

5.00 credits


30.0 h + 15.0 h

Q1


This biannual learning unit is not being organized in 2021-2022 !

Teacher(s)	Van der Linden Tim ;
Language :	English
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	Part of the final mark will take into account continuous evaluation throughout the course. This part of the mark will serve for each exam session and cannot be represented. There will also be an oral exam (exercises, 40% and theory, 60%). At the exam, we test knowledge and understanding of the notions and fundamental results of the course, as well as mastery of the basic techniques of homological algebra.
Teaching methods	The learning activities consist of lectures and practical work sessions. Lectures aim to introduce fundamental concepts, motivate them by showing examples and establishing results. The results are often presented with historical comments and applications. The practical work sessions aim to assimilate the theory through calculation exercises and reflection exercises.
Content	<p>The aim of this activity is to expose the fundamental concepts of homological algebra. The following subjects will be treated within the framework of this course:</p> <ol style="list-style-type: none"> 1. Categories of modules 2. Projective and injective modules 3. Chain complexes 4. Homology of a complex 5. Singular homology of a topological space 6. Morphisms of complexes and homotopies between them 7. Simplicial objects and the Dold-Kan theorem 8. Abelian categories: examples and basic properties 9. Homological lemmas in abelian categories
Inline resources	Course webpage on Moodle, where also the latest version of the course notes is available
Bibliography	<p>S. Mac Lane, Homology, Springer, 1967. Ch. A. Weibel, An introduction to homological algebra, Cambridge University Press, 1994.</p>
Faculty or entity in charge	MATH

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Mathematics	MATH2M	5		
Master [60] in Mathematics	MATH2M1	5		