

Practical Bioinformatics Module V: Gene Mapping (399671_5)

15.9.-6.10.2008 Mon, (Tue,) Wed at 9.15-12.00

Computer class room (P-floor), Biomedicum, Meilahti campus, and class 170 and 138, P-floor, Info building, Viikki campus (the place is stated separately for each day in the schedule below)

This course provides basic understanding of gene mapping methods. Each lesson is accompanied with hands-on computer exercises. The topics that will be covered are study design and statistical power estimation, phenotype data – data integrity and statistical analysis, genotype data – data checking (Mendelian errors, Hardy-Weinberg equilibrium), linkage analysis of dichotomous and quantitative variables, haplotype analyses and genetic association analyses.

The course language is English.

Tentative schedule:

Date	Time	Topics (L=lecture, E=exercises)
15.9. Monday Viikki Class 170	9-12	L: Introduction. Gene mapping approaches. Getting started. E: Pedigree data format & checking for Mendelian inconsistencies with PedCheck
16.9. Tuesday Biomedicum	9-12	L: Population Genetics: allele and genotype frequencies, HWE E: Testing HWE with PEDSTATS
17.9. Wednesday Biomedicum	9-12	L: Basics of parametric and non-parametric linkage analysis E: Linkage analyses with MERLIN
22.9. Monday Viikki Class 138	9-12	L: Basics of quantitative genetics E: Variance-components linkage analyses with MERLIN
24.9. Wednesday Biomedicum	9-12	L: Association mapping I: Linkage disequilibrium and association mapping in unrelated individuals E: Haploview
29.9. Monday Biomedicum	9-12	L: Haplotype analyses E: PHASE, MERLIN
1.10. Wednesday Viikki Class 138	10-12 Note!	L: Overview and study design E: Genetic power calculator
6.10. Monday Biomedicum	Note time: 11-14	EXAM.