DIPARTIMENTO DI METODI E MODELLI
PER L'ECONOMIA IL TERRITORIO E LA FINANZA
MEMOTEF

SAPIENZA
UNIVERSITÀ DI ROMA

PhD MODELS FOR ECONOMICS, TERRITORY AND FINANCE

INTERVIEW: SCOPE AND CRITERIA

During the interview, the Examination Board will further assess the candidate's preparation with respect to the most relevant themes, theories and methodologies relative to the chosen curriculum, with particular reference to the candidate's research project, and will evaluate the candidate's command of the English language.

In particular, the examination board will evaluate the candidate based on the following criteria:

- background knowledge of the most relevant topics relative to the chosen curriculum (max 20 points);
- knowledge of the literature and methodologies that are relevant to the candidate's research project (max 30 points);
- exposure clarity, skills, and appropriate scientific terminology (max 15 points);
- English language (max 15 points).

The minimum score for passing the interview is: 40/80

The minimum final resulting score valid for being eligible for admission is (cv and titles + research project + interview): 80/160

Università degli Studi di Roma "La Sapienza"
Dipartimento MEMOTEF
Via del Castro Laurenziano 9, 00161 Roma (RM)

THEMES AND READINGS FOR THE PREPARATION OF THE ADMISSION

Based on the chosen curriculum, candidates for admission to the PhD are suggested to study the following themes and material:

1. Mathematics

Mathematics and Mathematics for Economics

Basic notions of calculus. Implicit functions, homogeneous functions. Free or constrained maxima and minima. Elements of utility theory. Pareto optimality problems.

Notions of linear algebra. Ordinary Differential Equations: first order ordinary differential equations, linear differential equations of any order, systems of linear differential equations. Dynamical systems: equilibrium and stability.

Probability Theory

Set theory, Random Variables; Convergence Theorems, Central Limit Theorem, Law of Large Numbers.

References

Guerraggio, A. - Salsa, S., Metodi matematici per l'economia e le scienze sociali, Giappichelli, 1997.

Simon, C. – Blume, L.E., Matematica per l'Economia e le Scienze Sociali, Università Bocconi Editore (trad. it. a cura di A. Zaffaroni) 2002.

Ross, S., Calcolo delle probabilità, Apogeo 2004.

Chang, A. and Wainwright (1967) Fundamental Methods of Mathematical Economics (freely available on-line).

Peccati, L., Salsa, S. and Squellati, M. Mathematics for Economics and Business, EGEA, 2008

Intriligator, M.D., Mathematical Optimization and Economic Theory, Prentice Hall Series in Mathematical Economics 1971.

Takayama, A., Mathematical Economics, Cambridge University Press 1985.

Blitzstein, J.K., Hwang, J. (2019) Introduction to Probability, Second Edition, CRC Press.

2. Statistics

Sampling distributions, estimators, sufficient statistics.

Linear models, OLS theory.

Index numbers, national income models, income, consumption and productivity measurement,

Time series analysis, panel data analysis, regression and causality.

References

Wood, S. Core Statistics, CRC Press, 2014.

Azzalini A. Inferenza Statistica, Springer Italia, 2001.

Di Ciaccio A., Borra S., Statistica: metodologie per le scienze economiche e sociali, Mc Graw Hill 2007.

Stock J., Watson M., Introduction to Econometrics, Pearson 3rd edition.

Guarini R., Tassinari F., Statistica Economica, Il Mulino, 2000.

Angrist J., Pischke J.S., Mostly Harmless Econometrics, Princeton University Press, 2009.

Dekking, F.M., Kraaikamp, C. , Lopuha H.P. and Meester L.E , A Modern Introduction to Probability and Statistics: Understanding Why and How, Springer 2005.

3. Economic Geography

Local and regional development; the spatial behavior of economic agents; spatial agglomeration and regional specialization; inter-regional and intra-regional disparities; local, national and transnational economic relations and production systems; urban, regional and territorial policies; environmental issues and sustainability transitions; quantitative and qualitative methodologies in economic geography; GIS and spatial data analysis.

References

Sheppard E., Barnes T.J., A Companion to Economic Geography, Wiley-Blackwell, 2017.

Martin R., Economy: critical essays in human geography, Routledge, 2018.

Rogerson P.A., Statistical methods for geography: a student's guide, Sage, 2020 (fifth edition).

Clark G.L. et al., The New Oxford Handbook of Economic Geography, Oxford University Press, 2018.