

### Exercise 1(B) - Additional Task 3

<b>Modelling Based on First Principles</b>	<b>Modelling Based on System Identification</b>
Suitable for systems with known parameters and dynamics	Suitable for systems with unknown or unpredictable parameters and dynamics
Recommended for lower order systems with simple architectures	Recommended for higher order systems with complex architectures
Requires knowledge of physical laws and system dynamics	Requires knowledge of curve fitting (scientific computing tools)
Presence of actual plant is not necessary	Presence of actual plant with input and output measurement and recording systems is necessary
One type of model can be easily used for other systems with minor (or major) manipulations	Each system has a unique model that must be identified by analyzing input-output relations
Extremely complex for higher order systems with non-linear behavior and disturbances	Equally complex for higher and lower order systems (including systems with non-linear behavior and disturbances)
Accuracy can be guaranteed (subject to external disturbances)	Accuracy cannot be guaranteed since models are reasonable estimates of the system dynamics