Academic preparations

Depending on their educational background, students may want to prepare academically for one or more core sequences before they come to TI.

Microeconomics

Students lacking a strong background in economics will benefit from studying some undergraduate text books in intermediate microeconomics before they come to TI, such as

- Perloff, J.M. (2008), Microeconomics (Fifth Edition), Addison Wesley
- Frank, R. (2009), Microeconomics and Behavior (Eighth Edition), McGraw-Hill
- Pindyck, R. and D. Rubinfeld (2008), Microeconomics (Seventh Edition), Prentice Hall
- Varian, H.R. (2009), Intermediate Microeconomics (Eighth Edition), Norton
- Baye, M. (2006), Managerial Economics & Business Strategy (Fifth Edition), McGraw-Hill

Macroeconomics

Students without a strong background in economics are advised to study some undergraduate macroeconomics texts before the start of Macroeconomics I in November, such as

- Mankiw, N.G. (2015), Macroeconomics (Ninth Edition), Worth
- Blanchard, O. (2016), Macroeconomics (Seventh Edition), Prentice Hall
- Burda, M. and Wyplosz, C. (2017), Macroeconomics: A European Text (Seventh Edition), Oxford University Press

and ideally also

- Weil, David N. (2012), Economic Growth (Third Edition), Routledge.

Asset Pricing and Corporate Finance

Students without a strong background in finance that want to specialise in finance are advised to study the following undergraduate finance texts in Corporate Finance, Financial Economics, and Financial markets:

- Berk, J., and P. DeMarzo (2007), Corporate Finance, Pearson International.
- Bodie, Z., A. Kane, and A. Marcus (2008) Investments, Wiley.

Ideally also:

- Leroy, S.F., J. Werner, and S.A. Ross (2000), Principles of Financial Economics, Cambridge University Press.

Mathematics

All incoming students are supposed to be familiar with the basics of the usual mathematics courses for undergraduate students in economics:

1. Functions of one variable: linear functions, quadratic functions, polynomial functions, power functions, exponential functions, logarithmic functions, inverse functions.
2. Differentiation: relation with tangent, rules for differentiation (including product rule, quotient rule, chain rule), linear approximation, Taylor approximation.
3. Integration: indefinite and definite integrals, primitive of a function, relation with area.
4. Linear equations: matrix and vector notation, Gaussian elimination, matrix multiplication, transpose.

Students lacking a strong mathematics background should prepare before they come to TI, by studying the first 12 chapters of

- Anthony and Harvey (2012). Linear Algebra: Concepts and Methods, Cambridge University Press.

Also, students may want to enrol in the Coursera course "Logic for Economists" (https://www.coursera.org/learn/logic-for-economists), which has been written for prospective TI students, and which gives a brief introduction to formal mathematical topics like propositional and predicate logic, set notation, the number system, and types of proof strategies.

Econometrics
Students in the standard track should read Chapter 1 of the book used in this track's first course (TI1707),
- John A. Rice (1995). Mathematical Statistics and Data Analysis, 2nd Edition, Duxbury Press, ISBN: 0-534-20934-3 or 3rd Edition (2007), ISBN: 0-534-39942-8

before the start of Statistics and Econometrics in September.
The advanced track aims at students who already master econometrics at the level of the standard track.

Principles of Programming in Econometrics
Before the start of the course, students are expected to have studied the initial exercise E0, also available through the website http://personal.vu.nl/c.s.bos/ppectr.html, and to have worked through the first set of video lectures on Canvas. They are welcomed to read through the full slide deck (see website/canvas) in advance.

Background material can be found at the websites of Kevin Sheppard, or Thomas Sargent & John Stachurski.

Details about the general programming techniques will follow in the course, but we will assume you are able to pick up the syntax during the course with relatively little help.