# Articles and Scheduling for Student Seminar in Combinatorics: Theory of Oriented Matroids

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## 1 Seminar Schedule

The schedule is meant to be tentative and may be modified depending on the progress of our seminar. Students may use blackboards, overhead projector, or beamer for presentation. The lecture room is HG E 33.3 (Tuesday 10-12).

| Date | Article | Presenter(s) |
|---|---|---|
| September 17 | overview, initial planning | Komei Fukuda |
| September 24 | fixing teams and planning | Lukas Finschi, Komei Fukuda |
| October 1 | Section 0.1 and 0.2 [7] | team 1 (Laurin Stenz, Marcel Schmid) |
| October 8 | Section 0.3 and 0.4 [7] | team 2 (Luca Eggemann, Laura Casalena) |
| October 15 | Section 0.5 and 0.6 [7] | team 3 (Lucas Dahinden, Florian Meier) |
| October 22 | Section 0.7 and 0.8 [7] | team 4 (Nicolas Camenzind) |
| October 29 | Section 0.9 [7] | team 5 (Andreas Puccio) |
| November 5 | Section 1.1 – 1.3 [7] | team 6 (Clara Brioschi, Maximilian Goldmann) |
| November 12 | Section 1.4 – 1.7 [7] | team 7 (Nicolaus Heuer, Oded Stein) |
| November 19 | Chapter 2 [7] | team 8 (Jakob Oesinghaus) |
| November 26 | Chapter 3 [7] | team 9 (Peter-Maximilian Schmidt) |
| December 3 | Chapter 4 [7] | team 10 (Nathanael Gutmann) |
| December 10 | Chapter 6 – 8 [7] | team 12 (Kalle Klimkewitz) |
| December 17 | Chapter 5 [7] | team 11 (Lazar Todorovic) |

## 2 Presentations and Teams

In this seminar, we mainly focus on the doctoral thesis of Lukas Finschi [**7**], which has excellent introduction to the theory of oriented matroids and has important contributions to the enumeration of many fundamental mathematical objects such as point configurations, arrangement of hyperplanes, convex polytopes, etc. We also consult with other original literatures whenever more clarifications are necessary.

We may add some new articles for presentation, such as those listed in the references later if we are expected to profit from them.

We will have 12 teams, each of which consists of one or two students. A team of two can be made with mutual consensus, but we will have alternative way to make a team by random selection. Each presenter gives a talk on the assigned material for 45 to 90 minutes. Please have a pause of at least 5 minutes in the middle.

## 3 Final Report

Each student (not a team) must submit a final report in pdf of 5 to 10 pages written in latex covering the presented material, detailed proofs and possibly your conjectures, within four weeks after the presentation.

## 4 Articles Online

In addition to making use of web search engines, each student is expected to learn to use the AMS (American Mathematical Society) **MathSciNet** database to search for articles you wish to read: http://www.ams.org/mathscinet/index.html . Even if the database item of the article has no link to the pdf version, please do not give up. Go to the journal site and search there for the pdf. By now, most of the important articles are available online. Please make sure that your network connection is established within the ETH domain (by possibly using VPN from home).

## 5 Office Hours

The default office hours are Friday 10:00–12:00 and 15:00–16:30. Please send your reservation request by e-mail. Other day/time might be available but you have to make an appointment at latest one day before.

Fukuda's office is CAB G 33.3, which is near the entrance door furthest away from the main building HG.

# References


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