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Grundlagenmodul

Master BWL - Math Refresher (14202462)

Summer Semester 2021

1. Content and organisation

This course is part of the *Grundlagenmodul* for Master-students in their first semester. It is a compact course, which is intended to refresh the knowledge of fundamental mathematical concepts. The topics covered in this refresher course are likely to include most mathematical concepts you will come across during your studies in the next two years. If you observe that some of the material is not known to you, please be advised to work through the relevant chapters in one of the sources provided or any other suitable textbook.

The course is taught jointly by Axel Adam-Müller (generally in the winter semester) and myself (usually in the summer semester). To ensure comparability of the content, we share material. The only difference in comparison to last semester is that in the summer semester, an additional part on 'Comparative Statics' (Chapter 10 of the slides) is made available.

The course covers the following topics:

1. Introductory Topics I: Algebra and Equations
2. Introductory Topics II: Miscellaneous
3. Function of One Variable
4. Differentiation
5. Single-Variable Optimisation
6. Functions of Many Variables
7. Multivariable Optimisation
8. Constrained Optimisation
9. Matrix Algebra
10. Comparative Statics

The slides, which cover the entire material and can be used for self-study, as well as all other relevant files, are made available in Stud.IP.

The course consists of four parts:

1. Pre-recorded lectures for Chapters 1 to 9 provided by Axel Adam-Müller. The link to the lectures is available in Stud.IP. You can ignore the introductory video since it refers to last

semester. Given that all of you will have seen most if not all of the material covered here, the Math refresher proceeds rather quickly. It is not an elaborate course for beginners!

2. Three live lectures (for dates see below), in which I introduce the course, cover selected material from Chapters 1 to 9, and present the content of Chapter 10, for which we make no pre-recorded lecture available.

3. We provide you with an extensive set of questions and exercises for self-study. They can help you to assess your knowledge and to prepare for the exam.

4. A question and answer (Q & A) session, in which we recapitulate selected exercises. Moreover, students' questions will be answered in the Q & A session. Alberto Palermo will be in charge of the Q & A session (palermo@uni-trier.de). Please make your questions available to him beforehand via email.

Please be reminded that all the material we provide you with is copyrighted and that you are not permitted to share or distribute it in any way or form unless you are given explicit permission.

You are advised to register in PORTA for the *Grundlagenmodul* since the course will be organised via Stud.IP. You will automatically be registered for a course in Stud.IP about a day after you have registered via PORTA.

If you have any questions, please do not hesitate to contact me (goerke@uni-trier.de).

2. Preliminary schedule

Tuesday, 06.04.2021, 12.00-13.00, Zoom, Goerke Introduction & (Short) Lecture I

All students registered in Stud.IP for the Grundlagenmodul will receive an invitation for a Zoom-meeting to their university email address.

Friday, 09.04.2021: 15.00 – 16.30, Zoom, Goerke Lecture II

Tuesday, 13.04.2021: 12.00 – 13.30, Zoom, Goerke Lecture III

Friday, 16.04.2021: 9.00 – 10.30, Zoom, Palermo Q & A session

Friday, 16.04.2021: 14.00 – 15.30, Zoom, Palermo (Q & A – alternative date)

3. Formalities and further information

The entire course will take place in English.

There will be a joint exam for all courses making up the *Grundlagenmodul* at the end of the summer semester. Details will be provided as soon as they are available.