

Code: 1746 Forest Protection**Degree:** 1st cycle – Forestry and Natural Resources**Curricular Year:** 3rd**Semester Course:** 2nd**Credits:** 6 ECTS**Compulsory****Language:** Portuguese/English**Responsible:** José Miguel Oliveira Cardoso Pereira**Other lecturer(s):** Manuela Rodrigues Branco Simões and Ana Paula Ferreira Ramos**Web Site:** <http://www.isa.utl.pt/home/node/3980>**1. Contact hours:****Lecture/Practicals 70 Others 14 Total 84****2. Objectives:**

Becoming familiar with main forest pests and diseases, their life cycles, risk factors, and prevention. Identification of symptoms and damages. Acquaintance with nursery plant pathologies. Principles of forest health management. Sampling techniques and definition of intervention levels. Identification and selection of treatment methods. Introduce the historical, environmental and socio-economic context of wildfires in Portugal; evaluation of meteorological, anthropogenic and fuel hazard components of fire risk. Acquaintance with principles of preventive forest management and rehabilitation of burnt areas.

3. Programme:

I - Forest pests: main defoliators, borers, and sub-cortical forest insects. Symptoms, life cycle, risk factors and damage. Host selection and colonization. Pests in nurseries and young plantations.

II - Tree diseases: fundamental of Pathology. Disease: classification and manifestations, disease triangle, diagnostics, Koch's postulates, parasitism and pathogenicity, plant defense mechanisms, epidemiology. Pathogen morphology and biology. Main diseases of portuguese softwoods and hardwoods. Diseases in forest nurseries.

III - integrated pest and disease management: forest protection and integrated pest management. Sampling and monitoring. Damage assessment. Decision support for pest management. Risk and causality models. Forest protection and prevention.

IV - Rural fires: the context of rural fires in Portugal. Fire and land use. Combustion of plant fuels, phases and products of combustion; heat transmission; intrinsic and extrinsic fuel properties, fuel inventorying and modeling. Climate, weather and fire, danger indexing and danger mapping. Preventive silviculture and rehabilitation of burnt areas.

4. Bibliography:**Main Bibliography**

Pyne, Andrews and Laven (1996) Introduction to Wildland Fire

IEFC (Ed.) 2002. Pragas e doenças das florestas do Sul da Europa. IEFC. Cestas. France. 144 pp.

Other Bibliography

Various research papers

5. Assessment:

Mid-term test

Final exam

Computer lab practical exercises

6. Estimated Workload:

168 Hours

7. Last Update:

13/7/2010