

Module Name Lecture Advanced Biochemistry and Molecular Medicine						
Type of Module ○ Basic Module				Module Code Biochemistry Lecture		
Identification Number MN-B-B 1	Workload 180 h	Credit Points 6 CP	Term 1 st term of studying	Offered Every Winter term	Start Winter term only	Duration 1 term
1	Course Types Lecture		Contact Time 49 h		Private Study 131 h	
2	Module Objectives and Skills to be Acquired Students who successfully completed this module <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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	<p>Credits Awarded Written examination at least “sufficient”</p>
8	<p>Compatibility with other Curricula* Obligatory lecture module in the Master’s degree course “Biochemistry”</p>
9	<p>Proportion of Final Grade 7.5 %</p>
10	<p>Module Coordinator Dr. Jakob Suckale, phone 470-3536, e-mail: jsuckale@uni-koeln.de</p>
11	<p>Further Information</p> <p>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</p> <p>Literature:</p> <ul style="list-style-type: none"> • Information material will be given via ILIAS. <p>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</p> <p>Written examination: February 09, 2026, second/supplementary examination March 27, 2026, third/supplementary examination September 04, 2026; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.</p>