## Joram Lindenstrauss Lior Tzafriri

## Classical Banach Spaces I Sequence Spaces

Reprint of the 1977 Edition

## Classical Banach Spaces II

Function Spaces

Reprint of the 1979 Edition



## Table of Contents

1.	Schauder Bases	. 1
	<ul><li>a. Existence of Bases and Examples</li><li>b. Schauder Bases and Duality</li></ul>	7
	c. Unconditional Bases	15
	d. Examples of Spaces Without an Unconditional Basis	24
	e. The Approximation Property	29
	f. Biorthogonal Systems	42
	g. Schauder Decompositions	47
2.	The Spaces $c_0$ and $l_p$	53
	a. Projections in $c_0$ and $l_p$ and Characterizations of these Spaces b. Absolutely Summing Operators and Uniqueness of Unconditional	53
	Bases	63
	c. Fredholm Operators, Strictly Singular Operators and Complemented Subspaces of $l_p \oplus l_r$	75
	d. Subspaces of $c_0$ and $l_p$ and the Approximation Property, Complement-	, 0
	ably Universal Spaces	84
	e. Banach Spaces Containing $l_p$ or $c_0$	95
	f. Extension and Lifting Properties, Automorphisms of $l_{\infty}$ , $c_0$ and $l_1$ .	104
3.	Symmetric Bases	113
	•	112
	<ul><li>a. Properties of Symmetric Bases, Examples and Special Block Bases</li><li>b. Subspaces of Spaces with a Symmetric Basis</li></ul>	113 123
	b. Subspaces of Spaces with a Symmetric Basis	123
4.	Orlicz Sequence Spaces	137
	a. Subspaces of Orlicz Sequence Spaces which have a Symmetric Basis .	137
	b. Duality and Complemented Subspaces	147
	c. Examples of Orlicz Sequence Spaces	156
	d. Modular Sequence Spaces and Subspaces of $l_p \oplus l_r$	166
	e. Lorentz Sequence Spaces	175
R	eferences	180
Si	ubject Index	185