Stappenplan Control system lab:

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| **Black box model** | **Nonlinear/Linearized model** |
| * Make black box model on first measurement data (GBN) then verify black box model on the second set of data, see example linid | * Estimate parameter b1 by using lsqnonlin and costfunction, see example nonlinid |
| * Design a controller for quickly stabilizing theta2 in downward position (disturbance rejection) | * Linearize system around downward position |
| * Design a rough controller without use of the model to keep the system upright and validate | * Design a controller for quickly stabilizing theta2 in downward position (disturbance rejection) in simulation first and test on real setup |
| * Make black box model of this data in the upright position | * Linearize system around upright position |
| * Implement controller for the upright position on this black box model | * Design a controller for keeping the system upright in simulation and test on real setup |
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