

# Workshop on Real Analysis and Topology (WRAT-2024)

## Department of Applied Sciences IIIT Allahabad

### Program Schedule (WRAT-2024)

(Sept 06-08, 2024)

#### Day 1: Sept 06, 2024 (Friday)

INAUGURAL SESSION		
09:45 - 09:50	Welcome note from Dr. Saurabh Verma and Ms. Ekta Agrawal	
09:50 - 09:55	Address by Prof. Pramod Kumar HoD, Dept. of Applied Sciences	
MORNING SESSION: LECTURES		
Chair Person: Dr. Anand Kumar Tiwari		
Time	Speaker	Topics
09:55 - 11:25	Dr. Abdullah Bin Abu Baker (IIIT Allahabad)	Metric spaces, connectedness, compactness, completeness
11:30 - 13:00	Dr. Mahendra Kumar Gupta (IIT Bhubneshwar)	Sequences and series of functions, uniform convergence, Ascoli-Arzelà theorem; Weierstrass approximation theorem, contraction mapping principle, Power series
AFTERNOON SESSION: TUTORIALS		
Chair Person: Dr. Saurabh Verma		
15:00 - 16:00	Mr. Hemant Kumar (IIIT Allahabad) & Mr. Himanshu Kumar (IIIT Allahabad)	Tutorial sheet-1A
16:00 - 17:00	Ms. Ekta Agarawal (IIIT Allahabad) & Ms. Sonam Yadav (IIIT Allahabad)	Tutoria sheet-1B

**Day 2: Sept 07, 2024 (Saturday)**

MORNING SESSION: LECTURE and TUTORIAL		
Chair Person: Dr. Mahendra Kumar Gupta		
Time	Speaker	Topics
10:00 - 12:00	Dr. Saurabh Verma (IIIT Allahabad)	Lebesgue measure on the real line, measurable functions; Lebesgue integral, Fatou's lemma, monotone convergence theorem, dominated convergence theorem
12:00 - 13:00	Ms. Ekta Agarawal & Ms. Sonam yadav (IIIT Allahabad)	Tutorial sheet-2
AFTERNOON SESSION: LECTURE and TUTORIAL		
Chair Person: Dr. Suman Kumar		
15:00 - 16:00	Dr. Saurabh Verma (IIIT Allahabad)	Differentiation of functions of several variables, Inverse and Implicit function theorems
16:00 - 17:00	Mr. Hemant Kumar & Mr. Himanshu Kumar	Tutorial sheet-1C

**Day 3: Sept 08, 2024 (Sunday)**

MORNING SESSION: LECTURES		
Chair Person: Dr. Mahendra Kumar Gupta		
Time	Speaker	Topics
10:00 - 11:30	Dr. Anand Kumar Tiwari (IIIT Allahabad)	Basic concepts of topology, bases, subbases, subspace topology, product topology, quotient topology, metric topology
11:30 - 13:00	Dr. Suman Kumar (IGNTU Amarkantak)	Connectedness, compactness, accountability, and separation axioms, and Urysohn's Lemma
AFTERNOON SESSION: TUTORIALS		
Chair Person: Dr. Saurabh Verma		
15:00 - 16:00	Mr. Aditya Singh (IIIT Allahabad) & Dr. Anand Kumar Tiwari	Tutorial sheet-3A
16:00 - 17:00	Dr. Suman Kumar (IGNATU Amarkantak) & Dr. Anand Kumar Tiwari	Tutorial sheet-3B