



COURSE CATALOGUE

SLU SEMESTER 2

emPLANT COURSE CATALOGUE
ERASMUS MUNDUS MASTER PROGRAMME IN PLANT BREEDING

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Joint Courses

JOINT COURSES	Description, contents, learning outcomes	Prerequisites	Implementation:	ECTS
Pilot case	<p>Semester 1 and 2: UniLaSalle, SLU Semester 3: UH, UPV, EgeU</p> <p>The pilot case is a case study to apply the project management tools to a breeding program. First students by group have to choose a species to be ameliorated. Then, find a character or several ones as goal for the breeding strategy. The students need to check the market potential for this new variety and verify that farmers will want to cultivate it. Secondly, students will define the potential market for their product (seeds), but also the market for the new variety (consumers). Thirdly, they need to create a structure to breed the new variety, and define the role of each student of the group in this structure (company, association...).</p>	No prerequisites	<p>The introduction to the Pilot Case will take place during the Joint Integration Week where the groups will be formed based on the specialty chosen by the students for Y2. During the first year the students will work in groups with their tutors and via telephone/video conference/email if group members are not located at the same site (LAS/SLU). During S3 the Pilot Case will be finalized with the tutors at the host university and by telephone/video conference/email among the group members. Two juries will be organized. The first jury at the end of S1 will evaluate the content and the form of the work and especially the project management content. At the end of S2 a written report will be evaluated. At the end of S3 a jury composed of the local tutors, the Coordinators for Y1 and an expert in Project Management will judge the defense of the Pilot Case. The students of S1 and S3 will be able to attend their respective presentations. The juries of S1 and S3 will be carried out on the same day for logistic reasons.</p>	Included in the ECTS below
Intellectual Property & Plant Breeders' Rights	<p>The two systems (plant patent and plant breeders' right) and implication for breeder rights will be studied. Breeder's exemption and farmer privilege will be analysed. From practical examples, lecturers from institutions and companies will analyse each system. Infringement cases and violations will be analyzed. UPOV origin and historical steps are presented. DCU and VCU notions.</p> <p>The transgenic varieties, the mutant and somaclonal variants will allow to introduce the notion of Essentially Derived Variety (EDV). Current and potential application of molecular markers and next generation sequencing will be discussed.</p>	No prerequisites	<p>This course will be offered in form of a UPOV (www.upov.int) online course. During one month, the student can access and complete 25h of online courses at their own rhythm. The course will be validated by a written online examination. SLU and LAS will nominate tutors who will accompany the students. In addition UPOV will nominate a contact person to accompany the students.</p>	Included in the ECTS below

<p>Joint Summer Breeding Field Camp (at the end of Y1 (June))</p>	<p>The objective of this summer intensive program is to immerse students in two crops breeding chains. One week for a major crop such as corn or wheat and the second on a legume or fruit crop (green bean, apple). During each week students are going to visit the main actors related to breeding for the selected crop from farmers, to several breeders (diversity conservation, breeding, laboratory) or public research institutions involved in basic research , seed industry and seed multiplication farmers and even food industry to see the quality requirements for the specific transformation. To have a full panorama of the selected crop.</p> <p>The main learning objective is to have an integrated view of the food chain from the breeding till the final transformation of the product. Secondary objectives are to understand the different actions of breeding companies, how they integrate the requests of the consumer. To have a deeper knowledge on at least two crops which are managed differently, as are the cereals sand the vegetables. And understanding the importance of the seeds quality.</p>	<p>No prerequisites</p>	<p>All students will join the field camp after the first year.</p>	<p>Included in the ECTS below</p>
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Semester 2 SLU

SEMESTER 2 SLU	Description, contents, learning outcomes	Prerequisites	ECTS
Plant Biology for Breeding and Protection	The course gives an introduction to plant breeding and plant protection and their importance for sustainable plant production. It consists of lectures and practical exercises where bioinformatics is an important part as well as of seminars.	Admittance to the course requires knowledge equivalent to a minimum of 30 credits in Chemistry and a minimum of 90 credits in Biology or Molecular Biology. Additionally, it requires a minimum of 15 credits on advanced level in the area of Molecular Life Sciences. Swedish upper secondary school course English B/English 6 or equivalent.	15
Sustainable Plant Production – from Molecular to Field Scale	The course provides a deeper understanding and synthesis of the basic principles for sustainable production within agriculture, horticulture and forestry. Factors and processes affecting sustainability and multi-functionality in production are integrated by analysing them at different scales from molecular to stand level and with different methods. The course covers both the theoretical aspects as well as giving practical examples for specific plants and production systems. The course content includes lectures, seminars, exercises and a group project.	Knowledge equivalent to 180 credits of which 90 credits Biology	15

Swedish as a foreign language	The topics range from introducing and telling about oneself to greetings, family, food, shopping, weather and telling the time. The topics also include daily activities, living, transport and the immediate surroundings. The aim is to introduce students not only to the basic structures of Swedish, but also to the Swedish way of life. Simple everyday conversation is practised.	Course in S1	No ECTS but an official language certificate
Spanish as a foreign language	This language course is targeted at students who chose UPV as Y2 destination and who still need to bring their Spanish to a B2 level for everyday life and professional situations. Students will learn Spanish at the rate of 2 hours per week. In addition to classroom instruction, students will realize interactive assignments. This course is carried out in close collaboration with UPV so as to ensure that the students obtain the language level needed.	Course in S1	No ECTS but an official language certificate