# Course Descriptions None 2021-2022

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| Course Title | Analysis II |
| Course Code | EBC1032 |
| ECTS Credits | 6,5 |
| Assessment | Whole/Half Grades |

Period

| Period | Start | End | Mon | Tue | Wed | Thu | Fri |
|---|---|---|---|---|---|---|---|
| 4 | 31-1-2022 | 25-3-2022 | X | | X | | |
| 5 | 11-4-2022 | 3-6-2022 | X | | X | | |

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| Level | Intermediate |
| Coordinator | Janos Flesch For more information:j.flesch@maastrichtuniversity.nl |
| Language of instruction | English |
| Goals | * Students learn the concepts and techniques in the fields of integral calculus and differential equations.<br>* Students can apply the solution methods to calculate integrals and solve differential equations.<br>* Students can find and validate the right method to solve the mathematical problem.<br>* Students learn the concepts and techniques and can calculate the convergence interval for infinite series.<br>* Students learn for functions of two variables the concepts of continuity and differentiability, the implicit function theorem, and their implications.<br>* Students can show that a function is continuous, calculate its derivative, and apply the implicit function theorem.<br>* Students learn the definition and solution methods and their application for unconstrained and constrained optimization problems for functions of two variables.<br>* Students can explain their mathematical arguments clearly and discuss their solutions for the mathematical problems in small groups. |
| Description | The course Analysis II provides a more advanced study of mathematical analysis, including a rigorous introduction to integration, infinite series, differential equations, functions of more variables, multivariate calculus, and their applications to unconstrained and constrained optimization. The theory, concepts, tools and methods that are covered during the course are essential and heavily applied in problems arising in econometrics, mathematical economics and operations research. |
| Literature | Reader. |
| Prerequisites | - Differential calculus for functions of one variable (as, for instance, in the course Analysis 1).<br>- Elementary linear algebra (as, for instance, in the course Linear Algebra).<br>An advanced level of English. |
| Teaching methods | Lecture / Assignment |
| Assessment methods | Written Exam |
| Evaluation in previous academic year | For the complete evaluation of this course please click http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM |

This course belongs to the following programme / specialisation

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| Bachelor Econometrics and Operations Research | Year 1 Compulsory Course(s) |