

National Institute of Technology Meghalaya

An Institute of National Importance

CURRICULUM

Programm Departmer		e Mas	Master of Computer Applications										Year of Regulation			
		t Computer Science and Engineering									Semester				IV	
Cours	se l									Credit S	tructure			Marks Distribution		
Code		Course Name Pre-Requisi						re-Requisite	L	Т	Р	С	Continud Evaluati	1 () 7	/ Viva	Total
CA55	2	Design and Analysis of Algorithm Lab							0	1	2	2	70	3	30	100
										CO's	Statement				Bloom's Taxonomy	
		To tead algorit praction	ch paradigi hms and to e.	ms and app appreciate	proaches us the impac	sed to analy t of algorith	ze and d nm desig	lesign n in		CA552.1	Analyze the asymptotic performa algorithms.			ince of	Analyse	
		To make students understand how asymptotic notation is used to provide a rough classification of algorithms.							Course Outcomes	CA552.2	Write rigorous correctness produgorithms.		ctness proof	s for	or Create	
Cours Objecti	ves r	To explain different computational models and various complexity measures to analyze the complexity/performance of different algorithms.								CA552.3	Apply important algorithmic desiparadigms and methods of analysis Synthesize efficient algorithms in engineering design situations.				Apply	
		To teach various advanced design and analysis techniques such as greedy algorithms, dynamic programming.								CA552.4				Create		
		Know the concepts of tractable and intractable problems and the classes P, NP and NP-complete problems.														
COs		Mapping with Program Out								<u>s)</u>				Марр	oing with PSOs	
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO:
CA552		2	1	1		1					1	1	1	1		1
CA552		2	1	1	1	1	1			1				1	1	1
CA552		1	1	1	1	1				1				2	2	
CA552		2	2	2	2									1	1	1
CA55	2	1.75	1.25	1.25	1.33	1.00	1.00			1.00	1.00	1.00	1.00	1.25	1.33	1.00
									LLABUS				1			
No.		Content Hour												COs		
'	Assign	ignments and Tutorials on Brute Force, Divide and Conquer												06	CA552.1	
II	Assign	gnments and Tutorials on Decrease and Conquer, Linear sorting													CA552.2	
III	Assign	gnments and Tutorials on Greedy methods												08	CA552.3	
IV	Assign	signments and Tutorials on Dynamic Programming and string processing												08	CA552.4	

Essential Readings

- 1. A. Aho, J. Hopcroft and J. Ullman, "The Design and Analysis of Computer Algorithms", 4th Impression, Addison-Wesley, 2009.
- 2. E Horowitz, S Sahni, and S Rajasekhran, "Fundamentals of Computer Algorithms", 2nd Edition, Universities Press, 2008.
- 3. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, "Introduction to Algorithms", 3rd Edition, Pearson, 2010.
- 4. S. Sridhar, "Design and Analysis of Algorithms", 1st Edition, Oxford University Press, 2015.

Supplementary Readings

- 1. J. Kleinberg, E Tardos, "Algorithm Design", 1st Edition, Pearson, 2014.
- 2. S. Dasgupta, C. H. Papadimitriou, and U. V. Vazirani, "Algorithms", 2nd Edition, Tata McGraw Hill, 2016.
- 3. Steven S Skiena, "The Algorithm Design Manual", 2nd Edition, Springer, 2011.
- 4. H Bashin, "Algorithms Design and Analysis", 1st Edition, Oxford University Press, 2015.