## Notes on the module handbook of the department Biology

The below displayed informations on the courses of study, modules and courses of the department of Biology are still under construction. Till this process will be finished please use our module handbooks on

https://www.bio.uni-kl.de/studium-lehre/studiengaenge/ (https://www.bio.uni-kl.de/studium-lehre/studiengaenge/)

# Module BIO-TM1-4_15-M-5

## Theoretical Module 1-4: Lecture and Reading Course - Neural Plasticity (M, 3.0 LP)

### Module Identification

| Module Number | Module Name | CP (Effort) |
|---|---|---|
| **BIO-TM1-4_15-M-5** | *Theoretical Module 1-4: Lecture and Reading Course - Neural Plasticity* | 3.0 CP (90 h) |

### Basedata

| | |
|---|---|
| **CP, Effort** | 3.0 CP = 90 h |
| **Position of the semester** | 1 Sem. in SuSe |
| **Level** | [5] Master (Entry Level) |
| **Language** | [EN] English |
| **Module Manager** | Friauf, Eckhard, Prof. Dr. (PROF \| DEPT: BIO) (/staff/90/) |
| **Lecturers** | Friauf, Eckhard, Prof. Dr. (PROF \| DEPT: BIO) (/staff/90/) |
| **Area of study** | [BIO-TPH] Animal Physiology |
| **Reference course of study** | [BIO-88.Z10-SG] M.Sc. Biology (/mhb/FB-BIO/cos-582/) |
| **Livecycle-State** | [NORM] Active |

### Courses

| Type/SWS | Course Number | Choice in Module-Part | SL | PL | CP | Sem. |
|---|---|---|---|---|---|---|
| S | **BIO-TPH-02-K-5** (/mhb/courses/BIO-TPH-02-K-5/) | P | TEILN | PL1 | 3.0 | SuSe |

- About **[BIO-TPH-02-K-5]**: Title: "Lecture and Reading Course - Neural Plasticity"; Presence-Time: 20 h; Self-Study: 70 h

- About **[BIO-TPH-02-K-5]**: The study achievement **[TEILN] continuous and active participation in the courses** must be obtained.

## Examination achievement PL1

- Form of examination: **written exam (Klausur) (60-90 Min.)**
- Examination Frequency: each winter semester

## Evaluation of grades

The grade of the module examination is also the module grade.

## Contents

**From [BIO-TPH-02-K-5] Lecture and Reading Course - Neural Plasticity** (/mhb/courses/BIO-TPH-02-K-5/)**:**

− Students will hear introductory lectures, read selected textbook chapters at an advanced level (e.g. Bear/Connors Paradiso: Neuroscience, Exploring the Brain; chapter "Molecular Mechanisms of Learning and Memory") and reviews as well as original research papers focussing on mechanisms of neural plasticity. Each day, the literature will be discussed amongst the group and with the lecturer.

## Competencies / intended learning achievements

☒**Professional competence**:

− Overview of the principles underlying several forms neuronal plasticity (habituation, sensitization, classical conditioning, long-term depression, long-term potentiation).

− Students will evaluate, discuss and compare a variety of experimental strategies, model systems and experimental methods used to advance our understanding of the molecular, cellular and microcircuital aspects of neuronal plasticity.

− Topics will be explored both in breath and in depth using a combination of text books, reviews and original research papers.

− Students will learn to critically evaluate scientific literature.

☐**Methodological competence**: ---

☒**Social competence**:

− Learning to discuss scientific issues with other students and the teacher and explaining complex concepts.

− Learning to simplify complicated topics and ideas and to identify their key aspects.

☒**Self-competence**:

− Acquiring scientific expertise by self-responsible reading of English research literature, and identifying points that require further explanation.

− Critical evaluation of current research data.

Intended Learning Outcomes:

On successfully completing the module students will be able to...

− improve their knowledge in the field of neural plasticity.

− read and understand specialist English literature (research papers and reviews).

− summarize and discuss orally research papers.

## Literature

**From [BIO-TPH-02-K-5] Lecture and Reading Course - Neural Plasticity** (/mhb/courses/BIO-TPH-02-K-5/)**:**

1. Bear/Connors/Paradiso: Neuroscience: Exploring the Brain
2. Kandel/Schwartz/Jessell/Siegelbaum/Hudspeth: Principles of Neural Science
3. Kettenmann/Ransom: Neuroglia

## Materials

Will be provided at or prior to the beginning of the course

## Requirements for attendance (informal)

Bachelor-grade knowledge in molecular biology, genetics, animal physiology, neurobiology

## Requirements for attendance (formal)

## References to Module / Module Number [BIO-TM1-4_15-M-5]

| Course of Study | Section | Choice/Obligation |
|---|---|---|
| [BIO-88.Z10-SG] M.Sc. Biology (/mhb/FB-BIO/cos-582/) | Theoretical Modules 1-4: Lectures and Reading Courses | [P/WP] Compulsory or compulsory elective (depending on the chosen specialization / study profile) |