

DATE	DUE	SECTION & TOPIC
M 1.11 T 1.12 W 1.13 R 1.14		1.1: Introduction to Markov chains 1.2: Basic examples of Markov chains 1.3-1.4: Operations with transition matrices Activity 1: practice problems with Markov chains
M 1.18 T 1.19 W 1.20 R 1.21	1-10 Act 1	<i>No class - Martin Luther King Day</i> 1.5: Stationary distributions 1.5: More on stationary distributions 1.6: Class structure and periodicity
M 1.25 T 1.26 W 1.27 R 1.28	11-21	1.7: Recurrence and transience 1.7: State space decomposition 1.7: Absorption probabilities Activity 2: more practice problems with Markov chains
M 2.1 T 2.2 W 2.3 R 2.4	22-32 Act 2	Preparation for first group presentation Preparation for first group presentation Preparation for first group presentation Group presentations on Markov chains
M 2.8 T 2.9 W 2.10 R 2.11	33-39	Group presentations on Markov chains 1.8: Cèsaro convergence 1.8: Mean return times; positive and null recurrence 1.8: Existence and uniqueness of stationary distributions
M 2.15 T 2.16 W 2.17 R 2.18	EXAM 1 40-50	1.9-1.10: Proof of the FTMC 1.10: Example computations with stationary distributions 2.1: Introducing martingales 2.2: Filtrations and strategies
M 2.22 T 2.23 W 2.24 R 2.25	51-57	2.3: Conditional expectation with respect to a σ -algebra 2.4: Martingales and optional stopping 2.5: Random walk on \mathbb{Z} 2.5: Random walk on \mathbb{Z}
M 3.1 T 3.2 W 3.3 R 3.4	58-68 Act 3	Activity 3: random walk in higher dimensions 2.6: Introduction to birth and death chains 2.6: More on birth and death chains Activity 4: review of eigenvalues and eigenvectors
M 3.8 T 3.9 W 3.10 R 3.11	EXAM 2 69-74 Act 4	3.1-3.2: Introduction to CTMCs 3.2: Q-matrices and matrix exponentiation 3.2: Computations with finite state space CTMCs Activity 5: CTMCs with finite state space

DATE	DUE	SECTION & TOPIC
M 3.15		3.3: Jump processes
T 3.16		3.4: Class structure of CTMCs
W 3.17	Act 5	3.4: Stationary distributions of CTMCs
R 3.18	75-81	3.5: Birth and death CTMCs
M 3.22		3.6-3.7: Branching processes and queues
T 3.23		4.1: Introduction to Brownian motion
W 3.24	82-88	Preparation for group lectures
R 3.25		Preparation for group lectures
M 3.29		Group lectures: 4.2: Markov properties of BM
T 3.30		Group lectures: 4.3: Martingales associated to BM
W 3.31	89-96	<i>No class - Mid-semester Recess</i>
R 4.1		<i>No class - Mid-semester Recess</i>
M 4.5		Group lectures: 4.4: Gaussian processes
T 4.6		Group lectures: 4.5-4.6: Symmetries and zero sets of BM
W 4.7	97-108	Group lectures: 4.7: BM in higher dimensions
R 4.8		Preparation for final presentations
M 4.12		Preparation for final presentations
T 4.13	109-119	Preparation for final presentations
W 4.14		Preparation for final presentations
R 4.15		Final presentation
M 4.19	EXAM 3	
to		Final presentations
R 4.22		
W 4.28		Final presentation(s) (if necessary) - 2 PM