BREF2104 Forestry engineering

[22.5h] 2 credits

This course is taught in the 1st semester

Teacher(s): Daniel Bemelmans
Language: French
Level: Second cycle

Aims

The objective of this course is to give students foundations to:
- select appropriate techniques and strategies for the implementation of silvicultural operations at the stand level (site preparation, tree planting, plant and seedling protection, release treatments, pruning, thinnings, regeneration cuttings, harvesting);
- optimize the measures and techniques associated to the additional operations, at the stand as well as at the ownership levels: road implementation, forest protection (fire, wind, pests), site rehabilitation.

Main themes

1. Techniques used for silvicultural operations such as pruning, release treatments, planting; selection criteria; advantages | drawbacks
2. Operation and working methods of machines used for timber harvesting (felling, skidding, yarding, forwarding, extraction, transport); advantages | drawbacks; methods for the estimation of profitabity and productivity
3. Forest roads: design of networks, profitability and other functions, construction and maintenance, implementation
4. Forest protection against insects and game: techniques and tactics, selection criteria
5. Protection of forest soils: type of damages, causes, consequences, management strategies
6. Site rehabilitation
7. Planning, project design (invitation to tender, clauses and specifications), organization of silvicultural operations in time and space
8. Analysis of the relationships between forest owners, selection of management options and types of operations

Content and teaching methods

The various operations in the forest are considered successively for the following aspects: type of operation, equipment and description, implementation, selection criteria and assessment

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

Prerequisite Silviculture, Forest mensuration, Economy of natural resources, Forest products manufacturing
Assessment methods Oral examination with written preparation
Course materials Slides and documentation
Recommended readings Technical articles
Training | supervision Professor for lectures, Professor and assistant for field excursions

Other credits in programs

BIR22/6E	Deuxième année du programme conduisant au grade de bio-ingénieur : Sciences et technologie de l'environnement (Nature, eau & forets)	(2 credits)	Mandatory