

Index: Hilbert Space Notes

- Adjoint 45-47
- Banach Space 15
- Bessel's inequality 28
- BLT(E_1, E_2) 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