Instructor

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Teaching Assistant

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Description:

The course is intended to cover most of the mathematical tools required to follow standard first year graduate courses in microeconomics, macroeconomics and statistics.The topics covered are the fundamentals of real analysis and Euclidean spaces, including open and closed sets, compact sets, sequences, series, limits, continuity, differentiability, integration, sequences of functions, and metric and normed spaces. The course also includes fixed point theory for functions and correspondences and the Theorem of the Maximum of Bergé.

Grading

- 60% Final Exam (January 2021)

- 20% Homework

- 20% Midterm (October 2020)

Contents:

Referencss:

– Apostol, T.M. Mathematical Analysis, Second Edition, Addison-Wesley, 1974.

– Berge, C. Espaces Topologiques. Fonctions Multivoques, Deuxiéme dition, Dunod, 1966

– Chen, W.W.L. Lecture Notes available at https://rutherglen.science.mq.edu.au/wchen/lnfafolder/lnfa.

– de la Fuente, A. Mathematical Methods and Models for Economists. Cambridge University Press, 2005.

– Kolmogorov, A.N. and S.V. Fomin. Elements of the Theory of Functions and Functional Analysis, Dover, 1999.

– Ok, F.A. Real Analysis with Economic Applications, Princeton University Press, 2007.

– Royden, H. and P. Fitzpatrick. Real Analysis, Fourth Edition, Pearson, 2010.

– Rudin, W. Principles of Mathematical Analysis, Third Edition, McGraw-Hill, 1976.

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– Sundaram, R.K. A First Course in Optimization Theory, Cambridge University Press, 2005.

– Sydsaeter, Hammond, Seierstad, Strom. Further Mathematics for Economic Analysis, Second Edition, Prentice Hall, 2008.