

Title of Course: Advanced Practical in the Focal Point Programme "Molecular Medicine" <i>"Molecular mechanisms in lung and heart physiology"</i>					
Type: Mandatory practical with choices		185881	Workload 240 h	Intended for Semester 2	Duration 0.5 Semester
1	Module: Advanced Practical with seminar		Presence hours per course a) 112 h b) 14 h	Self-study 114 h	Credit Points 8 CP
2	Teaching Methods: a) Practical b) Seminar A five-week all-day practical lab course with a compulsory seminar presentation. Please note: A second Advanced Practical will have to be performed in the same semester to earn the full complement credits				
3	Group Size: Individual training				
4	Learning/Course Objectives: Students will acquire experimental skills in animal physiology of the cardio-pulmonary system. They learn to evaluate and document experimental data in a concise but sufficiently detailed protocol. The results will be presented by the student in the lab seminar typically in an oral presentation, thereby practicing how to present experimental data to an audience.				
5	Contents: The module focuses on molecular mechanisms in cardio-pulmonary physiology. The research project will include some of the following techniques: primary cell culture, isolation of organs and blood vessels, broncholarveolar lavage, generation of paraffin and cryosections, histological stainings, functional measurements (i.e. isometric force measurements, precision-cut lung slices, isolated perfused lung, in vivo heart catheter measurements or resistance and compliance measurement of airways), animal disease models, data analysis Seminar: Weekly discussion of ongoing research projects and results.				
6	Degree Courses: Master of Science Biochemistry;				
7	Prerequisite(s): The four Modular Advanced Practicals of the first Master semester have to be passed. Knowledge of basic methods in cell physiology and willingness to work with mice.				
8	Method(s) of Examination: Assessment of active and successful participation in the practical (50%) and a written project report (40%) and a seminar presentation of experimental results (10%).				
9	Requirements for Acquiring Credit Points: Achievement of at least the mark "sufficient" regarding the above modes of examination.				
10	Significance for Overall Grade: Weighted according to the 16 CPs for two practical courses the average grade of the two practicals provides 13.3% of the overall grade				
11	Frequency: Every summer semester				
12	Supervisor(s): Prof. Dr. med. Daniela Wenzel and teaching assistants Tel: 0234 32 29100 E-Mail: daniela.wenzel@ruhr-uni-bochum.de				
13	Additional Information:				