Course Type	Course Code	Name of the Course	L	T	P	Credits
DP	NECC520	**Modeling and Simulation lab-II**	0	0	3	1.5

Course Objective

To strengthen fundamental concepts of detection and estimation theory using simulation experiments.

Learning Outcomes

- Simulation of detection theory concepts in matlab
- Simulation of estimation theory concepts in matlab

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Evaluation of Bayes Risk and decision criteria	6	To introduce Binary hypothesis problem.
2	Neyman-Pearson method; Evaluation of receiver operating characteristics; Decision criteria for M-ary problem	9	To understand evaluation of ROC
3	Comparison of cost functions; Evaluation of Cramer-Rao bound;	6	To understand fundamentals of estimation theory.
4	Maximum Likelihood estimation; Application of least square error estimation in communication system	9	To implement basic methods in estimation theory.
5	Lab Project	12	To implement a project on modeling and simulation.
	Total	42	

Text Books:

1) Steven, M. Kay. "Fundamentals of statistical signal processing Volume III." *PTR Prentice-Hall,* (2017).

Reference Books:

1) Steven, M. Kay. "Fundamentals of statistical signal processing Volume I." *PTR Prentice-Hall,* (1998).
2) Steven, M. Kay. "Fundamentals of statistical signal processing Volume II." *PTR Prentice-Hall,* (1998).