Module Name Advanced Biochemistry and Molecular Medicine					
Identification Number	**Workload**	**Credit Points**	**Term**	**Offered Every**	**Duration**
MN-BC-ABMM	180 h	6 CP	1st or 2nd	winter term	15 weeks

1	**Type of lessons**	**Contact Times**	**Self-Study Times**	**Group Size***
	Lectures	49 h	131 h	approx. 50-70

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 Selected content of the module

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

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

4 Teaching Methods

Research-oriented, interactive lectures (incl. e.g. audience response systems and concept mapping)

5 Prerequisites

Enrolment in the Master´s degree course “Biochemistry and Molecular Medicine” or in the Master´s degree courses of the Department of Biology

Additional academic requirements

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

6 Type of Examination

Two hours written examination (100% of the total mark). All lectures have a first, introductory part relevant for the exam and a second, scientific part not relevant for the exam. The exam will have one question per lecture and you can select a subset.

7 Credits Awarded

Written examination at least “sufficient”

8	**Compatibility with other Curricula*** Master's degree courses of the Department of Biology
9	**Proportion of Final Grade** 12%
10	**Module Coordinator** Dr. Jakob Suckale, phone 470-90414, 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. B. Brachvogel, Dr. M. Escobar, 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. Carien Niessen, Prof. Dr. M. Pasparakis, Prof. Dr. J. Riemer, Prof. Dr. G. Schwarz, Dr. J. Suckale, Prof. Dr. H. Walczak **Literature:** • Information material will be given via ILIAS. **General time schedule:** Weeks 1-13: Tue. and Fri. from 8:15 to 9:45AM in the Biocenter ground floor lecture hall (0.024); Week 14-15 (Mon.-Fri) preparation for the written examination.

* Depending on how many students from other subject areas (and if indicated also from other master´s degree courses, see 5) choose this module.