

Research Course on Approximation Algorithms

[Course web-page: <http://www.isical.ac.in/~arijit/courses/autumn2015/approx.html>]

Taught by: Arindam Khan (AK), Visiting Scientist, ACMU and Arijit Bishnu (ArB), ACMU

Serial	Dates	Topic(s)	Responsibilities
Lecture 1	Sept 29 (Tues) Introductory Lecture I	Strong NP-completeness; Introduction to approximation algorithms; notions of PTAS, FPTAS, EPTAS, QPTAS; Introduction to LP, ILP, relaxation, rounding, integrality gap, etc., Notion of APX hardness, hardness of approximation; Configuration LP, notions of separation oracle, etc.; Discrepancy, Spencer six-sigma result, Beck-Fiala systems, entropy, etc.	ArB
Lecture 2	Sept 30 (Wed) Introductory Lecture II		ArB
Lecture 3	Oct 1 (Thurs) Introductory Lecture III		ArB
Lecture 4	Oct 5 (Mon)	Bin packing (APTAS)	AK
Lecture 5	Oct 7 (Wed)	Iterative Rounding -- Generalized Assignment Problem	AK
Lecture 6	Oct 8 (Thurs)	Minimum degree bounded spanning tree	AK
Lecture 7	Oct 27 (Tues)	Bin packing (Karp and Karmarkar)	AK
Lecture 8	Oct 28 (Wed)	Basic overview of Lovett-Meka and discrepancy based rounding	AK
Lecture 9	Oct 29 (Thurs)	Basic overview of Lovett-Meka and discrepancy based rounding	AK
Lecture 10			
Lecture 11			
Lecture 12			
Lecture 13			
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Lecture 18			
Lecture 19			
	Nov 30 ~ Dec 11	End Semester (M Tech CS II)	
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Lecture 22			
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Lecture 40			