Probability Lecture 2:

Sample Space: Set of all possible outcomes of a random Experiment.

* A Sample space having eliscrete number of Sample points, is a eliscrete Sample space.

Probability of an Event: if S is the sample space, and E is the elesired Event. Then

$$P(E) = \frac{n(E)}{n(S)}$$, where $n(E)$ are the favourable outcomes and $n(S)$ is the Sample space

Also, $P(E) \in [0,1]$ i.e $0 \leq P(E) \leq 1$.

Mutually exclusive events: if the occurence of one of the events rules out the any of the remaining events. A_1 and A_2 are mutually exclusive if $A_1 \cap A_2 = \phi$. Events $A_1, A_2, \cdots A_n$ are mutually exclusive if $A_1 \cap A_2 \cap A_3 \cap \cdots \cap A_n = \phi$

(or) if $A_i \cap A_j = \phi$ for any $i, j \in S$

Independent events:

it occurence of any of the events does not affect the probability of occurence of the other events.

* Note:

Mutually exclusive events will never be Independent events (and) Independent events never be Mutually exclusive.

Event: Event is a subset of Sample space (S)

* ϕ is also a subset of Sample space. and is called "impossible event"

Sample Event: An event which cannot be split (furtherly) is a Sample event:

Compound Event: An event consisting of more than one sample points is called compound event.

Note for topic: Random Experiment, for sure has more than one Outcome.