Homework 3, 6 points

November 30, 2011

1 Instruction

- **Deadline:** 8th, December, 2011

- Hand in personal or to Room 758 or by email

- The home assignments shall be solved **individually**. The home assignment is not compulsory.

- Write your solutions by hand - not by using a computer. Show your calculations.

- Solutions will be graded, and may give points that are added to the result of the written examination, as described in the course description. The points from the home assignments can only be added to the results of the written examinations in December,2011 and February, 2012. The points cannot be added to results from examinations written at later points of time. Home assignments that are handed in too late (i.e. after 11 November) give 0 points. It is not possible to get extra points by completing or correcting solutions after the deadline.

2   Problem

The factors that influence the breaking strength of a synthetic fiber are being studied. Four production machines and three operators are chosen and a factorial experiments is run using fiber from the same production batch. The results are as follows:

	Machine 1	Machine 2	Machine 3	Machine 4
Operator 1	109	110	108	110
	110	115	109	108
Operator 2	110	110	111	114
	112	111	109	112
Operator 3	116	112	114	120
	114	115	119	117

- Assume both factors are fixed, analyze the data and draw conclusions. Use $\alpha = 0.05$

- Suppose there are only four machines of interest, but the operators were selected at random, what type of model is appropriate? Perform the analysis.