

# **MATLAB for Psychology Research I**

Valbar forskarutbildningskurs i metod, 7,5 hp  
Selectable PhD course in methodology, 7.5 credits

## **Kursplan/Course Syllabus**

### **Goal**

The student should gain sufficient knowledge of MATLAB and programming techniques to enable programming of scripts in MATLAB for automated data analyses without prior programming skills.

### **Contents**

This is a PhD course with approximately 400 pages literature, lectures, homework assignments and labs. The course is aimed at students with no prior knowledge of MATLAB and no programming experience, the course teaches elementary programming techniques as well as basic MATLAB skills. The subjects taught in the course include:

- Variables, operators, vectors and matrices
- Functions and expressions
- Creating and manipulating plots in Matlab
- Loading and saving data
- Objects in Matlab: handles and properties
- Flow control: conditional statements and loops
- Interactive functions in Matlab
- Creating functions
- Structured programming: flow charts, indents and comments
- Debugging in Matlab
- Trouble-shooting code
- Variable classes, multidimensional arrays, cell arrays and structures

### **Teaching forms**

Each lecture includes assignments to implement subjects from the lecture. During interactive lab sessions students will achieve additional training in data analysis.

### **Examination**

As a final examination, students will write a script for analyzing realistic data, potentially from their own research.