19th International Project Week 2017
15th – 19th May 2017

Lecturer: Jan Berger

University/Company: bionikum:austria

Country: Austria

Biomimetics/Biomimicry in Engineering

Content:
The course consists of an introduction into biomimetics as a working principle for engineers with a focus on mechanics, fluid dynamics and design concepts. The biomimetics method will be explained by several examples from nature and technology, using the principles of bottom up and top down approaches. Besides lecturing the basics, teams with different backgrounds (if possible) will be formed. These teams get the task to start a project in the field of biomimetics. The goal of this project is the creation of a biomimetic idea in the form of a model. These ideas can be about optimization, product design, ... or displaying a natural principle. The course aims at a change from classical engineering points of view to a more creative based view to solve different kinds of problems in an innovative and efficient environment by using nature inspired approaches.

Methods:
- Discussion
- Presentations via Power Point, Video
- Field trip on campus to show natural approaches
- Group work
- Use the biomimetic approach to create a model out of own ideas

Competences and skills to be acquired:
- Beginner level of engineering methods
- Presenting skills (sketches, own ideas, verbal communication)
- Teamwork, creativity and the will to exchange ideas
- Basic interest in philosophy and naturalism

Prerequisites:
- Pen, paper, glue
- Simple maths and physics are required

Language of instruction: English

Recommended for: Engineering