Dr hab. Anna Karczewska

Zielona Góra, 31.3.2010r.

Propozycja wykładu dla doktorantów w semestrze letnim 2010/2011.
Wykład może być prowadzony po polsku, lub angielsku, w zależności od potrzeb.

„ An introduction to infinite - dimensional analysis „

Course contents:

1.A separable Hilbert space of infinite dimension – basic notions in functional analysis, examples and problems.
2. Gaussian measures in Hilbert space.
3. Gaussian random variables.
4. The Cameron-Martin formula.
5. Brownian motion – definition and properties.
6. Stochastic integrals – construction and properties.
7. The Ornstein-Uhlenbeck process.
8. Markov semigroups.
9. Invariant measures for Markov semigroups.
10. Weak convergence of measures.
11. L^2 spaces with respect to a Gaussian measure.
12. Sobolev spaces for a Gaussian measure.
13. Interpolation spaces – the idea, basic notions and applications.

Bibliography

1. A. Bobrowski, Functional analysis for probability and stochastic processes, Cambridge University Press, 2005.
2. G. Da Prato, An introduction to infinite- dimesional analysis, Springer, 2006.
3. P. Halmos, A Hilbert space problem book, Springer, 1982.
4. A. Lunardi, Interpolation theory, Scuola Normale Superiore Pisa, 2009.
5. L. Tartar, An introduction to Sobolev spaces and interpolation spaces, Springer, 2007.