

LaTeX assignment on Homology and Cohomology

Spring term 2018, First assignment

Hand in before 10 o'clock on 26th March 2018
by e-mailing .tex and .pdf file to sven.raum@epfl.ch

Sven Raum

The aim of this assignment is to give a presentation on **1-2 pages** of **homotopy invariance of relative singular homology** including a discussion of **chain homotopies** and to provide a **readable LaTeX code**. This includes several challenges:

- (i) Consulting resources independently.
- (ii) State a formal theorem and explain it.
- (iii) In view of the page limitation, you will be forced to make a choice on which parts are worth more detailed explanation and which others can be simply stated.
- (iv) Writing readable LaTeX code. (Cf. this text's LaTeX code for an example.)

Evaluation:

- This assignment accounts for 10% of the final grade.
- The grading scheme for the assignment takes into account the following aspects:
 - 60% of the points for a mathematically correct account on homotopy invariance of relative singular homology.
 - 20% for a clear presentation and appropriate selection of the content.
 - 20% of the points for a readable LaTeX code.

Suggested resources:

- Hatcher's "Algebraic topology"
<https://www.math.cornell.edu/~hatcher/AT/ATpage.html>.
Theorem 2.10, p.111 and Proposition 2.19, p.118
- Weibel's "An introduction to homological algebra", Chapter 1.4
- The LaTeX symbol list from
tug.ctan.org/info/symbols/comprehensive/symbols-a4.pdf.
- The LaTeX code of this document.

Further information:

- Around week 10 of the semester, there will be a second LaTeX assignment, which will be subject to peer-feedback (cf. https://en.wikipedia.org/wiki/Peer_feedback for peer-feedback in a language learning context). Since the second assignment's grading scheme will be exactly the same as this first one's, you are invited to develop a feeling for how its different aspects can be evaluated.