Module number	Module title
24 – 26 (BW)	Specialised Elective Module:
33 (EB)	Innovation & Clean Technology Entrepreneurship

Code	Semester	Number of WSH	Module offered.
ICTE	Depends on course programme	4	Changing Catalogue. Details can be found online.

Module coordinator	Tuition type		Module duration
Marcelo Machado, Ph.D. Kwantlen Polytechnic University, Canada	Seminar-style tuition with exercises		One semester

Lecturer	Compulsory/Elective	Course language
Marcelo Machado, Ph.D., Kwantlen Polytechnic University, Canada	Elective	English

Learning outcomes

The qualification goals mentioned below are subdivided into three dimensions. Each dimension corresponds to a target competence level. The following competence levels have been defined:

- Competence level 1 (awareness): cursory awareness of simple structures, only previously learned knowledge is tested

- Competence level 2 (comprehension): basic understanding of multiple structures up to deeper understanding of the relations between structures, learned knowledge is analysed, combined and applied

- Competence level 3(deep understanding and application): deeper understanding of the relations between structures up to independent transfer and extension of knowledge to new structures, learned knowledge is critically questioned and/or evaluated, interrelations between structures and their consequences are reflected and explained

The competence level of the respective qualification goal is represented by the corresponding number (1, 2 or 3) in the competence descriptions below.

On completing the module, the students will have achieved the following learning outcomes on the basis of scientific methods:

Subject skills

Students will understand the application of an array of digital technologies for environmental sustainability. (2) They will employ lean startup as a framework to optimize the launch of a new technology startup as well as both value proposition and minimum viable product assessment tools to evaluate the likelihood of technical and commercial success of a new product or service (3). Students will understand and apply environmentally sustainable business models (3). They will familiarize themselves with product development approaches, frameworks, and tools (2) and employ widely accepted financial tools to evaluate the economic feasibility of projects (3).

Method skills

Students will learn to employ various decision-making and problem-solving tools. (2). They will apply creativity enhancement frameworks and tools, especially they will employ design thinking as a framework for the innovation process (2).

Social skills

Students will work in groups and learn to divide tasks and take on individual roles. Students can make valuable contributions to the planning and decision-making processes(3). They are able to present arguments appropriate to different target groups (3).

Personal skills

Upon completion of the course, the student will acquire team-working, time-management, communication, and business presentation skills. (2).

Content

Students will learn how to spark creativity and innovation as enablers of technology entrepreneurship. They will study and practice the latest creativity enhancement approaches and apply them to the harnessing of technologies for the development of product and services with a special focus on environmental sustainability. In the execution aspect of the innovation process, students will be given the opportunity to develop an innovative cleantech solution into a new business model that can be presented to investors or senior managers.

Literature

Required reading

Will be announced in the course

Recommended reading

Will be announced in the course

Teaching and learning methods

A strong emphasis will be placed on practical exercises and activities in class that will culminate with the final innovation pitch.

Type of examination/Requirements for the award of credit points	Hands-on Project Delivered in Class (100%)
	Students will work in teams. All students in a group will receive the same mark. Team leadership, accountability and division of the workload will be the team's responsibility.
	Students are required to propose an innovative new product or service. This product or service must be technology intensive, it should be a technology-based solution related to environmental sustainability (i.e., cleantech).
	All teams start with an idea, but will have to go through all necessary steps to present it as a business case. Teams will prepare a report and a 7 minutes' presentation. The approach should be like the approach used to present a new venture idea to a group of investors.
Other information	Max. number of participants: twenty

		Registration necessary. Details can be found in ELO.
		Lecture Times:
		The class will take place **virtually via Zoom** on the following dates:
		Friday, March 24, 5:15-8:30 pm Friday, March 31, 5:15-8:30 pm Friday, April 7, 5:15-8:30 pm Friday, April 14. 5:15-8:30 pm
		The class will take place **in presence on OTH campus** on the following three weekends:
		Fri/Sat April 28/29 Fri/Sat May 5/6 Fri/Sat May 12/13
		Classes will run on Fridays from 4pm – 8pm and on Saturdays from 9 am to 12 am and from 1 pm to 4 pm.
ECTS Credits 5	**Workload** 150 hours Contact/attendance time: 60 h Additional work: 90 h	**Weighting of the grade in the overall grade** 5