



| PROBABILITY AND STOCHASTIC PROCESSES |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| Anno immatricolazione                | 2016/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Anno offerta                         | 2016/2017                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Normativa                            | DM270                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| SSD                                  | MAT/06 (PROBABILITÀ E STATISTICA MATEMATICA)                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Dipartimento                         | DIPARTIMENTO DI SCIENZE ECONOMICHE E AZIENDALI                                                                                                                                                                                                                                                                                                                                                                                                               |
| Corso di studio                      | ECONOMICS, FINANCE AND INTERNATIONAL INTEGRATION - ECONOMIA, FINANZA E INTEGRAZIONE INTERNAZIONALE                                                                                                                                                                                                                                                                                                                                                           |
| Curriculum                           | Finance                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Anno di corso                        | 1°                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Periodo didattico                    | Primo Semestre (26/09/2016 - 22/12/2016)                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Crediti                              | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ore                                  | 66 ore di attività frontale                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lingua insegnamento                  | ENGLISH                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Tipo esame                           | SCRITTO                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Docente                              | LIJOI ANTONIO (titolare) - 9 CFU                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Prerequisiti                         | The course is self-contained and no specific prerequisite is needed. Nonetheless, familiarity with the basic concepts in Probability typically taught in an introductory course in Statistics will be helpful.                                                                                                                                                                                                                                               |
| Obiettivi formativi                  | This is a first course on Probability and Stochastic Processes, having economic and financial applications in view. Accordingly, after introducing some basic notions of probability theory (including conditional expectation), lectures will focus on those processes which are popular in finance, including martingales, Markov chains and Brownian motion. As far as possible, technicalities are avoided. Various exercises will be discussed as well. |
| Programma e contenuti                | <ul style="list-style-type: none"><li>- Random variables and vectors</li><li>- Distribution functions</li><li>- Transformations of random variables and vectors</li></ul>                                                                                                                                                                                                                                                                                    |

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|                                                          | <ul style="list-style-type: none"> <li>- Simulation of random variables</li> <li>- Moment generating function</li> <li>- Laws of large numbers</li> <li>- Central limit theorem</li> <li>- Conditional expectation</li> <li>- Martingales</li> <li>- Stopping times</li> <li>- Brownian motion</li> </ul> |
| <b>Metodi didattici</b>                                  | All lectures are displayed on the blackboard. Students are introduced to main theoretical concepts and results through a number of examples and illustrations that considerably ease the understanding of the subject.                                                                                    |
| <b>Testi di riferimento</b>                              | <ul style="list-style-type: none"> <li>* Billingsley P. (1995). "Probability and Measure". Wiley, 3rd Edition.</li> <li>* Durrett, R. (2009). "Elementary Probability for Applications". Cambridge University Press.</li> <li>* Resnick, S. (1998). "A Probability Path". Birkhaeuser.</li> </ul>         |
| <b>Modalità verifica apprendimento</b>                   | Oral                                                                                                                                                                                                                                                                                                      |
| <b>Altre informazioni</b>                                | Oral                                                                                                                                                                                                                                                                                                      |
| <b>Obiettivi Agenda 2030 per lo sviluppo sostenibile</b> | <a href="#">\$lbl_legenda_sviluppo_sostenibile</a>                                                                                                                                                                                                                                                        |