

Code: 1719 Forest Models**Degree:** 2nd cycle – Forestry and Natural Resources**Stream:** all**Curricular Year:** 1st**Semester Course:** 2nd**Credits:** 6 ECTS**Compulsory** (Forestry; Natural Resources Management)**Language:** Portuguese/English**Optional** (Forest Products; Arboriculture and Urban Forestry)**Responsible:** José Augusto Lopes Tomé**Other lecturer(s):** -**Web Site:** <http://www.isa.utl.pt/home/node/3820>**1. Contact hours:****Lectures 42 Praticals/Laboratory 28 Others 14 Total 84****2. Objectives:**

The student must acquire the competences needed to process crude forest inventory data and using forest growth and yield models simulate alternative forest management prescriptions.

3. Programme:

Introduction to forest growth models. Data acquisition for their construction.

Growth functions and growth functions formulated as difference equations. Site index and dominant height growth models.

Structure of the main types of forest growth models: whole stand models (model GLOBULUS), diameter distribution models (Models PBRADO and MODISPINASTER), individual tree models (models PBRAD – TREE, GLOB _ TREE, SUBER), structure of simple process based models (3PG and YIELDSAFE models).

Simulation of forest stands with the available models.

The use of forest models to support the preparation of forest management plans – individual projects made by the students.

4. Bibliography:**Main Bibliography**

Notes prepared by the coordinator (available in the web page):

Tomé, M., 2003. Modelação do crescimento e da produção de povoamentos florestais. Textos didáticos do GIMREF, nº TP 2/2005. Centro de Estudos Florestais, Universidade Técnica de Lisboa, Lisboa.

Other Bibliography

Avery, T. E. e Burkhart, H. E., 1994. Forest Measurements, 4^a ed. McGraw-Hill Book Company, New York (capítulos 14 e 15)

Clutter, J. L., Forstson, J. C., Pienaar, L.I. Briester, G. H. e Bailey, R. L., 1983. Timber Management: a Quantitative Approach. John Wiley & Sons (capítulos 2, 3 e 4)

Vanclay, J. K., 1994. Modelling Forest Growth and Yield. Applications to Mixed Tropical Forests. CAB International, Wallingford, UK.

5. Assessment:

Requirements: participation in 75% of the classes, accomplishment of the projects on forest management plans.

Final mark is obtained by $((P1+P2)/2+2T)/3$, where P1 and P2 are the marks obtained in two practical tests, T is the mark obtained in a written final test or exam.

$T \geq 10$, $P1 \geq 7$, $P2 \geq 7$, $(P1+P2)/2 \geq 10$ are required.

6. Estimated Workload:

168	Hours
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7. Last Update:

25/2/2011
