Time being short, we are unable to complete the notes about the following topics that are also covered in class:

1) Convergence in variation; Coupling lemma; Convergence of $p_{ij}^{(n)}$ for periodic, irreducible chains. The last result is arrived at, in stages.

2) Discrete time renewal theory; renewal theorem (for lattice distributions) via an appropriately constructed DTMC.

3) Elementary renewal theorem and Renewal reward theorem; Renewal argument; a brief discussion of Renewal theorem in continuous time; Regenerative processes; time average of regenerative processes.

4) Continuous time processes; jump process; classification; their description in terms of joint law of jump-chain and sojourn-times; CTMCs; constructions; finite state CTMCs; brief review of structural properties in terms of jump chain.


End Note:
To repeat, this is a first course on stochastic models, models that capture dynamical systems that evolve in uncertain fashion. The emphasis is on some understanding of certain central ideas; it is not intended to be viewed as a set of disjoint bits-whenever possible, some unifying ideas are presented.