**Scuola di Dottorato del Politecnico di Bari**

**Ph.D. School**

**Elements of Probability for Engineering Sciences**

**CFU: 3 (24 ore)**

**SSD: ING-INF/03**

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| **Goal** | The course provides the basic elements of probability theory and stochastic process as well as examples of their usage in relevant engineering scenarios.  |
| **Program** | * Review of probability: key definitions ( 2 hours)
* Continuous and Discrete Aleatory Variables and Arrays (6 hours)
* Stochastic processes: basic definitions (2 hours)
* Stationarity and Ergodicity of stochastic processes (4 hours)
* Spectral analysis of stochastic processes (4 hours)
* Stochastic processes in Linear Time Invariant systems (4 hours)
* Selected Applications (2 hours)
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| **References** | Robert G. Gallager – Stochastic Processes Theory for Applications, Cambridge University Press.  |