

Part 2 „Innovation Engineering“

Instructor

Dr. Ralph Jürgen Peters

Course Description

Without innovation no enterprise will survive. Systematically tailored customer – centric innovation is prerequisite for successful innovation. The course deals with methods of such customer-centric of innovation engineering. Basing on need-finding and your brought-in ideas for new products we will develop innovations in working groups passing a whole cycle of innovation engineering. Your innovations have to be presented at the end of the course.

The theoretical Background of the course bases on Design Thinking and the Blue Ocean Strategy.

Course Goals

Upon completion of the course students should have

- understood the methods of systematic user-centric innovation engineering based on practical examples,
- widened their understanding of innovation.

Furthermore, the students will be guided in ways to increase their own creative and innovational competencies, thus helping to prepare successful innovations and establishing their role as innovators in the business world.

Course Content

- In-Class discussions
- Applying handouts to working group assignments
- Presentations

Examination

Your final grade for Innovation Engineering will be based

- on your working-groups final presentation (70 %)
- on discussion following your presentation (30%)

Your final grade for International Engineering is based on an average of the grades achieved in both parts of the course. You must pass both parts in order to receive a passing grade in this course.

Class Attendance

Attendance is required in this class.

Class Conduct

During this class, students are expected to be respectful of and courteous towards their fellow students and the teacher at all times. This means listening attentively when others are speaking or presenting, participating actively in discussions, and being a “team player” when group work is expected.

All electronic devices should be turned off during class. If it is appropriate to use your laptop or any other form of internet during the class to conduct research, the students will be informed.

Students are expected to be tolerant of their fellow students’ viewpoints and to respect differences.

Students are expected to comply with the Texas Tech Code of Student Conduct in all aspects of this class.

Tentative schedule for International Engineering 2 “Innovation Engineering”

Class Period	Topic	Content
Day 1 (3 classes)	Introduction to innovation Engineering And Understanding of Business Ideas and Need-Finding	<ul style="list-style-type: none">• Basics of Innovation• Process Overviews• Understanding of Needs:<ul style="list-style-type: none">○ Facts, Stakeholders, Strategy Canvas○ Development Fields and Road-Map○ How might we..
Day 2 (3 classes)	Observing Customers	<ul style="list-style-type: none">• Voice-of -the-Customer• Customers and Non-Customers• Customer Journey• Empathy-Map and Persona
Day 3 (3 classes)	Idea and Solution Finding	<ul style="list-style-type: none">• Creativity Methods• Six Paths of Solution Finding• Four-Actions-Map
Day 4 (3 classes)	Idea Description and Business Model Generation	<ul style="list-style-type: none">• Strategy Canvas• Strategic Pricing• Business Model Canvas
Day 5 (3 classes)	Prototyping and Testing	<ul style="list-style-type: none">• Understanding of Prototyping• Minimum Viable Product(MVP• Understanding of Testing• Developing of a MVP and the Testing
Day 6 (Examination)	Final Presentation	