Mathematics 2 Syllabus

1st semester 2016-17 Scuola di Dottorato – Sapienza Università di Roma

Instructor Information

Instructor	Email
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General Information

Description

The course aims at providing a short introduction to multivariate static optimization, differential equation and the first notions of calculus of variation. This course will be also suitable as a refresher for students already exposed to these topics.

Course Materials

Required Text

Knut Sydsaeter, Peter Hammond, Atle Seierstad, Arne Strom, Further Mathematics for Economic Analysis (2nd Edition), Pearson

James Stewart, Calculus early trascendentals (7th edition), Brooks/Cole

Bernt Oksendal, Stochastic Differential Equations (5th edition), Springer

Additional reading

Atle Seierstad, Knut Sydsaeter, Optimal control theory with economic applications, North Holland

Morton I. Kamien, Nancy L. Schwarz, Dynamic optimization. The calculus of variation and optimal control in economics and management, North Holland

Knut Sydsaeter, Peter Hammond, Arne Strom, Essential Mathematics for Economic Analysis (4th Edition), Pearson

Morton I. Kamien, Nancy L. Schwartz, Dynamic Optimization

Sheldon Ross, Introduction to Probability Models (9th edition), AP

Lawrence C. Evans, An introduction to Stochastic Differential Equations, online notes

Zachary S. Tseng, Differential Equations, online notes

Course Schedule

Week	Торіс
1	First order Differential Equations
11	Higher order Differential Equations
111	First notions in calculus of variations and control theory
IV	An introduction to stochastic differential equations and Ito's calculus