

annex 1

Equivalence table between the "Laurea specialistica **Ortofrutticoltura internazionale**" and the corresponding titles given by TUM, BoKu and HU: (I) given in Italian; (E) given in English, (G) given in German; (G/E) available in English on request. (W) = winter semester; (S) = summer semester

Course	Credits (semester)	Course	Credits (semester)	Course	Credits (semester)	Course	Credits (semester)	Course	Credits (semester)
Breeding and Biotechnology									
Bologna - Laurea Specialistica in Ortofrutticoltura Internazionale *		Munich – Master of Science (M.Sc.)		Wien – Diplom Ingenieur (Dipl.-Ing. or DI)		Berlin – Master of Science (M.Sc.)		Budapest – Master of Horticultural Science	
Biotechnologie s applied to fruit tree species (E)	4 (S)			Plant Molecular biology (G/E)	2 (II S)	Plant Biotechnology (G/E)	6 (W)	Propagation biology of plants (G/E)	3 (S)
Application of breeding technologies to fruit tree species (E)	3 (S)	Biotechnology in horticulture (E)	5 (I S)	3 ECTSs selected by students in one Partner University		Biology of generative propagation in horticulture (G/E)	6 (S)	Evaluation of fruit cultivars (E)	4 (W)
		Horticultural plant breeding (E)	5 (I S)					Applied biotechnology and resistance breeding (E)	3 (S, W)
		Crop biotechnology: plant breeding	5 (I S)						

		and micropropagation (G)						
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Plant and Soil Biochemistry

Bologna		Munich		Wien		Berlin		Budapest		
Agricultural chemistry and biochemistry (I)	3 (I S)	Control and optimization of secondary plant metabolites (E)		5 (S)	Rhizosphere Processes and Application to Agriculture and Soil Protection (G/E)	3 (S)	Effects of plant nutrition and other environmental factors on composition and quality of vegetable and ornamental plants (G/E)	6 (S)	Plant allergens and the immune system (G/E)	3 (S, W)
Beneficial rhizospheric micro-organisms as plant production factor (E)	2 (S)	Analysis of bioactive compounds in fruits and vegetables (E)		5 (S school)	Soil structure: Development, functions and changes in agricultural soil (G/E)	4,5 (S)	Plant nutrition and nutrient supply in environmentally-friendly horticultural systems (G/E)	6 (S)	Special plant compounds in nutrition and therapy (Phytotherapy) (E)	4 (W)
Microbial	2 (I S)	Genetic and		5 (S)			Crop Quality	6 (S)	Chemical diversity	4 (S)

ecology (E)		environmental control of vegetal plants (G/E)			Assessment (G/E) Symbiotics in Plant Nutrition (G/E) 6 (W)	of medicinal plants (E)	
		Secondary plant metabolites and human health (E)	5 (I S)				

Plant Protection

Bologna		Munich		Wien		Berlin		Budapest	
Insect resistance mitigation to artificial control methods (E)	3 (I S)	Host parasite interaction (E)	5 (W)	Laboratory diagnosis of plant damages (G/E)	3 (I S)	Diagnosis of Plant Pathogens (G/E)	6 (S)	Ecological background of pest management (E)	4 (W)
Biological and epidemiological aspects of fruit trees (I)	4 (S)	Methods in woody plant pathology (E)	5 (S)	Integrated and biological pest management in horticultural crops (G)	3 (I S)	Lab Course Plant Pathogens or Pests (G/E)	6 (W)	Zoology in plant protection (G)	3 (W, S)
Biotechnologie	2 (S)			Molecular	3 (S)			Applied	5 (W,

s applied to arthropods (I)				phytopathology (G/E)			entomology (E)	S)
Plant resistance to insects (I)	2 (S)			Soil-borne pathogens and symbionts (G/E)	3 (S)		Pests of vegetables and ornamentals (E)	3 (W)
Diagnosis of plant diseases (E)	3 (S)			Ecological basis of biological control (G/E)	3 (W)		Pests of fruits (E)	3 (S)
Insect quantitative population ecology (E)	2 (S)							
Conservation biological control (I)	2 (W)							
Zoology (I)	2 (W)							
Weed systematic (I)	3 (W)							

Economics

	Bologna	Munich	Wien	Berlin	Budapest		
Elements of agrifood marketing (I)	4 (W)	Controlling (in horticultural farms) I (G)	5 (W)	Management in Horticulture (G/E)	6 (W)	Agrarmanagement (G/E)	5 (W/S)
Measuring management performance (E)	6 (W)	Controlling (in horticultural farms) II (G)	5 (S)				
Agricultural	4 (W)	Management	5 (S)				

policy evaluation (E)		planning and control (G)					
Foundations of international agricultural markets economics (I)	3 (S)	Natural Resource Management (E)	5 (S)				

Crop Management

Bologna		Munich		Wien		Berlin		Budapest	
Fruit Growing I (E)	6 (S)	Systems analysis as a research method (E)	5 (W)	Use of plants in planting design (indoor, balcony and bedding plants (G/E)	3 (S)	Food Chain Management (G/E)	6 (W)	Environmental management in horticultural production (E)	3 (W, S)
Fruit Growing II (I)	3 (S)	Model systems and crop quality (E)	5 (W)	Introduction to Therapeutical Gardening (G)	3 (S)	Hydroponical systems in Horticulture (G/E)	6 (W)	Techniques in horticultural production (E)	3 (W)
Molecular biology of scion/rootstock interaction (E)	2 (S)	Energy conservation and alternative energy resources (E)	5 (S)	Aspects of product quality in plant production (E)	4,5 (S)	Cultivation of Vegetables in the Tropics and Subtropics (G/E)	6 (W)	Plant geography and ecology (E)	3 (S)
Vegetable crops (I)	4 (S)	Crop physiology: growth and development of plants (G)	5 (W)	Organic fruit growing and viticulture (G/E)	3 (W)	Land use systems in horticulture (G/E)	6 (S)	Growth control of ornamental plants (E)	4 (W)

Pomology (I)	3 (W)	Crop quality: basic of quality control and assurance (G)	5 (W)	Technology of fruits and vegetable processing (G)	3 (W)	Horticultural outdoor plant systems (decorative plants) (G/E)	6 (W)	Horticultural dendrology (G/E)	4 (W)
Irrigation and drainage (I)	3 (S)			Biological Production of Vegetables and Ornamentals (G/E)	3 (W)	International Floriculture and Nursery (G/E)	6 (W)	Cultivation of special ornamental plants (G/E)	4 (S)
Non-destructive methods for fruit quality assessment (E)	3 (W)			Postharvest Technology (E) offered at alternate years from 2005/06	3 (W)	Development of new floricultural products (G/E)	6 (S)	Up-to date production technologies of fruits (E)	4 (S)
Agricultural engineering: machinery (I)	3 (S)			Postharvest Technology (G/E) offered at alternate years from 2006/07)	3 (W)	Organic Farming and Sustainable Land Use (G/E)	6 (S)	Cultivation of special medicinal plants and spices (G/E)	4 (S)
Ergonomics and safety of spraying equipment (I)	3 (S)					Urban Horticulture - an introduction (G/E)	6 (W)	Quality oriented viticulture, production-development (E)	4 (W)
						Methods of monitoring and evaluation of	6 (W)	Modern mushroom growing (E)	4 (W)

					horticultural processes (G/E)			4 (S)
							Saatgutherstellung und Vermehrung im Gemüsebau (D)	

Crop Ecophysiology

Bologna		Munich		Wien		Berlin		Budapest	
Crop efficiency, orchard/vineyard design, real time monitoring of fruit growth (E)	3 (W)	Ecophysiology and crop quality (E)	5 (S)	Methods of measuring stress resistance of plants (G/E)	3 (S)	Ecophysiological basics of urban horticulture (G/E)	6 (W)	Plant stress physiology (E)	5 (W, S)
Woody plant ecosystems (I)	3 (S)	Physics of plant environment (E)	5 (S)	Plants temperature and radiation (G)	3 (W)	Physiology of woody plants and applied dendrology	6 (S)	Fruit and seed physiology (E)	3 (W, S)
Plant responses to abiotic stresses (E)	2 (W)			Water relations of plants(G)	3 (W)	Post harvest quality and stock protection of plant food crops (G/E)	6 (S)		
Wine grape physiology and ampelography (I)	9 (S)	Ecophysiology: technical procedures and principles of protected	5 (W)			Environmental Impact on Photosynthesis and Abiotic Stress Response	6 (W)		

		documentation and publication (E)		in plant pathology (G)		technologies in horticulture (G/E)				
		Research and science management (E)	5	Magister-seminar (G/E)	2	Current problems in horticulture	6 (S)	Practicum: possibility at the research station	Depends on time	
		Research project (oral presentation in English) (G/E)	5	Seminar applied plant sciences (G/E)		Seminar Horticultural Sciences with oral presentation (G/E)	6 (W)			

Bologna		Munich		Wien		Berlin		Budapest	
Free choice courses	12	Free choice courses	15	Free choice courses	5	Free choice courses	6	Free choice courses	6

* The University of Bologna recognises the 180 ECTS deriving from the Bachelor curriculum (first level degree) as "laurea di primo livello sequenziale" of students from Munich, Wien and Berlin as part of the agreement to obtain the Master degree. The language and title of courses might be susceptible to changes in the future and formalised by letter between partners. In Vienna any change has to be submitted to "Fachstudienkommission Angewandte Pflanzenwissenschaften" and afterwards to "Senatsstudienkommission". Any changes are indicated soon after decision in BLIS (Curricula and Course Information). Partner universities will be informed additionally.