Minor High tech and innovation in horticulture (AHTI)

Minor High tech and innovation in horticulture

Coördinator:	HSM	**Studiepunten:**	30

Onderdelen	**ECTS**	**Naam**	**Tentamenvorm**	**Tentamen periode**	**Literatuur**
AHTI01	3	Assessment HSIH	Assessment	2	
AHTI02	2	Course strategic product management	Presentation	1	To be found on canvas
AHTI03	2	Course strategic business management	Written exam	2	To be found on canvas
AHTI04	2	Course financial management 1	Written exam	1	To be found on canvas
AHTI05	2	Course financial management 2	Written exam	2	To be found on canvas
AHTI06	2	Course export management and intercultural communication	Assignment	1	To be found on canvas
AHTI07	3	Assessment HPPS	Assessment	2	To be found on canvas
AHTI08	2	Course High-tech Plant Production Systems	Written exam	1	To be found on canvas
AHTI09	2	Practical Training High-tech Plant Production Systems	Report (attendance compulsory)	1	To be found on canvas
AHTI10	2	Course Product quality and Postharvest	Written exam	2	To be found on canvas
AHTI11	2	Practical training Product quality and Postharvest	Poster (compulsory attendance)	2	To be found on canvas
AHTI12	2	Course Crop management and labour organization	Written exam	2	To be found on canvas
AHTI13	4	Company visits	Assignment	2	To be found on canvas

Prerequisites:	Minimum of two years bachelor program in horticulture.
Professional task:	• Horticultural consultant / agricultural advisor • Export manager in agri-food trade • Financial analyst / investment consultant for agri-food companies • Crop production manager / greenhouse manager.
Methods:	Lectures, practical training, group work, excursions, assignments.
Fields of knowledge:	**Goals (the student):**
Main aim:	At the end of this minor the student is able to act as an agricultural extension officer/advisor/entrepreneur on university level. Being a well-rounded horticultural professional capable of integrating high-tech production, financial management, strategic business planning, and international trade to optimize and innovate within the agricultural sector
2. Course Strategic product management	• Can apply innovation as a tool to improve current situation, either in technology, product or organisation. • Is able to select the right product-market combinations.

	• Can design a plan for the introduction of a new product / a product for a new market.
3. Course Strategic business management	• Can develop a sector vision based on found historic developments and using appropriate strategic analyse techniques (e.g. DESTEP, Porter). • Can design labour planning in the specific cultivations or company setting. • Can explain the outline of main topics of (European) tax legislation which are important for agricultural entrepreneurs (e.g. income , turn-over- and transfer taxes). • Is able to use knowledge about EU-agricultural policy in the planning of mid- and long term farm development.
4 + 7. Course Financial management 1 + 2	• Is able to read a financial annual report of a company. • Is able to analyse the financial situation of a horticultural company. • Can give a substantiated judgment about the key figures of the company based on internal and external comparison and advise the entrepreneur on optimisation of this financial technical figures.
8. Course Export management and intercultural communication	• Can explain implications of export in relation to (EU) regulations. • Can map the currently applicable laws and regulations (legislation) for production and apply it in an organisation • Can look at, analyse, and resolve problems from the perspective of cultural differences.
8. Course High-tech Plant Production Systems	• Can explain the effects of light, CO_2, humidity and fertigation on plant production • Can select the most appropriate plant production system for a given situation. • Can explain how a grower can use data from crop monitoring to adjust crop development in a desired way. • Is able to evaluate innovations and current developments in the sector.
9. Practical Training High-tech Plant Production Systems	• Is able to monitor crop growth and crop development. • Is able to calculate and prepare nutrient solutions for crops from liquid or solid fertilizers. • Can operate automated systems for irrigation and climate management.
10. Course Product quality and Postharvest	• Can describe in which way some companies implement quality oriented production in horticulture. • Can describe the effect of different measures on postharvest product quality. • Is able to analyse the factors influencing the quality of food during harvest, transport, storage and (industrial) processing.
11. Practical training Product quality and Postharvest	• Can perform postharvest tests. • Can collect and process quality data on flowers and vegetables.
12. Course Crop management and labour organization	• Is able to prepare a labour planning. • Is able to estimate labour costs. • Is able to discuss with processes should be automatized. • Can evaluate different aspects of corporate social responsibility which are applicable in horticulture.
13. Company visits	• Is able to evaluate and advise the entrepreneur about the implementation of improvements.

Aeres competences
• To innovate, to cooperate, to present, to research, to organize, to endorse sustainable behavior, to show leadership capabilities, to enterprise, to appreciate the global perspective
Final qualifications:
• 1. To manage crop production • 2. To do business in the Agro Food Sector • 3. To manage in the Agro Food Sector • 5. To advise in the Agro Food Sector • 6. To trade and market in the Agro Food Sector • 7. To act independently and reflective

Minor Overview:

The Minor High-Tech and Innovation in Horticulture (AHTI) offers a holistic and integrated approach to modern horticulture, covering the entire value chain from farm to fork. It goes beyond traditional plant production, equipping students with a deep understanding of pre-harvest and post-harvest processes, financial management, market analysis, and strategic business planning.

Students do not only learn how to grow plants efficiently but also how to analyze, optimize, and innovate within the entire production and supply chain. The program is designed to bridge the gap between science, business, and practical application, ensuring graduates are well-rounded professionals ready for the global agro-food sector.

The minor uniquely combines theory, practical training, company visits, and real-world assignments. Courses in crop production, postharvest management, and high-tech cultivation are balanced with financial management, business strategy, export, and intercultural communication, ensuring students not only understand the technical aspects of production but also know how to manage and market a horticultural business.

A key feature is the hands-on approach, where students engage in company visits, practical assignments, and consultancy projects. They work directly with agricultural businesses, developing strategic business plans that consider financial feasibility, market opportunities, and sustainability. This allows them to apply knowledge in real-world scenarios, enhancing their soft skills, problem-solving abilities, and entrepreneurial mindset.

By the end of the minor, students will have comprehensive expertise in both the technical and business sides of horticulture, making them valuable assets to the industry. They are equipped to innovate, manage, and advise companies in an ever-evolving, technology-driven agricultural landscape.