

Module Name Functional Genomics						
Identification Number	Workload	Credit Points	Term	Offered Every	Start	Duration
MN-BC-GSM03	360 h	12 CP	1 st or 2 nd term of studying	Summer term	summer term only	7 weeks
1	Course Types a) Lectures b) Practical/Lab c) Seminar		Contact Time 22 h 150 h 8 h	Private Study 50 h 100 h 30 h	Planned Group Size* max. 12 max. 2 max. 2	
2	Module Objectives and Skills to be Acquired Students who successfully completed this module <ul style="list-style-type: none">• genome regulation in physiology and disease.• have acquired experimental skills in state-of-the art methods in genomics, cell biology and molecular biology and 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 skills acquired in this module to other fields of biology.					
3	Module Content <ul style="list-style-type: none">• Regulation of nuclear and chromatin architecture• Epigenetic regulation of gene expression• Principles of transcriptional regulation• Identification of longevity genes• Next generation sequencing methods for genomic analyses• Genetic screening• Genetic reprogramming• Chromatin immunoprecipitation• Cloning methods• Cell biology, immunological staining methods, microscopy• DNA repair					
4	Teaching Methods Lectures; Practical/Lab (Project work); Seminar; Guidance to independent research; Training on presentation techniques in oral and written form					
5	Prerequisites (for the Module) Enrollment in the Master’s degree course “Biological Sciences” or in the Master’s degree course “Biochemistry”. Additional academic requirements For Students of Master “Biological Sciences”: Previous attendance of the lecture module “Principles of Molecular Genetics, Development and Aging (A/D/G)”.					

6	Type of Examination The final examination consists of two parts Type 1: written examination on topics of lectures, seminars and the practical/lab part (1 hour; 50 % of the total module mark), oral presentation (20-30 min; 50 % of the total module mark)
7	Credits Awarded Regular and active participation; Passed seminar paper; Each examination part at least "sufficient" (see appendix of the examination regulations for details)
8	Compatibility with other Curricula* Biological subject module in the Master's degree course "Biological Sciences"
9	Proportion of Final Grade In the Master's degree course "Biochemistry": 10 % of the overall grade (see also appendix of the examination regulations)
10	Module Coordinator Dr. Joris Deelen, phone: +49 (0)221 379 70 480, e-mail: Joris.Deelen@age.mpg.de
11	Further Information Participating faculty: Dr. J. Deelen, Dr. S. Panier, Dr. H. Bazzi, Dr. L. Kurian, Dr. S. Steculorum, Dr. I. Huppertz 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 (Mon.-Fri.): Introduction to Functional Genomics (lectures), safety lecture and lab projects; Week 2-6 (Mon.-Fri.): Lectures, seminars and lab projects; Week 7 (Mon.-Fri.): 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. Introduction to the module: May 22, 2022 at 10:00 a.m., MPI Age, Joseph-Stelzmann-Str. 9 b, 50931 Köln, seminar room 1 (ground floor) 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. Oral or Written examination: July 14, 2023, second/supplementary examination August 25, 2022; the latter date may vary if students and module coordinator agree. More details will be given at the beginning of the module.

* 10 students from the Master's degree course "Biological Sciences" and 2 students from the Master's degree course "Biochemistry".