



The ARCS Seminar

K-theory: An Elementary Introduction

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Abstract: K-theory is a generalized homology in which one associates abelian groups to a C^* -algebra. While K-theory provides some of the most important and useful invariants for C^* -algebras, it is also notoriously technical. Simply defining the abelian groups can be cumbersome and involves a lot of machinery. Furthermore, K-theory is motivated by and has applications to a vast number of topics (e.g., topology, geometry, index theory, classification of C^* -algebras), all of which can easily cause newcomers to get mired in details and lose track of the forest in the trees. In this talk we shall present a bird's eye view of K-theory, including a descriptive walk-through of the definitions of the K-groups and how to use them. Throughout, we will discuss the origins and motivations for K-theory, explain how it relates to other subjects, examine some of its most useful properties, and present the major C^* -algebraic results that it has provided.

This talk is aimed at students, and I'll do my best to keep everything accessible and focus on the "big picture". In particular, I will not assume audience members know anything about homology, C^* -algebras, or other advanced graduate-level topics.

Time and Place: Wednesday, October 14 from 4:30–5:30PM (Mountain Time Zone) on MS Teams. Contact Gene Abrams for the invitation link.



The Rings and Wings Seminar is an activity of ARCS.
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