

Program of Studies:	Master Program Bioinformatics
Name of the module:	Special-topic Lecture Biosciences: Introduction in the Principles of Epigenetics and Epigenomics
Abbreviation:	B-M-5
Modules:	Lecture
Semester:	1 st – 3 rd , each summer semester
Responsible lecturer:	Prof. Dr. Jörn Walter
Lecturer:	Prof. Dr. Jörn Walter, Abdulrahman Salhab
Language:	English
Level of the unit/ Mandatory or not :	Graduate course / mandatory elective
Course type/weekly hours:	2 SWS
Total workload:	90 h = 30 h of classes and 60 h private study
Credits:	3
Entrance requirements:	Open for all participants with good knowledge in molecular genetics
Aims/Competences to be developed:	Overview on epigenetics, epigenomics and related diseases
Content:	The lectures provide an overview of epigenetic concepts and their relevance for human biology. Following an introduction into basic mechanisms and enzymologies of epigenetic control we will discuss the developmental aspects of epigenetic modifications, particularly their importance for cell fate maintenance and cell function. Following a summary of disease related aspects we will briefly discuss modern epigenomic mapping technologies and finally the basic principles of epigenetic data production, data management and data interpretation.
Assessment/Exams:	Written exam
Literature:	"Epigenetics", by David Allis, Marie-Laure Caparros, Thomas Jenuwein, Danny Reinberg, Monika Lachlan (2015), "Molekulare Genetik" (Hrsg.: Alfred Nordheim, Rolf Knippers, 2015), "Cancer Genetics and Epigenetics: Two Sides of the Same Coin?" Review by You & Jones (2012)

Fig. 3 1