

Schedule

(Last Update: March 31, 2015)

Date	Topic	Student Name	Due
12-Jan Mon	Course Logistics and Introduction	No Note	
14-Jan Wed	Review of Probability		
16-Jan Fri	Bayes decision theory	Chatzidakis S.	Feb 23
19-Jan Mon	No Class		
21-Jan Wed	Binary hypothesis testing		
23-Jan Fri	M-ary hypothesis testing		
26-Jan Mon	Trade off in false alarm and miss	Jeong J.	Mar 2
28-Jan Wed	Neyman-Pearson testing I		
30-Jan Fri	Neyman-Pearson testing II		
2-Feb Mon	Neyman-Pearson testing Examples		
4-Feb Wed	Composite Hypo. Test. I (nuisance parameter)	Wen H.	May 1
6-Feb Fri	Composite Hypo. Test. II (UMP)		
9-Feb Mon	Composite Hypo. Test. III (LMP and GLRT)		
11-Feb Wed	Law of large number	Li J.	Mar 13
13-Feb Fri	Central limit theorem		
16-Feb Mon	Chernoff Method	Pereira S.	Mar 20
18-Feb Wed	Fenchel Duality		
20-Feb Fri	Performance Analysis of Detection		
23-Feb Mon	Sufficient statistics	Vondersaar B.	Mar 27
25-Feb Wed	Minimum variance unbiased estimator		
27-Feb Fri	Rao-Blackwell theorem		
2-Mar Mon	Maximum likelihood estimation (MLE)	Fang S.	Apr 6
4-Mar Wed	Fisher Information		
6-Mar Fri	Cramer-Rao lower bound		
9-Mar Mon	Properties of MLE I (Efficiency)	Wen H.	Apr 11
11-Mar Wed	Properties of MLE II (Efficiency vs MVUE)		
13-Mar Fri	Mid term	Spring Break	
16-Mar Mon	No Class		
18-Mar Wed	No Class		
20-Mar Fri	No Class		
23-Mar Mon	Properties of MLE III (Consistency)	Wen H.	Apr 11
25-Mar Wed	Bayesian Estimation I (MSE, MAE)	Jeong J.	May 1
27-Mar Fri	Bayesian Estimation II (MAP, Examples)		
30-Mar Mon	Bayesian Estimation III (Vector, Joint Gaussian)		
1-Apr Wed	Bayesian Estimation IV (LMMSE)	Fang S.	May 1
3-Apr Fri	EM I (Basic concepts)		
6-Apr Mon	EM II (Gaussian Mixtures)		
8-Apr Wed	EM III (Bernoulli Mixtures)		
10-Apr Fri	EM IV (Convergence and Prior)	Vondersaar B.	May 1
13-Apr Mon	Iterative algorithm for MLE and MAP		
15-Apr Wed	Stein Unbiased Risk Estimator	Chatzidakis S.	May 1
17-Apr Fri	Kalman Bucy Filtering I (Main results)		
20-Apr Mon	Kalman Bucy Filtering II (Examples)		
22-Apr Wed	Orthogonality Principles and Wiener Hopf	No Note	
24-Apr Fri	Project Presentation		
27-Apr Mon	Project Presentation		
29-Apr Wed	Project Presentation		
1-May Fri	Project Presentation		