

Cambridge University Press

0521604885 - Completeness and Basis Properties of Sets of Special Functions

J. R. Higgins

Table of Contents

[More information](#)

Contents

<i>Preface</i>	<i>page ix</i>
1 FOUNDATIONS	1
1.1 Notes on metric spaces	1
1.2 Notes on the L^p spaces	8
1.3 Orthogonal sequences in Hilbert space	11
1.4 Biorthogonal systems in Hilbert space	19
1.5 Postscript to chapter 1	26
2 ORTHOGONAL SEQUENCES	28
2.1 Complete sequences of polynomials	28
2.2 The Vitali completeness criterion	33
2.3 The Dalzell completeness criterion	39
2.4 The functions of Rademacher, Walsh and Haar	45
2.5 CON sequences and the reproducing kernel	53
2.6 The method of isometric transformation	55
2.7 CON sequences of complex functions	64
3 NON-ORTHOGONAL SEQUENCES	71
3.1 The stability of bases	71
3.2 A complex variable method	84
3.3 Non-orthogonal Fourier–Bessel and Legendre functions	88
3.4 Some theorems of Müntz and Szász	95
4 DIFFERENTIAL AND INTEGRAL OPERATORS	98
4.1 Sturm–Liouville systems	100
4.2 Singular boundary value problems	109
4.3 Integral operators	112

Cambridge University Press

0521604885 - Completeness and Basis Properties of Sets of Special Functions

J. R. Higgins

Table of Contents

[More information](#)

viii	<i>Contents</i>
<i>Appendix 1</i> Supplementary theorems	<i>page 116</i>
<i>Appendix 2</i> Definitions of special functions	120
<i>Appendix 3</i> Some complete sequences of special functions	122
<i>Bibliography</i>	126
<i>Subject index</i>	131