Integration Week Economics 2022 – 5-9 September 2022

	Empirical Basics Monday, 5 September	Economics Tuesday, 6 September	Economics Wednesday, 7 September	Mathematical Basics Thursday, 8 September	Programming Friday, 9 September
08:30hrs 08:45hrs 09:00hrs	**Registration / Welcome Coffee & Gipfeli** *08:30 – 09:10 / FOY09-21*			*08:30-09:15hrs* **Mathematics Input** *Prof. Enrico de Giorgi / 01-014*	
09:15hrs 09:30hrs 09:45hrs	*09:15-10:00hrs* **Statistics Input** *Prof. Petyo Bonev / 09-011*	*09:15-10:00hrs* **Microeconomics Input** *Prof. Stefan Bühler / 01-013*	*09:15-10:00hrs* **Macroeconomics Input** *Prof Winfried Königer / 09-011*	*09:15-10:00hrs* **Problem Solving** *01-014*	*09:15-10:45hrs* **Programming in R** Part I: Background & Tools *Jonathan Chassot & Jan Serwart / 09-011*
10:00hrs 10:15hrs 10:30hrs 10:45hrs	*10:00-10:45hrs* **Problem Solving** *09-011*	*10:00-10:45hrs* **Problem Solving** *01-013*	*10:00-10:45hrs* **Problem Solving** *09-011*	*10:15-11:00hrs* **Problem Solving** *01-014*	
11:00hrs 11:15hrs 11:30hrs 11:45hrs	*11:00-11:45hrs* **Problem Solving** *09-011*	*11:00-11:45hrs* **Problem Solving** *01-013*	*11:00-11:45hrs* **Problem Solving** *09-011*	*11:00-12:30hrs* **Problem Solving (Group/Presentations)** *01-014*	*11:00-12:00hrs* **Programming in R** Part II: First steps in R, core concepts *Jonathan Chassot & Jan Serwart / 09-011*
12:00hrs 12:15hrs 12:30hrs	**Lunch**	**Lunch**	**Lunch**		**Meet Up Lunch with fellow students and the Student Union (SHSG)** *@Campus bar adhoc & terrace*
12:45hrs 13:00hrs 13:15hrs	*12:45-13:30hrs* **Econometrics Input** *Jana Mareckova, Ph.D. / 09-011*	*12:45-14:15hrs* **Problem Solving (Groups/Presentations)** *01-013*	*12:45-14:15hrs* **Problem Solving (Groups/Presentations)** *09-011*	**Lunch**	
13:30hrs 13:45hrs 14:00hrs 14:15hrs 14:30hrs 14:45hrs 15:00hrs	*13:30-15:00hrs* **Problem Solving** *09-011*	*14:15-15:00hrs* **Practice** *01-013*	*14:15-15:00hrs* **Practice** *09-011*	*13:30-14:15hrs* **Practice** *01-014*	*13:30-15:30hrs* **Programming in R** Part III: Working with Data in R *Jonathan Chassot & Jan Serwart / 09-011*
15:15hrs 15:30hrs 15:45hrs 16:00hrs 16:15hrs 16:30hrs	*15:15-16:45hrs* **Problem Solving (Groups/Presentations)** *09-011*	*15:15-16:00hrs* **(Mock) Exam (45 mins)*** *01-013*	*15:15-16:00hrs* **(Mock) Exam (45 mins)*** *09-011*	*14:30-15:30hrs* **(Mock) Exam (60 mins)*** *01-014*	
16:45hrs 17:00hrs	*16:45-17:15hrs* **Practice** *09-011*	*16:15-17:15hrs* **Orientation Economics @HSG** Programme Commission *01-013*	*16:15-17:15hrs* **Data Analysis & IT Infrastructure Input** Hugo Bodory, Ph.D. *09-011*	*15:45-18:30hrs* **USP Workshop with HSG Career & Corporate Services (CSC)** *Input: 01-014* *Workshops: 01-110 / 01-114 / 01-014*	
17:15hrs 17:30hrs 17:45hrs 18:00hrs 18:15hrs	*17:15-18:15hrs* **(Mock) Exam (60 mins)*** *09-011*	**Get to know your classmates Apéro** *FOY01-01*			
18:30hrs					

* Please check on your admission letter, whether the passing of the integration week exams is an admission criteria for you.

University of St.Gallen

Literature List for the Integration Week MEcon and MiQE/F

In order to be able to follow the core studies in the MEcon and MiQE/F, a certain basic knowledge in various academic areas is required.

If you are familiar with the topics and subject areas (theory and application) listed below, you should be prepared and able to succeed with the contents offered in our courses on Master's level for MEcon and MiQE/F.

Please note: The books are only suggestions; other books can be used as well, if they cover similar topics.

Microeconomics

- Varian, Hal R. (2019): Intermediate Microeconomics – A Modern Approach; 9th Edition, W. W. Norton & Company (e.g. chapter 12, 14-16, 18-29, 31-34, 36 & 37).

or

- Varian, Hal R. (2014): Intermediate Microeconomics with Calculus; 1st Edition, W. W. Norton & Company (e.g. chapter 12, 14-16, 19-30, 32-35, 37 & 38).

or

- A. Goolsbee, S. Levitt, and C. Syverson (2020): Microeconomics, 3rd Edition, Worth Publishers (Macmillan), New York.

Macroeconomics

For example the topics covered in:

- Peter Birch Sørensen and Hans Jørgen Whitta-Jacobsen (2011): Introducing Advanced Macroeconomics: Growth and Business Cycles, 2nd Edition, McGraw-Hill.
- Blanchard, Oliver (2020): Macroeconomics, 8th Edition, Pearson.

Econometrics

A basic econometrics course at the level of, for example:

- Wooldridge, Jeffrey (2014): Introductory Econometrics - A Modern Approach; 6th Edition, Cengage Learning.

or

- Angrist, Josh and Steve Pischke (2015): "Mastering 'Metrics: The Path from Cause to Effect", Princeton University Press, US.

Statistics

- Morris DeGroot and Mark Schervish (2012): Probability and Statistics, 4th Edition, Pearson (chapters: 1, 2, 3, 4, 5, 6.2, 7, 9).

This book is also available free of charge as an online version:
http://bio5495.wustl.edu/Probability/Readings/DeGroot4thEdition.pdf

- Michael Barrow (2013): Statistics for economics, accounting and business studies, 6th Edition, Pearson (chapters: 1 - 5).

Mathematics

Students starting the MEcon or the MiQE/F are expected to have a solid background in mathematics before entering the programs. Knowledge of calculus in one and several variables, of linear algebra and some experience with proofs and formal mathematical arguments are required.

The following topics are pre-requisites for the MEcon and the MiQE/F programs:

Analysis:

- Mathematical logic
- Set theory (incl. operation with sets, Cartesian product)
- Combinatorics
- Real numbers and complex numbers
- Sequences, geometric sequences
- Series, geometric series, Euler number
- Financial mathematics (compound interest, present value, continuous compounding)
- Univariate calculus
    - Functions of a real variable
    - Polynomials, exponential and logarithmic functions, trigonometric functions
    - Continuity and differentiability: limits, continuous functions, derivatives
    - Differential, rate of change and elasticities
    - Monotonicity, convexity and concavity of functions
    - Extreme points
    - Taylor polynomials included remainder terms and Taylor theorem
- Multivariate Calculus
    - Functions of several variables
    - Partial derivatives
    - Taylor expansion for function of several variables
    - Generalized chain rule
    - Total differential and partial elasticities
    - Constrained and unconstrained optimization, Lagrange multiplier method
- Integration
    - Definite integral
    - Indefinite integral
    - Fundamental theorem of calculus
    - Improper integral
    - Marginal and total function
    - Probability distributions

Linear algebra:

- Matrices
- Vectors
- Gradients
- Systems of linear equations, existence and uniqueness of solutions, Cramer's rule, Gaussian elimination method
- Eigenvalues and eigenvectors
- Decomposition of matrices

- Quadratic forms

Dynamic models:

- First and second order linear difference equations
  - General solution
  - Monotonicity and convergence properties of solutions
- First order differential equations
  - Analytical solution methods

A self-assessment multiple-choice test which covers selected topics from the pre-requisites can be found at http://www.enricodegiorgi.com/test/index.htm

Clearly, multiple-choice tests have some limitations. However, the test should allow you to refresh your mathematical knowledge before starting the MEcon or the MiQE/F programs. Please note that the test has been created to run under Adobe Reader. If your browser does not use Adobe Reader as default pdf viewer, you might face some issues. In this case, either select Adobe reader pdf viewer or download the file and do the test on paper. Solutions are reported at the end for a self-check.

The book

- De Giorgi, Enrico (2017): Mathematics, University of St.Gallen

covers all topics listed above, and thus best summarizes the pre-requisites in Mathematics for the MECON and MiQEF programs. Exercise booklets are also available, as well as an e-learning tool with more than 2000 multiple choice exercises and open questions. To request the book and the access to the e-learning tool please write go to www.e-maths.ch.

Alternatively, we also suggest the book:

- Chiang, Alpha C. and Kevin Wainwright (2005): Fundamental Methods of Mathematical Economics, McGraw Hill.