Module Title	Pathways to net zero GHG emissions in the food sector
Code	MCCf153
Degree Programme	Master of Science – Circular Innovation and Sustainability
ECTS Credits	3
Workload	90 hours
Module Coordinator	Name: Prof. Dr. Christoph Denkel Phone: +41 (0) 31 910 21 68 Email: christoph.denkel@bfh.ch Address: BFH – HAFL, Länggasse 85, 3052 Zollikofen
Lecturers	Further lecturers will be announced later.
Entry Requirements	Good basics in food chemistry or related fields.
Learning Outcomes and Competences	Through the module, students: • will gain basic knowledge of the ways in which protein sources can be used for human nutrition or proteins can be made available; • will know the most important processes and mechanisms behind the individual strategies and will be able to evaluate and classify them with regard to the current state of research, feasibility, and impact on sustainability in the food sector, as well as place them in an overall context; • will be able to collaborate in a transdisciplinary manner with experts and stakeholders from different sectors in projects to develop sustainable production strategies. After completing the module, students will be able to: • perform rudimentary analysis of existing processing strategies/chain and develop proposals for improvement; • develop proposals for local material cycles and production solutions, especially for urban areas.
Module Content	Today's food industry is in the mid of a broad shift towards greater sustainability, with two trends in particular standing out: (a) shifting protein supply from animal protein-based to non-animal protein-based diets (non-animal protein sources: e.g., plants, algae, bioengineered proteins), (b) recycling and/or avoiding side streams of industrial food processing. In the wake of the global interdependencies of our economic systems revealed by the COVID pandemic, local material cycles are also coming into sharper focus, and may also be more sustainable. In this module we will look at possible actions and strategies to increase sustainability in the food sector and try to develop visions for the future. In doing so, we will get to know very different approaches that can be assigned to the above-mentioned trends - both on the level of production and on the level of processing as well as on the level of consumers. The focus will be less on subject-specific and more on methodological knowledge for the development of local material cycles.

Teaching / Learning Methods	• Input presentations/contact teaching • Project-based learning • Case studies • Literature review • Individual and group exercises
Assessment of Learning Outcome	• Final written exam, closed book, 100% ➔ *Subject to change until the start of the module*
Conditions of assessment repetition	In case of failure, students can either: • Repeat the competence assessment at next re-examination period (as defined in the "Assessment of Learning Outcome"). • Retack the full module next time it is offered. **NB: in MSc CIS, failed modules can only be repeated once!**
Format	2 lessons per week over 7 weeks
Attendance & Compulsory session	Not compulsory
Timing of the module	Autumn Semester
Venue	On-site
Location	Bern
Bibliography	Relevant literature will be introduced during the module.
Language	English
Links to other modules	• MCCf036 Bridging life sciences • MCCf443 Impact Assessment
Last Update	May 2023