Peptide Biochemistry						
Identification number		Workload	Credit points	Term of studying	Frequency of occurence	Duration
MN-B-SM (Z 4)		360 h	12 CP	1st or 2nd term of studying	Summer term, 2nd half	7 weeks
1	Type of lessons		Contact times	Self-study times	Intended group size*	
	a) Lectures		25 h	50 h	max. 10	
	b) Practical/Lab		154 h	103 h	max. 2	
	c) Seminar		4 h	24 h	max. 4	
2	Aims of the module and acquired skills Students who successfully completed this module … • have a general understanding about the recent developments in the field of peptides including synthetic methodologies, biology of peptides and the application of peptides and peptide conjugates in medicinal or analytical context. • have acquired working skills to tackle the synthesis of peptides and peptide libraries, to apply deconvolution techniques, and to investigate peptide structure by biophysical methods. • can independently carry out small scientific projects related to the topic of the module. • 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 the skills acquired in this module to other fields of biochemistry.					
3	Contents of the module • Synthesis of peptides and proteins (i.e. solid phase peptide synthesis, native chemical ligation, Staudinger ligation, etc.) • Peptide modifications (i.e. mimetics, labeling strategies, cyclic peptides) • Peptide libraries and arrays, deconvolution • Analytical methods (mass spectrometry, Edman degradation, fluorescence techniques, CD spectroscopy) • Antimicrobial peptides, peptide hormones, cell-penetrating peptides, peptide targeting sequences • Peptides in diagnostics and therapy					
4	Teaching/Learning methods Lectures; Practical/Lab (Project work); Seminar; Computer exercises, Guidance to independent research; Training on presentation techniques in oral and written form					
5	Requirements for participation Enrollment in the Master´s degree course “Biological Sciences”, in the Master’s degree course “Biochemistry” or in the Master´s degree course “Chemistry”					

6	Type of module examinations The final examination consists of three parts: Two hours written examination about topics of the lectures and the practical/lab part (50 % of the total module mark), oral presentation (25 % of the total module mark) and seminar paper (25 % of the total module mark)
7	Requisites for the allocation of credits Regular and active participation; Each examination part at least "sufficient" (see appendix of the examination regulations for details)
8	Compatibility with other Curricula Subject module in the Master´s degree course "Biochemistry", combined advanced and experimental module in the Master's degree course "Chemistry"
9	Significance of the module mark for the overall grade In the Master´s degree course "Biological Sciences": 15 % of the overall grade (see also appendix of the examination regulations)
10	Module coordinator Prof. Dr. Ines Neundorf, phone 470-8847, e-mail: ines.neundorf@uni-koeln.de
11	Additional information Subject module of the Master´s degree course "Biological Sciences" Participating faculty: Prof. Dr. I. Neundorf Literature: • Information about textbooks and other reading material will be given on the ILIAS representation of the course (https://www.ilias.uni-koeln.de/ilias/goto_uk_cat_2815610.html) General time schedule: Week 1-5 (Mon.-Fri.): Lectures, practical/lab, preparation for the seminar talk (topic and date will be arranged individually); Week 6 (Mon.-Fri.): Writing seminar paper; Week 7 (Mon.-Fri.): Preparation for the written examination Note: The module contains hand-on laboratory work conducted by small groups of students and individually and is taught in course rooms and research laboratories. The module does not contain computer-based practicals/ research as a main component. Introduction to the module: June 07, 2021 at 8:30 a.m., seminar room first floor, Zülpicher Str. 47a (building 301, COMB) or online (in this case, further information/link will be sent to your Smail-Account) for preparation to the module before this introduction see ILIAS link under literature. Written examination: July 23, 2021, second/supplementary examination August 27, 2021; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.

* 2 students from the Master´s degree course "Biological Sciences", 4 students from the Master's degree course "Biochemistry" and 4 students from the Master´s degree course "Chemistry".

Corona note! Depending on the Corona situation during the summer term, practical work may be skipped either totally or in part. In this case, some or all practical parts will be replaced by adequate alternatives so that (i) the workload and (ii) the principle content of the modules remained unchanged.