



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Science
Name of Program: B.Sc. (Major: Chemistry)
(2022-2025)

Semester IV

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
VOCCH401	SEC	Herbal Technology	0	0	0	60	40	0	0	8	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit.

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Scope:


The course Herbal technology provides the student, knowledge of herbal drugs and herbal drug industry, the quality of raw material, guidelines for the quality of herbal drugs, herbal cosmetics, nutraceuticals. The syllabus is designed in a way to explain the scope of pharmacognosy, traditional systems of therapy, preparation of herbal formulations, and important aspects of ethnomedicine.


Course Educational Objectives (CEOs): The course Herbal Technology is intended to empower the students

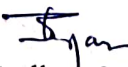
1. To understand the authentication, collection of raw material as source of herbal drugs
2. To learn the principles and significance of different Indian Systems of Medicines
3. To acquaint the students with practical knowledge of Herbal Drug preparation and Profiles
4. To include the importance and values of Nutraceuticals and its health benefits

Course Outcomes: Upon completion of the course, the student shall be able to know

1. Definition, history, and scope of Pharmacognosy and Ethnomedicine
2. Analysis of drugs using analytical instruments Calorimeter, and UV spectrometer
3. Methods of harvesting and storing plant drugs and basics of commerce of herbal drugs
4. The economic potential of medicinal plants, its contribution on National economy


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Syllabus

UNIT I: Herbal materials and Systems of Indian Medicines

Herbs as raw materials, definition of herb, herbal medicine, herbal medicinal product, Importance of medicinal plants in human health care. Traditional knowledge and utility of some medicinal plants of India. Collection, authentication, and study of following medicinal herbs present in the SVVV University campus – *Bryophyllum pinnatum*, *Rauvolfia serpentina*, *Achyranthes aspera*. Preparing plant sample-Herbarium record.

UNIT II: Study and analysis of commercial Herbal drugs

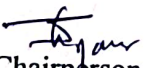
Outline of herbal drug preparation analysis of important commercial medicines and their profiles with the help of TLC and UV spectra - Ashokarishta, Madhugrit, Madhunashini Vati, Cardiogrit, and Triphala.


UNIT III: Nutraceuticals and Health Benefits

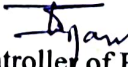
General aspects, growth, scope, and types of products available in the market. Study of following herbs as health food: Ginger, Fenugreek, Garlic, and Spirulina. Study and analysis of following – Nutrela, Chyawanprash, Nutrela diabetic care powder.

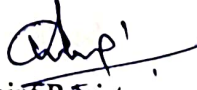
UNIT IV: Preparation and Standardization of Herbal Extracts

Principles of extraction and different methods of extraction including maceration, percolation,


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hot continuous extraction, microwave method. Extraction and crystallization of Azadiradione from neem kernels, preparation of crude extracts from *Asparagus racemosus*, *Andrographis paniculate*, and *Tinospora cordifolia* plant species of SVVV garden. Analysis and isolation of phytochemicals by using TLC, preparative TLC and Column chromatography. Microbiological evaluation of herbal extracts.


UNIT V: Preparation herbal domestic products

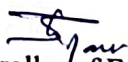
Preparation of herbal mosquito liquid repellent, mosquito cream (ointment), herbal juice for gastric related problems - indigestion, antacids, and constipation. Preparation of herbal plant crude extract - decoction for cough, cold and sanitizer.

References:

1. Evans WC, Trease and Evans Pharmacognosy, WB Saunders Limited.
2. Taylor VE, Brady LR, Robbers JE, Pharmacognosy, KM Varghese Company.
3. Kokate CK, Practical Pharmacognosy, Vallabh Prakashan
4. Essential of Pharmacognosy by Dr.S.H.Ansari
5. Pharmacognosy & Phytochemistry by V.D.Rangari
6. Pharmacopoeal standards for Ayurvedic Formulation (Council of Research in Indian Medicine & Homeopathy)


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7. Mukherjee, P.W. Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals. Business Horizons Publishers, New Delhi, India, 2002.

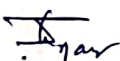
8. Modern Methods of Plant Analysis- Peach & M.V. Tracey, Vol. I&II.

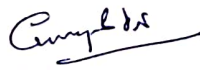
9. Instrumental Methods of Chemical Analysis by B.K Sharma

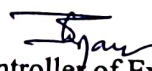
10. Vogel's Textbook of Quantitative Chemical Analysis by A.I. Vogel

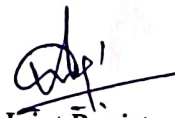
List of Experiments:

1. Preparation of herbarium specimens of at least THREE medicinal plants studied in theory
2. Determination of the alcohol content of Ayurvedic medicines (syrup/tonic) •
3. Chemical tests for identification of honey, castor oil and their adulterants
4. Phytochemical screening for alkaloids, polyphenolic compounds, and glycosides
5. Monograph analysis of herbal drugs from recent Pharmacopoeias
6. Determination of Carbonyl functional group in a Tablet, Syrup, and Creams
7. Preparation of some herbal formulations mentioned in the syllabus
8. Analysis of following Ashokarishta, Madhugrit, Madhunashini Vati, and Triphala
9. Analysis of following Nutraceuticals Chyawanprash, Nutrela diabetic care powder


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