

Department of Economics

Offer holder webinar
18 July 2025

**Masters in Economics:
Get Ready for the Programme**

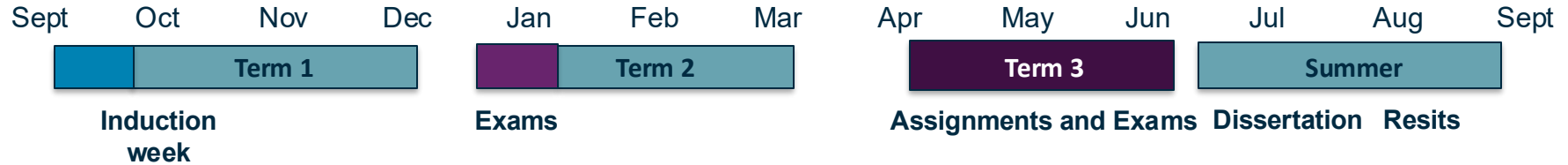
Who I am



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Timeline



Key dates in 2025/26 academic year:

- **29 September – 5 October 2025:** Induction
- **6 October – 12 December 2025:** Term 1
- **First half of January 2026** (starting *5 January*): exams
- **12 January – 20 March 2026:** Term 2
- **27 April – 26 June 2026:** Term 3 (exams + working on Dissertation)
- **July and August 2026:** Dissertation
- **First half of September 2026:** Submission of Dissertation

Key recommended activities during summer

- Pre-sessional Intro to Economics
 - Online drop-in sessions in the end of August and second half of September
- Refreshing Mathematics and Statistics
 - Note that the pre-sessional module in Maths and Stats will take place *in person* in the *first several weeks* of Term 1
- Coding training in DataCamp

Mathematics and Statistics: what to refresh

- **Matrix Algebra**

- Key operations with matrices
- Determinant and matrix inversion
- Rank of a matrix
- Quadratic forms and (semi-)definiteness of matrices

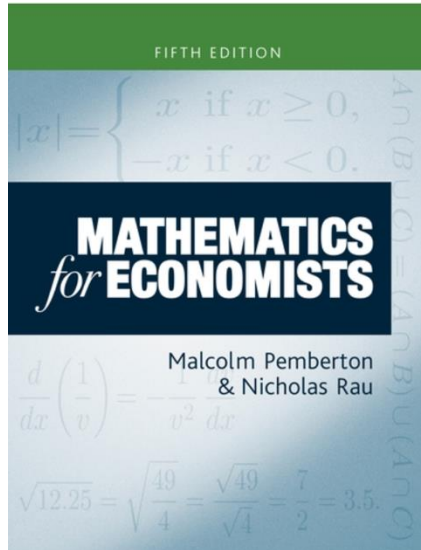
- **Calculus and Optimisation**

- Rules of differentiation and integration
- Properties of functions (continuity, homogeneity, convexity / concavity etc)
- Exponential and logarithmic functions
- Static multivariable *unconstrained and constrained* optimisation (Lagrangian, Hessian matrix, FOCs and SOC, local and global max/min)
- *Basics* of dynamic optimisation

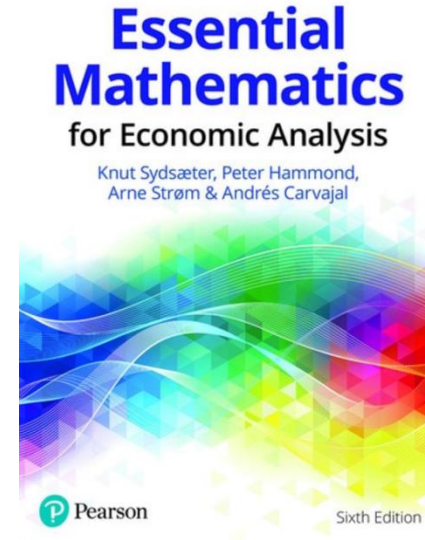
- **Probability and Statistics**

- Random variable and its moments (mean, variance, skewness etc)
- Distribution function of a random variable
- Types of distribution
- Covariance between random variables
- Variance-covariance matrix

Mathematics and Statistics: useful textbooks



**M. Pemberton and N. Rau (2023),
Mathematics for Economists:
An Introductory Textbook. 5 ed.
Manchester University Press**



**K. Sydsaeter, P. Hammond,
A. Strom, and A. Carvajal (2021),
Essential Mathematics for
Economic Analysis. 6 ed. Pearson**

For more information following this session:

- **Contact me:**

- vsevolod.ostapenko@durham.ac.uk

- WhatsApp



- WeChat



- Check out the [Masters Hub](#)

- [Please sign up](#) for the upcoming session the next week:

Masters drop in Q&A with Business School students and alumni: [Monday 21 July 6pm – 6:45pm \(BST\)](#)

Thank you for
attending!

Any questions?

