Articles for Presentation and Scheduling for Student Seminar in Combinatorics:
The Sylvester-Gallai Theorem and Its Relatives

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1 Seminar Schedule

Each presenter gives a talk on the assigned material of 45 to 90 minutes. The schedule is meant to be a plan and may be modified due to the progress of our seminar. One may use blackboards, overhead projector, or beamer for presentation. Handouts are also welcome.

<table>
<thead>
<tr>
<th>Date</th>
<th>Article</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>September 18</td>
<td>various</td>
<td>Komei Fukuda</td>
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<td>September 27</td>
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<td>Komei Fukuda</td>
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<tr>
<td>October 2</td>
<td>[5][p111–p116(1-7)]</td>
<td>presenter 1 (Oliver Huggenberger)</td>
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<td>October 9</td>
<td>[5][p116(1-6)–p121]</td>
<td>presenter 2 (Edmond Murati)</td>
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<td>October 16</td>
<td>[5][Sections 3 and 4]</td>
<td>presenter 3 (May Szedlak)</td>
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<td>October 23</td>
<td>[5][Sections 5 and 6]</td>
<td>presenter 4 (Janathan Lorand)</td>
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<td>October 30</td>
<td>[10]</td>
<td>presenter 5 (Hannah Hutter)</td>
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<td>November 6</td>
<td>[10]</td>
<td>presenter 6 (Felix Hensel)</td>
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<td>November 13</td>
<td>[23]</td>
<td>presenter 7 (Patrick Link)</td>
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<td>November 20</td>
<td>[17]</td>
<td>presenter 8 (Flavio Wicki)</td>
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<td>November 27</td>
<td>[25]</td>
<td>presenter 9 (Christoph Dätwyler)</td>
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<td>December 4</td>
<td>[1]</td>
<td>presenter 10, 11 (Sara Svaluto-Ferro, Angelo Abächerli)</td>
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<td>December 11</td>
<td>[16]</td>
<td>presenter 12, 13 (Clemans Pohle, Mathias Ermatinger)</td>
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<td>December 18</td>
<td>[16]</td>
<td>presenter 14 (Johannes Schmitt)</td>
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2 Articles for Presentation

The following articles are to be presented with the number of presenters in brackets ():

- related algorithmic problems and a (almost-true?) conjecture of strengthening of
  the SG theorem [10] (2), with an extremely rare counterexample [15],
- two theorems closely linked to the conjecture above [23] (1),
- Hansen’s theorem on higher dimensional generalizations [17] (2),
- Shannon’s paper on the existence of simplicial regions in arrangements of hyper-
  planes, [25] (1 or 2),
- a recent paper on fractional SG theorem and applications in error correcting codes
  [1] (2),
- very recent results asymptotically resolving Dirac’s conjecture [16] (2 or 3)

in this order. Each student taking this seminar for credit must select at least two articles
that you wish to present during the first week. The article assignments will be made during
the first three weeks. We may add some new articles later if we profit from them.

3 Final Report

Each presenter 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

All the articles listed in the references are available online through the weblink
http://www.inf.ethz.ch/personal/fukudak/lect/sgsemi/articles/
It is password protected and access information will be given on the starting day, September
18, 2012.

Please use also the AMS MathSciNet database to search for any other 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.
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References


