		Part I: Multivariable Calculus	
		M = Basic Multivariable Calculus by J. Marsden, A. Tromba and A. Weinstein	
Chap.	**Sec.**	**Topic**	**Exercises**
		Vector Valued Functions (2 lectures)	
M 4	2	Arc Length	4, 7, 11, 13
	3	Vector Fields	5, 6, 10, 11, 18
		Integrals over Curves and Surfaces (7 lectures)	
M 6	1	Line Integrals	1, 6, 7, 14, 15, 18, 19
	2	Parametrized Surfaces	3, 5, 6, 8, 9, 10
	3	Area of a Surface	1, 4, 8, 9, 10, 12, 15,
	4	Surface Integrals	1, 3, 7, 9, 10, 15
		The Integral Theorems of Vector Analysis (9 lectures)	
M 4	4	Divergence and Curl	2, 3, 11, 14, 16, 21, 22, 25, 28, 30, 31, 32
M 7	1	Green's Theorem	1, 5, 7, 8, 11, 17, 18, 21, 25, 27, 28, 29
	2	Stokes' Theorem	1, 3, 4, 5, 7, 8, 9, 11, 18, 19
	3	Gauss' Theorem	1, 2, 3, 5, 6, 9, 10, 17
	4	Path Independence	5-9, 11, 13, 14, 17, 23
		Part II: Linear Algebra	
		L = Introduction to Linear Algebra by S. Lang S = Linear Algebra and its Applications by G. Strang	
Chap.	**Sec.**	**Topic**	**Exercises**
		Matrices and linear equations (5 lectures)	
L II	1	Matrices	5, 6, 10,11
	2	Multiplication of matrices	8,12, 14-16 20-23,27-32
	4	Row operations and Gauss elimination	2,3,4
	5	Row operations and elementary matrices	2,3
	6	Linear combinations	1
S I	5	Triangular factors and row exchanges	5, 11
S VII	2	Norm and condition number of a matrix	1-8
		Vector spaces (3 lectures)	
L III	1	Definitions	1-5
	2	Linear combinations	1
	4	Linear independence	1-10, 14-16
	5	Dimension	1-3
	6	Rank of a matrix	1-3
		Linear Mappings (3 lectures)	
L IV	2	Linear mappings	1-8,10, 12, 13
	3	Kernel and image of a linear map	3,4,6,8,10,11-13
	4	Rank and linear equations again	1-4,6-8
	5	Matrix associated with linear map	1-8
L V	1	Compositions of linear maps	1-6
	2	Inverses	1,3-5,9,10,12
		Scalar products and orthogonality (3 lectures)	
L VI	1	Scalar products	1-13
	2	Orthogonal bases	1-10
S III	3	Projections and least squares approximations	13, 18, 23, 25
		Determinants (2 lectures)	
L VII	2	3×3 and $n \times n$ determinants	5,6(i),9, 10
	3	Rank of a matrix and subdeterminants	8, 9
	4	Cramer's rule	1
	5	Inverse of a matrix	1, 2
		Eigenvectors and eigenvalues (4 lectures)	
L VIII	1	Eigenvectors and eigenvalues	1-7
	2	The characteristic polynomial	1-15
	4	Diagonalization of symmteric linear maps	1-8
S	3	Computation of eigenvalues	