

Biostatistics	
Course Code	DIC 8012
Credits	Three (lectures: 3 hr per week)
Organizers	Dr. Pei-Jen Lee Shaner
Lecturer	Dr. Pei-Jen Lee Shaner
Time	14:20-17:20, Thursday
Place	Room 802, NTNU Library
Prerequisites	None
Description	This course aims to provide students tools for analyzing biological and ecological datasets. After this course, the students should have a firm understanding of basic statistical methodology used in biology.
Objectives	<ol style="list-style-type: none"> 1. Lectures are designed to provide students statistical tools for analyzing biological and ecological datasets. 2. Students will apply the methodologies learned in lectures to their own research projects.
Grade	Homework 60%; Final project 40%
Reference	The Analysis of Biological Data, 2 nd Edition, by Michael C Whitlock and Dolph Schluter, Roberts and Company Publishers, Greenwood Village, Colorado, USA

Week	Date	Topic
Week 1	9/14	A brief introduction to statistics and R
Week 2	9/21	Displaying and describing data
Week 3	9/28	Probability distribution
Week 4	10/5	Hypothesis testing
Week 5	10/12	Categorical data analysis
Week 6	10/19	General linear model I
Week 7	10/26	General linear model II (Homework 1)
Week 8	11/2	Correlation and ANCOVA
Week 9	11/9	Linear regression
Week 10	11/16	Generalized linear model (Homework 2)
Week 11	11/23	Classic non-parametric statistics
Week 12	11/30	Computer intensive methods I
Week 13	12/7	Computer intensive methods II (Homework 3)
Week 14	12/14	Multivariate statistics I
Week 15	12/21	Multivariate statistics II
Week 16	12/28	Experimental design
Week 17	1/4	Model selection
Week 18	1/11	Independent project presentation