

Institute for Excellence in Higher Education (IEHE), Bhopal

Department of Chemistry

PART-A: INTRODUCTION			
Program: UG	Class: B.A./B. Com, B.Sc. Honours	Semester: IV	Session: wef 2022-23
Subject: Chemistry			
1.	Course Code	..SEC...481..... (To be filled by Exam Cell)	
2.	Course Title	Herbal Technology	
3.	Course Type (Core Course / Discipline Specific Elective / Generic Elective)	Vocational Course	
4.	Pre-Requisite (if any)	Open for all students	
5.	Course Outcomes (CO)	After completing this course student will be able to: CO-1. Develop their understanding on Herbal Technology CO-2. Define and describe the principle of cultivation of herbal products. CO-3. List the major herbs, their botanical name and chemical constituents. CO-4. evaluate the drug adulteration through the biological testing CO-5. formulate the value-added processing / storage / quality control for the better use of herbal CO-6. develop the skills for cultivation of plants and their value added processing / storage / quality control	
6.	Credit Value	3 (Th)	
Code Details: Gender-[1], Environment & Sustainability- [2], Human Values- [3], Professional Ethics- [4], Employability-[5], Entrepreneurship- [6], Skill Development-[7]			
Signature of Members: (1)  (2) (3)  (4)  (5) (6)  (7) (8) (9)  (10) (11) (12)			
Date of BOS: 25/6/22.....			
Total No. of Lectures for theory: L – 45 (One hour each)			

Module	Topics	No. of Lectures
I	Herbal Technology: Definition and scope; Herbal medicines: history and scope; Traditional systems of medicine, and overview of AYUSH (Traditional Indian Systems of Medicine); Cultivation - harvesting - processing - storage of herbs and herbal products <i>Keywords:</i> Herbal medicines, AYUSH.	10
II	Value added plant products: Herbs and herbal products recognized in India; Major herbs used as herbal medicines, nutraceuticals, cosmetical and biopesticides, plant parts used, major chemical constituents. <i>Keywords:</i> cosmetical, biopesticides, nutraceuticals.	10
III	Pharmacognosy – Chemistry of the following herbs: Tulsi, Ginger, Curcuma, Fenugreek, Indian Gooseberry, Catharanthus roseus, Withaniasomnifera, Centellaasiatica, Achyranthes aspera, Kalmegh, Giloe (Tinospora), Saravar. Herbal foods, future of pharmacognosy. <i>Keywords:</i> Pharmacognosy.	8
IV	Analytical pharmacognosy: Phytochemical screening tests for secondary metabolites (alkaloids, flavonoids, steroids, triterpenoids, phenolic compounds). Plant gene banks, Cultivation of Plants and their value-added processing / storage & quality control <i>Keywords:</i> herbal drug, plant gene bank, tissue culture.	5
V	Extraction and Applications of Phyto- Pharmaceutical Successive solvent Extraction / Maceration technique / Steam distillation techniques for various herbal plants. Study of following herbs as health food: Ginger, Garlic, Aloe-vera, Honey, Amla, Fenugreek, spiruline, Tulsi, Turmeric, pudina etc.	8

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PART-C: LEARNING RESOURCES

Textbooks, Reference Books, Other Resources

Suggested Readings:

Textbooks:

1. Arber, Agnes. (1999). Herbal Plants and Drugs. Mangal Deep Publications, Jaipur.
2. Saunders / Elsevier Evans, W.C. (2009): Trease and Evans Pharmacognosy 16th Edition.
3. Miller, L. and Miller, B. (2017). Ayurveda & Aromatherapy: The Earth Essential Guide to Ancient Wisdom and Modern Healing. Motilal Banarsidass,; Fourth edition .
4. Yoga and Naturopathy, Unani, Siddha and Homeopathy. New Delhi: Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry and Family Welfare, Government of India.
5. Sapna Malviya, Neelesh Malviya Herbal Drug Technology Eurospan publication.

Reference Book:

1. AYUSH (www.indianmedicine.nic.in). About the systems—An overview of Ayurveda,
2. Kokate, C.K. (2003). Practical Pharmacognosy. Vallabh Prakashan, Pune.
1. Panda H. The Complete Technology Book on Herbal Beauty Products with Formulations and Processes. Centre for Information Technology publication

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(7)	(8)	(9)	(10)	(11)	(12)

Date of BOS:.....

Suggestive digital platform web links

www.indianmedicine.nic.in

<https://www.kobo.com/us/en/ebook/herbal-technology-concepts-and-scope>

Suggested equivalent online courses

SWAYAM /NPTEL Course: 1. <https://youtu.be/8cyjlnDo5ok>

2. <https://youtu.be/wsz-LEFuLdc>

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(7)	(8)	(9)	(10)	(11)	(12)

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PART-D:Assessment and Evaluation(For theory of3 credits)

Internal Assessment:		External Evaluation:	
Continuous Comprehensive Evaluation (CCE): 40 Marks		Term-end Examination(EE): 60 Marks	
<i>The distribution of marks shall be as follows:</i>		Time:3 hours	
(1) Class Tests#(best 2 out of 3)	2×10 Marks	Section (A): 12(MCQ) questions of one mark each.	12×01 = 12 Marks
(2) Any one of the following: - Quizzes/Objective Tests##(best1outof2) - GroupTasks (Group Discussion/FishbowlTechnique; Role-Play/Authentic-Problem Solving)	08 Marks		
(3) Any one of the following: - Home Assignments (followed by presentation) - Class Assignments - Class-Teaching - Poster Presentations - Portfolios - Annotated Bibliographies* - Reports* - Book Review* - Article Review* - Journal Writing* - Paper Presentations* - Seminar* - Field Assignments*	08 Marks	Section (B): Four short questions with internal choice (200 Words Each)	04 × 04 = 16 Marks
(4) Attendance 75%-80% : 01 Mark 80%-85% : 02 Marks 85%-90% : 03 Marks 90% & above: 04 Marks	04 Marks	Section (C): Four long questions with internal choice (500 Words Each)	04 × 08 = 32 Marks
Total (A+B+C+D):		40 Marks	
		Total (A+B+C):	60 Marks

Signature of Members:

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