Syllabus: Advanced Technology & Innovation Management (MLICS5104)

Prof. Dr. Claus Lang-Koetz
Hochschule Pforzheim / Pforzheim University

Course:	Advanced Technology & Innovation Management (MLICS5104)
Workload:	2 SWS (2 hours @45min, however held 4 hours weekly in condensed form ("fast track") from Oct. – Dec. 3 Credits
Level:	Master
Prerequisites:	Basic lecture on innovation management is recommended, but not required
Validity:	Winter term 2020/21
Lecturer:	Prof. Dr. Claus Lang-Koetz Tel. 07231 – 28-6427, Email: claus.lang-koetz@hs-pforzheim.de Consultation hour: see Link
Place and time:	Monday 15.30-18.45h, starting Oct 12, See LSF

Description

The students are taught advanced topics within technology and innovation management, the respective theoretic background, practical application and relevance for companies. The lecture is a mixture of a classical lecture by the professor, group discussions and seminar. Concepts, process and methods are taught, seminar topics are researched and presented by the students. At the end, the re results are delivered in a written seminar paper.

The students learn how an innovation management can be built up and which methods can be used for it. This comprises of activities for strategic planning, the generation of ideas, their assessment and selection, followed by their implementation into products and processes suitable for the market (see also preliminary schedule below).

A special focus is put on a strategic component (working with market and technology trends and future scenarios), the sources of innovations (taking open innovation approaches and collaboration with other organizations into account) and how to deal with ideas in the company and how to implement them (assessment and selection, technical implementation and market launch).

The course consists of lectures in order to convey concepts, processes and methods, group discussions and working independently (in groups) on case studies on innovation strategy and innovation management.

Learning objectives

Participants that successfully complete the course will

- know the basic concepts of technology & innovation management, their relevance for companies and the most important concepts, methods and process,
- know how creativity and openness for new topics and ideas on the one hand and a well-structured methodological procedure on the other hand can contribute to the implementation of successful innovations,
- have gotten insights into company topics involved into innovation management (such as sales, marketing, production, development, …) and will have learned about their perspective on innovation),

- be able to apply selected concepts and methods and know their strengths and weaknesses,
- be able to assume different perspectives on the topic in order to select suitable methods and concepts case by case.

Contribution to program goals

Goal	Contributions
The students have enlarged their knowledge of the bachelor study program concerning … - the basics of the sustainability approach including characteristics of the relevant ecologic, economic and social perspectives. - They know important fields of application from technology and society and are able to formulate questions related to a sustainable development and to establish action strategies. - They are familiar with concepts, norms and applications in the field of Life Cycle (ISO 14040ff.). - They are able to identify possible solution approaches for theoretical or practical tasks in the field of eco-balancing, to assess the relevance and to critically analyse them in future.	Learning of the principles of green and sustainable innovation Understanding of the possibilities of technology towards fulfilling needs and requirements of consumers and customer Understand how to improve sustainability performance of products, processes and services by using methods of technology and innovation management
The MLICS Master students are able to … - understand the complexity of specific scientific and/or practical tasks in the field of Life Cycle Assessment by using suitable models and concepts under consideration of given norms. - analyse them based on scientifically sound methods and - develop – based on the analysis results - independently, reflected recommendations / results on specific research questions or complex practical tasks based on empirical and/or theoretical evidences	Know how to relate influences of technology and innovation management on sustainability impact of products, processes and services
The MLICS Master students are able to … - provide the independently elaborated solution approaches to third parties in a clear, concise and and stylistically appropriate way. - consider the appropriate formal guidelines for scientific solution concepts and - argue in a convincing manner by presenting their solution approaches comprehensible, differentiated and sufficiently documented.	Learn how to communicate with technical and marketing experts Learn how to frame a complex problem and describe solution approaches in a sound way Learn how to communicate with technical and marketing experts

Teaching and learning approach

The course is organized as a lecture with seminar elements. Throughout the course special emphasis is met on discussion and interaction with the students. We will critically discuss the theory, its practical application and its implications for use in an industrial company. An emphasis will be used on case studies on innovation strategy and innovation management.

Students will have to work independently in groups with the case studies provided (with a focus on different topics to be specified in class) and present their results in class.

The materials – slides and questions & problems – will be distributed to the students on the e-learning platform.

I appreciate the interaction with students in class very much – it helps me to understand your thoughts and it helps you to better understand the topic. I invite you to actively "think along", ask questions and discuss with me in the lecture!

Preliminary Schedule

1	Ch. 1: Introduction into innovation mgt. + case study work	12.10.2020
2	Ch. 2: Technology mgt. and technologies of the future	12.10.2020
3	Ch. 3: Development of innovation strategies	19.10.2020
4	Students discuss first idea case studies / Q&A session	19.10.2020
5	Ch. 3: Development of innovation strategies	26.10.2020
6	Ch. 4: Sources of innovation	02.11.2020
7	Case studies: Presentation of first results by students	02.11.2020
8	Q&A session	09.11.2020
9	Ch. 5: Open Innovation and innovation networks	16.11.2020
10	Ch. 6: Organization of innovation	16.11.2020
11	Interactive innovation workshop	30.11.2020
12	Interactive innovation workshop	30.11.2020
13	Case studies: Presentation of final results by students	07.12.2020
14	Case studies: Presentation of final results by students	07.12.2020
15	Feedback session / paper due	14.12.2020

Grading

The grading will be based upon

- two group presentations and a written paper on a selected topic
- a short paper on the relevant findings from the case study
- active participation in class discussion

The following assessment scheme is applied:

- 'Sehr gut' represents exceptional work, far above average.
- 'Gut' represents good work, above average.
- 'Befriedigend' represents average work.
- 'Ausreichend' represents below average work with considerable shortcomings.
- And 'mangelhaft' is just work in the wrong direction or with unacceptable shortcomings.

It is my objective to grade everybody in the same, fair way. Equal performances are equally graded, no matter who the person is. Grade changes subsequently to their official publication are your disadvantage.

I am looking forward to working together with you in class!

Claus Lang-Koetz