

**SYLLABUS**  
**QUANTITATIVE GENETICS OF SELECTION RESPONSE:**

Wageningen University, 7 – 11 June 2010.

**INSTRUCTOR:**

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**IN CLASS PROBLEMS**

We will be doing short in-class exercises throughout the course. Students will be encouraged to work in small groups on these, and to use R.

**NOTES:**

The bulk of the notes are draft chapters from Selection and Evolution of Quantitative Traits (Walsh and Lynch). “Chapter xx” refers to these

A few of the introductory lectures also have additional short notes, “Lecture xx” refers to these.

**LECTURE SCHEDULE**

**Monday, 7 June**

9:00 – 10:00 am

10:30 11:30 am Welcome, Basics of Population and Quantitative Genetics

**Readings:** Lecture 1 notes

11:30 11:45 am Break

11:45 12:30 Basics of Population and Quantitative Genetics (cont)

**Readings:** Lecture 1 notes

12:30 1:30 pm Lunch

1:30 3:00 pm Population Genetics of selection

**Readings:** Chapter 7

3:00 3:30 pm Break

3:30 5:00 pm Introduction to linear models and linear algebra

**Readings:** Lecture 2 notes, R notes

## **Tuesday, 8 June**

9:00 – 10:30 am	Detecting Molecular Signatures of Selection <b>Readings:</b> Lecture 8 notes.
10:30 – 11:00 am	Break
11:00 – 12:30	The univariate Breeder's Equation: Changes in means <b>Readings:</b> Chapter 10
12:30 – 1:30 pm	Lunch
1:30 – 3:00 pm	Transient changes in the Mean, Changes in the variance <b>Readings:</b> Chapters 11, 13
3:00 – 3:30 pm	Break
3:30 – 5:00 pm	The Infinitesimal model and its extensions <b>Readings:</b> Chapter 24

## **Wednesday, 9 June**

9:00 – 10:30 am	Long-term selection response <b>Readings:</b> Chapters 25, 26
10:30 – 11:00 am	Break
11:00 – 12:30	Measuring univariate selection <b>Readings:</b> Chapter 28
12:30 – 1:30 pm	Lunch
1:30 – 3:00 pm	Multivariate Selection <b>Readings:</b> Chapter 30
3:00 – 3:30 pm	Break
3:30 – 5:00 pm	Review and Discussions, Problems

## **Thursday, 10 February**

9:00 – 10:30 am	Response in G <b>Readings:</b> Chapter 31
12:30 – 1:30 pm	Lunch
1:30 – 3:00 pm	Index selection theory I <b>Readings:</b> Chapter 33
3:00 – 3:30 pm	Break
3:30 – 5:00 pm	Review & Discussion, Problems

## **Friday, 11 February**

9:00 – 10:30 am	Index selection theory II <b>Readings:</b> Chapter 34
10:30 – 11:00 am	Break

11:00	12:30	Comparison of $G$ matrices, dimensionality of $G$ <b>Readings:</b> Chapter 32
12:30	1:30 pm	Lunch
1:30	3:30 pm	Review and Discussions, additional topics, closing remarks
3:30		End of course!