The written exam is the basis for the final mark of the lecture course on Modelling and System Identification.

**Facts on the Written Exam and Tips for Exam Preparation**

1. **Exam date is March 13, 2014, from 13:00 to 14:45**, at the Technical Faculty of Freiburg, Georges Köhler Allee 101, SR 101 - 00 - 10/14. We start the exam latest at 13:15 sharp. No computers or mobile devices are allowed. The exam duration is at maximum 90 minutes.

2. The exam is a **closed book** exam, i.e. no books or other material are allowed.

3. Some students wrote **project reports** that have been marked. The marks can be found in a list hanging in front of M. Diehl’s room in building 102, 1st floor, at the end of the corridor in the building extension to the left.

4. The exam is divided into **four parts with equal weight**. If a student did a project, and if the project mark is better than the mark of the part with the lowest grade, it will replace the mark in this part. Thus, by having done a project, one can improve the final result and even decide to skip a part completely.

5. Each part will consist of several multiple choice questions - similar as in the microexams - and some questions with free text answers that might contain some computations. All questions that have been asked in the microexams can be asked again, or variations of them. The same holds for questions and solutions of the exercise sheets including some short MATLAB codes. Given that the exam is a closed book exam, some formulae or MATLAB commands will be restated at the appropriate place.

6. Basis for the exam preparation is the lecture material on the web, i.e. the videos and the handwritten PDFs, along with the book links mentioned in the lecture. Thus, the preparation sources are:
   - handwritten PDFs from webpage
   - videos from webpage
   - lecture manuscript draft by Benjamin Voelker
   - Script of Schoukens
   - Book of Ljung

7. The four parts cover the following material:

   - **Part A**: Chapters 1, 2, 3: concepts from probability, estimators, and statistics [PDFs, Schoukens Chapter 1, Ljung Appendix I and Chapter 1].
   - **Part B**: Chapters 4, 5, 6: Linear Least Squares and Dynamic System Models [PDFs, Skript “Systemtheorie und Regelungstechnik” or basic control books, Ljung Appendix II, Schoukens Chapter 2].
   - **Part C**: Chapters 7, 8, 9, 10: Maximum Likelihood and Bayesian Estimation, Optimization, Cramer-Rao Inequality [PDFs, first three pages of Section 7.3, and first four pages of Section 7.4 of the book of Ljung, Schoukens Ch. 2, 4].
   - **Part D**: Chapters 11, 12, 13: Frequency Domain Identification, Recursive Identification and the Kalman Filter [PDFs, Ljung Section 6.2, 6.3, Ch. 11, Schoukens Chapters 5 and 6].