



# ONE WEEK GIAN COURSE TITLE: CHALCOGENIDE BASED PHASE CHANGE MEMORY FOR NON-VOLATILE DATA STORAGE



## Tentative Lecture Schedule

Day	Time	Lecture/Tutorial	Teaching Faculty	Topic	YouTube Link
<b>Day-1</b> <b>(07.04.2025)</b>	09.00 AM - 10:00 AM	Registration	–	–	
	10:00 AM - 11:00 AM	Inauguration	–	–	
	11:00 AM - 11:30 AM	High Tea	–	–	
	11:30 AM - 12:30 PM	Lecture-1 (1hr)	AL	Memory technologies and memory device architecture	
	03:00 PM - 04:00 PM	Lecture-2 (1hr)	SKP	Phase Change Memory: Multi-level storage, circuit and system-level aspects	
	04:00 PM – 05:00 PM	Lecture-3 (1hr)	AL	Structure properties of chalcogenide material for non-volatile data storage	
<b>Day-2</b> <b>(08.04.2025)</b>	10:00 AM - 11:00 AM	Lecture-4 (1hr)	AL	Local structure; Methods of structure analysis; Chemical bonding	
	11:00 AM – 12:00 PM	Lecture-5 (1hr)	AL	Impact of disorder, composition and dimensions on material properties	
	03:00 PM – 05:00 PM	Tutorial-1 (2 hr)	AL	Structure determination by TEM & Measurements methods of glass forming ability	



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<b>Day-3</b> <b>(09.04.2025)</b>	10:00 AM - 11:00 AM	Lecture-6 (1hr)	AL	Phase change mechanisms; Pressure-induced phase changes	
	11:00 AM – 12:00 PM	Lecture-7 (1hr)	SKP	Phase-change memory as a programmable synapse	
	03:00 PM - 04:00 PM	Lecture-8 (1hr)	AL	Phase transformations induced by ion and electron beams	
<b>Day-4</b> <b>(10.04.2025)</b>	10:00 AM - 11:00 AM	Lecture-9 (1hr)	AL	Glass forming ability & aging mechanism	
	11:00 AM – 12:00 PM	Lecture-10 (1hr)	AL	Crystallization kinetic and its tailoring	
	03:00 PM – 05:00 PM	Tutorial-2 (2 hr)	SKP	Thin film deposition using RF/DC magnetron sputtering system, pulsed laser deposition (PLD) and molecular beam epitaxy (MBE)	
<b>Day-5</b> <b>(11.04.2025)</b>	10:00 AM - 11:00 AM	Lecture-11 (1hr)	AL	Materials engineering for device optimization	
	11:00 AM – 12:00 PM	Lecture-12 (1hr)	AL	Hetero-structured phase change materials	
	03:00 PM – 04:00 PM	Examination	AL, SKP	–	
	04:00 PM – 05:00 PM	Valedictory	–	–	

AL – Dr. Andriy Lotnyk and SKP – Dr. Shivendra Kumar Pandey