

## Gestão Integrada de Pragas e Doenças Florestais / Management of Forest Pests and Diseases

### Class Calendar / Syllabus

**2021/2022**

**Theoretical-practical class 1:** Tuesday, 11h00-13h30, L24

**Theoretical-practical class 2:** Thursday, 08h15-10h45h, L24

**Professors:** Ana Paula Ramos (PR); Manuela Branco (MB); José Guilherme Borges (JGB),  
Invited Researchers

**Assessment:** Mini-tests and quizzes in classes (4) to be carried out during classes (60%);  
presentation of a synthesis work (40%)

Day	Subject	Prof.
28-Set	Introduction to the course. Program, bibliography and evaluation methods. Ecological fundamentals of disease management: the health status of the tree/forest versus the functions and value of the forest Disease parameters and Epidemiological models. Monocyclic, polycyclic and polyethical diseases.	PR/ MB
30-Set	Diseases and diversity: density, competition, succession: Janzen-Connell hypothesis and "The Red Queen hypothesis". Emerging pathogens in the forest: entry, establishment and dissemination processes.	PR
05-Out	Holiday	
07-Out	Infectious process and plant resistance mechanisms. Short and long-term pest and disease resistance strategies. Reading of scientific articles	PR
12-Out	Detection and monitoring of forest pests and diseases. Definition of risk at stand and individual tree level. Causality and degree models.	PR
14-Out	Detection and monitoring of forest pests and diseases. Case Study. <b>Assessment (mini-test)</b>	PR
19-Out	Pest and Disease Protection Strategies Prevention of pests and diseases: Legislative measures. Exotic pests and diseases. Quarantine and Embargoes Legislation. <b>Invited Researcher from DGAV</b>	PR
21-Out	Chemical Control in forest environment: historical evolution. Composition, formulation and application of insecticides and fungicides. Ecological and public health impacts, safety standards.	PR
26-Out	Products approved in Portugal for forest plantations and forest products. Application techniques and materials.	PR

Day	Subject	Prof.
28-Out	Convidado dos Laboratórios do INIAV (Oeiras)	PR
02-Nov	Assessment (mini-test)	PR
04-Nov	Ecological fundamentals of pest management: Dynamics of pest populations. Regulatory mechanisms. "Bottom-up" and "top-down" effects. Population cycles.	MB
09-Nov	Ecological fundamentals of pest management (cont). Implications of climate change for forest pests. Critical reading of scientific articles.	MB
11-Nov	Biological invasions. Ecological and economic impacts. The invasion process: entry, establishment and dispersion. Management strategies. Invasive forest species in national and European territory.	MB
16-Nov	Forestry and cultural measures as strategies to prevent pests and diseases. Preventive forestry.	MB
18-Nov	Forest Health Operational Program. Invited Researcher from ICNE.	MB
23-Nov	Strategy and national action in the scope of pinewood nematode (PWN), role and performance of phytosanitary inspectors in the prevention and control of forest pests. Invited Researcher from ICNE.	MB
25-Nov	Genetic control measures. Seminar – INIAV's Invited Researcher - Isabel Carrasquinha: Selection of maritime pine for pinewood nematode tolerance. Assessment (mini-test with consultation of the texts and articles available).	MB
30-Nov	Genetic control measures. Seminar – INIAV's Invited Researcher – Rita Costa: Castanea sp. and Pinus sp. – genetic improvement program against biotic stresses.	PR
02-Dez	Biological Control. Biotic agents. Strategies for the use of biotic agents in pest control: Classic biological control; bioinsecticides; augmentative release; conservation biological control.	MB
07-Dez	Biotechnological Control of Insect Pests: definition and use of semiochemicals.	MB
09-Dez	Integration of Pest and Disease Management in Forest Management.	JGB
14-dez	Biological and genetic control methods in Eucalyptus plantations. Seminar – ALTRI-Florestal or RAIZ Invited Researcher.	MB
16-Dez	Assessment (mini-test with consultation of the texts and articles available). Presentation and discussion of works.	PR/ MB