

[Campus: UPM- Ciudad Universitaria]	[School of Forestry and Natural Environment Engineering]
Program	13IG – [Bachelor’s Degree in Forest Engineering] 13MP – [Bachelor’s Degree in Natural environment engineering]

Course number and name	
Number	[135004514] (in 13IG) and [135004527] (in 13MP)
Name	[USES OF MEDICINAL AND AROMATIC PLANTS]
Semester	S8 [(February-June)]

Credits and contact hours	
ECTS Credits	3
Contact hours	36

Coordinator's name	[Prof. Carlos CALDERON-GUERRERO] [carlos.calderon@upm.es]
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Specific course information	
Description of course content	
<p>[Medicinal aromatic plants belong to a large plant group with a great interest due to its pharmaceutical, cosmetic and nutritious application and they are also an alternative to traditional crop with species in high demand at the current international market. It is expected to give basic knowledge and skills related to production and chemical features of essences and extracts from local plants in Spain. The main purpose of this course is that students have an approach to economic importance, uses, botany and harvested processes of the most significant medicinal aromatic and seasoning specie plants]</p>	
List of topics to be covered	
<ol style="list-style-type: none"> 1. Introduction and Concepts. Definitions. 2. Production and marketing. History. Classification. 3. Raw Material and plant processing. 4. Active principles in MAPs. 5. Essential oils. Industrial utilization of MAPs. 6. Uses of MAPs. Medicinal sector. 7. Uses of MAPs. Food sector. 8. Uses of MAPs. Perfume and cosmetic sector. 9. Other uses of MAPs. 10. Chemical analyze and Quality Control of MAPs. 	

Prerequisites or co-requisites	
None	
Course category in the program	
<input type="checkbox"/> R (required)	<input checked="" type="checkbox"/> E (elective) <i>(elective courses may not be offered every year)</i>

Specific for course objectives
Specific learning outcomes
<p>CE 4.6 - Ability to know, understand and use the principles of: Forestry non-wood raw materials.</p> <p>CE 4.7 - Ability to know, understand and use the principles of: Industrial processes of non-wood products: cork, resin, and essential oils.</p> <p>CT 10 - Environmental awareness: It is the set of knowledge, abilities, skills and attitudes, useful for interacting with the environment, ethically, responsibly and sustainably, in order to avoid or lessen the negative effects produced by the inappropriate practices caused by human activities, and to promote the benefits that professional activity can generate in the environmental field, taking into account its economic and social implications.</p> <p>CT 5 - Bibliographic search and analysis of documentation.</p> <p>RA540 - Attainment of competences in the field of medicinal and aromatic plants.</p>

Further reading and supplementary materials
<ul style="list-style-type: none"> - ARRAIZA. M.P., CALDERON GUERRRO, <i>Frontiers in Horticulture (Volume 1) (Medicinal and Aromatic Plants: The Basics of Industrial Application)</i> (2017) - PAZ ARRAIZA, MP; GONZALEZ-COLOMA, A. FE ANDRES, M; BERROCAL-LOBO, M; DOMINGUEZ-NUNEZ, J; CIDRAL DA COSTA, A; NAVARRO-ROCHA, J; CALDERON-GUERRERO, C, <i>Antifungal Effect of Essential Oils. Potential Of Essential Oils.</i> 145-164 - 2018-01-01 (), DOI: 10.5772/intechopen.78008

Teaching methodology			
<input checked="" type="checkbox"/> lectures	<input type="checkbox"/> problem solving sessions	<input checked="" type="checkbox"/> collaborative actions	<input checked="" type="checkbox"/> laboratory sessions
Other:			