

National Institute of Technology Meghalaya

An Institute of National Importance

CURRICULUM

Programme		me l	Bachelor of Technology in Computer Science and Engineering Year of Regulation									egulation	2019-20		9-20
D	epartm	ent	Computer S	cience ar	d Engine	ering					Seme	ster		V	/
Course Name							Credit Structure Marks Distribution								
Code CS301									Т	Р	С	INT	MID	END	Total
			Operating Systems					3	1	0	4	50	50	100	200
		To introduce the components of operating system CO1 Able to learn the fundamenta										•			
Course Objectives		To analyse the process scheduling and execution							CO2	techniques.			bout different process schedulin		
		To describe the structure of main memory, virtual memory Cours							CO3	Able to solve process synchronization and deadlock handling strategies					
		Outcomes CO4 Able to acquire knowledge ab													
		To explore the structure of an operating system's I/O subsystem and hardware.							CO5	management techniques and page replacement algorithms. Able to describe file concepts and analyse various disk scheduling and storage strategies					
							ill December 0								D 00-
No.	COs		Mapping with Program Outcor PO1 PO2 PO3 PO4 PO5 PO6 PO7										•	ping with	1
1	001			PO3	PO4 0	PO5 0			PO9 0	PO10 0	PO11	PO12	PSO1	PSO2	PSO 0
1 2	CO1 CO2		0	0	0	0	0 0		0	0	0	0	2	1	1
2	CO2		2	2	1	0	0 0		0	0	0	1	2	1	1
4	CO3		2	2	2	0	0 0		1	0	1	1	1	1	1
5	CO5		0	1	1	0	0 0		0	0	0	1	1	1	0
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No.	Content											Hours COs		COs	
	Introduction Operating Systems Functionalities - Formal Definition - Evolution – Types of operating system, Services, Operating system Design and Implementation, Operating System Structure.														
•	Opera	ating Sys							of opera	ating sys ^a	tem, Ser	vices,	06		CO1
	Opera Opera Proce IPC n Proce	ating Systems Mana ess Mana ess conc nodels: sess Sync fors -	tem Design gement ept - Proces shared men chronization	and Impl ss contro nory and - Pete	ementatio I block, P message rson's So	on, Opera Process H e passing plution, F		ads – Single Iling algorithi	Thread a ms, Mult Semapt	and Multi tiprocesso nores, Cri	Thread I or Schec itical Re	Model, Juling, gions,	06		
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III V	Opera Opera Opera Proce IPC n Proce Monit Algor Memo Overv & Cor File S Acces imple	ating System ating system ating system ating system ass Mana ass conc nodels: s ass Sync ars - ithm. ary Mana view of S mpaction system ass Meth mentation vstem disk sch	tem Design gement ept - Proces shared men chronization Deadlock p gement wapping - M - Page repla	and Impl ss contro hory and - Pete reventior Aultiple P acement a guous-Se ry Storag	ementation I block, P message rson's So - Deadlo artitions algorithm equential e Structu	on, Opera Process H e passing olution, F ock avoid - Paging s, Memor and Ind re.	ting System S lierarchy, Thre J. CPU Sched Process Sync Jance and De , Page table, S y allocation al	ads – Single lling algorith aronization - adlock Detection egmentation, gorithms: first	Thread a ms, Mult Semaph ction an Demand t fit, Bes	and Multi tiprocess nores, Cri d Recove I paging- t fit, wors terface	Thread I or Schec itical Re ery - Ba Fragmen t fit. File S	Model, Juling, gions, ankers ntation ystem	16 14 08		02, CO3

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, "Operating System Concepts", 9th Edition, John Wiley & Sons Inc. 2012.

2. Andrew S Tanenbaum, "Modern Operating Systems", 4th Edition, Prentice Hall. 2014

3. William Stallings, "Operating System: Internals and Design Principles", 9th Edition, Pearson, 2018.

Supplementary Readings

- 1. Harvey M. Deitel, Paul J. Deitel, David R. Choffnes, "Operating System", 3rd Edition, Pearson, 2013.
- 2. D M Dhamdhere, "System Programming and Operating Systems", 2nd Edition, Tata McGraw Hill, 2009.
- 3. Gary Nutt, "Operating Systems: A Modern Perspective", 2nd Edition, Addison Wesley, 2001.

4. Achyut S Godbole, "Operating Systems", 3rd Edition, Tata McGraw Hill, 2010.