

Video Lectures

You can find the video files from google video search of the following key words.

"Linear Algebra: 1999 Fall Professor Gilbert Strang"

These video lectures of Professor Gilbert Strang teaching 18.06 were recorded live in the Fall of 1999. Support for the video production was provided by the Lord Foundation of Massachusetts under a grant to the MIT Center for Advanced Educational Services.

Video Lectures Table

NCU_AP2044 Lyu (Strang)		TOPICS VIDEOS
Lyu1 (1.1-2.1)	1	The Geometry of Linear Equations https://www.youtube.com/watch?v=ZK3O402wf1c
Lyu1 (2.2-2.3)	2	Elimination with Matrices https://www.youtube.com/watch?v=QVKj3LADCnA
Lyu1 (2.4-2.5)	3	Multiplication and Inverse Matrices https://www.youtube.com/watch?v=FX4C-JpTFgY
Lyu1 (2.6)	4	Factorization into $A = LU$ https://www.youtube.com/watch?v=5hO3MrzPa0A
Lyu1 (2.7)	5	Transposes, Permutations, Spaces $\mathbb{R}^n$ https://www.youtube.com/watch?v=JibVXBEIKL0
Lyu2 (3.1)	6	Column Space and Nullspace https://www.youtube.com/watch?v=8o5Cmfpeo6g
Lyu2 (3.2)	7	Solving $Ax = 0$: Pivot Variables, Special Solutions https://www.youtube.com/watch?v=VqP2tREmvt0
Lyu2 (3.3-3.4)	8	Solving $Ax = b$: Row Reduced Form R https://www.youtube.com/watch?v=9Q1q7s1jTzU
Lyu2 (3.5)	9	Independence, Basis, and Dimension https://www.youtube.com/watch?v=yjBerM5jWsc
Lyu2 (3.6)	10	The Four Fundamental Subspaces https://www.youtube.com/watch?v=nHIE7EqJFds
Lyu3 (3.1,8.2)	11	Matrix Spaces; Rank 1; Small World Graphs https://www.youtube.com/watch?v=2IdtqGM6KWU
(8.2)	12	Graphs, Networks, Incidence Matrices https://www.youtube.com/watch?v=6-wh6yvk6uc
	13	Quiz 1 Review https://www.youtube.com/watch?v=l88D4r74gtM
Lyu3 (4.1)	14	Orthogonal Vectors and Subspaces https://www.youtube.com/watch?v=YzZUIYRCE38
Lyu3 (4.2)	15	Projections onto Subspaces https://www.youtube.com/watch?v=Y_Ac6KiQ1t0
Lyu4 (4.3)	16	Projection Matrices and Least Squares https://www.youtube.com/watch?v=osh80YCg_GM
Lyu3 (4.4)	17	Orthogonal Matrices and Gram-Schmidt https://www.youtube.com/watch?v=uNsCkP9mgRk
Lyu5 (5.3)	18	Properties of Determinants https://www.youtube.com/watch?v=srxexLishgY
Lyu5 (5.3)	19	Determinant Formulas and Cofactors https://www.youtube.com/watch?v=23LLB9mNJvc
Lyu5 (5.3)	20	Cramer's Rule, Inverse Matrix, and Volume https://www.youtube.com/watch?v=QNpj-qOXW9M

Lyu7 (6.1)	21	Eigenvalues and Eigenvectors https://www.youtube.com/watch?v=IXNXrLcoerU
Lyu7 (6.2)	22	Diagonalization and Powers of A https://www.youtube.com/watch?v=13r9QY6cmjc
Lyu7 (6.3)	23	Differential Equations and $\exp(At)$ https://www.youtube.com/watch?v=IZqwi0wJovM
(8.3,8.5)	24	Markov Matrices; Fourier Series https://www.youtube.com/watch?v=8MF3pz-oYHo
	24b	Quiz 2 Review https://www.youtube.com/watch?v=sFxA8eIS6tA
Lyu7 (6.4)	25	Symmetric Matrices and Positive Definiteness https://www.youtube.com/watch?v=umt6BB1nJ4w
(10.2-10.3)	26	Complex Matrices; Fast Fourier Transform https://www.youtube.com/watch?v=M0Sa8fLOajA
Lyu7 (6.5)	27	Positive Definite Matrices and Minima https://www.youtube.com/watch?v=vF7eyJ2g3kU
Lyu7 (6.6)	28	Similar Matrices and Jordan Form https://www.youtube.com/watch?v=z_zYQHmrh08
Lyu7 (6.7)	29	Singular Value Decomposition https://www.youtube.com/watch?v=Nx0IRBaXoz4
(7.1-7.2)	30	Linear Transformations and Their Matrices https://www.youtube.com/watch?v=Ts3o2I8_Mxc
Lyu6 (7.3-7.4)	31	Change of Basis; Image Compression https://www.youtube.com/watch?v=vGkn-3NFGck
	32	Quiz 3 Review https://www.youtube.com/watch?v=HgC1I_6ySkc
(1-4) (7.4)	33	Left and Right Inverses; Pseudoinverse https://www.youtube.com/watch?v=Go2aLo7ZOIU
	34	Final Course Review https://www.youtube.com/watch?v=RWvi4Vx4CDc