Biophysics of Hearing and Seeing

Code 8812874268

ECTS credits 4

Attendance time 3

Language of instruction English

Duration 1 Semester Semester

Cycle irregular

Coordinator Dean of Physics Studies

Instructor(s) Prof. Heinrich Hoerber

Allocation of study programmes
- Physics M.Sc., elective module, 1st or 2nd semester
- Wirtschaftsphysik M.Sc., elective module, 1st – 3rd semester

Recommended prerequisites None

Learning objectives The course "Biophysics of Hearing and Seeing" will provide a basic understanding of these senses with respect to their anatomy and physiology. In comparison with recent technical developments of optical and acoustic sensor systems, the physical principles to characterize the performance of these senses will be introduced.

Syllabus
- Evolution of seeing
- New developments in imaging and image processing techniques
- Anatomy and Physiology of the Eye
- Comparison between natural and artificial systems
- Introduction to Acoustic
- Anatomy and Physiology of the Ear
• Comparison between natural and artificial systems

**Literature**

- The Evolution of the Eye, 8.10.2015, Georg Glaeser und Hannes F. Paulus, Springer

**Teaching and learning methods**

Lecture with exercises, block course

**Workload**

- 60 hours lecture with exercises (attendance time)
- 60 hours self-study and exam preparation
- Total: 120 hours

**Assessment**

The grade of the module will be the grade of the oral exam. No prerequisites are necessary for exam registration.

**Grading procedure**

The grade of the module will be the grade of the exam.

**Basis for**

Research in the field of Biophysics