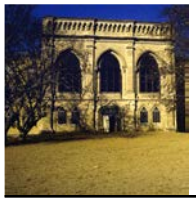
Jorge Alcázar

Lleida, 8th-12th September 2014

Universitat de Lleida

University of Lleida's experience in the implementation of the Bologna process: Structure & contents of study plans in Agricultural and Forestry degrees



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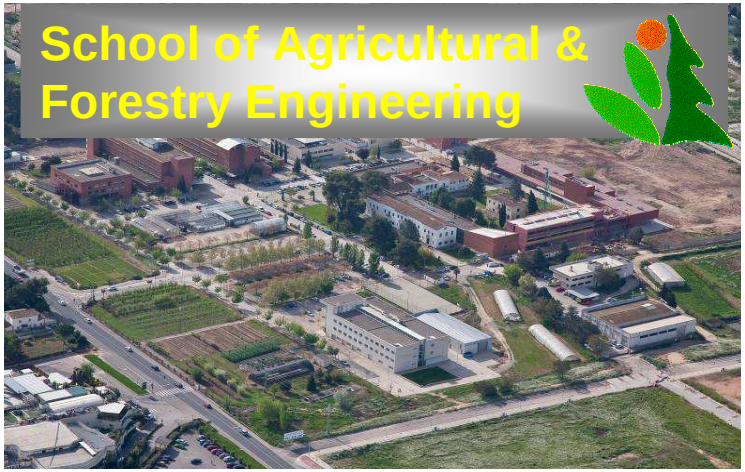
University of Lleida's experience in the implementation of the Bologna process: Structure & contents of study plans in Agricultural and Forestry degrees

School of Agricultural & Forestry Engineering

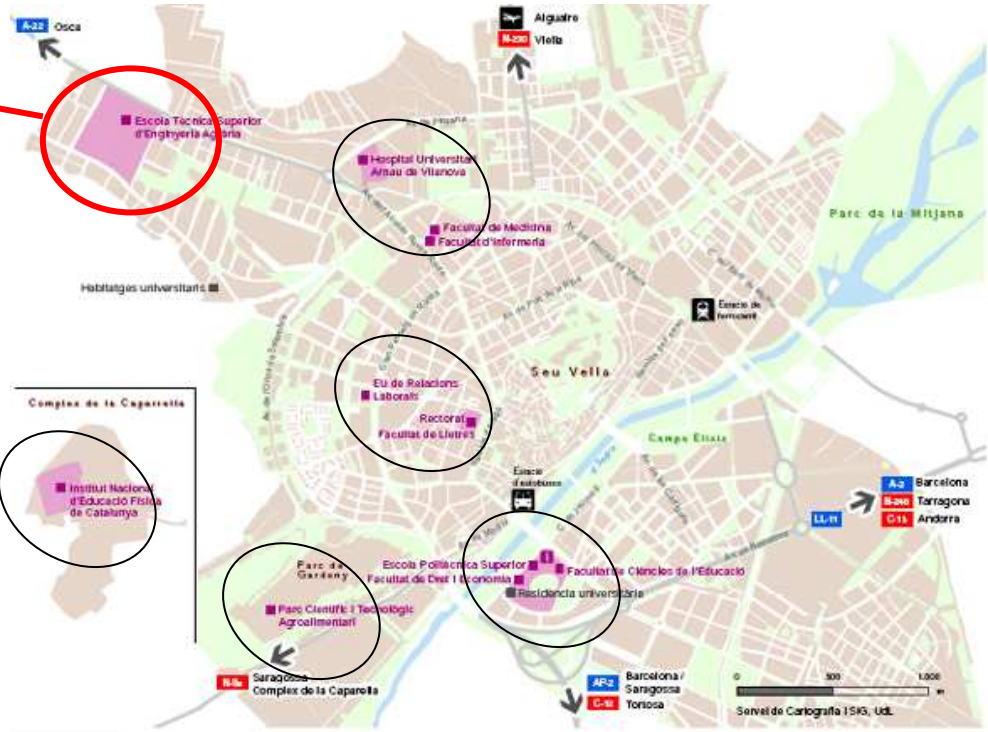


200 teachers
1700 students

Degrees in:

- Agricultural Engineering
- Forest Engineering
- Food Science & Technology
- Biotechnology
- Animal & Health Science

University Campus



Total UdL: 750 teachers
9700 students

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

Year 1 (60 ECTS)

Year 2 (60 ECTS)

Year 3 (60 ECTS)

Year 4 (60 ECTS)

Common subjects			
Common subjects			
AP	HG	FE	AEE
AP	HG	FE	AEE

Basic courses: Biology, ecology, botany, soils, hydrology,…

Engineering courses: mathematics, physics, chemistry, economy, topography, rural enginering, GIS,…

Specialization

AP – Agricultural Production

HG – Horticulture and Gardening

FE – Food Engineering

AEE – Agricultural and Environmental Engineering

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

Basic training subjects	• Biology & ecology • Botany and plant physiology • Climate, soil and water Statistics and information technologies • Mathematics, physics and chemistry
Common training subjects	• Plant and animal production technologies • Economics • Rural engineering • Topography and geographical information systems • Projects

Universitat de Lleida

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

Agricultural production

Extensive agricultural production	Animal food and breeding
• Field crops Plant breeding • Crop protection • Horticulture and fruit growing • Irrigation and agricultural equipment	• Poultry production • Swine production • Ruminant production • Constructions and facilities

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

Horticulture, Fruit Growing and Gardening

Horticulture and Fruit	Gardening and
• Fruit growing • Horticulture • Plant breeding • Crop protection • Irrigation and agricultural equipment	• Gardening • Parks engineering and management • Landscape and land planning • Environmental mgmt. • Construction and facilities

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

Agrifood Industries

Agrifood industries engineering	Agrifood industries engineering
• Food technology and engineering • Food engineering • Food processing • Food microbiology • Food quality	• Food industries • Process engineering • Plant design Auxiliary industries • Agroindustrial constructions

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

Rural and environmental engineering

Agricultural applications in rural	Agricultural applications in
• Irrigation and agricultural equipment • Rural constructions • Rural mechanisation • Production technologies	• Efficiency and agroenergy • Renewable energies Environmental eng. • Environmental management and impact evaluation

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

4.1 First year (compulsory subjects)

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102510	6	Biology	102515	6	Agricultural botany and plant physiology
102511	6	Graphic expression	102516	6	Earth Sciences
102512	6	Physics I	102517	6	Ecology and environmental management
102513	6	Mathematics I	102518	6	Physics II
102514	6	General chemistry	102519	6	Organic chemistry and biochemistry

4.2 Second year (compulsory subjects)

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102520	6	Fundamentals of plant production	102525	6	Fundamentals of animal production
102521	6	Construction	102526	6	Agrarian economy and policies
102522	6	Business economics	102527	9	Fundamentals of rural engineering
102523	6	Statistics and Informatics	102528	6	Topography, GIS and teledetection
102524	6	Mathematics II			

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

4.3 Third year (speciality subjects)

4.3.1 Speciality: Agricultural production

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102530	6	Genetics and plant breeding	102552	9	Field crops
102531	9	Plant protection	102553	6	Fruit trees, horticulture and gardening
102532	6	Irrigation	102554	6	Poultry production
102550	6	Animal feeding and breeding	102555	6	Swine production
102551	6	Field crop technology	102501	6	Agricultural biotechnology (OP)
			102502	6	Ecological agricultural production (OP)

4.4 Fourth year (speciality subjects)

4.4.1 Speciality: Agricultural production

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102556	6	Livestock machinery and facilities	102503	6	Precision agriculture and farming (OP)
102557	6	Ruminant production	102504	6	Ecologic livestock production (OP)
102540	6	Integrated practice: Management and engineering of agricultural and livestock production	102542	6	Placement
102541	9	Projects	102543	12	End-of-degree Project
				6	Horizontal subject

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

4.3 Third year (speciality subjects)

4.4 Fourth year (speciality subjects)

4.3.2 Speciality: Horticulture, Fruit Growing and Gardening

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102530	6	Genetics and plant breeding	102563	6	Fruit crops
102531	9	Plant protection	102564	6	Vegetable crops
102560	6	Construction and facilities	102565	6	Gardening
102561	6	Fruit production (annual)	102561	3	Fruit production (annual)
102562	6	Horticulture (annual)	102562	3	Horticulture (annual)
			102566	6	Irrigation and agricultural equipments

4.4.2 Speciality: Horticulture, Fruit Growing and Gardening

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102567	6	Parks engineering and management	102569	6	Environmental management
102568	9	Landscape and land planning	102542	6	Placement
102544	6	Integrated practice: Management and engineering of vegetable and fruit growing and gardening	102543	12	End-of-degree Project
102541	9	Projects		6	Horizontal subject

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

4.3 Third year (speciality subjects)

4.4 Fourth year (speciality subjects)

4.3.3 Speciality: Rural and Environmental Engineering

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102532	6	Irrigation	102574	6	Precision agriculture automatics and robotics
102570	6	Agricultural mechanisation	102575	6	Extension of irrigation
102571	6	Material resistance and structural calculations	102576	6	GPS, DEM and CAD
102572	6	Animal production technologies	102577	6	Rural electrical systems
102573	6	Plant production technologies	102578	6	Structural materials

4.4.3 Speciality: Rural and Environmental Engineering

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102579	6	Buildings and land works	102595	6	Environmental management and impact evaluation
102593	6	Efficient energy use and renewable energy	102542	6	Placement
102594	6	Environmental engineering	102543	12	End-of-degree Project
102545	6	Integrated practice: Management and engineering		6	Horizontal subject
102541	9	Projects			

Bachelor in Agricultural and Food Engineering - BAFE (240 ECTS)

4.3 Third year (speciality subjects)

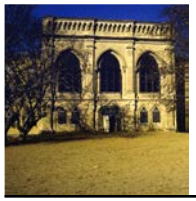
4.4 Fourth year (speciality subjects)

4.3.4 Speciality: Agrifood Industries

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102580	6	Food analysis	102585	6	Agro industrial constructions and electrical systems
102581	6	Fundamentals of food engineering	102586	6	Design of food processing plants
102582	9	Food industries	102587	6	Food process engineering I
102583	6	Food microbiology	102588	6	Animal foods processing technology
102584	6	Vegetable foods processing technology I	102589	6	Vegetable foods processing technology II

4.4.4 Speciality: Agrifood Industries

First Semester			Second Semester		
Code	Credits	Subject	Code	Credits	Subject
102590	6	Food process engineering II	102592	6	Food quality and safety management
102591	9	Auxiliary systems in food industry	102542	6	Placement
102546	6	Integrated practice: Food management and engineering	102543	12	End-of-degree Project
102541	9	Projects		6	Horizontal subject



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University of Lleida's experience in the implementation of the Bologna process: Structure & contents of study plans in Agricultural and Forestry degrees

Master in Agronomical Engineering - MAE (90 ECTS)

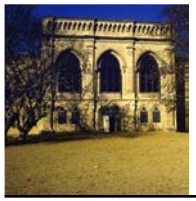
Year 1	**Compulsory (33 ECTS)**
Year 2	**Compulsory (33 ECTS)**
	Optative (12 ECTS)
	Master thesis (12 ECTS)

Compulsory courses

Management of hydric resources (6 ECTS)
Infrastructure management (6 ECTS)
Animal productions systems (7 ECTS)
Biotechnology & plant and animal breeding (6 ECTS)
Land & agricultural resource management (4 ECTS)
Agrifood industries technology (10 ECTS)
Agroenvironmental policy & rural development (4 ECTS)
Business management (6 ECTS)
Plant production & protection systems (7 ECTS)
Business administration (4 ECTS)
Statistical methods (6 ECTS)

Intensification in

Integrated pest management
Soil & water management
Swine health & production
Manag. & innovation in food industry
Placement (6 ECTS)



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Bachelor in Forestry Engineering – BFE (240 ECTS)

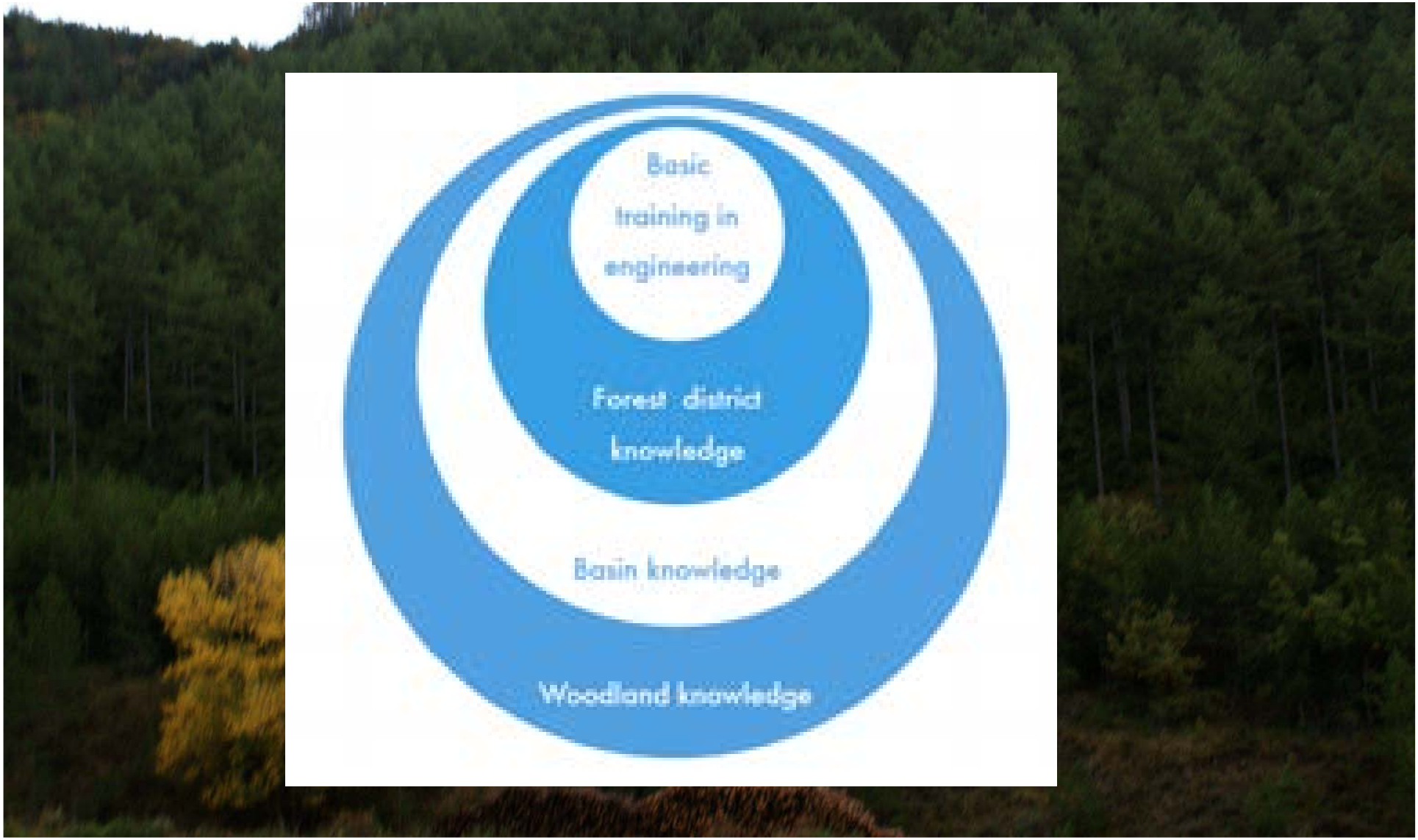
Year 1 (60 ECTS)	Common subjects
Year 2 (60 ECTS)	Common subjects
Year 3 (60 ECTS)	Common subjects
Year 4 (60 ECTS)	Common & optative

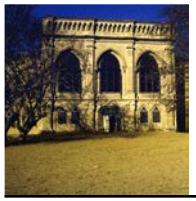
Basic courses: Biology, ecology, botany, soils, hydrology,…

Engineering courses: mathematics, physics, chemistry, economy, topography, GIS,…

Forestry courses: forest management, reforestation, forest mensuration, silviculture,…

Bachelor in Forestry Engineering – BFE (240 ECTS)





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University of Lleida's experience in the implementation of the Bologna process: Structure & contents of study plans in Agricultural and Forestry degrees

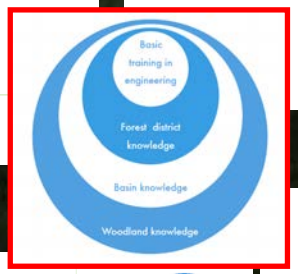
Bachelor in Forestry Engineering – BFE (240 ECTS)

1

Basic training in engineering
- Chemistry
- Physics
- Mathematics
- Technical drawing
- Cartography

Forest district knowledge
- Biology
- Botanics
- Geology
- Ecology
- Zoology

Integrated practice



2

Basin knowledge
- Hydrology
- Reforestation
- Forest works
- Hydraulic-forestry engineering
- Geographical information systems
- Statistics and mathematics II

Integrated practice in basin branch

3

Forestry knowledge
- Silviculture
- Wildfires
- Forest health
- Forest inventory
- Wildlife management
- Forest management
- Forest-industry
- Forest engineering

Integrated practice

4
- Planning
- Forest policy
- Engineering projects
- Optional subjects

Placement

End of degree thesis

Bachelor in Forestry Engineering – BFE (240 ECTS)

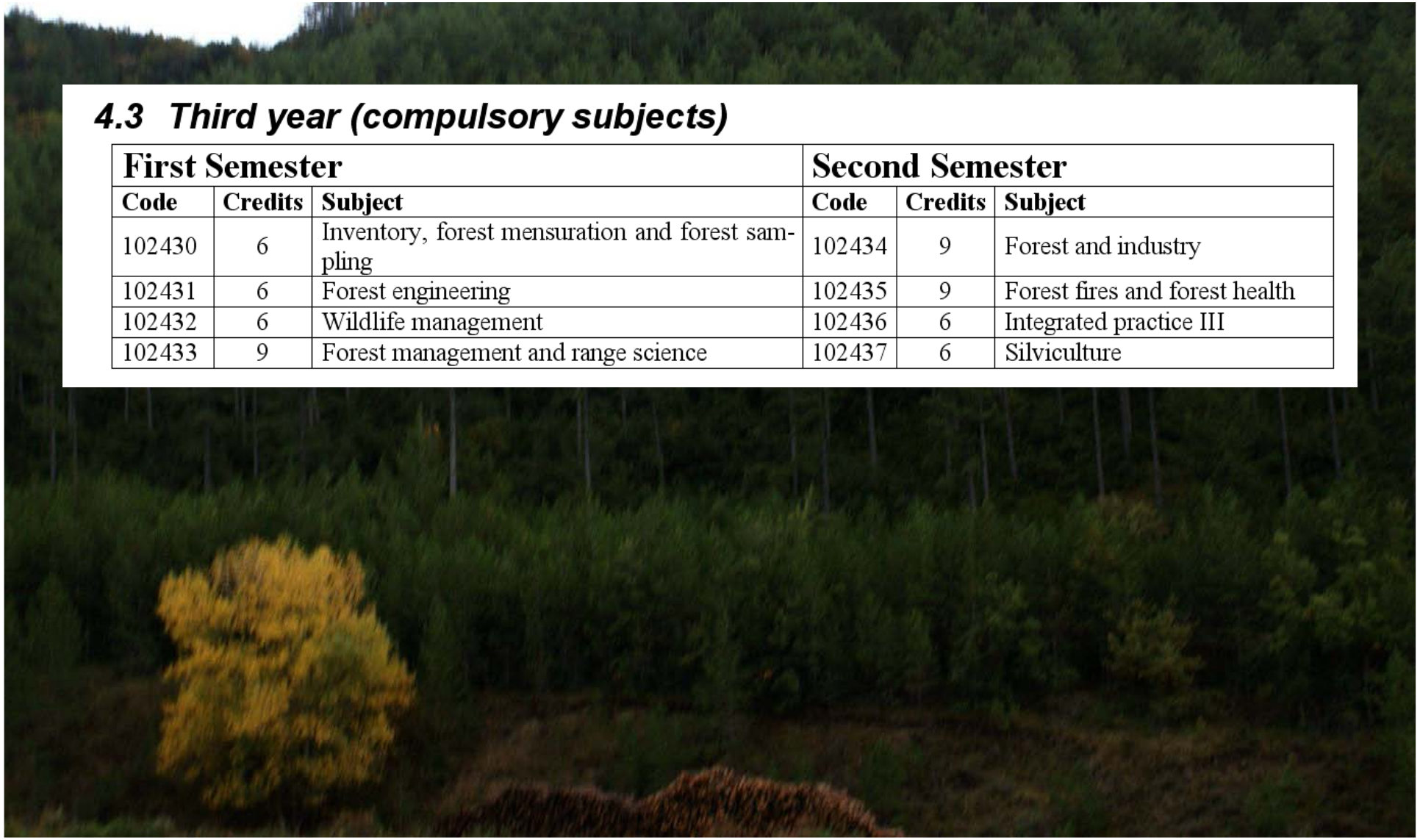
4.1 First year (compulsory subjects)

First Semester			Second Semester		
Code	**Credits**	**Subject**	**Code**	**Credits**	**Subject**
102410	6	Graphic expression and cartography	102414	6	Forest biology and genetics
102411	9	Physics	102415	9	Forest botany
102412	6	Mathematics I	102416	6	Earth Sciences
102413	9	Chemistry	102417	9	Ecology, plant ecophysiology and forest zoology

4.2 Second year (compulsory subjects)

First Semester			Second Semester		
Code	**Credits**	**Subject**	**Code**	**Credits**	**Subject**
102420	6	Statistics and informatics	102425	6	Business economics
102421	6	Forest hydrology	102426	6	Forest hydraulic engineering
102422	6	Mathematics II	102427	6	Forest works
102423	6	Integrated practice I	102428	6	Integrated practice II
102424	6	Topography, GIS and Remote Sensing	102429	6	Reforestation

Bachelor in Forestry Engineering – BFE (240 ECTS)



4.3 Third year (compulsory subjects)

First Semester			Second Semester		
Code	**Credits**	**Subject**	**Code**	**Credits**	**Subject**
102430	6	Inventory, forest mensuration and forest sampling	102434	9	Forest and industry
102431	6	Forest engineering	102435	9	Forest fires and forest health
102432	6	Wildlife management	102436	6	Integrated practice III
102433	9	Forest management and range science	102437	6	Silviculture

Bachelor in Forestry Engineering – BFE (240 ECTS)

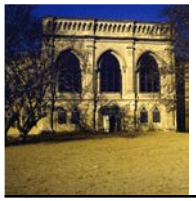
4.4 Fourth year

The degree's optional credits will take place during the first and second semesters to a total amount of 30 credits. All optional subjects are 6 credit subjects, and will be offered on alternate years. Each year's guide will contain information about the ones offered for that year.

Code	Credits	Subject	Code	Credits	Subject
102440	9	Land and environmental planning	102443	6	Placement
102441	6	Forest policy and legislation	102444	12	End-of-degree Project
102442	6	Projects		12	Optional subjects[1]
	12	Optional subjects[1]			

4.4.1 Optional subjects – Mention: Natural system management

Code	Credits	Subject	Credits
102470	Conservation and Biodiversity (OP)	1-2	6
102471	Wood in construction (OP)	1-2	6
102472	Meteorology applied to the environment (OP)	1-2	6
102473	Statistical methods and forest modelling (OP)	1-2	6
102474	Forest nurseries and reforestation (OP)	1-2	6
102475	Forest health (OP)	1-2	6
102476	Functional silviculture (OP)	1-2	6



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University of Lleida's experience in the implementation of the Bologna process: Structure & contents of study plans in Agricultural and Forestry degrees

Master in Forestry Engineering - MFE (72 ECTS)

1 Year

BLOCKS	SUBJECTS
Industries & Renewable Energies (20 ECTS)	Round wood industries (6 ECTS) Board & cellulose industries (6 ECTS) Non-timber forest products industries (4 ECTS) Renewable energies & Biomass (4 ECTS)
Manag. & forest improvement at regional level (20 ECTS)	Land use planning tools (6 ECTS) Planning & management of protected areas (4 ECTS) Environmental manag. of forestry activities (6 ECTS) Tree breeding (4 ECTS)
Business management & environmental policy (20 ECTS)	Business administration (6 ECTS) Business management (6 ECTS) Forest governance (4 ECTS) Environmental policy (4 ECTS)

Master thesis (12 ECTS)

Some aspects of Bologna process included in new study plans:

- Evaluation based on ***continuous assessment***
- Focus on ***practical training***
- Student's ***personal attention***

➢ ***Continuous assessment*** of the student

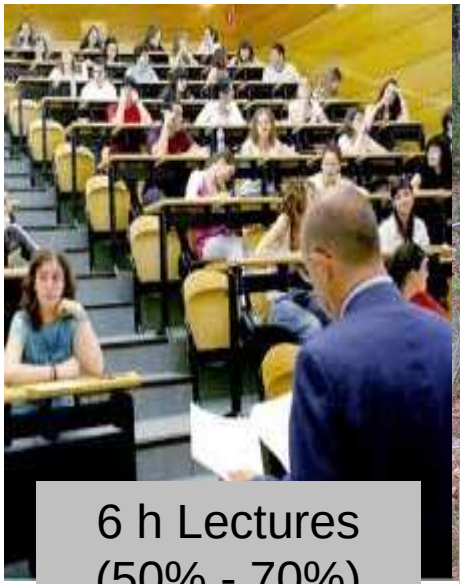
Including testing, lab reports, exams, oral presentations, resolution of study cases, and other assessment activities

- At least 3 evaluation activities of different tipology
- All evaluation activities ≤ 50% of final grade
- Second chance for theorical tests counting 30-50% of final grade

- Focus on ***practical training***

1 ECTS = 25 hours of student work

- 10 h (40%): Instructor present
- 15 h (60%): Instructor not present



6 h Lectures
(50% - 70%)

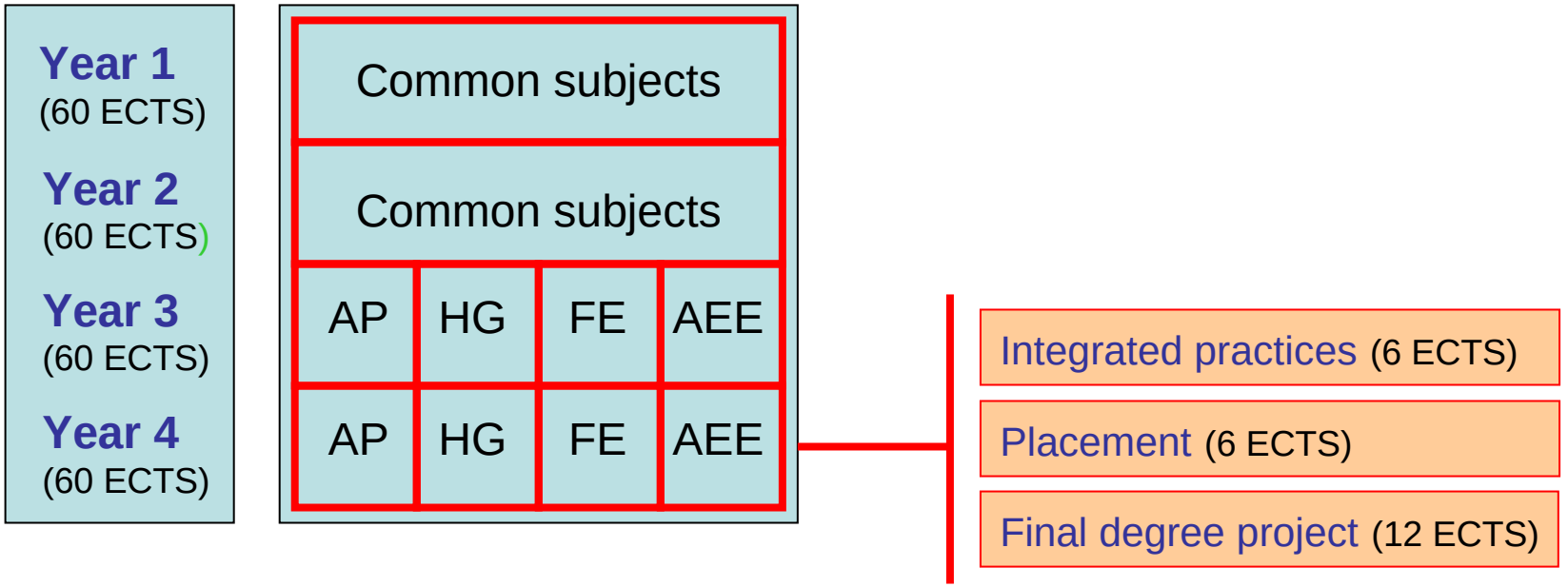
4 h Practical Training
(30% - 50%)

Large groups
(< 80 students)

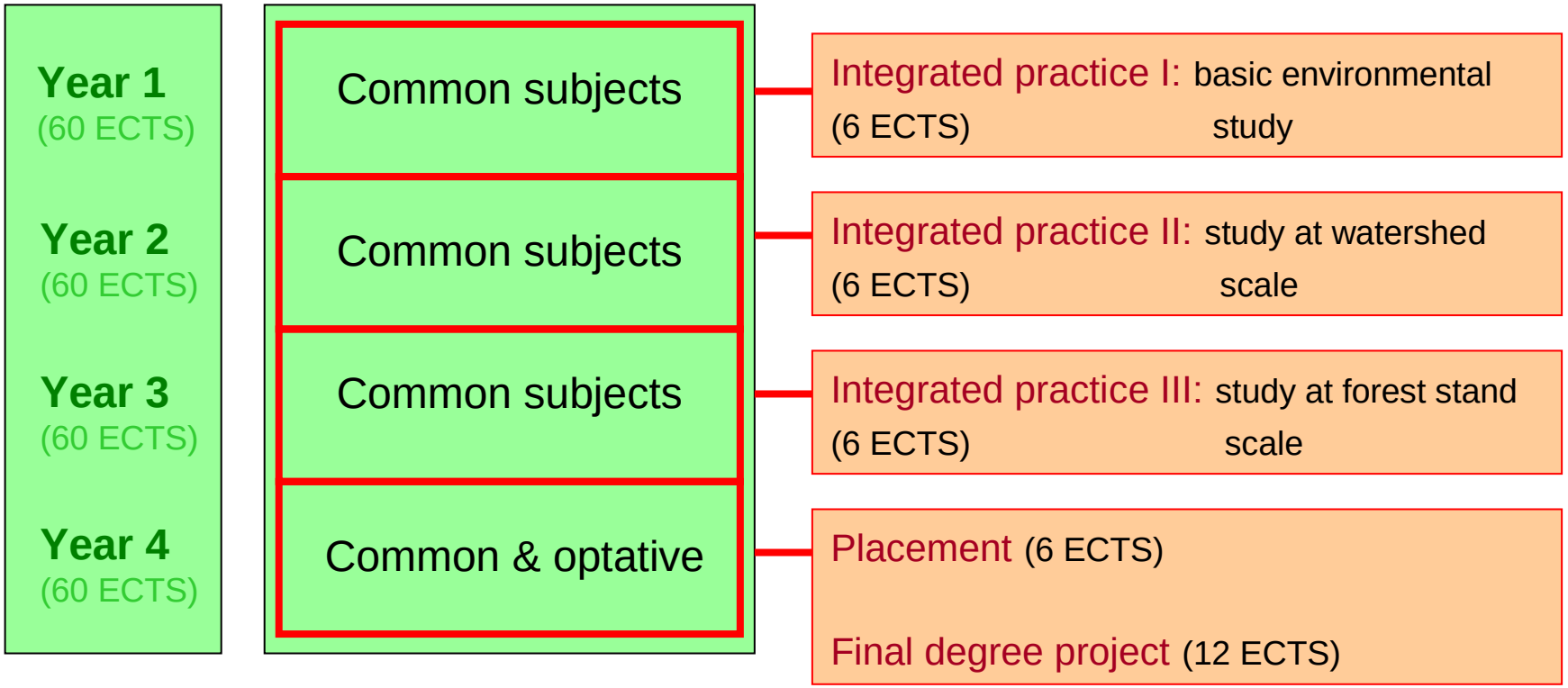
Small groups
(< 20 students)

Individual student work

Degree in Agricultural and Food Engineering (240 ECTS)



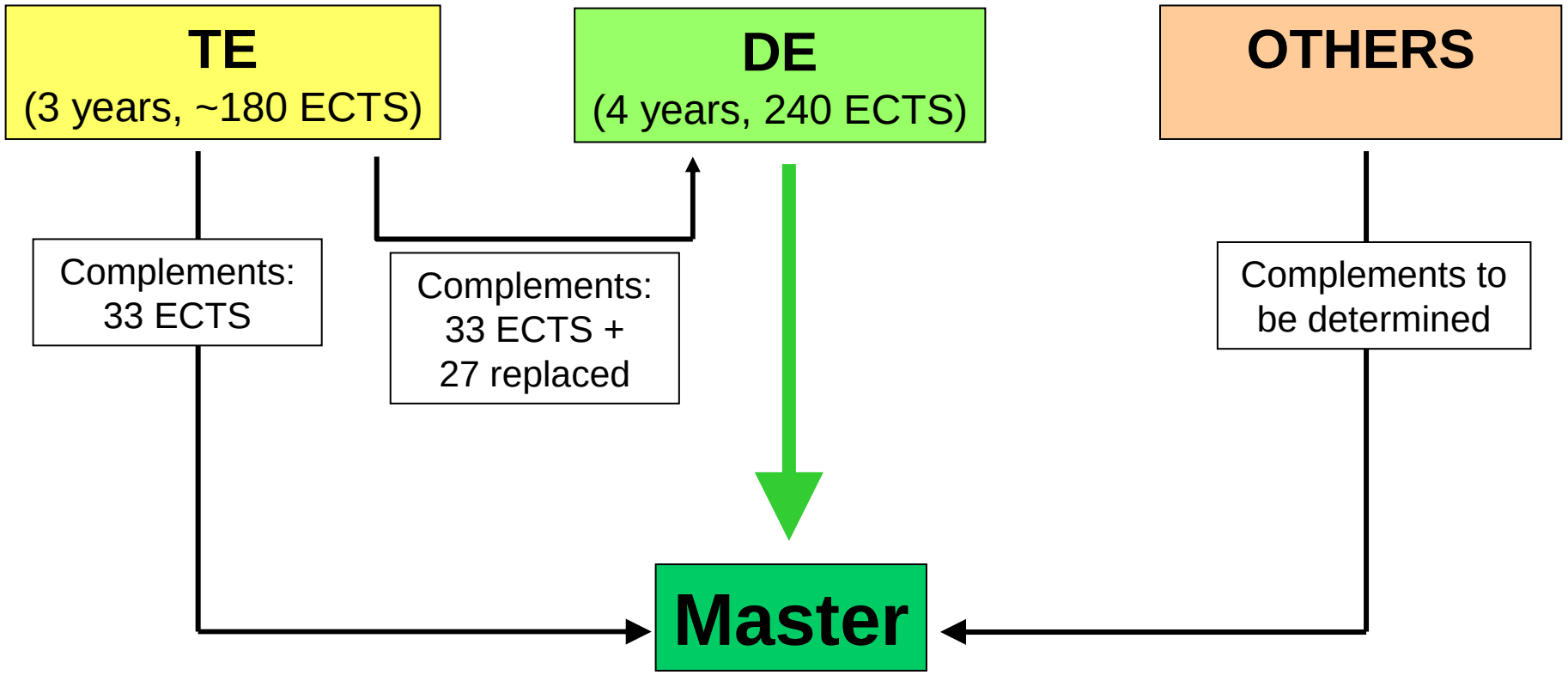
Degree in Forestry Engineering (240 ECTS)



- Student's ***personal attention***

  - Small groups
  - Tutoring program: NESTOR

Access to Master (ex. MFE)



Structure and content of courses

Guia docent UdL

General information | Objectives | Competences | Contents | Methodology
Development plan | Evaluation | Bibliography
Idioma English

Subject's general information

Subject name	ENVIRONMENTAL IMPACT ASESSMENT IN FORESTRY OP
Codi	11378 2014-15
Course	2
Semester	Anual
Typology	Optativa
ECTS credits	2

Placements / Internships (6 ECTS)

6 ECTS = 150 hours of student work

- 135 h: Internship
- 15 h: Writing report

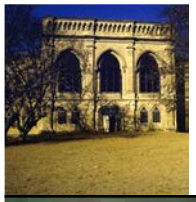
Parties involved:

Course coordinator → **Final Grade**

Student → Report on activities → **Final Grade**

Supervisor at UdL → Evaluation → **Final Grade**

Supervisor at company → Evaluation → **Final Grade**



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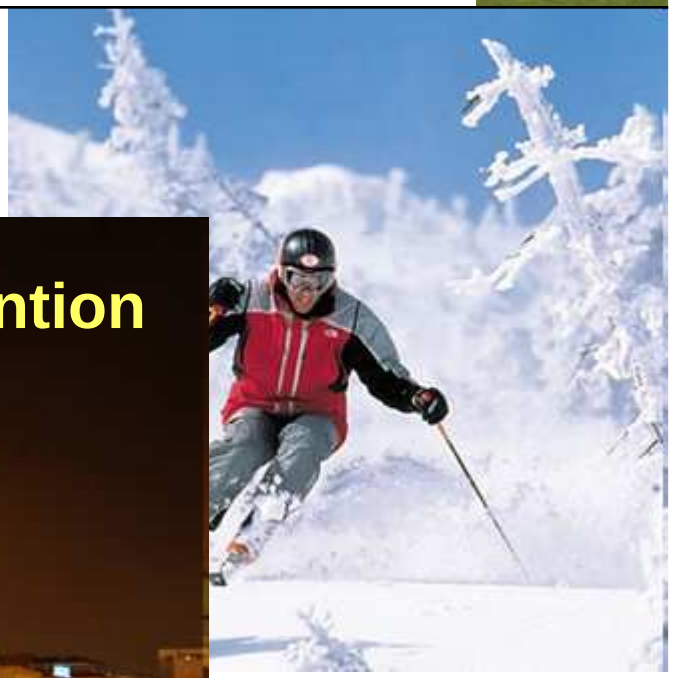

Thank you for your attention