

MODULE DESCRIPTION

General

School	Geotechnical Sciences
Department	Forest and Natural Environment Sciences

Module Information

Title	Forest Road Engineering
Course Code	G.Y.4
Level of Studies	Undergraduate
Teaching Period	Seventh Semester
Attendance Type	General Foundation / General Knowledge / Skills Development
Prerequisites	-

Orientation	Weekly Hours		Year	Semester	ECTS
	Lectures	Laboratory work			
MANAGEMENT, PROTECTION OF NATURAL RESOURCES & CLIMATE CHANGE	3	3	4	7	6

Faculty Instructor

Dr. Ing. Dimitrios Kaziolas

Type of Module

- General Foundation
- Specific Foundation / Core
- Knowledge Deepening / Consolidation

Mode of Delivery

- Face to face
- Distance learning

Digital Module availability

- E-Study Guide
- Departments Website
- E-Learning

Language

	Teaching	Examination
Greek	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
English	<input type="checkbox"/>	<input type="checkbox"/>

Erasmus

- The course is offered to exchange programme students

Learning Outcomes

After the successful completion of the course, the student is expected to:

- be able to study elements of the forest road engineering in order to serve geotechnical projects
- cultivate critical thinking through verification of results
- calculate the fundamental elements of forest roads
- design a forest road
- calculate the necessary technical works for the safe operation of the forest road
- recognize any problems that may arise when designing a forest road and suggest the best solutions

List of General Competences

- Apply knowledge in practice
- Work autonomously
- Work in teams
- Work in an international context
- Work in an interdisciplinary team
- Respect natural environment
- Advance free, creative and causative thinking

Module Content (Syllabus)

General concepts. Traffic analysis. Traffic volume. Tractive effort and resistances. Visibility. Stopping-sight distance, passing - sight distance. Geometric design. Principles of road alignment. Horizontal alignment. Vertical alignment. Cross-sections, superelevation. Project phases: reconnaissance project, preliminary project, final project. Land registry. Estimating earthwork quantities. Distribution, mass-haul diagram. Earthworks machinery. Road drainage. Surface runoff quantities, basic culvert design, drainage ditch design. Pavement design. Flexible pavements, rigid pavements, asphalt coatings.

Educational Material Types

- Book
- Notes
- Slide presentations
- Video lectures
- Multimedia
- Interactive exercises
- Other:

Use of Information and Communication Technologies

- Use of ICT in Course Teaching

- Use of ICT in Laboratory Teaching
- Use of ICT in Communication with Students
- Use of ICT in Student Assessment

Module Organization

Please fill in the workload of each course activity

Course Activity	Workload (hours)
Lectures	39
Laboratory work	39
Individual Assignment	48
Independent Study	23
Total	150

* 1 ECTS unit corresponds to 25 hours of workload

Student Assessment Methods

- Written Exam with Multiple Choice Questions
- Written Exam with Short Answer Questions
- Written Exam with Extended Answer Questions
- Written Assignment
- Report
- Oral Exams
- Laboratory Assignment

Suggested Bibliography (Eudoxus and additional bibliography)

1. Nikou Nikolaos, Applied Forest Road Engineering, S. Giahoudis Publications & Co G.P. (2004), ISBN: 960-7425-75-2
2. Apostoleris K. Anastasios, Road Construction I - Landscaping and Calculation of Landscaping, Publisher APOSTOLERIS AND CO G.P. (2015), ISBN: 9789609371735