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# University of Pretoria Yearbook 2022

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## Axiomatic set theory and mathematical logic 724 (WTW 724)

**Qualification** Postgraduate

**Faculty** [Faculty of Natural and Agricultural Sciences](#)

**Module credits** 15.00

**NQF Level** 08

**Programmes** [BScHons \(Mathematics and Mathematics Education\) \(Algebra and Analysis\)](#)

[BScHons \(Mathematics\)](#)

**Contact time** 1 lecture per week

**Language of tuition** Module is presented in English

**Department** Mathematics and Applied Mathematics

**Period of presentation** Semester 1

### Module content

Axiomatic set theory, ordinals, transfinite induction and recursion, ordinal arithmetic, the axiom of choice, cardinal arithmetic, the continuum hypothesis. Propositional and first order logic. The completeness and compactness theorems. Decidability, Gödel's incompleteness theorems.

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