

SRI GURU TEGH BAHADUR KHALSA COLLEGE
North Campus, University of Delhi - 110007

Teaching Schedule
(July, 2016 - December, 2016)

Teacher : Jasvinder Kaur Bhalla
Department : Mathematics
Course : B.SC (H) Maths
Subject : C5 Theory of Real Functions
Semester : 1

Text Books

[1] Introduction to Real analysis by R.G. Bartle and D.R. Sherbert

[2] Elementary Analysis by K.A. Ross

Week	Topics to be covered	Remarks
1.	<ul style="list-style-type: none"> ● Limit of functions (epsilon-delta approach) ● Sequential criterion for limits 	[1] Chapter 4 (4.1, 4.2)
2.	<ul style="list-style-type: none"> ● Limit theorems ● Infinite limits ● Limit at infinity 	[1] Chapter 4 (4.3.1 - 4.3.16)
3.	<ul style="list-style-type: none"> ● Continuous functions, discontinuity and related problems 	[1] Chapter 5 (5.1, 5.2)
4.	<ul style="list-style-type: none"> ● Continuous functions on an interval and related problems 	[2] Chapter 18 (18.1, 18.2)
5.	<ul style="list-style-type: none"> ● Intermediate value theorem and related problems 	[2] Chapter 18 (18.3)
6.	<ul style="list-style-type: none"> ● Location of roots and related problems 	[2] Chapter 18 (18.5, 18.6)
7.	<ul style="list-style-type: none"> ● Uniform continuity and theorems and related problems 	[1] Chapter 5 (5.4)
8.	<ul style="list-style-type: none"> ● Differentiability of a function at point and related problems 	[1] Chapter 6 (6.1)

9.	<ul style="list-style-type: none"> • Relative extrema • Rolle's theorem and related problems 	[1] Chapter 6 (6.2.1, 6.2.2, 6.2.3, 6.2.4)
10.	<ul style="list-style-type: none"> • Mean value theorem • Applications of mean value theorem 	[1] Chapter 6 (6.3.5, 6.3.6, 6.3.7)
11.	<ul style="list-style-type: none"> • Darboux's theorem and related problems 	[1] Chapter 6 (6.2.11)
12.	<ul style="list-style-type: none"> • Taylor's theorem and related problems 	[1] Chapter 6 (6.2.12)
13.	<ul style="list-style-type: none"> • Cauchy's mean value theorem and related problems 	[1] Chapter 6 (6.3)
14.	<ul style="list-style-type: none"> • Taylor's series and related applications 	[1] Chapter 6 (6.3.2)
15.	<ul style="list-style-type: none"> • Convex functions and related applications 	[1] Chapter 6 (6.4.1, 6.4.2)
16.	<ul style="list-style-type: none"> • Taylor's series, Maclaurin's series expansion and related problems • Exponential and Trigonometric functions 	[1] Chapter 6 (6.4.3, 6.4.4, 6.4.5, 6.4.6)
17.	<ul style="list-style-type: none"> • Revision 	