

**Code: 1726 Forest Operations****Degree:** 1<sup>st</sup> cycle - Forestry and Natural Resources**Curricular Year:** 3<sup>rd</sup>**Semester Course:** 2<sup>nd</sup>**Credits:** 6 ECTS**Compulsory****Language:** Portuguese/English**Responsible:** Pedro César Ochôa de Carvalho**Lecturer(s):** -**Web Site:** <http://www.isa.utl.pt/home/node/3983>**1. Contact hours:****Lecture/Practicals 70 Others 14 Total 84****2. Objectives:**

Forest Work. Work methods and organization in forest operations. Forest mechanization. Forest machines and engines. Planning and operational efficiency. Forest operations and sustainable forest management. Good practice codes. Laws and Standards. Forest operations and certification. Chain of custody.

**3. Programme:**

Introduction: Portuguese forests and forest based industries. Forest operations characterization. Terminology.

Forest mechanization. Machines and engines operation. Forest machines: types and functions.

Afforestation operations, silvicultural operations.

Forest harvesting systems. Energy and material fluxes. Output and costs. Operational efficiency.

Forest harvesting systems classification and selection criteria.

Forest operations: felling, debranching, cross-cutting.

Debarking and chipping. Biomass harvesting systems.

Wood logging methods. Loading and unloading operations.

Traction: Terrain and tractors

Forest roads planning principles.

Forest harvesting planning.

Environmental impacts of forest operations.

Laws and Standards. Forest certification. Chain of custody.

Notice: students must attend a forest operations practical training course (35 hours) at COTF Lousã.

**4. Bibliography:****Main Bibliography**

Manuel d,exploitation forestière, 1983. (ARMEF-CTBA-IDF)

Tolosana, E; González, V. & Vignote, S 2000. El Aprovechamiento Maderero. Ed. Mundi-Prensa

Ojeda, R. 2001. Manual de Mecanización Forestal. Ed autor.

**Other Bibliography**

Sundberg, U & Silversides, C. 1989. Operational Efficiency in Forestry. Vol 1 Analysis. Kluwer Acad. Publ.

**5. Assessment:**

Course requirements include practical training and class participation (20%) and a final exam (80%)

6. Estimated Workload: 

168	Hours
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7. Last Update: 

13/7/2010
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