Ramachandra Reddy.
8. Bhaishjya Kalpana Vigyan	Siddhi Nandan Mishra
9. Textbook of Rasashasra	Dr. K Ramachandra Reddy
10. Rasashastra-The mercurial system	P. Himsagara Chandra murthy
11. Bhaishjya Kalpana Vigyanam	Dr. Prabhakar Rao
12. Basic Principle Of Ayurveda	Bhagwan Dash
13. Forensic Pharmacy	B. M Mithal
14. Forensic Pharmacy	N. K. Jain
15. Abhinav Chintamani	CCRAS Delhi
16. Quality Control manual for ayurvedic medicine	Ravindra singh, Dept of Ayush
17. Safety /Toxicity study report of ayurvedic drugs	CCRAS, Dept of Ayush

18. Padartha Vigyan	Acharya Ramraksha Pathak
19. Ayurveda Ke Itihasa Ka Parichaya	Dr. Ravidutta Tripathi
20. Ayurveda Ke Pranacharya	Ratnakara Shastri
21. Drugs and Cosmetic Act, 1940.	Vijay Malik
22. Instrumental Methods of Chemical Analysis –	Gurdeep R. Chatwal
23. Chemical Index	
24. National and International Guidelines for Drug development and Clinical trials	
25. Act, rules, notifications and directions regarding Drug development and clinical trials	

SYLLABUS

Subject : Ayurveda Siddhant - paper I (Basic Principles of Ayurveda)

Time : 3 Hours Theory

Theory : 100 Marks

The students are coming fresh from BAMS/B. Pharm & onwards. Therefore, they are supposed to have basic understanding about what is Ayurveda and the fundamental and basic principles on which it stands. The students should know the history of Ayurveda and its development. The syllabus of this paper covers the above aspects.

- Definition of Ayu. And Ayurveda.
- Definition of Swastha according to ayurveda.
- Ashtanga Ayurved- The eight specialized branches of Ayurveda, concept and definition.
- Ayurvediya Padarth Vignan and its importance . Characteristics and classification of Padarth.
- Basic principles & siddhantas of ayurveda (includes Triguna siddhanta and its qualities, Panchamahabhuta & its qualities, relation of panchamahabhuta & Triguna, Introduction to Prakruti, its types & characteristics, introduction to Dosha-Dhatu-Mala Vigyanam)
- Dravyguna Vignaniyam, characteristics, number And classification of dravyas, shadarasa .
- The Characteristics, qualities (gunnas) and origin of panchamahabhutas and their mutual micro- merging (parasparaanupravesha).
- Guna Vignaniyam : Characteristics and types of Gunas as gurvadi guna, adhyatmika
- Guna Vaisisika guna samanya guna
- Karma Vignaniyam : characteristics and types of Karmas.
- Samanya , vishisha, samvaya Vignaniyam – characteristics and types
- Pramana vignaniyam : characteristic, importance and numbers of pramana.
- The pramanas accepted by Ayurveda- Pratyakasha, Anumana, Aptopdesha and Yukti Pramanas.
- Effect and causative factors (Karya, Karana, Bhava) : Description of Karya- Karana And various vadas, Features of cause (karana) and types. Description of asamavayi and
- Nimita karana in ayurved. Satkarya vada, Parmanu Vada , Pilupaka, Pitharapaka etc.,
- The advent of Ayurvedavatarana : The Atreya (Charaka Samhita) and the Dhanvantari (Shushruta Samhita) traditions of Ayurveda.
- Laghtrayi and Brihatrayi Parichaya.
- Developments of Ayurvediya Rasashastra & Bhaishjya Kalpana.
- Propagation of Ayurveda in Globally.

SYLLABUS

Subject : Rasa Shastra Paper 2

Time :-3 Hours Theory
2 Hours Practicals

Theory : 100 Marks
Practicals : 100 Marks

Aims & Objectives

Students taking up course in Ayurved Manufacturing must have basic knowledge of Rasa Shastra and Bhaishjya Kaipana an ancient science of alchemy. They must know the classical methods and principles involved in manufacture of different Ayurvedic formulations and should also get the basic concept of manufacturing, storage, presentation and dispensing of Ayurvedic drugs.

The syllabus of course includes these aspects of teaching and training.

- Definition of Rasashastra, importance in Ayurveda and brief history of Rasa Shastra, its relevance in vedic era. Ayurvedic literature and in Modern Science.
- Define Paribhashas : Shodhana, Samskara, Marana, Satvapatan, Nirvap, Avap, Dhanvantaribhag, Rudrabhag, Kajjali, Parpisti, Dhanyabhak, Budhukshitparad, Hinguloth Parad.
- Definition of Dravya, type and panchbhautic composition of dravya.
- Definition types and importance of Gunas, Vipaka, Veerya, Prabhava.
- Brief descriptions of Yantra, puta and Musha, Yantra-Dolayantra, Vidyadharyantra,
- Khalvayantra Swedanyantra, Valukayantra, Udukhalyantra, Patalyantra, Taptakhaivayantra.
- Musha- Samanya, Vajra, vajradrahan, Yog, Gar, Var, Varnya, Rupya, Bid, Gostani, Vrutan, Gol, Malla, Pakva, maha, Manduk, Mushal.
- Classification of drugs in Rasa Shastra.
- Maharasas- their synonyms, identification, types, impurities shodhana, Marana,
- Therapeutics dose and compound formulation side effects and its antidote.
- Principles of Shodhana, Marana and Jarana of Metals & Minerals.
- Introduction, identification, types, impurities, shodhana marana,
- Therapeutic dose, adverse effects and antidotes of Upa rasas sadharan
- Rasa, Dhatu and Ratna.
- Introduction to Sudhavarga & Pranjia dravya their synonyms, identification, types, impurities shodhana, Marana, Therapeutics dose and compound formulation side effects and its antidote their composition, properties and uses.
- Introduction, shodhana, therapeutics dose, antidotes toxicity of visha-upvisharga.
- Introduction to Puta, its classifications and descriptions.
- Preparation of several Ayurvedic Formulation like Bhasma, sindooras, Netrabindu,
- Varti, Rasa preparations.

Aushadha Yoga

- | | |
|---------------------|---------------------|
| • Anandbhainav rasa | Arogyavardhini rasa |
| • Garbhapalrasa | Gandhakrasayna |
| • Tribhunikirtirasa | Laxmivilas Rasa |
| • Navajivan Rasa | Swaskuthar ras |
| • Ichchhabledi rasa | Chadraprabhavati |

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|-------------------------------------|--------------------|
| • Panchamruti Parpati /loha bhasma | Sweta Parpati |
| • Abragarbha Pottali/ Praval pishti | Hemagarbha pottali |
| • Rasa Sindur | Mallasindur |
| • Makardhwaj | Suvarnabang |
| • Saptamruta loha | Kamadudha rasa |

Practicals

Preparation of at least 20 yogas (formulations) from Rasa Shatra including purification processes.

SYLLABUS

Subject : Bhaishjya Kalpana Paper -3

Time :-3 Hours Theory

Theory : 100 Marks

2 Hours Practicals

Practicals : 100 Marks

- Definition of Bhaishjya –Bhaishjya Kalpana and its brief history in veda , Ayurvedic samhitas and in samgrah period.
- Definition of Dravya, type and panchbhautic composition of Dravya.
- Definition types and importance of Gunas, Vipaka, Veerya, Prabhava.
- Paribhashas- Dipana, Pachana, Rasayana, Vajikarna, Grahi, Stambhana, Stransana, Virechak , Vangamana.
- Mana Paribhashas according to Sarangdhar samhita
- Introduction of PanchaVidhaKashaya Kalpana,their Upakalpana & Introduction of Different dosage forms according to modern & its manufacturing processes.
- Preparation methods of Avaleha kalpana, churna, Vati- Guggulu Kalpana.
- Preparatory methods of Senha Kalpana and Aahariya Kalpana
- Definition and application of Bhajana, Bhavana,Samskara, Mardana
- Preparatory methods of Satva, Ghan Kalpana, Keshar Nirmana, Malhar Kalpana
- Preparation of several Ayurvedic formulation : asavas, Arishtha, Taila, Ghrita, etc.Their composition, properties and uses.

Aushadha yoga

Panchatikta ghrita

Jatyadi ghrita

Triphala ghrita /Drakshasav

Pinditail/Draksharishta

Satapaki balitail

Panchagunitail/Arkalavan khsara

Drakshasava

Kutajarishta

Bringraj tail

Shadabindu tail/guduchi Satva

Vishgarbha tail

Shakhaivati

Khadiradivali

Lavangadi vati

Dashamool Kwath/ Trifala mashi

Phalatrikadi Kwath

Pathyadi Kwath/shatavari kalpa

Rasnasaptak Kwath/Shatadhuta ghruta

Vasavaleha

Chyavanaprashavaleh/Dashanga Lepa

Dashanasamskar churna

Lavanbhaskar Churna/Anu taila

Triphala Guggulu

Abha Guggulu/Lavangadi vati

Yogaraj Guggulu

Bala Chaturbhadra Churna/dashangavarti

Kaishor Guggulu/Goskhura arka.

Practicals

Preparation of least 20 yogas (Formulation) of different kalpanas.

SYLLABUS

Subject : Ayurvedic pharmaceuticals and Selected Topics in Pharmacy- Paper-4

Time :-3 Hours Theory

Theory : 100 Marks

2 Hours Practicals

Practicals : 100 Marks

- Introduction to Pharmacopoeias with special reference to the Ayurvedic.
- Pharmacopoeia of India.
- Metrology –systems of Weight and measures /Manaparibhasha according to ayurveda.
- Packaging & labeling of Pharmaceuticals.
- Sterilization – concept of Sterilization and its type.
- Introduction to quality testing procedures during production and finished goods .
- Brief introduction to modern tablet,capsule,liquid,ointment processing techniques.
- Brief introduction to sterile dosage forms with special reference to precaution in their handling and storage
- Drug distribution systems in the market .
- Ayurvedic Pharmaceutical Jurisprudence & Toxicology
- Ayurvedic Drugs & cosmetics act and rules
- Ayurvedic Quality assurance & GMP for finished goods.
- Introduction to Excipients/intermediate products & chemicals used in pharmaceutical industry like preservatives/binders etc...
- Introduction to Pharmaceutical machinery & its uses for production .
- Rasashala Nirman vidhi : According to ayurveda and modern pharmacy
- Any relevant topic concerned with manufacturing of ayurvedic drugs