

Study program N0811A370002 - Sustainable Agriculture and Food Security (AGRIFOM)

MSc. full time course

Program guarantor: doc. Ing. Jaroslav Havlík, Ph.D.

1st year

	Subject	ECTS	AS	SS
AVA43E	Animal Physiology	5	2/2 E	
ACA12E	Biochemistry	5	2/2 E	
AGA47E	Experimental Design and Statistics	5	2/2 E	
ABA15E	Plant Physiology	5	2/2 E	
AQA59E	Sustainability in the Food Chain	3	1/1 E	
	1x Compulsory Optional Subject group 1	5	AS or SS	
ARA42E	Alternative Agriculture	5		2/2 E
ARA46E	Crop Management Systems	5		2/2 E
AQA03Z	Excursion	1		1 day C
ACA13E	Food Chemistry	5		2/2 E
ASA48E	Livestock Management	5		2/2 E
AWA64Z	MSc. Thesis I	5		125 hours C
AUA59Z	Practical Diploma Training	5		125 hours C
EHIO3E	Rural Development	5		2/2 E
AHA17E	Soil and Plant Relationship	5		2/2 E
64 + optional subject (5) = 69 C				

2nd year

	Subject	ECTS	AS	SS
AMA09E	Agricultural and Environmental Microbiology	5	2/2 E	
AVA54E	Animal Biotechnology	4	1/1 E	
ACA06E	Environmental Analytical Chemistry	5	2/2 E	
AQA25E	Food Quality and Food Safety	5	2/2 E	
AQA55E	Quality Assessment of Plant-Based Foods	5	2/2 E	
	1x Compulsory Optional Subject group 2	min. 4	Only AS	
AWA63Z	MSc. Thesis II	6+6	150 hours C	150 hours C
AQA62E	Advanced Technology in Food Processing	5		2/2 E
AKA34E	Food, Beverages and Dietary Supplements	5		2/2 E
AQA60E	Quality Assessment of Animal-Based Foods	5		2/2 E
AMA18E	Special Food Biotechnology	5		2/2 E
56 + optional subjects (min 4) = 60 C				
in total 120 + optional subjects (min 9) = 129 C				

List of optional subjects – group 1

	Compulsory optional subject	ECTS	AS	SS
ATA33E	Sustainable Agriculture	5	2/2 E	
AAA30E	Weed Science	5	2/2 E	
AEA38E	Fish Systematics	5		2/2 E

List of optional subjects – group 2

	Compulsory optional subject	ECTS	AS	SS
AAA41E	Advanced Meteorology and Climatology	5	2/2 E	
ADA21E	Poultry Management	5	2/2 E	
AKA39E	Sensory Analysis of Food	4	1/2 E	
APA22E	Soil Taxonomy, Survey and GIS	5	2/2 E	

Explanation: AS = Autumn semester; SS = Spring semester; E = Examination; C = Credited

The student should enrol in the Erasmus + program and should spend one semester abroad at one of our sister universities. If a student has an approved "Learning Agreement" (list of courses at a sister university) by Study Program guarantor then all fulfilled equivalent courses at a foreign university are accepted and he/she do not need to complete these courses from the curriculum here above.

State exam

Study program N0811A370002 – Sustainable Agriculture and Food Security (AGRIFOM)

Subject of the SE (corridor)	Subjects of the corridor
Sustainable Agriculture	Sustainability in the Food Chain
	Alternative Agriculture
Food Quality and Food Chemistry	Food Quality and Food Safety
	Quality Assessment of Plant-based Food
	Quality Assessment of Animal-based Foods
Food Technology and Biotechnology	Special Food Biotechnology
	Advanced Technology in Food Production
	Food, Beverages and Dietary Supplements
Diploma thesis defence	

Study program N0712A370001 - Natural Resources Management and Ecological Engineering (NARMEEM)

MSc. full time course

Program guarantor: prof. Ing. Pavel Tlustoš, CSc.

1st year

	Subject	ECTS	AS	SS
AAA41E	Advanced Meteorology and Climatology	5	2/2 E	
AMA09E	Agricultural and Environmental Microbiology	5	2/2 E	
AEA17E	Agricultural Ecology	5	2/1 E	
ACA06E	Environmental Analytical Chemistry	5	2/2 E	
AGA47E	Experimental Design and Statistics	5	2/2 E	
	At least 15 Credits from Compulsory optional subject I	min. 15	AS or SS	
AHA17E	Soil and Plant Relationship	5		2/2 E
AIA04E	Soil and Water Relationship	5		2/2 E
AIA04Z	Excursion	1		1 day C
AUA59Z	Practical Diploma Training	5		125 hours C
AWA64Z	MSc. Thesis I	5		125 hours C
46 + 15 C. optional subject = 61 Cr.				

2nd year

	Subject	ECTS	AS	SS
AHA39E	Environment Pollution and Remediation	5	2/2 E	
	At least 15 Credits from Compulsory optional subject I	min. 15	AS or SS	
	At least 27 Credits from Compulsory optional subject II	min. 27	AS or SS	
AWA69Z	MSc. Thesis – Joint Degree	6+6	150 hours C	150 hours C
AUA59Z	Practical Diploma Training *	5		20 days
17 + Compulsory optional subjects (min. 42 Cr.)				
in total 63 + optional subj. (min 57) = 120 C				

* if not studied in the first year

List of compulsory optional subjects I

	Soil Resources	ECTS	AS	SS
APZ03E	Environmental Soil Science	5	2/2 E	
APA21E	Soil Conservation and Protection	5	2/2 E	
BOKU	Soil Physics and Chemistry	3	2.0	
BOKU	Soil Chemistry Laboratory	3	2.0	
BOKU	Soil Ecology	3	2.0	
BOKU	Field Course Soil Ecology	3	2.0	
APA22E	Soil Taxonomy Survey and GIS	5		2/2 E
	Description, Functions of Soil Structure and its Changes in Agricultural Land Use	3		2.0
911.317	Soil Properties and Processes for Ecological Engineering	3		2.0
BOKU	Remote Sensing and Image Processing	6		2.0
	Water Resources and Climate	ECTS	AS	SS
AIA05E	Hydrogeology	5	2/2 E	
AEA22E	Aquaculture	5	2/2 E	
ZBX03E	Water Resources Management	5	2/2 E	
BOKU	Simulation in Vadose Zone Environment	3	2.0	
BOKU	Ecology of Aquatic Systems	3	2.0	
BOKU	Hydrogeology	3	2.0	
BOKU	Limnology	3	2.0	
BOKU	Limnochemistry and Nutrient Cycling	3	2.0	
AIA08E	Hydrology	5	2/2 E	2/2 E
AIA13E	Crop and Irrigation Systems Management	5	2/2 E	2/2 E
AIA12E	Survey for Soil and Water Relationship	5		2/2 E
	Bioresources	ECTS	AS	SS
ABA15E	Plant Physiology	5	2/2 E	
BOKU	Ecology and Population Biology of Plants in Agro-ecosystems	5	2.0	
BOKU	Farmland Ecology	1	1.0	
BOKU	Population Genetics and Evolutionary Theory Relevant for the Management and Protection of Aquatic Organisms	3	2.0	
BOKU	Conservation Biogeography and Genetics	3	2.0	
BOKU	Ecology of Fishes	3	2.0	
BOKU	Fish Sampling and Monitoring	3	2.0	
BOKU	Fish Ecological Status Assessment	3	2.0	
BOKU	Multiple Criteria Decision Making in Natural Resource Management	3	2.0	

List of compulsory optional subjects II

	Agro-municipal Resource Management	ECTS	AS	SS
AOA29E	General Phytopathology	5	2/2 E	
ARA42E	Alternative Agriculture	5	2/2 E	
LHX17E	Forest Management	6	2/2 E	
LPX24E	Forest Management in Air Polluted Areas	6	2/2 E	
LLX01E	Forest Ecology	6	2/2 E	
815.321	Soil Conservation and Soil Protection	3	2.0	
BOKU	Soil Water Management	3	?	
BOKU	Rhizosphere Processes and Application to Agriculture and Soil Protection	3	?	
BOKU	Ecology and Management of the Rhizosphere in Ecological Engineering	3	?	
BOKU	Air Pollution Effects on Forest Ecosystems	3	?	
BOKU	Forests and Water	3	?	
816.338	Water Resources Planning and Management	3	2.0	
BOKU	Irrigation Design	3	?	
LOX12E	Forest Protection	6		2/2 E
LPX20E	Silviculture	6		2/2 E
BOKU	Soil Fertility and Soil Ecology in Organic Agriculture	3		?
BOKU	Soil Protection	3		?
	Ecological Engineering and Risk Management	ECTS	AS	SS
ZEX27E	Ecology and Ecological Methods	6	2/2 E	
ZUX14E	Landscape and Ecological Applications	6	2/2 E	
ZGX02E	GIS I	5	2/2 E	
ZEX01Z	Aquatic Ecosystem Restoration	6	2/2 C	
BOKU	Hydrological Processes and Modelling	3	?	
BOKU	Hydraulic Engineering and River Basin Management	3	?	
BOKU	Integrated Flood Risk Management	3	?	
811.362	On Site Solutions for Water Supply and Sanitation	3		2.0
AZA36E	Landscaping	6		2/2 E
ZBX15E	Spatial Planning	6		2/2 E
BOKU	Geotechnics	3		?
BOKU	Ecologically Oriented Methods and Monitoring in River Engineering	3		?
BOKU	Flood Forecasting and Flood Protection	3		?
BOKU	Soil Pollution and Remediation	3		?
911.319	In-situ Treatment of Polluted Soils and Sediments: Phytoremediation, In-situ Fixation and Attenuation Techniques	3		?
BOKU	Planning and Design in Water Supply and Wastewater Treatment	3		?
	Nature Conservation and Biodiversity Management	ECTS	AS	SS
ZEX01E	Biodiversity	6	2/1 E	
ZUX01E	Landscape Ecology	5	2/2 E	
LLX06E	Vegetation in Land Management	5	2/2 E	
BOKU	Environmental Impacts on Riverine Ecosystems I	4	?	
BOKU	Environmental Impacts on Riverine Ecosystems II	2	?	
BOKU	Aquatic Biomonitoring and assessment	2	?	
BOKU	Ecohydromorphological Mapping	2	?	
AEA38E	Fish Systematics	5		2/2 E

AEA20E	Parasitology	5		2/2 E
ZOX05E	Paleoecology	3		1/0 E
ZEX09E	Conservation Biology	6		2/1 E
ZEX04E	Ecosystems Conservation and Management	6		2/2 E
LLX05E	Classification of Vegetation	6		2/2 E
BOKU	Ecology, Restoration and Conservation of Aquatic and Riparian Vegetation	2		?
BOKU	Fisheries Management and Conservation	2		?
	Global Resources and Sustainability Management	ECTS	AS	SS
APA17E	Modeling in Soil Science	5	2/2 E	
ZBX09E	River Restoration	6	2/1 E	
BOKU	Using Water Erosion Models	3	?	
BOKU	Soils and Food Security	2	?	
BOKU	Soils and Global Change	4	?	
BOKU	Interdisciplinary Seminar on Agriculture, Climate Change and Transition	3	?	
BOKU	Innovations for Sustainable Forest Management	4	?	
BOKU	Adapting Forest Management to Climate Change	2	?	
BOKU	Global Waste Management I	3	?	
ZEX10E	Conservation Policy	4		2/0 E
ZUX03E	Wetlands Cons. and Management	6		2/1 E
731.328	Valuation Methods for Natural Resources	3		2.0
BOKU	Global Aspects in Landscape Planning	4,5		?
816.342	Possible Impacts of Climate Change on Water Resources	3		2.0
BOKU	Life Cycle Management	2		?
BOKU	Global Waste Management II	3		?
	Human Dimension and Socio-economic Aspects of Sustainable Development			
AQA25E	Food Quality and Food Safety	5	2/2 E	
AKA39E	Sensory Analysis of Food	4	1/2 E	
LRX07E	Forest Enterprise Economics	6		2/2 E
EHI03E	Rural Development	5		2/2 E
EJE21E	Law in EU	4		2/1 E
BOKU	Environmental statistics	3		?
732.326	Institutions and policies of the EU (Introduction to the law and politics of the European Union)	3		2.0
731.347	Regional economics and regional governance	3		2.0
BOKU	Welfare economic analysis of agricultural policy - theory and applications	3		?
BOKU	Facilitating change for sustainable development	3		?
BOKU	Growth, development, trade and environment	3		?
	Language			
ELX..Z	Foreign Language	2	0/2 C	
ELX..E	Foreign Language	3		0/2 E

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State exam

Study program N0712A370001 – Natural Resources Management and Ecological Engineering (NARMEEM)

Subject of the SE (corridor)	Subjects of the corridor
Soil Properties and Conservation	Soil and Chemical Relationship or equivalent
	Soil Conservation and Protection or equivalent
Water Resources and Management	Soil and Water Relationship
	Water Resources Management or equivalent
Atmosphere, Biosphere and Environment	Advanced Meteorology or equivalent
	Soil and Plant Relationship
	Agricultural Ecology or equivalent
	Environmental Contamination and Remediation
Diploma thesis defence	

Study program N0712A330002 – Natural Resources and Environment (ENVIM)

MSc. full time course

Program guarantor: prof. Ing. Radka Kodešová, CSc.

1st year

	Subject	ECTS	AS	SS
AAA41E	Advanced Meteorology and Climatology	5	2/2 E	
AMA09E	Agricultural and Environmental Microbiology	5	2/2 E	
AEA17E	Agricultural Ecology	5	2/1 E	
ACA06E	Environmental Analytical Chemistry	5	2/2 E	
AGA47E	Experimental Design and Statistics	5	2/2 E	
ZBX03E	Water Resources Management	5	2/2 E	
	1x Compulsory Optional Subject group 1	min 5.	AS or SS	
APA03Z	Excursion – Soils and Water Resources of the Czech Republic	3		3 days C
AWA64Z	MSc. Thesis I	5		125 hours C
AUA59Z	Practical Diploma Training	5		125 hours C
APA19E	Soil and Chemical Relationship	5		2/2 E
AHA17E	Soil and Plant Relationship	5		2/2 E
AIA04E	Soil and Water Relationship	5		2/2 E
APA22E	Soil Taxonomy, Survey and GIS	5		2/0 20s 4tp E
63 + optional subject (5) = 68 C				

2nd year

	Subject	ECTS	AS	SS
EEA16E	Environmental Economics	5	2/1 E	
AIA05E	Hydrogeology	5	2/2 E	
APA17E	Modeling in Soil Science	5	2/2 E	
APA21E	Soil Conservation and Protection	5	2/2 E	
	2x Compulsory Optional Subject group 1	min. 10	AS or SS	
	2x Compulsory Optional Subject group 2	min. 10	AS or SS	
AWA63Z	MSc. Thesis II	6+6	150 hours C	150 hours C
APA23E	Proximal and Remote Sensing in Soil Science	4		2/1 zk
36 + optional subjects (20) = 56 C				
in total 99 + optional subjects (25) = 124 C				

List of optional subjects ENVIM – group 1

	Compulsory optional subject	ECTS	AS	SS
APA14E	Environmental Soil Science	5	2/2 E	
ZBX27E	Water in Landscape	5	2/2 E	
AIA13E	Crop and Irrigation Systems Management	5	2/2 E	2/2 E
AIA08E	Hydrology	5	2/2 E	2/2 E
AIA10E	Hydrometeorology	5	2/2 E	2/2 E
ZVX24E	Hydroinformatics	5		2/2 E
AIA12E	Survey for Soil and Water Relationship	5		2/2 E

List of optional subjects ENVIM – group 2

	Compulsory optional subject	ECTS	AS	SS
ACA12E	Biochemistry	5	2/2 E	
AHA39E	Environment Pollution and Remediation	5	2/2 E	
AOA28E	Fundamentals of Plant Protection	5	2/2 E	
AOA29E	General Phytopathology	5	2/2 E	
ATA17E	Management of Turf and Lawn	5	2/0,83 4s 4tp 6e E	
ACA11E	Advanced Organic Chemistry	5		2/2 E

Explanation: AS = Autumn semester; SS = Spring semester; E = Examination; C = Credited, S = seminar, tp = terrain practice, e = excursion

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State exam

Study program N0712A330002 – Natural Resources and Environment (ENVIM)

Subject of the SE (corridor)	Subjects of the corridor
Soil and Environment	Soil and Chemical Relationship
	Soil Conservation and Protection
Water and Environment	Soil and Water Relationship
	Modeling in Soil Science
	Hydrogeology
Biosphere and Environment	Soil and Plant Relationship
	Agricultural and Environmental Microbiology
	Agricultural Ecology
Diploma thesis defence	