

Subject: Mathematics – I

Math-101-F

Some useful link, I think which can help and create interest among the students in the subject mathematics & Engineering .

S.No.	Topics	NPTEL links	Others links
1.	What is engineering ?		https://www.youtube.com/watch?v=bipTWWHya8A
	How much maths is used in Engineering ?		https://www.youtube.com/watch?v=hIN0o7moYrQ
2	Indian mathematics: from Vedic to modern times.	http://nptel.ac.in/courses/111101080/	

Some NPTEL / Other links of subject mathematics-I (according to the M.D.U. syllabus) are given below.

Section I: Infinite Series			
S.No.	Topics	NPTEL links	Others links
1.	real numbers	http://nptel.ac.in/courses/122104017/1	
2	sequences	http://nptel.ac.in/courses/122104017/2	
3	sequences	http://nptel.ac.in/courses/122104017/3	
4	Series of numbers.	http://nptel.ac.in/courses/122101003/25	
5	Infinite series partial sum	http://nptel.ac.in/courses/122104017/13	
6	Tests infinite series	http://nptel.ac.in/courses/122104017/14	
7			
8	Test of convergence	http://nptel.ac.in/courses/122101003/26	
9			
10	Absolute convergence, conditional convergence	http://nptel.ac.in/courses/122101003/27	
Section –II: Matrices			

1	matrix algebra	--	https://www.youtube.com/watch?v=hbk01uhgsos
2	inverse of matrix	http://nptel.ac.in/courses/111105035/3	
3	Rank of matrix	http://nptel.ac.in/courses/111105035/3	https://www.youtube.com/watch?v=GU-pJMxABQQ
4	System of simultaneous Linear equation.	http://nptel.ac.in/courses/111105035/5	
5	Linear dependent & Independent vectors	http://nptel.ac.in/courses/111105035/2	
6	Linear transformation , Matrix presentation.	http://nptel.ac.in/courses/111105035/4	
7	Eigen values & Eigen vectors ,Diagonalization of Matrix.	http://nptel.ac.in/courses/111105035/6	https://www.youtube.com/watch?v=If8pYknlxNM
8	Canonical form , Cayley Hamilton theorem.	http://nptel.ac.in/courses/111105035/7	
Section –III : Differential Calculas			
1	Leibnitz's Theorem for successive differentiation.		https://www.youtube.com/watch?v=67uJGwsZz-Q
	Taylor & Maclaurine theorem for one variable.	http://nptel.ac.in/courses/122104017/11	http://www.creativeworld9.com/2011/02/iit-guest-lecture-mathematics-iii-video.html
2	curve tracing	http://nptel.ac.in/courses/122104017/12	
3	Partial derivatives	http://nptel.ac.in/courses/122101003/31	
4	Partial derivatives and euler th.	www.nptel.ac.in/courses/122101003/downloads/Lecture-31.pdf	
5	Composite function	http://nptel.ac.in/courses/122101003/32	
6	Saddle point	http://nptel.ac.in/courses/122101003/38	

7	Implicit function.	http://nptel.ac.in/courses/122101003/33	
8	maxima & minima.	http://nptel.ac.in/courses/122104017/10 http://nptel.ac.in/courses/122101003/37 http://nptel.ac.in/courses/122104017/26	
9	method of Lagrange's multipliers	http://nptel.ac.in/courses/122104017/27	https://www.youtube.com/watch?v=xjUcaH6dCNO
	Taylor's theorem for two variables		https://www.youtube.com/watch?v=Z7yTsoMTjnM
Section IV: Multiple Integral			
1	Double integral over rectangular domain.	http://nptel.ac.in/courses/122101003/40	
2	change of order of integration		https://www.youtube.com/watch?v=BRFUvco07uU
3	Triple integral	http://nptel.ac.in/courses/122101003/41	
4	Change of variable in double & triple integral.	http://nptel.ac.in/courses/122104017/28 http://nptel.ac.in/courses/122101003/42	
5	Area and Volume by double integration	http://www.nptel.ac.in/courses/122101003/40	
6	Integral calculus		http://elearning.vtu.ac.in/10MAT21.html
7	Beta & gamma function		http://elearning.vtu.ac.in/10MAT21.html