

14 GEOSYNTHETICS IN HYDRAULIC AND ENVIRONMENTAL ENGINEERING

Teachers: Markou I., Professor

The course covers the following topics:

1. Introduction – Types and functions of geosynthetics
2. Properties of geosynthetics
3. Drainage applications
4. Filtration applications
5. Slope erosion control
6. Landfills – Part 1
7. Landfills – Part 2
8. Embankments
9. Dams
10. Ponds, reservoirs and canals
11. Specialized applications of geosynthetics – Part 1
12. Specialized applications of geosynthetics – Part 2
13. Examples of hydraulic and environmental projects

At the end of the course the student will be able to understand per type of hydraulic and environmental projects:

- the types of geosynthetics used (geotextiles, geogrids, geomembranes, geonets, geosynthetic clay liners, geocells, geocomposites, etc.)
- the objectives and functions that geosynthetics are required to perform (barrier, separation, filtration, drainage, erosion control, protection, reinforcement)
- the required properties of geosynthetic materials
- the design methodologies applied, and
- the construction methods followed.

Additionally, the student will be able to understand the economic and environmental benefits, as well as the sustainability of the solutions resulting from the use of geosynthetics in hydraulic and environmental engineering

Teaching Mode: 3 Hours Suggestion-Workshop / Week