Notation Clarification to Lecture #2

- $\sigma(Y)$ is "all the events generated by random variable Y". More rigorously, it is a sigma algebra containing all events generated by Y.
- On page 7, 1_A is a random variable, called indicator, defined as: $1_A(\omega) = 1$, if $\omega \in A$; $1_A(\omega) = 0$, otherwise.
- On page 17, $A =^d B$ means the distribution of A and B are the same.
- On page 19, it is better to write the transition density in the following way:

$$p(t, y; s, x) := \frac{d}{dx} P(X(t) \leq y | X(s) = x).$$