



# SYLLABUS

<b>Course Title</b>	<b>HERBAL DRUGS STANDARDIZATION</b>	
<b>Course Code</b>	PH803	
<b>Course Credit</b>	Lecture	: 3
	Practical	: 3
	Tutorial	: 0
	Total	: 6
<b>Course Objectives</b>		
<p>On the completion of the course, students will be able to:</p> <ul style="list-style-type: none"> <li>▪ Discuss the various aspect of herbal drug standardization.</li> <li>▪ Understand techniques to extract and isolate phytoconstituents.</li> <li>▪ Understand regulatory aspect of herbal drugs.</li> <li>▪ Perform Laboratory activities: preparation and evaluation of various formulations.</li> </ul>		
<b>Detailed Syllabus</b>		
<b>Sr. No.</b>	<b>Name of Chapter &amp; Details</b>	<b>Hours Allotted</b>
	<b>Section-I</b>	
<b>1</b>	Ayurvedic Formulations.	<b>10</b>
<b>2</b>	Techniques of extraction and isolation of phytoconstituents.	<b>08</b>
<b>3</b>	Study of different chromatographic methods and their applications in	<b>05</b>

	evaluation of herbal drugs.	
	<b>Section-II</b>	
<b>4</b>	Evaluation and standardization of crude drugs and herbal medicines.	<b>08</b>
<b>5</b>	WHO guidelines for quality control of herbal drugs.	<b>07</b>
<b>6</b>	Stability testing of herbal medicines.	<b>02</b>
<b>7</b>	Comparison of various Herbal Pharmacopoeias.	<b>02</b>
<b>8</b>	GMP requirements and Drugs & Cosmetics Act provisions.	<b>02</b>
<b>9</b>	Regulatory requirements for herbal medicines.	<b>01</b>
<b>Herbal Drug Standardization (Practical)</b>		
<ol style="list-style-type: none"> <li>1. Preparation and evaluation of various herbal formulations.</li> <li>2. Isolation of phytoconstituents.</li> <li>3. Experiments related to Chromatographic techniques.</li> </ol>		
<b>Instructional Method and Pedagogy:</b>		
<ul style="list-style-type: none"> <li>▪ Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.</li> <li>▪ Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval.</li> <li>▪ Surprise tests/Quizzes/Seminar/Tutorials will be conducted.</li> <li>▪ The course includes language practices such as Group Discussion, Interviews etc to develop the communication skills of the students.</li> </ul>		

**Students Learning Outcomes:**

At the end of the course the students will be able to:

1. Understand various quality control parameters of herbal drugs and formulations.
2. Prepare and evaluate some of the herbal formulations.
3. Understand various aspects of regulatory requirements.

**Text books:**

1. Trease and Evans Pharmacognosy: W C Evans; 15<sup>th</sup> edition, Elsevier publication.
2. Pharmacognosy: C. K. Kokate, A. P. Purohit, S. B. Gokhale, Nirali Prakashan Pune, 9th edition, 1998.

**Reference Books:**

1. Quality Control Methods for Medicinal Plant Materials, 2002, WHO, Geneva.
2. The Ayurvedic Pharmacopoeia of India, Government of India, Ministry of Health & Family Welfare, controller of publication, Delhi.

**Additional Resources:**

- <http://www.who.int/publications/en/>