

數學系課程核心教材內容

課程名稱：(中文) 基礎數學(一) (英文) Elementary Mathematics (I)				開課單位	學士班
				課程代碼	2101005
學分數	3	必/選修	選修	開課年級	一
<p>教學目標：希望學生能熟悉數學中的基本語言、敘述、證明技巧之能力</p> <p>課程概述：</p> <p>先修科目或先備能力：</p>					
建議參考書目	Bernard W. Banks, <i>A primer for modern mathematics</i> C.C. Pinter, <i>Set Theory</i> T.M. Apostol, <i>Mathematical Analysis</i>				

課程大綱

單元主題	內容綱要	上課週數
Basic Concepts of Logic and Sets	Connectives, Negation, Truth tables, Quantifiers	3-4
Relations and Functions	Cartesian product, Fundamental concepts, Equivalence relations and partitions, Quotient, Direct and inverse image, Composite and inverse functions	3-4
The Integers and Real Numbers	Mathematical induction, lower and upper bounds, least upper bound axiom	3-4
Countable and Uncountable Sets	Equivalence of sets, Cardinal numbers	3-4
Open, closed sets in \mathbb{R}^n (Optional topics).		2