

## Faculty of Biological, Agronomic and Environmental Engineering

### BRAI2103 Tropical phytotechnology

[30h+0h exercises] 2.5 credits

This course is taught in the 2nd semester

**Teacher(s):** Pierre Bertin  
**Language:** French  
**Level:** Second cycle

#### Aims

Analysis of the specificity of tropical and subtropical regions and constraints to the agricultural production (climate, soil, economy). Analysis of the diversity of productions as a result of the biological, environmental and genetic aspects of the culture. Evaluation of the accuracy of production systems as a function of environmental and socio-economical constraints and production objectives.

#### Main themes

Analysis of the ecological and agronomical specificity of the intertropical and subtropical environment. Analysis of the physiological and ecophysiological aspects of the cultures: water relationships, thermal and nutritional aspects, photoperiodism. Phenological study: growth and development of model plants (including their development cycle), growth and development of harvested organs. Critical study and evaluation of cultural practices as a function of all above-mentioned criteria.

#### Content and teaching methods

Content and methods: practical approach based on the analysis of interactive documents, videos, personal experiences of teacher and students, followed by theoretical courses aiming to synthesize the acquired knowledge. Environmental aspects in tropical regions: climatology, soil science, phytogeography and consequences for the production. Ecophysiology in tropical environment: water regime, photoperiod, phenology, mineral nutrition, consequences on the cultural practices. Diversity of cultures: improvement of study of several cultures constituting a large panel of ecological and cultural aspects (vegetative cycle, harvested organs): cereals (maize, sorghum, pearl millet), annual legumes: (peanut, soybean, common bean), tuber crops (yams, sweet potato), perennial crop cultivated as annuals (cassava, cotton), perennial crops (harvested organ: leaves: tee; fruit: bananas, coffee tree, cacao; rubber: hevea).

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Pre-requisite: courses of plant biology, plant physiology, plant production, phytiatry and genetics of the first three years of the Bioengineer program or equivalent

Evaluation: oral

Support: syllabus, video documents, PowerPoint slides, internet sites, reference books

#### Programmes in which this activity is taught

**AGRO2**

**BIR2**

Bio-ingénieur

**ECRU3DS**

Diplôme d'études spécialisées en économie rurale

### **Other credits in programs**

**BIR22/8A**            Deuxième année du programme conduisant au grade de            (2.5 credits)  
bio-ingénieur : Sciences agronomiques (Intégrée, productions  
animales, végétales & économie)