

**Course teaching guide**

<b>Course</b>	<b>Forestry and Climate Change</b>		
<b>Subject area</b>			
<b>Module</b>	Optional Module		
<b>Degree</b>	Degree in Forest Engineering and Natural Environment		
<b>Curriculum</b>	449/903	<b>Code</b>	47135/75027
<b>When taught</b>	Second Semester	<b>Type/Category</b>	ELECTIVE
<b>Level/Cycle</b>	Bachelor Degree	<b>Year</b>	4º/International Semester
<b>ECTS Credits</b>	3 ECTS		
<b>Language of instruction</b>	English		
<b>Lecturer/s in charge</b>	Dr. Felipe Bravo.....1,5 ECTS (Course responsible) Dr. Eduardo Velázquez.....1,5 ECTS		
<b>Contact details (e-mail, telephone no....)</b>	Dr. Felipe Bravo, <a href="mailto:fbravo@pvs.uva.es">fbravo@pvs.uva.es</a> Phoe: 979-108424 / Building E (Office 208) Curriculum Vitae: <a href="http://sostenible.palencia.uva.es/users/fbravo">http://sostenible.palencia.uva.es/users/fbravo</a>   <a href="https://www.researchgate.net/profile/Felipe_Bravo4">https://www.researchgate.net/profile/Felipe_Bravo4</a>   <a href="https://www.linkedin.com/in/felipebravooviedo/">https://www.linkedin.com/in/felipebravooviedo/</a> Dr. Eduardo Velázquez, <a href="mailto:eduardo.velazquez@forest.uva.es">eduardo.velazquez@forest.uva.es</a> , Curriculum Vitae: <a href="https://www.researchgate.net/profile/Eduardo_Velazquez4">https://www.researchgate.net/profile/Eduardo_Velazquez4</a>		
<b>Tutorial hours</b>	See at <a href="http://www.uva.es">www.uva.es</a> > Masteres > Título correspondiente > Tutorías		
<b>Department</b>	INSTITUTO UNIVERSITARIO DE INVESTIGACIÓN EN GESTIÓN FORESTAL SOSTENIBLE (iuFOR)		



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## 1. Situation /Relevance of the Course

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### 1.1 Contextualisation

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Forestry and Climate Change is a course on silvicultural methods applied under environmental change. Mitigation and adaptation to climate change effects are key in the forest management systems. During the course, students will insight on the basic aspects of the effects of climate change on forest systems and how to help mitigate its effects. In addition, the students' abilities will be strengthened to obtain, elaborate, criticize and communicate scientific ideas to specialized and non-specialized audiences.

### 1.2 Relation with other subject areas

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This course is closely related with forest and environmental modelling

### 1.3 Pre-requirements

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None but English proficiency is assumed

## 2. Skills

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### 2.1 General

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The General competences (G1 to G27) will be addressed on a global basis, and, particularly, efforts will be made to the compliance of:

G3 Be able to analyze and synthesize.

G4 To be capable of organizing and of planning.

G5 Be able to communicate effectively, orally and in writing, with both internal audiences.

G15 To show critical reasoning.

## 3. Aims

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Ability to design, direct and apply silvicultural treatments to mitigate climate change and silvicultural treatments adapted to changing environmental situations.

## 4. Thematic blocks<sup>1</sup>

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### Block 1:

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Work load in ECTS credits:

#### a. Contextualisation and justification

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See course context

#### b. Learning objectives

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See course objectives

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**c. Content**

Climate change: variations of climate and human impact on climate. Protocols and agreements at regional, national and international level. The Kyoto Protocol and its extensions. Forest systems and carbon flows. Impacts of climate change on forests and forestry. Quantification of carbon stored in forests. Adaptation to climate change through forest management. Mitigation of climate change through forest management. Forest Projects for Clean Development Mechanisms (CDM) and Reducing Emissions from Deforestation and Reduced Degradation (REDD +).

**d. Method of teaching**

A combination of lectures, students' active discussion and personal project are used in this course. Students will be encouraged to share thoughts and opinions. Participation and interaction with other will be required.

**e. Work plan**

Classes will take place during the second quarter according with published schedule. Classroom will be determined yearly. Depending on the year, invited speakers could deliver invited seminars.

**f. Assessment**

Active participation (10%), the presentation of an activity dossier (10%), class projects (30%) and a final exam (50%).

Each student will complete an individual project. Instructions will be provided at the beginning of the course. The project will be a Mitigation project adapted to carbon market requirements. A short, 10 minutes, oral presentation of your report is also mandatory. Additionally, a short report about biomass equations elaborations will be required.

**g. Basic references**

- BRAVO, F., LEMAY, V., GADOW, K. VON, JANDL, R. (Eds) 2017. Managing Forest Ecosystems: The Challenge of Climate Change. Springer. 2<sup>nd</sup> Edition
- ROBINSON, A.P, HAMMAN J.D. 2011. Forest Analytics with R: An Introduction. Springer

**h. Complementary references**

Lecture powerpoints will be posted on the e-campus (UVa campus virtual)  
Additional readings and resources will be delivered to the students through the e-campus (UVa campus virtual)

**i. Resources required**

No special resources

**j. Timing**

THEMATIC BLOCK	ECTS LOAD	EXPECTED PERIOD OF TIME
ONE	3	2 <sup>nd</sup> Quarter



**5. Didactic methods**

Lectures, labs, writing assessment and on field discussions.

**6. Table of student's dedication to the course**

In Class	Hours	Outside Class	Hours
Lectures	10	Preparation for assessment	30
Labs	15	Preparation of writing assignment.	11
Oral Presentations	5	Preparation of oral presentation	4
<b>Total in class</b>	<b>30</b>	<b>Total outside class</b>	<b>45</b>

**7. Summary table of instruments, procedures and assessment/marking/grading systems**

INSTRUMENT/PROCEDURE	WEIGHT IN THE FINAL MARK/GRAD E	REMARKS
Activity dossier	10 %	
Class projects	50 %	
Active participation in the course	10 %	
Final exam	30 %	Theory questions (test and short questions) and problems resolution

**Grading Criteria**

Written assignment and class presentation are mandatory. It is not possible (in the first call) to pass the course with final examination only.

**Course Policies**

- Attendance:**  
Lectures form a core component of this course. Students must ensure that they are available to attend lectures and arrive with punctuality. They should pay close attention to the class schedule and read the material prior to class. They are welcome to share new ideas during class and are encouraged to read related papers.
- Technology in the classroom:**  
No cellphones are allowed. Please, turn-off your cell phone prior to the start of class. You will be asked to leave the course for the day if you are using your phone.
- Policy on Academic Ethics and Honesty:**  
The University of Valladolid (UVa) regards cheating as a serious academic offence. Anyone caught cheating will automatically receive a 0/10 for the quiz/exam/assignment, and will be reported to the dean. Your responsibility, besides maintaining a high standard of personal honesty, includes taking precautions to prevent others from copying your work. A student's assessed work may be reviewed against electronic source material using computerised detection mechanisms.

**8. Final considerations**

In case a student fails in the first call of the academic year in second round the written exam will stand alone for grading.