

SRM University Delhi-NCR, Sonapat

TEACHING, LEARNING & EVALUATION PLAN

Academic Session: 2023-24

Course Name: Measure Theory & Integration

Course Code: 21MAMS402

Faculty Name: Dr. Asha

Programme: M.Sc.-4th Sem, 2nd Yr

Unit	Topic & Coverage	Lecture sessions schedule	Lecture sessions held	Pedagogue	Activity	Unit Objective	Unit Learning outcome	Remark
Unit-I	Introduction to set function	1	1	Participative	1. written text 2. presentation 3. Assignments	To acquired basic knowledge of measure, outer measure	Become familiar with measure on a set	
	Properties of set function	1	1					
	Continue	1	1					
	Length of an open set	1	1					
	concept of measure	1	1					
	Lebesgue outer measure	1	1					
	Continue	1	1					
	measurable sets,	1	1					
	Continue	1	1					
	example of non-measurable set	1	1					
Unit-II	sigma algebra	1	1	Participative	1. written text 2. presentation 3. Assignments 4. MST	To acquired basic knowledge measurable functions	Become familiar with measurable functions	
	Borel sets	1	1					
	F sigma and G delta sets	1	1					
	outer and inner regularity	1	1					
	continue	1	1					
	properties of measures	1	1					
	continue	1	1					
	continue	1	1					
	abstract measure spaces	1	1					
	Continue	1	1					

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Unit-III	Step function	1	1	1	Participative	1. written text 2. presentation 3. Assignments	To introduce Riemann integral, integrable simple functions, the Lebesgue integration of a measurable function, integration	Gain good knowledge of Lebesgue integration of a measurable function, integration	
	simple function	1	1	1					
	characteristic function	1	1	1					
	Theory	1	1	1					
	Review of Riemann integration	1	1	1					
	continue	1	1	1					
	integrable simple functions	1	1	1					
	the Lebesgue integration	1	1	1					
	continue	1	1	1					
	Theorems	1	1	1					
Unit-IV	Integration with respect to	1	1	1	Participative	1. written text 2. presentation 3. Assignments 4. MST	To acquired basic knowledge of Fatou's Lemma, Monotone and Dominated Convergence Theorems	Gains good knowledge on Monotone and Dominated Convergence Theorems	
	Introduction to almost everywhere	1	1	1					
	Almost everywhere convergence	1	1	1					
	Theory	1	1	1					
	convergence in measure	2	2	2					
	continue	1	1	1					
	Monotone Convergence theorem	2	2	2					
	continue	1	1	1					
	Fatou's Lemma	1	1	1					
	Dominated Convergence Theorem	1	1	1					
Continue	1	1	1						
		54	To be written	54					