Course Syllabus

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Date	Module	Lecture	Topics
Jan 14	M0	Lec 1	Introduction/Course Overview
Jan 16	M0	Lec 2	Introduction to Julia
Jan 21	M1	Lec 3	Introduction to Probability
Jan 23	M1	Lec 4	Discrete Probability Distributions
Jan 28	M1	Lec 5	Continuous Probability Distributions
Jan 30	M1	Lec 6	Multivariate Probability Distributions
Feb 4	M2	Lec 7	Parameter estimation, Maximum Likelihood Estimation
Feb 6	M2	Lec 8	MLE, Gradient Descent, Multivariate Gaussian
Feb 11		Midterm 1	
Feb 13	M2	Lec 9	Multivariate Gaussian MLE, Logistic Regression, Newton's Method
Feb 18	M2	Lec 10	Latent Variables, Mixture Models, Expectation Maximization
Feb 20	M2	Lec 11	EM for MV Gaussians, Correctness
Feb 25	M2	Lec 12	Factor Analysis
Feb 27	M3	Lec 13	Introduction to Bayesian Estimation
Mar 3	M3	Lec 14	Conjugacy, Posterior Summarization
Mar 5	M3	Lec 15	Natural Conjugacy, Mixture of Priors

Mar 10	M3	Lec 16	Fisher Information and Jeffreys' Prior
Mar 12		Midterm 2	
Mar 17			Spring Break
Mar 19			Spring Break
Mar 24	M3	Lec 17	Multiparameter Models
Mar 26	M4	Lec 18	Random Sampling
Mar 31	M4	Lec 19	Accept-Reject Method; Monte Carlo Integration
Apr 2	M4	Lec 20	Monte Carlo Integration
Apr 7	M4	Lec 21	Markov Chain Monte Carlo Methods I
Apr 9	M4	Lec 22	Markov Chain Monte Carlo Methods II
Apr 14	M4	Lec 23	Hierarchical Modeling, Application of Gibbs Sampling
Apr 16		Lec 24	Model Selection
Apr 21			Final Review
Apr 23		Final	

Course Summary:

Date	Details	
Tue Jan 14, 2020	**Quiz for Lec 1 (https://uc.instructure.com/courses/1257331/assignments/13601428)**	due by 9:20am

Date	Details	
Wed Jan 15, 2020	**Plagiarism awareness exercise** (https://uc.instructure.com/courses/1257331/assignments/13598893)	due by 11:59pm
Thu Jan 16, 2020	**Exercise for Lec 2: Introduction to Julia** (https://uc.instructure.com/courses/1257331/assignments/13544510)	due by 9:30am
Tue Jan 21, 2020	**Exercise for Lec 3: Introduction to Probability** (https://uc.instructure.com/courses/1257331/assignments/13601437)	due by 9:30am