Module Name
Lecture Advanced Biochemistry and Molecular Medicine

Type of Module	**Module Code**
o Basic Module	Biochemistry Lecture

Identification Number	**Workload**	**Credit Points**	**Term**	**Offered Every**	**Start**	**Duration**
MN-B-B 1	180 h	6 CP	1st term of studying	Winter term	Winter term only	1 term

1	**Course Types**	**Contact Time**	**Private Study**
	Lecture	49 h	131 h

2 Module Objectives and Skills to be Acquired

Students who successfully completed this module

- have acquired an understanding of advanced concepts and technologies related to the molecular basis of biochemical principles.
- possess the ability to develop hypotheses through problem analysis and will be able to develop experiments to test these hypotheses.
- have acquired a knowledge of important concepts in biochemistry such as reaction mechanisms, molecular basis of diseases, development and use of model systems and key technologies.

3 Module Content

The lecture series is organized into 6 blocks (see below) consisting of 4-5 lectures with a review tutorial at the end of each block.

- Structure and proteomics
- Extracellular matrix and transport
- Metabolism and hereditary disease
- Mitochondria and death, immunity, cancer
- Regulation and proteostasis
- Engineering and tools

We bring together a wide range of local researchers to give a broad overview of advanced biochemistry and molecular medicine topics, spike curiosity regarding new areas, and lead to research projects.

4 Teaching Methods

- Lecture (incl. e.g. audience response systems and concept mapping)

5 Prerequisites (for the Module)

Enrollment in one of the Master's of Science degree courses of the Department of Biology or in the Master's degree course "Biochemistry"

Additional academic requirements

The knowledge of basic and specific biochemistry, cell biology and genetics at the level of general biochemistry/biology text books (*e.g.* Stryer/Alberts) is required.

6 Type of Examination

Two hours written examination about topics of the lectures (100 % of the total module mark)

7	**Credits Awarded** Written examination at least “sufficient”
8	**Compatibility with other Curricula*** Obligatory lecture module in the Master’s degree course “Biochemistry”
9	**Proportion of Final Grade** 7.5 %
10	**Module Coordinator** Dr. Jakob Suckale, phone 470-3536, e-mail: jsuckale@uni-koeln.de
11	**Further Information** **Participating faculty:** Prof. Dr. U. Baumann, Prof. Dr. E. Behrmann, Prof. Dr. T. Benzing, Prof. Dr. U. Brandt, Prof. Dr. B. Brachvogel, Dr. M. Escobar, Prof. Dr. M. Gather, Prof. Dr. N. Kononenko, Prof. Dr. S. Kath-Schorr, Prof. Dr. M. Krüger, Dr. P. Krüger, Prof. Dr. T. Langer, Prof. Dr. M Lemberg, Dr. Elisa Motori, Prof. Dr. I. Neundorf, apl. Prof. Dr. K. Niefind, Prof. Dr. M. Pasparakis, Prof. Dr. J. Riemer, Prof. Dr. G. Schwarz, Dr. Katrin Ulrich, Prof. Dr. H. Walczak, Prof. Dr. B. Wirth **Literature:** • Information material will be given via ILIAS. **General time schedule:** Weeks 1-14: Tue. and Fri. from 8:15 to 9:45 am; Week 15 (Mon.-Fri). Preparation for the written examination The series starts on 8 Oct 2024. **Written examination:** The preliminary examination dates are 11 Feb and 28 March 2025.