Index: Hilbert Space Notes

Adjoint 45-47
Banach Space 15
Bessel's inequality 28
BLT(E₁,E₂) 53
Cayley-Hamilton 2
Cauchy-Schwartz 7
closed, operator 72-73
closed, set 18-20, 35, 47-50
closest point 18-24
closure 20, 48
compact, operator 49, 50-71
compact, set 47-48
complete space 15
continuous 35
control 77
convergence of operators 53
convergence, pointwise 14
convergence, strong 14
convergence, uniform 14
convergence, weak 14
convex set 18
differential equations 5, 8, 40-42, 58
eigenvalue-vector 8-12, 27, 32, 43-45, 53-67
Fourier 15, 31, 65
Fredholm alternative 69-71
generalized eigenvector 66
generalized inverse 33
Gerschgorin circle theorem 11-12
Gramm-Schmidt 28-30
Green's functions 41, 65
Green, William F. 81
Hilbert space 15
Innerproduct space 7
interior 20
Jordan Form 1
Laguerre 29
Legendre 30
maximal orthonormal family 27
matrix norms 12
nilpotent 1, 5, 66
non-expansive 1, 23
normal operator 61-62, 67
operator topology 53
Parallelogram 18
Parseval's inequality 27
polarization 23
polynomial 29-30
projection, definition 1
projection, closest point 18-22, 32-34, 77-78
projection, right triangle 24
projection, unbounded, 56
orthogonal 23
Reisz Representation Theorem 36, 37
resolution of identity 59
self-adjoint 7, 23, 45
separable
Shift operators 65
spectrum
totally bounded 47
Tschebysheff 29
unbounded operator 65, 72
A Compendium of Problems