

Fachseminar on Algebra and Logic (WiSe 2021/2022)

Dozentin: Prof. Dr. Salma Kuhlmann
Homepage: <https://www.mathematik.uni-konstanz.de/kuhlmann/>
E-Mail: salma.kuhlmann@uni-konstanz.de

Mitarbeiter: Dr. Lothar Sebastian Krapp
Homepage: <http://www.math.uni-konstanz.de/~krapp/>
E-Mail: sebastian.krapp@uni-konstanz.de

Target group

Validation

- Fachseminar (BSc; BEd, MEd) (5 ECTS)

Prerequisites

- Linear Algebra I and II
- Algebra I
- Algebra II (recommended)

Language

- English
- German

Content

Aim Deepening the topics covered in the lectures on Linear Algebra and Algebra with connections to Mathematical Logic.

Each participant will give a **talk**, presenting a specific topic. They will both survey the results from the **literature** and illustrate them with **examples and applications**.

Procedure

1. Each participant will **choose a topic** of their interest. A list of possible topics will be provided, or a participant can suggest a topic of their own, which will be subject to approval by the instructors.
2. Each participant will present their chosen topic through an **oral presentation**. Beforehand they will also produce
 - an **abstract**, where they explain briefly what the main contents of their presentation will be;
 - a **handout** (max. 10 pages), where the content of the talk is covered in detail. The handout will be distributed before the talk and it should help the audience to follow and revise the content.

A personal tutorial will be offered to each participant to help them preparing their talk, discuss questions, suggest improvements.

Schedule

The preliminary time of the seminar is **Wednesdays, 13:30–15:00**. We plan to hold the seminar in presence. Depending on the availability of the participants, the day and time of the seminar can be changed.

Preliminary meeting

We will hold a preliminary meeting to present further information on literature, possible topics and the general structure of the seminar. This meeting is going to take place on **Wednesday, 20 October 2021, 13.30h** in the following virtual room:

<https://bbb.uni-konstanz.de/b/lot-kdt-d74>

(Access code: 104811)

Registration on ZEuS

If you wish to attend the seminar, please register on ZEuS for the course. Please also notify us that you are interested by sending an email to sebastian.krapp@uni-konstanz.de.

Literature

- J. H. CONWAY, *On numbers and games*, Lond. Math. Soc. Monogr. 6 (Academic Press, London, 1976).
- A. J. ENGLER and A. PRESTEL, *Valued Fields*, Springer Monogr. Math. (Springer, Berlin, 2005).
- D. GOLDREI, *Classic Set Theory: For guided independent study* (Chapman & Hall, Boca Raton, 1996).
- D. GOLDREI, *Propositional and Predicate Calculus: A Model of Argument* (Springer, London, 2005).
- S. KUHLMANN, *Ordered Exponential Fields*, Fields Inst. Monogr. 12 (Amer. Math. Soc., Providence, RI, 2000).

- D. MARKER, *Model Theory: An Introduction*, Grad. Texts in Math. 217 (Springer, New York, 2002).
- S. PRIESS-CRAMPE, *Angeordnete Strukturen: Gruppen, Körper, projektive Ebenen*, Ergeb. Math. Grenzgeb. (2) 98 (Springer, Berlin, 1983).