

**Course name:**  
**Herbal plants**

ECTS	6
Course status	<i>Facultative</i>
Course final assessment /evaluation of outcomes	<i>Exam</i>
Prerequisite	<i>Interest in plant biology, organic chemistry and phytotherapy</i>

**Main field of study:**

The knowledge about herbal plant species from natural resources, as well those cultivated for their roots, herbs, flowers, fruit and seeds. The students will learn about the most important biologically active phytochemicals present in herbal plants. The use of selected herbs for medical, culinary and household purposes, as well as the cultivation issues will be emphasised.

Educational profile	General academic
Code of studies and education level	<b>SM</b>
Semester of studies	Summer
Language of instructions	English

**Course offered by:**

Name of faculty offering the course	Faculty of Agriculture and Economics
Name of department offering the course	Department of Plant Physiology, Breeding and Seed Science/ Department of Crop Production
Course coordinator	Renata Bączek-Kwinta/Agnieszka Klimek-Kopyra

**Learning outcomes:**

Symbol of outcome	Description of the learning outcome	Reference to main field of study outcomes	Area symbol*
<b>KNOWLEDGE – student knows and understands</b>			
	The relationship between plant habitat and human activity	HERPL_K01	0522, 0811, 0812
	Principles of herbal plants production	HERPL_K02	0811, 0812
	Basics of pharmacognosy	HERPL_K03	0916
	Classification of phytochemicals of therapeutical use	HERPL_K04	0916
	Selected analytical methods of phytochemical analysis	HERPL_K05	0531
<b>SKILLS – student is able to</b>			
	Schedule the small-scale herbal plants cultivation	HERPL_S01	0811
	Recognise basic herbs in nature and their products	HERPL_S02	0522, 0812, 0812, 0916, 0531
	Choose herbs and herbal products for minor health	HERPL_S03	0916

	dysfunctions treatment		
SOCIAL COMPETENCIES – student is ready to:			
	Use herbs and herbal products in self-healing in the case of minor health dysfunctions	HERPL _S01	0916
	Predict and avoid side effects of herbal treatments	HERPL _S02	0916

### Teaching contents

Lectures		20 hours
Topics	Principles of herbs cultivation Sustainable approach for herbs and spices crop protection History of phytomedicine and different phytomedicine systems in the world Morphology, systematics and chemotaxonomy of medicinal plants Plant primary compounds, carbohydrates and lipids: biosynthesis and therapeutical use. Plants producing flavonoids Plants producing lignans Plants producing coumarins Plants producing phenolic compounds Plants producing tannins and quinons Plants producing isoprenoids and steroids Plants producing tetra- and polyterpenes Plants producing iridoids and essential oils Plants producing resins and balsams	
Accomplished learning outcomes		Exam; the grade is 67% of contribution in the final grade.
Means of verification, rules and criteria of assessment		Written test, mixed version. Grade E (2.0) < 50% Grade D (3.0) 50% Grade C (3.5) 60% Grade B (4.0) 70% Grade B+ (4.5) 80% Grade A (5.0) 90-100%
Classes:		20 hours
Topics	Diagnostic and assessment of herbs and spices in natural habitats Identification of medicinal plant material and classification to the appropriate botanical group based on its morphological and anatomical features Identification of raw material of representatives of families yielding important phytopharmaceuticals (Alliaceae, Apiaceae, Asphodelaceae, Asteraceae, Caesalpiniaceae, Fabaceae, Hyparicaceae, Lamiaceae, Papaveraceae, Piperaceae, Rubiaceae, Rhamnaceae, Rutaceae, Solanaceae, Zingiberaceae, Ginkgoaceae, Pinnaceae). Chemical analyses of some specific metabolites and/or antioxidant activity of raw material and/or herbal plant products Identification of threats related to medicinal plants (analysis of literature data)	
Accomplished learning outcomes		Classes reports
Means of verification, rules and criteria of		1. Grades for accomplished tasks realised individually

assessment	<p>or as a teamwork. The assessment will be based on the efficiency and organization of a team and skills in using the source materials.</p> <p>2. Correctness of tasks performance, tests.</p> <p>Classes grade is 33% of the contribution in the final grade.</p>
------------	---

### References:

Basic	<ol style="list-style-type: none"> <li>1. Lecture notes, classes handouts</li> <li>2. Bruneton J., Pharmacognosy, phytochemistry, medicinal plants, 2nd ed., Springer Verlag 2008</li> <li>3. Peter K.V. (Ed.) Handbook of herbs and spices, Second Edition, Woodhead Publishing 2012</li> </ol>
Supplementary	<ol style="list-style-type: none"> <li>1. Heinrich M. et al. Fundamentals of pharmacognosy and phytoterapy, 2nd ed., Elsevier 2012</li> </ol>

### Structure of learning outcomes

Area of academic study: R – Agricultural, forestry and veterinary sciences	6 ECTS **
Area of academic study: T – technological sciences	ECTS**

### Structure of student activity

Contact hours	52	hrs.	2.1	ECTS**
Including:				
lectures	20	hrs.	0.8	
classes and seminars	20	hrs.	0.8	
consultations	3	hrs.	0.1	
participation in research	0	hrs.	0	
obligatory traineeships	0	hrs.	0	
participation in examination	3	hrs.	0.1	
e-learning	10	hrs.	0.4	ECTS**
student own work	128	hrs.	5.1	ECTS**

\*Areas of academic study in the fields of: H- humanities; S - social studies; P – biological sciences; T – technological sciences; M- medical, sport and health sciences; R – Agricultural, forestry and veterinary sciences; A – the arts

\*\* stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes