Module variant to: Topics in Molecular- and Cellular Biology

Module: Evolutionary Medicine	
University/Department/Teaching Unit: Freie Universität Berlin/Department of Biology, Chemistry, Pharmacy/Biology	
Module coordinator: Ulrich Steiner, Sophie Armitage, Peter Hammerstein, Dino McMahon, Jessica Metcalfe, Michael Hochberg, Charlotte Rafaluk-Mohr, Katja Nowick, Jens Rolff, Marcus Fulde, Benedikt Kaufert	
Prerequisites: Deeper knowledge in the life sciences, primarily acquired through modules attended in life sciences and related fields during the first six semesters, or acquired during a completed bachelor degree.	
Learning objectives: Students will gain insights into evolutionary theoretic concepts and their application in modern medicine to understand health and disease. They will apply fundamental evolutionary concepts across disciplines and derive understanding why such cross disciplinary approach generates deeper knowledge in medicine.	
Content: Deeper insights into application of evolutionary theories in modern medicine through applied examples. Topics covered, include viral evolution, evolution of antibiotic resistance, evolutionary roots of lifestyle diseases, evolution of sexual differentiation, aging, and immunity and evolutionary arms races. The adjacent seminar trains to understand topic scpecific scientific publications, to discuss those topics in the context of the current scientific understanding and to present them in a scientific manner. Discussion of selected scientific articles, presentation of ideas, hypotheses and results.	

Modes of instruction	**Contact hours** (hours per week during the semester)	**Types of active participation**	**Work load** (in hours)	
Lecture (V)	2	–	Class attendance (lecture) Preparation, before and after (lecture)	30 15
Seminar (S)	1	Presentation and discussion	Class attendance (seminar) Preparation, before and after (seminar) Exam preparation and exam	15 15 75
Module assessment		Written exam (60 minutes), wholly or partially in multiple-choice format; can also be carried out electronically or written report on research results (approx. 10 pages) or examination colloquium (approx. 20 minutes)		
Language		English		
Regular attendance required		Seminar: yes, lecture: attendance recommended		
Total workload		150 hours		5 credit points
Duration		one semester		
Frequency		irregular		
Applicability		Master's degree program M.Sc. Biology		

Utilization in the following specializations (decision by the examining board):

Biodiversity, Evolution and Ecology	x
Genetics and Genomics	
Microbiology	x
Molecular- and Cellular Biology	x
Molecular Plant Sciences	
Neurobiology	
Biology	x