# MATLAB for Psychology Research II

Valbar forskarutbildningskurs i metod, 7,5 hp
Selectable PhD course in methodology, 7,5 credits

## Kursplan/Course Syllabus

### Goal

The student should be able to implement own stimuli and study designs in stimuli presentation software (such as E-prime or Psyscope) and integrate external measure equipment (such as Tobii, EEG). Also, the student should be able to organize the raw data using MATLAB into analyzable units in statistical software (such as SPSS, Statistica or Excel) or perform statistical tests in MATLAB.

### Contents

This is a applied PhD course with approximately 300 pages litterature, lectures, homework assignments and labs. The course is aimed at students with some prior knowledge of MATLAB or similar programming languages, and who want to gain practical experience in a broader range of methods to present stimuli and collect data. The subjects taught in the course include:
• Implementing experimental designs in E-Prime
• Implementing experimental designs in Psyscope
• Connecting external measure equipment: basic considerations
• Common communication protocols between hardware units
• Trouble-shooting external equipment integration
• Getting the collected data into MATLAB structures
• Organizing the data into meaningful units using MATLAB
• Dealing with missing or corrupt data
• Statistical testing in MATLAB
• Dealing with multiple testing in time series or in time frequency analysis

### Teaching forms

Each lecture includes assignments to implement subjects from the lecture. During interactive lab sessions and on-site workshops students will achieve additional training in presentation software and MATLAB analysis.

### Examination

The final examination consists of the implementation of a given study design, testing a few subjects, organizing the data and performing a relevant statistical test on the collected material.