

Code: 1558 Ecophysiology of Tropical Plants
Degree: 2nd cycle – Tropical Agriculture and Sustainable Development
Curricular Year: 1st **Semester Course:** 1st
Credits: 6 ECTS **Compulsory**
Language: Portuguese/English
Responsible: Maria Isabel Nunes Januário
Other lecturer(s): -
Web Site: <http://www.isa.utl.pt/home/node/3735>

1. Contact hours:
Lectures 28 Lecture/Practicals 28 Practicals/Laboratory 14 Others 14 Total 84

2. Objectives:

To provide students with basic preparation to understand the interaction systems between plant-soil-water-atmosphere, biomass production and environment. The course will have emphasis on the fundamentals of biomass production in a tropical environment and on the opportunities that this environment can provide for tropical production and productivity increases. It will also address how to explore improvement alternatives in the process of generating value and sustainable development.

3. Program:

1. Integrated Assessment of biomass production. Growth Analysis. Carbon assimilation. Constitution and functioning of the photosynthetic apparatus. Use of light by plants of sun and shade. Photoinhibition and photo-oxidation.
2. Water regulation inside the plant. Resistance in the continuum soil-plant-atmosphere. Effects of drought stress. Adapting to drought.
3. Temperature. Response to extreme temperatures. Processes of adaptation to cold and heat. Translocation and distribution of assimilates. Regulation at the whole plant.
4. Pytopathological Aspects related to crop productivity. Intrinsic tolerance of germoplasm.
5. "Case Studies" – on going research in Portugal on Plant Physiology with "tropical crops" such as the following examples:
 - 5.1 - Coffee
 - 5.2 - Triticale
 - 5.3 - Amaranthus
 - 5.4 - Peanuts
 - 5.5- Pachyrhizus
 - 5.6 - Other

4. Bibliography:

Main Bibliography

To be defined

5. Evaluation:

Through written tests and bibliographical revision work

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| 6. Estimated Workload: | 168 | Hours |
| 7. Last Update: | 16/7/2010 | |