



STOCHASTIC PROCESSES

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| Enrollment year | 2019/2020 |
| Academic year | 2020/2021 |
| Regulations | DM270 |
| Academic discipline | MAT/06 (PROBABILITY AND MATHEMATICAL STATISTICS) |
| Department | DEPARTMENT OF MATHEMATICS "FELICE CASORATI" |
| Course | MATHEMATICS |
| Curriculum | PERCORSO COMUNE |
| Year of study | 2° |
| Period | 2nd semester (01/03/2021 - 11/06/2021) |
| ECTS | 6 |
| Lesson hours | 48 lesson hours |
| Language | Italian |
| Activity type | ORAL TEST |
| Teacher | ORRIERI CARLO (titolare) - 6 ECTS |
| Prerequisites | The courses of Probability and Functional Analysis of the Laurea Magistrale. |
| Learning outcomes | <p>This course is the natural continuation of "Probability" (Laurea Magistrale). The objectives are, on the one hand, the theoretical studio of the stochastic processes and, on the other hand, the applicability of such a theory. At the end of the course, the student should be able to make simple computations with stochastic processes and should be able to model some concrete problems within such a theory.</p> |
| Course contents | <ol style="list-style-type: none">1. General notions about stochastic processes.2. Markov chain.3. Poisson process. |

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| | <p>3. Brownian motion or Wiener process.</p> <p>4. Introduction to the stochastic Ito calculus with respect to the Wiener process.</p> |
| Teaching methods | Lectures. (Exercises will be also discussed during the course). |
| Reccomended or required readings | <p>1. Markov Chains, J. R. Norris, Cambridge University Press.</p> <p>2. Stochastic Calculus: An Introduction Through Theory and Exercises, P. Baldi, Springer</p> |
| Assessment methods | Oral examination. During the examination, the solution of a exercise will be also considered. |
| Further information | |
| Sustainable development goals - Agenda 2030 | \$lbl legenda sviluppo sostenibile |