

MAST 661 (MATH 640/MAST 837), Sec. E

Topics in Analysis

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Topics: In this course we consistently keep to the viewpoint that every mathematical object is a set. Therefore the set theory is a theory of what all the mathematical entities have in common. We develop the theory from the beginning using the axiomatic approach. In particular we consider some set like things which are not sets, i.e. which do not satisfy the axioms. The central point of the course is the ordinal theory which makes it possible to compare the “content”, or cardinality, of any two sets. Other topics include the partial order structures, the Zorn Lemma and similar results, and some recent applications in Analysis. No preliminary knowledge of the set theory is assumed.