This worksheet explains what we are going to cover this week, and is meant to help you plan how to work with the material. Please consult the first worksheet for more detailed explanations.

**Schedule:** Same as last week.

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>08:15-10:00</td>
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<td></td>
<td>SI Linear Algebra</td>
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<tr>
<td>10:15-12:00</td>
<td>Lecture Linear Algebra</td>
<td>Lecture Analysis</td>
<td>Problem seminar Analysis</td>
<td>Lecture Linear Algebra</td>
<td>Problem seminar Analysis</td>
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<td>12:00-13:00</td>
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<td>13:15-15:00</td>
<td>Problem seminar Linear Algebra</td>
<td>Q&amp;A session</td>
<td>Q&amp;A session</td>
<td>Problem seminar Linear Algebra</td>
<td>Q&amp;A session</td>
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<td>15:15-17:00</td>
<td>Q&amp;A session</td>
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<td>Q&amp;A</td>
<td>SI An.</td>
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</tbody>
</table>

**Rotating schedule:** As an extra precaution, we choose to use invitations this week also. Please confirm your invitation for next week at the latest by Sunday by clicking here.

- **Tuesday:** Mentor groups 1 – 8 (58 invited students)
- **Wednesday:** Mentor groups 9 – 16 and 201 (57 invited students)
- **Friday:** Mentor groups 1 – 8 (58 invited students)

**Obligatory activities related to this week:**

- **Confirm invitation to class.** Deadline is Sunday 27 September.
- **Group-wise presentation of problems in problem seminar.** See next page for details.
- **Mentor meeting.** Themes for the meeting this week are to discuss any trouble using Python, and to talk through the changes you need to make, if any, before you resubmit homework 1 to get the pass. Also, you may want to schedule the meeting ahead of your presentation if you have one...
- **Homework:** Homework 2 is published Monday with deadline is Friday next week. If you need to resubmit homework 1, the deadline is this Friday.
Tuesday 22/9:

- **Pages to read before lecture:** Do a first reading of pages 149 – 169, and 209–234.

- **Films available on YouTube:**
  - Chapter 3: (continued from last week)
    * Plotting partial sums using lists, 4:15 min.
    * For-loops, 5:56 min.
    * While-loops, 3:15 min.
    * If-else-break, 3:14 min.
    * Functions, 4:17 min.
    * Plotting functions using lists, 2:16 min.
    * Plotting functions using numpy arrays, 3:04 min.
    * How integers are stored in a computer, 5:47 min.
    * How non-integers are stored in a computer, 10:55 min.
  - Chapter 5:
    * Definition of the limit of sequences, part 1 (5.2-3), 9:20 min.
    * Definition of the limit of sequences, part 1 (5.10-11), 8:13 min.
    * Definition of the limit of sequences, part 1 (5.13), 8:23 min.
    * Computing limits of sequences, part 0: Example of a pitfall, 5:31 min.
    * Computing limits of sequences, part 1: Quotients are good, 6:08 min.
    * Computing limits of sequences, part 2: Compositions, 3:01 min.
    * Computing limits of sequences, part 3: The Squeeze theorem
    * Computing limits of sequences, part 4: The table of growth, 6:51 min.
    * A first glance at Big-oh notation, 4:12 min.
    * On the proof of why the limit of sequences is well-defined, 3:20 min.
    * On the proof of the summation rule for the limit of sequences, 3:05 min.
    * On the proof of the squeeze theorem for limits of sequences, 2:45 min.
    * On the proof of the multiplication rule for limits of sequences, 3:42 min.
    * On the proof of the Balloon lemma, 3:18 min.

- **Reading exercises:** Most exercises in Chapter 3 are meant to help you play around with Python, and are therefore classified as "reading exercises".
  - Chapter 3.3: 3.28, 3.30, 3.32-33, 3.36.
  - Chapter 3.5: 3.60, 3.63, 3.65, 3.70, 3.73.
  - Chapter 5.1: 5.4, 5.8, 5.9, 5.14.
  - Chapter 5.2: None.
  - Chapter 5.3: 5.25, 5.29, 5.34, 5.37a.
  - Chapter 5.4: None.
Wednesday 23/9:

- **Pages to read before problem session:** 149 – 162, 209 – 220.
- **Problems to work on:**
  - 3.4: 3.46, 3.47, 3.52, 3.55.
  - 5.1: 5.5, 5.6, 5.12, 5.15-16, 5.17.
  - 5.2: 5.19, 5.22-23.
- **Problems to present:** (Each group should spend 5-10 minutes in total.)
  - Mentor group 101: 5.5
  - Mentor group 102: 5.6.
  - Mentor group 103: 5.16a.
  - Mentor group 104: 5.23.

Friday 25/9:

- **Pages to read before problem session:** 163 – 169, 221 – 234.
- **Problems to work on:**
  - 3.5: 3.69, 3.71, 3.76, (3.77).
  - 5.3: 5.26, 5.30, 5.32, 5.33, (5.35), 5.37c, 5.38, 5.40-43, 5.47, 5.49-51.
  - 5.4: (Will be central part of homework 3)
- **Problems to present:** (Each group should spend 5-10 minutes in total.)
  - Mentor group 1: 5.50.
  - Mentor group 2: 5.43.
  - Mentor group 3: 5.38.
  - Mentor group 4: 5.33.

- **How to prepare for lecture:** Look over your notes from this week, and determine what parts you understand the least. Try to formulate some questions and post them on the mentimeter page that will be made available after the problem session on Friday.

- **Added exercises:**
  - Exercises 4.66 and 4.71, should be inserted at the end of page 229.
  - At the very end of the chapter, the following exercise should be added: use whatever method you want to finish the proof of Proposition 4.20.