

100.578 Uncertainty Quantification & Analysis in Systems Modeling and Simulation**Exercise 4**

Select a problem of your interest and model it by a hidden Markov model (HMM). Provide the following model descriptions.

- (1) Describe a state transition diagram. The number of hidden states and observable should be at least two.
- (2) Show the collection of possible observable variable values.
- (3) Provide an example of state sequence.
- (4) Provide an example of observable sequence.
- (5) Provide an example of evaluation problem.
- (6) Provide an example of decoding problem.
- (7) Provide an example of learning problem.