



HÖGSKOLAN I GÄVLE

Principles of Mathematical Analysis C 7.5 cr

Analysens grunder C 7,5 hp

Set by Board of Mathematics, Natural and Computer Sciences

Version

Set at

Valid from

12/17/07

HT2007

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|----------------------------|--------------------------|
| Level | G1F |
| Education level | First cycle |
| Course identifier | MA006C |
| Credits | 7.5 cr |
| Main field of study | Mathematics |
| Subject group | Mathematics |
| Disciplinary domain | Natural sciences 100.0 % |

Learning outcomes The course should through, inter alia, basic topology provide a solid theoretical basis for analysis. After expected course, the student should be able to:

1. account for basic concepts and prove basic theorems within analysis
2. illustrate how general concepts in the theory of metrical spaces may be applied in mathematics and applied mathematics
3. demonstrate skills in applying theorems and solve mathematical problems within analysis

Course content Axioms for and construction of the real numbers.
The theory of metric spaces.
Differentiable function, inverse and implicit function theorem.
Integrals and differential forms.
Sequences and series of functions.

Teaching The teaching is campus-based in the form of lectures and calculation exercises. On the distance course, supervision and reading instructions are provided electronically.

Prerequisites Multivariate Calculus, 7.5 HE credits, or Advanced Linear Algebra, 7.5 HE credits, or equivalent.

Examination Written Examination or Written Assignments, 7.5 HE credits

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| Grade | A, B, C, D, E, Fx, F | | |
| Sustainable environment | Content with sustainable development is not relevant to this course. | | |
| Module | 0010 Written examination or written assignments | 7.5 cr | Grade: AF |