Identific			iming in	Health and	d Disease	es (Trifuno	vic)		
Identification Number		Workload	Credit Point		Term		Offered Every		Duration
MN-BC-BSM04		360 Hours	12 CP		1 st or 2 nd term		Winter, 2 nd half		7 weeks
1	Course Types		Contact Times Self		Self-Stu	Study Times G		Group Size	
	a) Lecture		20 h		80 h		max. 10		
	b) Practical/Lab		150 h		50 h		max 1		
	c) Sem	c) Seminar		12 h 48 h		max		10	
2	 Module Objectives and Skills to be Acquired Students who successfully completed this module have acquired detailed knowledge on important metabolic concepts in a variety of health and diseases states. have acquired experimental skills in state-of-the art methodologies in cell biology, biochemistry and molecular biology and can independently carry out small scientific projects related to the topic of the module. have the ability to process, quantify and evaluate their experimental results. have learned how to present research results in oral and written form and to critically discuss scientific publications related to the topic of the module on a professional level. are able to transfer skills acquired in this module to other fields of biochemistry 								
	 In this course we will gain insight into the fundamental principles of metabolic concepts in different health and diseases states and especially emphasize how these processes can be studied using biochemical and molecular biological techniques. The specific areas that will be covered are: Compartmentalization of mitochondrial metabolism in the brain Metabolic plasticity of T cell immunity Reprogramming of mitochondrial metabolism in macrophages to drive the wound healing response Immuno-metabolic pathways involved in human diseases Mitochondria and cancer Metabolic (re)programming of the heart: during development and disease Inflammatory cell death in metabolic diseases linked to obesity Mitochondrial metabolism in the defense against microbes Metabolic Homeostasis during stress conditions Mitochondrial control of metabolism 								
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	The final examination consists of three parts: Two hours written examination about topics of the lectures (50% of the total module mark), oral presentation (25% of the total module mark) and seminar paper (25% of the total module mark)						
7	Credits Awarded						
	Regular and active participation;						
	Each examination part at least "sufficient" (see appendix of the examination regulations for details)						
8	Compatibility with other Curricula						
	-						
9	Proportion of Final Grade						
10	Module Coordinator						
	Prof. Dr. Aleksandra Trifunovic, phone 478-84291, e-mail: aleksandra.trifunovic@uk-koeln.de						
	Dr. Alexandra Kukat, phone 478-84296, e-mail: <u>akukat@uni-koeln.de</u>						
11	Further Information						
	Subject module of the Master's degree course "Biological Sciences", Focus of research: (M) Molecular Biology: Molecular mechanisms of metabolic reprograming.						
	Participating faculty: Prof. Dr. M. Bergami,/Dr. E. Motori, Dr. M. Corrado, Prof. Dr. S. Eming/Dr. S. Willenborg, Prof. Dr. M Fabri, Prof. Dr. C. Frezza, Prof. Dr. H. Kashkar/Dr. L Schiffmann, Dr. L. Kurian, Dr. M. Peltzer, Dr. L. Pernas, Dr. G. Storelli, Prof. Dr. A. Trifunovic						
	Literature: A list of literature that should be used for preparation to the module can be obtained from http://www.genetik.uni-koeln.de/Teaching.html under "Advanced undergraduate courses".						
	General time schedule: Week 1-6 (MonFri.): Lectures, practical/lab, writing seminar paper and preparation for the oral presentation (held at the end of week 6); Week 7 (MonFri): Preparation for the written examination						
	Note: The module contains hand-on laboratory work conducted individually and is taught in research laboratories. The module does not contain computer-based practicals/research as a main component.						

* 10 students from the Master's degree course "Biochemistry and Molecular Medicine".