


Curriculum Plan (ODD SEM 2021-22): Generic Elective-I (Semester I) Calculus

Mr. Hari Kishan Bhardwaj Assistant Professor Department of Mathematics Kalindi College University of Delhi Delhi- 110008 Mobile: +91-9868053327 E- mail harikishan@kalindi.du.ac.in		Marks Distribution	Theory	75 Marks
			Internal Assessment	25 Marks
		Classes Assigned	Lecture Tutorial	5 per week 1 per week
References	<p>1. Anton, Howard, Bivens, Irl, & Davis, Stephen (2013). Calculus (10th ed.). John Wiley & Sons Singapore Pvt. Ltd. Reprint (2016) by Wiley India Pvt. Ltd. Delhi.</p> <p>2. Strauss, M. J., Bradley, G. L., & Smith, K. J. (2007). Calculus (3rd ed.). Dorling Kindersley (India) Pvt. Ltd. (Pearson Education). Delhi. Sixth impression 2011.</p>			
	Week	Topics		
	1st week Nov 22- 28, 2021	The first derivative test, Concavity and inflection points		
	2nd week Nov 29- 04 Dec, 2021	Second derivative test, Curve sketching using first and second derivative test.		
	3rd week Dec 6-11, 2021	Limits at infinity, Horizontal asymptotes, Vertical asymptotes		
	4th week Dec 13-18, 2021	Graphs with asymptotes; L'Hopital's rule.		
	5th week Dec 20-25, 2021	Volumes by slicing, Volumes of solids of revolution by the disk method		
	6th week Dec 27-01 Jan, 2021-22	Volumes of solids of revolution by the washer method, Volume by cylindrical shells.		

	7th week Jan 03- 08, 2022	Length of plane curves, Arc length of parametric curves, Area of surface of revolution.	
	8th week Jan 10-15, 2022	Techniques of sketching conics, Reflection properties of conics.	
	9th week Jan 17-22, 2022	Polar coordinates, Graphing in polar coordinates.	
	10th week Jan 24-29, 2022	Vector-valued functions: Limit, continuity, Derivatives, Integrals, Arc length, Unit tangent vector, Curvature, Unit normal vector.	
	11th week Jan 31-05 Feb, 2022	Functions of several variables: Graphs, Level curves	
	12th week Feb 07-12, 2022	Limits and continuity, Partial derivatives and differentiability.	
	13th week Feb 14-19, 2022	Functions of several variables: The chain rule, Directional derivatives and gradient vectors.	
	14th week Feb 21-26, 2022	Functions of several variables: Tangent plane and normal line	
	15th week Feb 28- Mar 05, 2022	Extreme values and saddle points.	
	16th week Mar 07- Mar 10, 2022	Revision	
Dispersal of classes, preparation leave and practical examination begin March 11, 2022.			