

Course Information

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Textbook. For most of the semester, we will work from the following book:

- C. Weibel, *An introduction to homological algebra*, Cambridge in Advanced Mathematics, no. 38, Cambridge University Press, Cambridge, 1994.

At various points, we may supplement this with topics from other sources, especially

- S.I. Gelfand and Yu.I. Manin, *Methods of homological algebra*, 2nd ed., Springer Monographs in Mathematics, Springer-Verlag, Berlin, 2003.

Course outline. A rough schedule of topics for the semester is as follows.

Abelian categories; chain complexes; derived functors	3 weeks
Tor and Ext; homological dimension	2 weeks
Derived categories; triangulated categories; spectral sequences	3 weeks
Group cohomology; Hochschild homology	2 weeks
Sheaf cohomology	1 week
Simplicial methods; further topics	remaining time

Homework & Grading. Problem sets will be due approximately once every week or two. Each problem set will consist of about 3–5 problems. The letter grade will be based on the number of problem sets submitted with substantial work, and the $+/-$ designation will be based on the number of correct solutions.

A	Substantial work on at least 80% of the problem sets		
B	Substantial work on at least 50% of the problem sets	+	At least 90% correct solutions
C	Substantial work on at least 20% of the problem sets	neutral	At least 50% correct solutions
D	Less than 20% of the problem sets submitted	-	Less than 50% correct solutions
F	No work submitted		

Under normal circumstances, I expect everyone to earn at least an ‘A’. If you feel that you are getting behind, please come see me as soon as possible.

Exams. There will be no timed exams. In lieu of a final exam, the last homework assignment will be due at the scheduled time for the final exam: Monday, December 7, 10:00am.