

Code: 1360 Fire Ecology and Management**Degree:** 2nd cycle – Forestry and Natural Resources**Stream:** Forestry; Natural Resources Management**Curricular Year:** 1st **Semester Course:** 1st**Credits:** 6 ECTS **Compulsory****Language:** Portuguese/English**Responsible:** José Miguel Oliveira Cardoso Pereira**Other lecturer(s):** -**Web Site:** <http://www.isa.utl.pt/home/node/3803>**1. Contact hours:****Lectures 35 Lecture/Practicals 35 Others 14 Total 84****2. Objectives:**

Present fundamental concepts about the physics, chemistry, meteorology, ecology and management of fires.

3. Programme:

Introduction to the problem of wildfires in Portugal: statistics on number of fires, área burned and causes of ignition. Geographical distribution. Physics and chemistry of vegetation fires; Plants as fuels: main types of forest fuels. Structural and thermodynamical parameters of plant fuels; Climate, meteorology, and fire. Main synoptical conditions associated with large fires. Fire danger indexing: European indices, American and Canadian systems. Wildfire behavior: ignition, steady-state fire behavior, and extreme fire behavior. Crown fires. Wind-dominated vs plume-dominated fires. Fire behavior modeling: the Rothermel model. Fire ecology and effects. Fire as an ecosystem disturbance. Evolutionary adaptations to fire and ecological succession. Fire effects on flora, fauna, soils and water. Fire prevention silviculture. Stand and landscape-level fuels and forest management.

4. Bibliography:**Main Bibliography**

Pyne, S.J., P.L. Andrews e R.D. Laven (1996) Introduction to Wildland Fire, John Wiley & Sons, NY

Other Bibliography

Velez, R. (ed), (2000) La Defensa Contra Incêndios Forestales. McGraw-Hill, Madrid

5. Assessment:

Synopsis of a research paper – oral presentation

Final written exam

6. Estimated Workload:

168	Hours
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7. Last Update:

21/7/2010
