Degree programmes in Agrobiology

BSc Agrobiologi (Animal Science, Plant & Environmental Science, Food Science)

MSc Agrobiology (Animal Science, Crop Science; ± organic Agriculture)

MSc Agro-Environmental Management

International MSc in Organic Agriculture and Food Systems
(Agrobiology Double-Degree)

International MSc in Soils and Global Change (IMSOGLO)
(Erasmus Mundus Joint Master-Degree)

Topic: Production of the plants and animals that end as our food

Focus: Sustainable interplay between nature, environment and food quality

Method: Interdisciplinary, research-based teaching, involving cooperation with 3 departments

Degree programmes in Agrobiology – 'Mini- SWOT'

Strengths

* Research-based teaching
* Interdisciplinary content
* Use of facilities in Foulum and Flakkebjerg
* Good job opportunities

Weaknesses

* Relatively low number of students
* Not enough familiarity with **Agro**biology
* Geographical distance between students and teachers

Opportunities

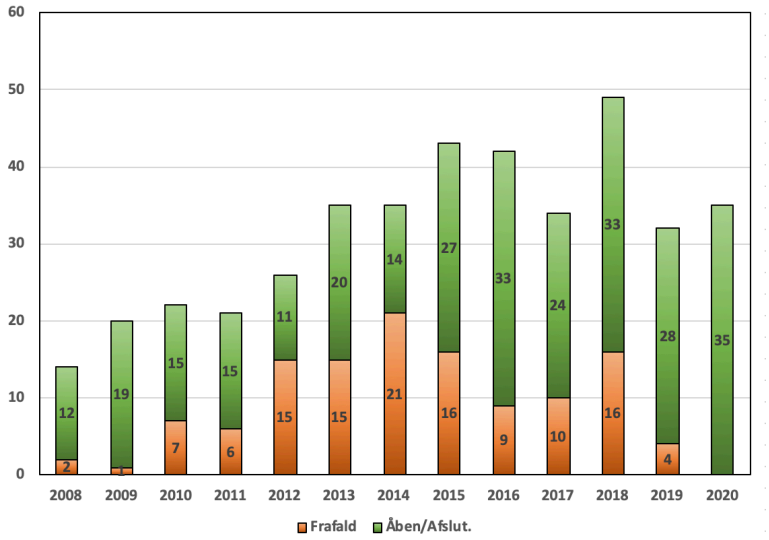
* Increase collaboration with other Depts.
* Strengthen synergy between the degree programme and industry partners

Threats

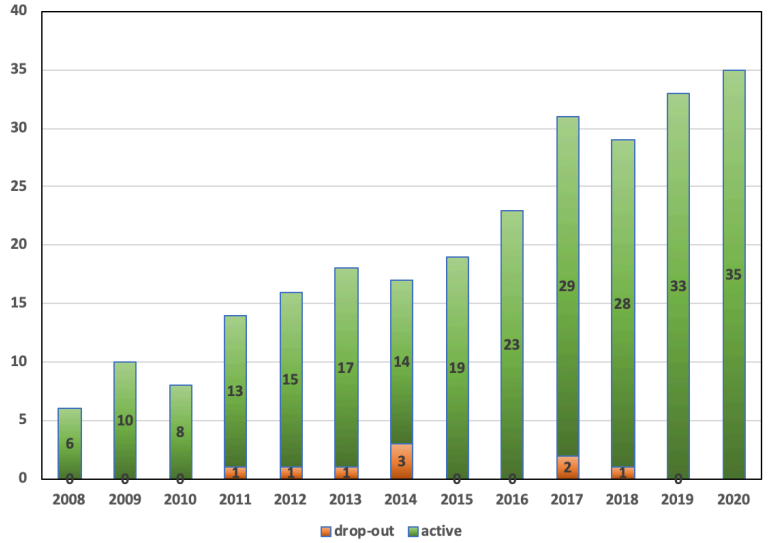
* Competition with other Depts.
* Lack of interest in our degree programmes

Enrolment

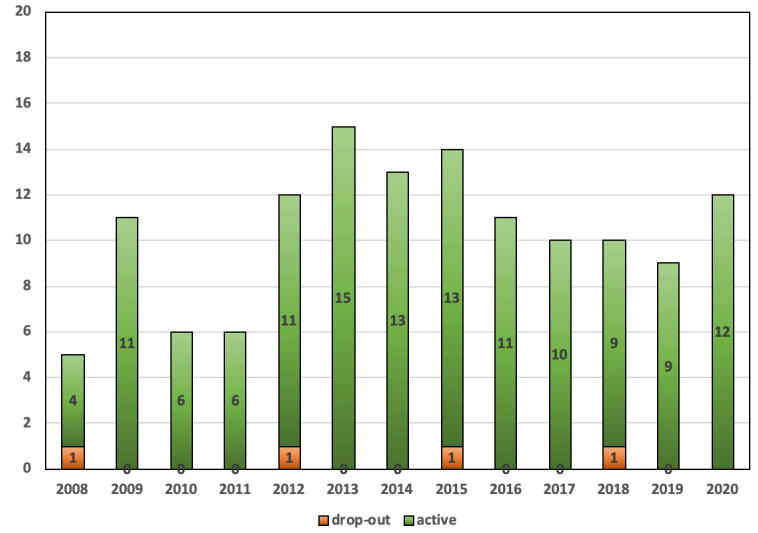
Number of active students/dropouts per year



BSc Agrobiologi



MSc Agrobiology



MSc Agro-Environmental Management

Source: Power Bi

Degree programmes in Agrobiology – Teaching Evaluation

	BSc	MSc	AEM
Overall, the quality of my education is high	4,31	4,29	4,18
There is a good social environment	4,36	4,22	4,00
There is a good professional environment	4,33	4,56	4,36
My teachers are good at providing useful feedback	3,51	3,97	3,45
My teachers are professionally skilled	4,69	4,69	4,45
My teachers are good at communicating	3,89	3,71	3,64
My teachers are engaging in teaching	4,38	4,49	4,27
My benefit from teaching is high	3,93	4,17	4,27

1,0-1,5	Strongly disagree
1,5-2,5	Disagree
2,5-3,5	Neither agree/disagree
3,5-4,5	Agree
4,5-5,0	Strongly agree

Weighted average of the 5 scaled response categories

Source: Uddannelseszoom 2019

Competences and skills acquired in the courses

Alignment of expectations of graduates and of employers

To what extent have you acquired the following skills in your education?
To what extent does your employer demand the following skills?

	Acquired	Demanded
Theoretical knowledge and methods from my education	4,40	3,44
Ability to apply knowledge and methods from my education	4,30	3,67
Ability to acquire new knowledge	4,50	4,56
Ability to analyze complex issues	3,90	4,56
Ability to be think critically	4,10	4,56
Ability to work with real issues and solutions	4,00	4,63
Ability to work project-oriented	4,00	3,89
Ability to work in an organized manner	4,33	4,33
Ability to work independently	4,10	4,56
Ability to cooperate	4,30	4,11
Ability to communicate in writing	4,30	4,00
Ability to communicate orally	4,00	3,89

1	not at all
2	to a lesser degree
3	somewhat
4	greatly
5	to a great extent

Weighted average of the 5 scaled response categories

Source: Uddannelseszoom 2019

Competences and skills acquired in the courses

Study techniques

- Organize study work + project management
- Group work
- English text-books

Scientific methodology

- Assessment of data

Lab work

- Report from exercises
- Practical work in (semi)field and labs

Technical Skills

- GIS, Excel, R, Endnote …

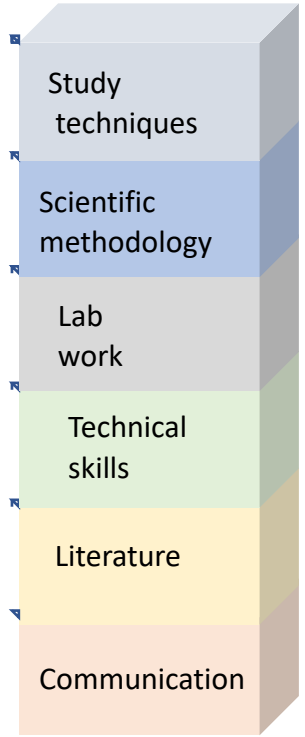
Literature

- Library, databases, Scientific literature

Communication

- Scientific presentations.
- Report writing
- Problem formulation / hypothesis
- Oral, popular communication

Categories of competences



Competences and skills acquired in the courses

Semester	ECTS		Communication					Litterature		Scientific metodology	Lab. work		Study techniques			Technical skills
			Videnskablig fremstilling /sprog/præcision	Disponering, opsætning og citation i rapporter	Problemformulering og hypoteser	Mundtlig formidling	Populær for midling	Informationssøgning, bibliotek/vid. Databaser	Læsning af vid. Litteratur	Videnskabelig metode og vurdering af data	Øvelsesrapport	Lab-arbejde/sikkerhed	Tilrettelægge studiearbejde + projektstyring	Gruppearbejde	Læsning af engelsk lærebog	Gis, Excel, R, Endnote, PC-planteværm
		Obligatoriske fag														
1	10	Jordbrugs- og fødevareproduktion	x	x		x	x		(x)	(x)			x	x		
2	5	Agroøkologi	x	x	x			x	x	(x)			x	x	x	
3	10	Agromikrobiologi	x	x		x		x	x		x	x		x	x	x
4	10	Genetik og avl	x			x			x	(x)			x	x	x	
5	5	Jordbrug i globalt perspektiv	x	x		x		x	x				x		x	x
5	5	Økologisk Jordbrug														
6	15	Bachelor projekt	x	x	x	x	(x)	x	x	x		(x)	(x)		(x)	x
		Planteproduktion														
3	5	Jordens egenskaber	x	x	(x)			x	x						x	
4	5	Planteernæring	x	x	x	x		x	x	x	(x)			x	x	x
4	5	Plantemikrobiologi	x	x	x			x	x						x	
5	10	Plantedyrkning og miljø	x	x	x	x	x		x	x	x		x	x		x
5	5	Jordbrugets Økotoksikologi		x	x			x	x	x						x
		Husdyrvidenskab														
3	10	Husdyranatomi og fysiologi	(x)			x			(x)	x	x			x	x	
4	10	Husdyrernæring	x	x	x	x			x	x				x	x	x
5	10	Husdyrproduktion	x	x	x	x			x	x				x	x	
5	5	Husdyradfærd og velfærd	x		x	x					x			x	x	
5	5	Hysdyrhygiejne og sygdom		x		x			x		x		x	x		
		Fødevarekvalitet														
3	10	Fødevare på molekylært niveau								x	x	x			x	
4	10	Metabolismens koncepter	x	x		x			x	x	x			x		x
5	10	Fødevarekvalitets-egenskaber…	x	x	x				x				x			x
5	10	Molekylær ernæring		x		x		x	x					x		

Competences and skills – feedback from the employer panel

Employer-panel

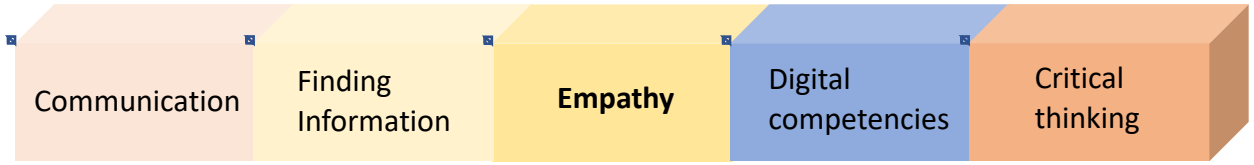
Seges, Arla, Erhvervsakademi Aarhus, Landbrug og Fødevarer, Vitfos, Dupont, VikingGenetics, Danish Crown, LandboNord, Aarhus Municipality

- Collaborative skills and interdisciplinarity, empathy
- Communication and communication skills
- Project management

- Understanding of the connection between theory and practice
- Decisive, flexible, judgmental, critical thinking
- Understanding of sustainability, food safety

- Understanding of business economics
- International mindset

- Digital competencies (data, statistics)

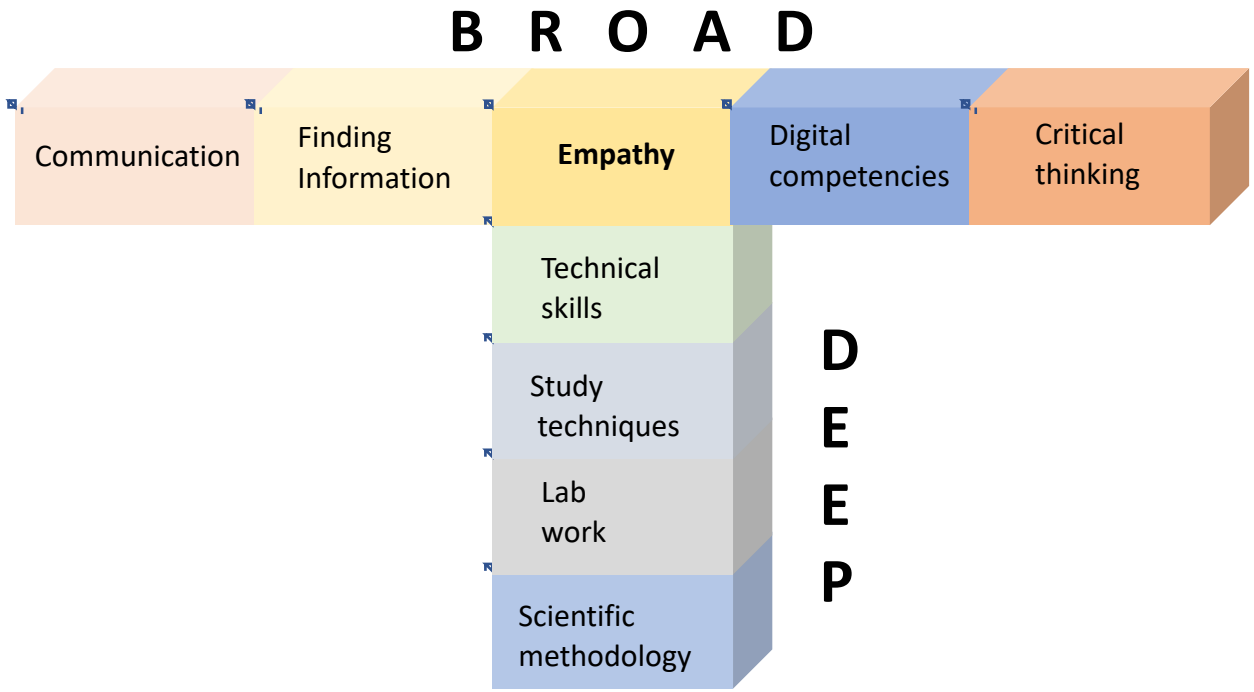


Competences and skills – ‘T - Shaped Professionals’

Combination of skills for both
problem solving (disciplinary knowledge, deep) and
communication (system knowledge, broad)

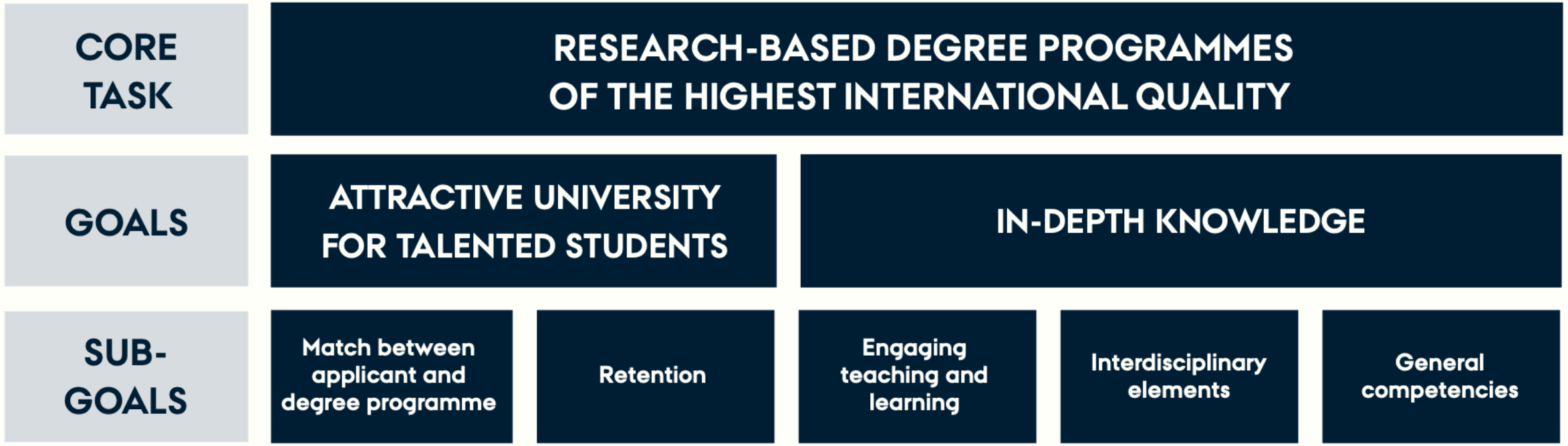
will result in:

- Ability to empathize and collaborate across disciplines
- Ability to apply knowledge across disciplines
- International mindset, communication, networking, teamwork



Aarhus University Strategy 2025

RESEARCH-BASED DEGREE PROGRAMMES OF THE HIGHEST INTERNATIONAL QUALITY



Goal: Attractive University for talented students

Sub-goal: Match between the applicant and degree program

Identification of different target audiences amongst prospective students

Type	Interests	Narrative angle
'Farmer'	Animals, Crops, Production Is familiar with agronomy Some interest in ecology Uni could feel a bit frightening	'We need to produce more to feed the world'
'Environmentalist'	Ecology, food, climate, sustainability Uni feels like a natural place to be	'We have to take care of our environment and climate'
'Veterinarian'	Animals, health, nutrition Uni feels like a natural place to be	'We have to care about animal welfare'
'Foodie'	Food, health, human nutrition Uni feels like a natural place to be	'We need healthy foods for our nutrition'

Alignment of expectations

- Workshops with prospective students
- Online presence in social media
- Websites, videos
- Education days, Study-practice

Participation in a national campaign

- Futurefood.nu

Goal: Attractive University for talented students

Sub-goal: Match between the applicant and degree program

Recruitment – Objective: More qualified applicants for BSc Agrobiology

The existing education in BSc Agrobiology will be adapted in relation to the future labour market, i.e. the green transition, the digital revolution in information technology and automation in agriculture.

Analysis: How to get more students to choose Agrobiology?
What educations do "our" students study instead?

Tasks:

- Find a provider who can do an analysis of how to get more students to apply for Agrobiology
- New strategy work based on the result of the analysis
- Marketing
- Adaptation of the BSc Agrobiology Degree program

Goal: Attractive University for talented students

Sub-goal: Match between the applicant and degree program

Education - Collaboration within TECH

Tasks:

- Incorporate relevant engineering courses as elective courses
- New line specialisation in BSc Agrobiology with more digitization, green transition and biotechnology
- A new BSc 'Agrotechnology' degree program

3-year BSc in Engineering (in Danish)

- BSc. in Biotechnology
- BSc in Chemical Engineering
- BSc in Civil and Architetural Engineering
- BSc in Electrical Engineering
- BSc in Computer Engineering
- BSc in Mechanical Engineering

BSc Agrobiology

Year	Semester	ECTS	Courses		
1	1	30	Agriculture and Food Production	Eukaryotes - Zoology	Eukaryotes - Fungi, Algae and Land Plants
	2	30	Philosophy & Ethics of Science Agroecology	Basic General and Organic Chemistry	General Molecular Biology and Biochemistry
2	3	30	Agromicrobiology	Optional	Calculus Alpha
	4	30	Genetics and Breeding	Optional	Introd. Statistics and Dataanalysis Applied Statistics
3	5	30	Agriculture in a Global Context Organic Food Systems	Optional	Optional
	6	30	Elective courses Bachelor Project		

Compulsory	Elective Optional	Auxiliary
Animal Science	Plant & Environmental Science	Food Science

Goal: In-depth knowledge

Sub-goal: Engaging teaching and learning

All lecturers in AGRO are active researchers with a high level of commitment to the subjects they teach. This is beneficial for teaching, for example by linking BSc and MSc projects to current research projects.

Tasks:
An increased focus on international cooperation in the degree programs. It should be easier for foreign students to take courses in our programs, as well as AGRO to support the exchange of our own students.

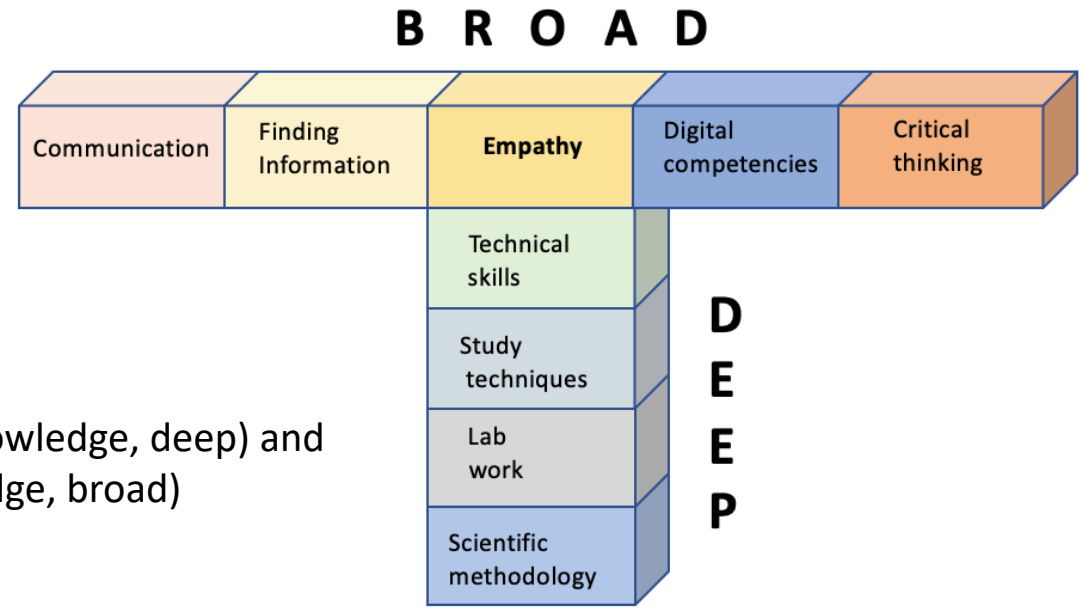
Recent developments:
Deakin University (Melbourne) and *Alexander von Humboldt University* (Berlin) have shown interest...

Goal: In-depth knowledge

Sub-goal: General competencies

We will ensure that the students acquire a number of “non-professional” competencies demanded by employers.

Tasks:
Implement ‘T-shape professional’ competences in relevant in courses



Combination of skills for both
problem solving (disciplinary knowledge, deep) and
communication (system knowledge, broad)

Education - Tasks for discussion in breakout rooms

- How to attract more students for BSc Agrobiology?

- Is the name ‘Agrobiology’ appropriate? Suggestions for new names

- Collaboration with the 4 new engineering departments – Which of the following would be attractive?
  1. Incorporate relevant engineering courses as elective courses
  2. New line specialisation in BSc Agrobiology with more digitization, green transition and biotechnology
  3. Conversion of line specialisations to separate degree programs: Crop Science, Animal Science, Food Science
  4. A new BSc ‘Agrotechnology’ degree program
  5. Any other suggestions?

- Any new elective courses could we offer?

BSc Agrobiology

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