COURSE OUTLINE

CONTEMPORARY APPROACHES IN FOREST MANAGEMENT

(1) GENERAL

SCHOOL	TECHNOLOGY		
DEPARTMENT	FORESTRY, WOOD SCIENCES & DESIGN		
LEVEL	POSTGRADUATE		
COURSE CODE	MB112	**SEMESTER**	1st
COURSE TITLE	CONTEMPORARY APPROACHES IN FOREST MANAGEMENT		

ACTIVITIES	**WEEKLY HOURS**	**ECTS**
Lectures	2	6
TOTAL	2	6

TYPE OF COURSE	OBLIGATORY
PREREQUISITES	NO
LANGUAGE OF TEACHING AND EXAMINATION	GREEK
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO
WEBPAGE COURSE (URL)	https://eclass.uth.gr/courses/GD-LARISSA237/

(2) LEARNING OUTCOMES

Learning Outcomes
The purpose of the course is to acquaint students with the role of forest management as a process, where the manager, based on the international, national and regional forest policy planning framework and the dynamics of the forest landscape, sets corresponding general and specific management objectives and selects, implements and monitors appropriate management measures from an ecological, technical, social and economic point of view. More specific aims are to acquaint students with methods that ensure effective and transparent forest management planning and implementation, such as decision support methods, participatory planning, adaptive management and quality assurance systems. Upon successful completion of the course the student will be able to: • Recognizes the forest policy framework for forest management planning and implementation. • Identifies the needs and possibilities of forest management planning and implementation to increase the resilience of forests and forest landscapes to climate change. • Identifies the needs and possibilities of forest management planning and implementation to maintain and increase the contribution of the forest sector to carbon sequestration through appropriate forest management adaptations and the provision of related ecosystem services, including all types of forest products. • Integrates biodiversity conservation requirements into forest management planning and implementation. • It integrates the needs to contribute to the conservation and increase of the quantity and quality of water resources in the planning and implementation of forest management. • Cooperates with the forest products and services market to make possible adjustments to their needs. • Identify risks and threats to forest ecosystems in a timely manner, as well as related economic activities and respond appropriately. • Cooperates through an organized, transparent and effective mechanism with local communities and all stakeholders in the planning and implementation of forest management

• Contributes to the communication and promotion of forest management achievements in its area of responsibility. • Amends the inventory, monitoring and supervision methods it uses to plan and implement forest management in accordance with applicable obligations and the latest results of scientific research and innovation.
General Skills

(3) COURSE CONTENT

The course content is as follows:
• Course Update – Introduction to Forest Ecosystem Management. General concepts of management in the context of sustainable development. Purpose of Forestry.
• Organization and planning in forestry. By spatial organization in the forest. Production factors in Forestry. Planning in Forestry.
• Forest management for timber production. Timber forest management. Management in deciduous and coniferous forests.
• Multiple forest use – management plan. Management studies specifications. Multiple use of forests. The forest management study.
• International and National legal framework. European policies and legislation for forest management. National forest management policies and legislation.
• Forest management and climate change. Adaptation of forest management. Enhancing the resilience of forests and forest landscapes to climate change and the role of wood. National and international experience - directions.
• Preservation of biodiversity. Institutional framework. Identifying needs and planning conservation measures. Conservation of biodiversity in the exercise of management.
• Ecosystem services. What are ecosystem services? Identification and quantitative approach Y.O. Value estimation approaches Y.O. Integration into forest management planning.
• Forest management and water resources. Institutional framework for water resources management. Hydrological management of forest ecosystems and landscapes. Protection of water resources in the context of the practice of Forestry.
• Production of non-timber forest products. Categories of non-wood forest products (NWFP). Identification of requirements and planning for the production of MSDS. Management measures for production of MSW: general guidelines and case studies.
• Planning and implementation of forest management. Strategic planning. Communication, participatory planning and cooperation with the forestry community. Decision making methods.
• Management monitoring. Modern methods of inventory and monitoring of forest resources. Monitoring the achievement of the general and specific purposes of the design. Monitoring of design implementation efficiency.
• Presentations of final course assignments**.**

The theoretical course takes place two (2) hours a week and is conducted using PCs, ppt slides, projector.
The learning process is supported through the E-class electronic platform.
An interactive whiteboard, as well as eight (8) PCs in the Laboratory are used as media to exercise students in applications related to decision-making.
Every one or two weeks assignments are given to practice topics related to the subject of the course, while the final (6th assignment) should be undertaken and prepared by the student (individually) until the end of the semester of the MSc.
The relevant directions are given, while rich material and instructions are posted on the E-class https://eclass.uth.gr/courses/GD-LARISSA237/. 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 on the overall performance of their final paper: 70% for content and editorial specifications and 30% for 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 COMMUNICATION TECHNOLOGIES	• Use of PCs, ppt slides, and videos. • Support of the learning process through the e-class electronic platform. •Interactive Whiteboard • Eight (8) PCs in the Laboratory to exercise students in a questionnaire processing program.

MANAGEMENT OF TEACHING	Activity	Semester Workload
	Lectures	26
	Six (6) individual assignments related to the subject of the course	44
	Small individual practice tasks	10
	Independent Study	70
	Course Total (25 workload hours per credit unit)	*150*

STUDENT EVALUATION	
	The achievement of the learning objectives will be evaluated based on a total of six (6) assignments and the written exam of the lesson. In order to secure a passable grade (at least 5) it is necessary to achieve a passable grade in weighted average of six (6) assignments and the final exam. I. Written final exam (60%) which includes: • Short answer questions from all the material of the book and lectures. • Solving exercises related to the subject of the course. II. Successful delivery of six (6) assignments and presentation of the individual final (6th) assignment (40%)

(5) RECOMMENDED-BIBLIOGRAPHY

Suggested Bibliography:
Alcasena F.J., A.A. Ager, J.D. Bailey, N. Pineda and C. Vega-García. 2019. Towards a comprehensive wildfire management strategy for Mediterranean areas: Framework development and implementation in Catalonia, Spain. *Journal of Environmental Management*, 231:303-320.
Bravo F. 2009. Adaptive Forest Management: Learning by Doing in Forestry. In Palahí, M., Y. Birot, F. Bravo and E. Gorriz (eds.), Modelling, Valuing and Managing Mediterranean Forest Ecosystems for Non-Timber Goods and Services. European Forest Institute, Palencia, Spain. 9 p.
Ezquerro M., M. Pardos and L. Diaz-Balteiro. 2019. Integrating variable retention systems into strategic forest management to deal with conservation biodiversity objectives. *Forest Ecology and Management*, 433:585-593.
Fussi B., M. Westergren, F. Aravanopoulos, R. Baier, D. Kavaliauskas, D. Finzgar, P. Alizoti, G. Bozic, E. Avramidou, M. Konnertand and H. Kraigher. 2016. Forest genetic monitoring: an overview of concepts and definitions. *Environmental Monitoring and Assessment*, 188: 1-12.
González-Sanchis M., G. Ruiz-Pérez, A.D. Del Campo, A. Garcia-Prats, F. Francés and C. Lull. 2019. Managing low productive forests at catchment scale: Considering water, biomass and fire risk to achieve economic feasibility.

Journal of Environmental Management, 231:653-665.

Jand R., P. Spathelf, A. Bolte and C.E. Prescott. 2019. Forest adaptation to climate change—is non-management an option? *Annals of ForestScience*, 76: 48.

Kadioğullari A.I. and I. Turna. 2015. Determination of the priority areas for the rehabilitation of degraded forest lands. *Scientific Research and Essays*, 10: 7.

Kaya A., P. Bettinger, K. Boston, R. Akbulut, Z. Ucar, J. Siry, K. Merry and C. Cieszewski. 2016. Optimisation in Forest Managment. *Current Forestry Reports*, 1-17.

Mansourian S. and G. Walters. 2019. Identifying governance problems and solutions for forest landscape restoration in protected area landscapes. *Parks*, 25:83-96.

Mitsopoulos I., I. Chrysafi, D. Bountis and G. Mallinis. 2019. Assessment of factors driving high fire severity potential and classification in a Mediterranean pine ecosystem. *Journal of Environmental Management*, 235:266-275.

Qureshi M.E. and S.R. Harrison. 2001. A decision support process to compare Riparian revegetation options in Scheu Creek catchment in North Queensland. *Journal of Environmental Management*, 62:101-112.

Rammer W. and R. Seidl. 2015. Coupling human and natural systems: Simulating adaptive management agents in dynamically changing forest landscapes. *Global Environmental Change*, 35:475-485.

Sarvasova Z., Z. Dobinska and J. Sálka. 2014. Public participation in sustainable forestry: the case of forest planning in Slovakia. *iForest - Biogeosciences and Forestry*, 7:414-422.

Schulz, T., F. Krumm, W. Bücking, G. Frank, D. Kraus, M. Lier, M. Lovrić, M. van der Maaten-Theunissen, Y. Paillet, J. Parviainen G. Vacchiano and K. Vandekerkhove. 2014. Comparison of integrative nature conservation in forest policy in Europe: a qualitative pilot study of institutional determinants. *Biodiversity and Conservation*, 23:3425-3450.

Seddon N., B. Turner, P. Berry, A. Chausson and C.A.J. Girardin. 2019. Grounding nature-based climate solutions in sound biodiversity science. *Nature Climate Change*, 9:84-87.

Stanturf J.A., B.J. Palik and R.K. Dumroese. 2014. Contemporary forest restoration: A review emphasizing function. *Forest Ecology and Management*, 331:292-323.

Vacchiano G., R. Berretti, R. Romano and R. Motta. 2018. Voluntary carbon credits from improved forest management: policy guidelines and case study. *iForest - Biogeosciences and Forestry*, 11:1-10.

Williams B.K. and E.D. Brown. 2016. Technical challenges in the application of adaptive management. *Biological Conservation*, 195:255-263.

Related scientific journals:
• *Forest Ecology and Management*
• *European Journal of Forest Research*
• *Forest Science*
• *Forestry*
• *Annals of Forest Science*
• *Mathematical and Computational Forestry & Natural resource Sciences*
• *Scandinavian Journal of Forest Research*
• *Unasylva*
• *Forest Policy and Economics*
• *Forests*
• *iForest - Biogeosciences and Forestry*