ENGINEERING PF
SCHOOL OF ENGINEERING
Fakultät für Technik
Hochschule Pforzheim

HS PF

Syllabus

BAE4172 Sustainable Product Development 3

Prof. Dr.-Ing. Joerg Woidasky

Summer Semester 2022

Level	Bachelor	
Credits	3	
Student Contact Hours	2	
Workload	90 hours	
Prerequisites	You should have attended Sustainable Product Development 1 and 2 lectures, and have a good command over the English language.	
Time	s. LSF	
Room	s. LSF	
Start Date	s. LSF	
Lecturer(s)	**Name**	Prof. Dr.-Ing. Joerg Woidasky
	Office	T2.2.14
	Virtual Office	Virtual Office Prof. Woidasky
	Office Hours	Upon appointment in Moodle (https://lms.hs-pforz-heim.de/course/view.php?id=2054)
	Phone	07231 28-6489
	Email	Joerg.woidasky@hs-pforzheim.de

Summary

During this seminar, students use a practical business example to apply procedures for product and market development and product assessment with regard to sustainability requirements.

The company representatives will both present his or her challenges from a business point of view, and will attend the final presentation round.

Outline of the Course

- Introduction and implication of product design in businesses
- Business application of sustainability
- Creativity processes
- Innovation in SME

Course Intended Learning Outcomes and their Contribution to Program Intended Learning Outcomes / Program Goals

	Learning outcome	**Contribution**	**Assessment**
1.3	Students demonstrate key knowledge in Business Administration.	Strategic decisions, theories and instruments of International Management	Participation in class + outcome of assigment
1.4	Students demonstrate key knowledge in Economics.	Background to international economics and international trade	Participation in class + outcome of assigment
2.2	Students demonstrate the ability to use information systems effectively in real world business settings.	Research on different countries	Participation in class + outcome of assigment
3.1	Students are able to apply analytical and critical thinking skills to complex problems.	Develop own case study in international business	Class work, presentations
4.1	Students are able to develop business ethics-based strategies and are able to apply them to typical business decision-making problems	Ethical decision making in international management	Discussion in Class + outcome of assignment
5.1	Students demonstrate their ability to express complex issues in writing.	assignments	assignments
5.2	Students demonstrate their oral communication skills in presentations and lectures.	Communication of knowledge in International Management and Cross-Cultural Management	Discussion in class
6.1	Students show that they are able to work successfully in a team by performing practical tasks.	Conducting group work	Outcome of group work

Teaching and Learning Approach

Learning will be achieved through presentation and to a larger extent through group work, discussion, and additional students' presentation.

Literature and Course Materials

Course Material:

Handouts (e-learning based)

Background reading:

- Ehrlenspiel, K.: Integrierte Produktenwicklung. Hanser Verlag, München, 2009, ca. 80,-€ / 770 S.
- Engeln, W.: Methoden der Produktenwicklung. Oldenbourg, München, 2011, ca. 25,-€ /230 S.
- Schäppi, B. et al.: Handbuch Produktentwicklung. Hanser Verlag, München, 2005; ca. 150,- €/ 840 S.
- Ponn, J.; Lindemann, U.: Konzeptentwicklung und Gestaltung technischer Produkte. Springer Verlag/VDI, 2011; ca. 70,- €/ 460 S.
- Wimmer, W., et al.: Ecodesign – the competitive advantage. Springer Verlag, Dordrecht, 2011; 60,- €/ 230 S.
- Fleischer, G. (Hrsg.): Eco-Design – Effiziente Entwicklung nachhaltiger Produkte mit euro-Mat. Springer Verlag, Berlin, 2000
- Behrend, S. et al.: Umweltgerechte Produktgestaltung – ECO Design in der elektronischen Industrie. Spinger Verlag, Berlin, 1996
- VDI-Richtlinien, u. a.
  2206 (V-Modell/Mechatronik),
  2221 (Entwicklungsmethodik),
  2243 (Recyclinggerechte Produktentwicklung)

Assessment

WI Students and REM students will have different assessment methods. The WI method will be as follows:

- First Assignment will be a graded Exposé paper (project planning), weighed 1
- Second Assignment is the final oral presentation, weighed 2
- Third Assignment is the final written report (including an extended abstract in English language), weighed 3
- The final individual grade will be composed of the three assignments, and weighed according to the figures given above.

Recommendations: Observe the requirements and assessment table items in Table 1:

Table 1: Grading basis requirements for this lecture

Presentations	**formal**	**Overview over the presentation (table of contents)**
		Change of methods (e.g. video, use of board...)
		free speech
		inclusion of audience
		appropiate information on slides (little text)
		no typos/mistakes on slides
		identification of references
		summary
	contents	attractive start
		continuous line of thought and arguments
		sufficient depth of argumentation
		give quantitative information as much as possible
	Discussion	familiarity with topics
Papers	formal	pages max.announced in lecture not exceeded
		Submission due date kept
		paper printout
		identification of references (in text AND as foot/endnotes): Without references never better than "good"
		picture and table captions
		page numbers
		Introduction
		summary
		title
		date
		Identification of type of document
	contents	continuous line of thought and arguments
		sufficient depth of argumentation
		appropriate use of graphs and tables
		give quantitative information as much as possible

Grading: based on seminar / assignment results

- '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 exceptional work in the wrong direction or with unacceptable shortcomings.

Schedule

No.	NPE3
1	Introduction, Requirements
2	Business case introduction
3	Group formation, Q&A
4	Project planning and feedback
5	Scientific writing
6	Pre-Presentation Check
7	Final presentation to company partner
8	Feedback rounds

Joint groups of Resource Efficiency and Industrial Engineering Program Students will be formed. The lecture content will be a real world task from various fields, preferrably supplied by industrial companies.

Academic Integrity and Student Responsibility

Please do not hesitate in case you have any questions regarding the course. You are also welcome to make suggestions on the course.

Code of Conduct for Students

Link to the Code of Conduct for online Teaching

Teaching Philosophy

Project-based learning and teaching

Additional Information

Learning Objectives:

After completing this course students

- know the stage-gate development process
- have learned about sustainability requirements for products in practical business life
- have developed or matured a product meeting sustainability requirements
- are able to present their works results orally and in writing in English