

COURSE OUTLINE

MANAGEMENT OF ECOSYSTEMS FOR THE PRODUCTION OF NON-WOOD FOREST PRODUCTS (MUSHROOMS, RESIN, AROMATICS)

(1) GENERAL

SCHOOL	TECHNOLOGY		
DEPARTMENT	FORESTRY, WOOD SCIENCES & DESIGN		
LEVEL	POSTAGRADUATE		
COURSE CODE	MB125	SEMESTER	2 nd
COURSE TITLE	MANAGEMENT OF ECOSYSTEMS FOR THE PRODUCTION OF NON-WOOD FOREST PRODUCTS (MUSHROOMS, RESIN, AROMATICS)		
ACTIVITIES		WEEKLY HOURS	ECTS
Lectures		2	6
TOTAL		2	6
TYPE OF COURSE	ELECTIVE		
PREREQUISITES	NO		
LANGUAGE OF TEACHING AND EXAMINATION	GREEK		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO		
WEBPAGE COURSE (URL)	https://eclass.uth.gr/courses/FWSD_P_111/		

(2) LEARNING OUTCOMES

Learning Outcomes
<p>The purpose of the course is for the graduate student to learn about non-wood forest products (Non Wood Forest Products) that can be produced both from forest holdings and from crops. From a commercial point of view, the most important (according to FAO) non-timber forest products are essential oils, aromatic - medicinal plants and products, nuts and fruits, mushrooms, oleoresins, vegetable oils, tannins, pigments, sweetening agents, gums, balms, cork and candles.</p> <p>Upon successful completion of the course, the student will be able to:</p> <ul style="list-style-type: none"> • Know the main non-timber forest products. • Propose, describe and apply, as appropriate, appropriate management measures for their sustainable management. • Know and apply cultivation methods for the production of non-timber forest products. • Understand the importance of the ecological, social and economic parameters of collecting non-timber forest products.
General Skills

(3) COURSE CONTENT

<p>In the theoretical part of the course the student is taught and learns about:</p> <ul style="list-style-type: none"> • Introduction to non-timber forest products. Terminology, clarification of concepts, primary

non-timber forest products. The needs created in the market for non-timber forest products.

- Aromatic/Medicinal Plants. What elements make plants fragrant? Morphological characteristics of aromatic and medicinal plants, glandular duct system, secondary plant metabolites.
- Aromatic/Medicinal Plants. Discretionary collection from native populations, cultivation in safe environments, optimization techniques, harvesting, post-harvest management, ecological footprint.
- Essences. Extraction, distillation, therapeutic action, incorporation into products of high added value.
- Therapeutic action of essential oils, aromatherapy. Properties of the most important native aromatic medicinal plants of the country, reference to their therapeutic properties and use in aromatherapeutic preparations.
- Mushrooms. Morphology – physiology of mushrooms, edible and poisonous fungi.
- Mushroom management. Discretionary collection from native populations, cultivation in safe environments, harvesting, post-harvest management, drying.
- Oleoresins – resins. Chemical composition of resins, resin utilization technologies.
- Berries and forest fruits. Most important species, methods of collection, permission to collect, processing, placing on the market.
- Educational excursion to production units for the cultivation and distillation of aromatic plants. Appropriate destinations will be selected for visiting aromatic plant cultivation and distillation enterprises.
- Tannins and pigments. Chemical composition of tannins and pigments, utilization technologies and integration into finished products.
- Sweetening agents, gums, balms, corks and candles. Chemical composition of sweetening agents, gums, balms, corks and candles. Processing and utilization technologies for the preparation of final products.
- Sustainable management of non-timber forest products – Presentation of work. Basic principles of sustainable management of non-timber forest products. Presentation of work.

From the 1st lesson, a suggested list of assignments is given that the student should undertake and prepare (individually) until the end of the MSc semester.

The relevant directions are given, while rich material and instructions will be posted in the E-class.

The final assignment includes, in addition to paper and electronic submission, a public oral presentation on the chosen topic, on a set date (usually the 12th or 13th week of classes). The presentation lasts 15 minutes and is followed by 5 minutes of questions from the students present. The teacher intervenes - if necessary - for comments, observations, corrections.

Students are graded for their overall performance in their final paper: 70% on content and editorial specifications and 30% on the preparation of the online presentation and its oral support.

These grades count for a total of 40% of the overall grade that students will receive after the final written theory exam.

(4) TEACHING AND LEARNING METHODS - EVALUATION

COURSE DELIVERY METHOD	In class and remotely
USE OF INFORMATION AND	<ul style="list-style-type: none"> • Use of PCs, ppt slides, projector.

COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none"> • Support of the learning process through the e-class • electronic platform 	
MANAGEMENT OF TEACHING	Activity	Semester Workload
	Lectures	26
	Individual work in creating an essential oil company (case study)	44
	Educational excursion / Small individual practice tasks	10
	Independent Study	70
	Course Total (25 workload hours per credit unit)	150
STUDENT EVALUATION	<p>I. Written final exam including (70%):</p> <ul style="list-style-type: none"> - Comprehension questions on what was learned - Critical questions on related issues - Multiple choice questions <p>II. Delivery – presentation of written work (30%).</p>	

(5) RECOMMENDED-BIBLIOGRAPHY

- Suggested Bibliography:

- Ciesla W. 1998. *Non-wood Forest Products from Conifers*. Editor: Food and Agriculture Organization of the United Nations. Pp 124. ISBN 9251042128.
- FAO. 1989. *Small-scale harvesting operations of wood and non-wood forest products involving rural people*. FAO Forestry Paper 87. Rome, FAO.
- FAO. 1994. *Non-wood News 1*.
- Negi S.S. 1992. *Textbook of forest utilization (wood and non-wood forest products)*. Bishen Singh Mahendra Pal Singh, India.
- Shackleton S., C. Shackleton and P. Shanley. 2011. *Non-Timber Forest Products in the Global Context*. Springer Eds. ISBN 978-3-642-17983-9.
- Vantomme P., A. Markkula and R.N. Leslie. 2002. *Non-wood forest products in 15 countries of tropical Asia: a regional and national overview*. FAO Regional Office for Asia and the Pacific.
- Wickens G.E. 1991. *Management issues for development of non-timber forest products*. *Unasylva* 165, 42, pp.3.
- Αθανασίου Ζ. 2010. *Μανιτάρια*. Εκδόσεις ΨΥΧΑΛΛΟΥ (Κωδικός ΕΥΔΟΞΟΣ: 22768323).
- Βογιατζή – Καμβούκου Ε. 2004. *Επιλογή Αρωματικών και Φαρμακευτικών φυτών*. Εκδόσεις Χριστίνας & Βασιλικής Κορδαλή Ο.Ε. ISBN: 978-960-357-065-6 (Κωδικός ΕΥΔΟΞΟΣ: 77119822).
- Διαμαντής Σ. 1992. *Τα μανιτάρια της Ελλάδας. Οι σπουδαιότεροι εδώδιμοι, δηλητηριώδεις και ζυλοσηπτικοί μύκητες της χώρας μας*, Εκδόσεις ΙΩΝ.

- Δορδάς Χ. 2012. Αρωματικά και φαρμακευτικά φυτά. Εκδόσεις Χριστίνας & Βασιλικής Κορδαλή Ο.Ε. (Κωδικός ΕΥΔΟΞΟΣ: 22768402).
- Κασιώτης Σ. και Π. Χατζοπούλου. 2015. Αρωματικά, Φαρμακευτικά Φυτά και Αιθέρια Έλαια. Εκδόσεις Κυριακίδη (Κωδικός ΕΥΔΟΞΟΣ: 86200855).
- Κουτσός Θ. 2006. Αρωματικά και Φαρμακευτικά φυτά. Εκδόσεις Ζήτη Πελαγία & Σία (Κωδικός ΕΥΔΟΞΟΣ: 11015).
- Κωνσταντινίδης Γ. 2014. Μανιτάρια, φωτογραφικός οδηγός μανιταροσυλλέκτη. 2η έκδοση, 560 σελ. Γρεβενά.
- Χασιώτης Χ. 2004. Αρωματικά και φαρμακευτικά φυτά. Διδακτικές σημειώσεις. ΤΕΙ Λάρισας, Καρδίτσα.

- Related scientific links:

- <http://www.fao.org/forestry/nwfp/en/>
- <https://rainforests.mongabay.com/>
- <https://www.efi.int/articles/non-wood-forest-products-europe>
- <https://www.iufro.org/science/>
- <http://www.sylvamed.eu/docs/>
- <https://www.incredibleforest.net/content/non-wood-forest-products-europe-seeing-forest-around-trees>