

Course information system	Year of study 2019-2020
Study programme	Environmental Studies
Course unit code	MN3404
Course unit title	Biobased economy in the agri-food sector
Location	HAS University of Applied Sciences, 's-Hertogenbosch, The Netherlands
Coordinator (afk.)	Mieke van Eerten-Jansen
Type of course unit (year)	Minor third year
Language of instruction	English/Dutch
Credits (ECTS)	15
Moment of delivery (year and term)	September 2019 to November 2019
Prerequisites	<p>To participate in this minor, you must have completed your first year college and have earned at least 40 ECTS in your second year.</p> <p>In addition, students should have knowledge of and affinity with agriculture and/or food production.</p>
Application deadline	22 March (HAS-students)/1 May 2019 (external students)
Wijzigingen t.o.v. vorig jaar	No major changes
<p>Course content (elaborate description of course content, in which the following questions are answered:</p> <ul style="list-style-type: none"> - Why this course (necessity and importance)? - Which themes are discussed? - Why sign up for this course? (think also of students outside of HAS University of A.S.) <p>Max 350 words</p>	<p>Would you like to find out how to contribute to a sustainable, circular economy and at the same time raise the value of crop or animal production? Which of the following products will actually represent the highest added value or income: food, animal feed, (bio)fuel, materials, or a combination thereof? And what may determine this value? The edibility, taste, nutritional value, or the fact that you can construct your house with it, run your car on it, or that you can wrap your food in it? Within the agri-food sector, developing a BBE means: making choices on how to successfully use plant-based and animal-based biomass to sustainably meet all our daily needs, for us and for future generations.</p> <p>The BBE is all about replacing fossil raw materials, such as oil, coal, and natural gas, by renewable biomass. Biomass, including residues of crops and animals, is used to produce energy, biofuels, high value chemicals, as well as other products, hereby reducing our dependency on fossil raw materials as well as our greenhouse gas emissions. At the same time, however, we and our livestock still need to eat from this biomass in the first place.</p> <p>In order to meet these different interests, developing a BBE demands a change in thinking and acting. Unlike oil and gas, biomass is very diverse in its origin and composition and therefore usually is produced and processed in many different ways. This leads to different production processes and often also requires specific organizational and commercial/entrepreneurial skills. Furthermore, we will explore to which extent transitions from fossil raw materials to biomass are possible, impossible or already happening.</p> <p>In this minor, you will learn about all these aspects of the BBE, with specific attention to the agri-food sector. While stepping out of the comfort zone of your own expertise and study program and through</p>

	<p>interdisciplinary cooperation, you will learn to develop new and innovative agri-food chains, where food, feed, fuel and materials can be produced simultaneously.</p> <p>In this minor, you'll be working in a multidisciplinary group on real life issues and projects.</p>	
<p>Learning outcomes (knowledge, skills, attitude and behavior)</p>	<p>At the end of the module, the following questions will be answered:</p> <ul style="list-style-type: none"> • What is Biobased Economy? (Theme 1 'Biobased Economy') • What is currently happening in the Biobased Economy? (Theme 2 'Biobased in practice') • What is needed to earn money in a Biobased Economy? (Theme 3 'Biobased Economics') • How do we transform into a Biobased Society? (Theme 4 'Biobased Transition') <p>In order to answer the above questions, this minor will make you:</p> <ul style="list-style-type: none"> • Theme 1 'Biobased Economy' <ul style="list-style-type: none"> ○ Understand the impact of development of a BBE on the agri-food sector and vice versa ○ Gain knowledge on all aspects of biobased production chains, in particular in the agri-food chain • Theme 2 'Biobased in practice' <ul style="list-style-type: none"> ○ Gain insight in biorefinery of various types of biomass and in production processes of biobased products and materials ○ Develop a vision on the combined production of food, feed, fuel and biobased products • Theme 3 'Biobased Economics' <ul style="list-style-type: none"> ○ Conduct a stakeholder analysis within biobased production chains ○ Gain knowledge of (new) business models fitting in biobased production chains in the agri-food sector ○ Translate sustainable ambitions of entrepreneurs into concrete, workable biobased applications • Theme 4 'Biobased Transition' <ul style="list-style-type: none"> ○ Gain insight in the relationship between the BBE and circular economy, and therefore with a sustainable society ○ Understand the impact of development of a BBE on the agri-food sector and vice versa • Make a professional contribution to a multi-disciplinary group, on the basis of own talents and study program-specific competences 	
<p>Learning activities and teaching methods (elaborate description)</p>	<p>During the minor the project management method SCRUM is used.</p>	
<p>Learning activities and teaching methods</p>	<p>Method</p>	<p>Study load (hours)</p>
	<p>2-day external program, (guest) lectures, practicals, excursions</p>	<p>Ca. 210</p>
	<p>SCRUM Projects</p>	<p>Ca. 210</p>
	<p>Total</p>	<p>420</p>
<p>Test matrix</p>		

Part	Type of examination	Weighing factor	Bottom grade	Rating scale	Individual/ group work	Time of examination	Resit
Project(s) (consisting of 5 sub-projects = SCRUM sprints)	Project deliverables in sub-groups	0.3	4	1-10	G	-	WRT wk9-T2
Individual assessment	Oral	0.7	5.5	1-10	I	1	Oral wk10-T2
Title							
Author		Status		Type		Code	
Study manual		Mieke van Eerten-Jansen		Via Blackboard			
All other study materials will be provided via Blackboard							
Time table							
Costs							
€ 100,-- for external activities, excursions and literature							
Themes							
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Remarks							