

# **RheinAhrCampus Remagen**

Dr. F. Berenice Baez Revueltas

## **Hierarchical Regression Modeling**

How to fit regression models for multilevel data.

### **Topics of the Lecture**

Concepts and methods from basic probability and statistics (review)

Single level regression: Linear Regression, Logistic Regression, Generalized Linear Models (review)

How to work with regression inferences

Multilevel models:

- Multilevel structures
- Multilevel linear regression
- Multilevel logistic regression
- Multilevel generalized linear models

Fitting multilevel models (programming in R)

Model understanding and model checking for multilevel models

### **Text**

*Gelman, Andrew and Hill, Jennifer*

Data Analysis Using Regression and Multilevel/Hierarchical Models  
Cambridge University Press

### **Prerequisites**

Statistics I and Statistics II

### **Tests**

Written, oral or project examinations