



# GLOBAL INITIATIVE FOR ACADEMIC NETWORKS




**NATIONAL INSTITUTE OF TECHNOLOGY, DURGAPUR**

## Finite Markov Chain and Fuzzy Models in Management and Education

### Overview

There used to be a tradition in science and engineering of turning to probability theory when one is faced with a problem in which uncertainty plays a significant role. This transition was justified when there were no alternative tools for dealing with the uncertainty. Today this is no longer the case. Fuzzy logic, which is based on fuzzy sets theory introduced by Zadeh in 1965, provides a rich and meaningful addition to standard logic that opens the door to construction of mathematical solutions of computational problems which are stated in a natural language. In contrast, standard probability theory does not have this capability, a fact which is one of its principal limitations. The applications which may be generated from or adapted to fuzzy logic are wide-ranging and provide the opportunity for modelling under conditions which are inherently imprecisely defined, despite the concerns of classical logicians. Many systems may be modelled, simulated and even replicated with the help of fuzzy logic, not the least of which is human reasoning itself.

On the other hand, concerning the probability theory, Markov chains offer ideal conditions for the study and mathematical modelling of a certain kind of phenomena depending upon random variables. The basic concepts of the corresponding theory were introduced by Markov in 1907 on coding literary texts. Since then the Markov chain theory was developed by a number of leading mathematicians such as Kolmogorov, Feller etc, but only from the 60's the importance of this theory to the natural, social and most of the other applied sciences has been recognized.

<b>Module</b>	<b>A: Finite Markov Chains</b> : <b>October 3 - October 4, 2016</b>
	<b>B: Fuzzy Sets and Logic</b> : <b>October 5 - October 7, 2016</b>
<b>Number of participants for the course will be limited to thirty.</b>	

<b>You Should Attend if.....</b>	1. You are Executives, engineers and researchers from manufacturing, service and government organizations including R&D laboratories.
	2. You are students at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic institutions and technical institutions.

## Fees

The participation fees for taking the course is as follows:

Participants from abroad	:	US \$ 200
Industry/Research Organizations	:	Rs.6000
Academic Institutions	:	Rs.4000
Students/Scholars	:	Rs.1000

The above fee includes all instructional materials, computer use for tutorials, 24 hr free internet facility. Accommodation will be arranged twin sharing basis on payment basis.

## The Faculty



**Prof. Michael Gr. Voskoglou** is currently an Emeritus Professor of Mathematical Sciences at the School of Technological Applications of the Graduate Technological Educational Institute (T. E. I.) of Western Greece, where he served as a Full Professor from 1987 to 2010. He is the author of 10 books in Greek and in English language and of more than 350 papers published in reputed journals and proceedings of conferences of 26 countries in the five continents around the globe, with many references from other researchers. He is also the Editor in Chief of the "International Journal of Applications of Fuzzy Sets and Artificial Intelligence" (ISSN 2241-1240), Reviewer of the American Mathematical Society and member of the Editorial Board or referee in a great number of mathematical journals. His research interests include Algebra, Fuzzy Logic, Markov Chains, Artificial Intelligence and Mathematics Education.



**Dr. Anita Pal** is an Assistant Professor of Mathematics department NIT Durgapur. Her current research interest lies in Graph Theory, Fuzzy Mathematics and Operations research. She has published more than 80 papers, mostly in various International and national journals of repute. She has co-authored two books on Engineering Mathematics. She is in editorial board of many International Journals. She has visited 12 countries for academic interest. She has successfully completed two sponsored projects and one is ongoing now.

## COURSE CO ORDINATOR

**Dr. Anita Pal**

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## Registration Process

Registration for GIAN course is not automatic because of the constraints on maximum number of participants allowed to register for a course. In order to register for one or multiple non-overlapping courses, you have to apply online using the following steps:

1. Create login and password at [www.gian.iitkgp.ac.in](http://www.gian.iitkgp.ac.in)
2. Login and complete the registration form.
3. Select courses
4. Confirm your application and payment information.
5. Pay Rs.500 through online payment gateway.

The course coordinator of the course will go through your application and confirm your selection as a participant one month before the starting date of the course. Once you are selected you will be informed and requested to pay the full fees through online gateway service.

## Venue:

**Dept. of Mathematics, NIT Durgapur,  
West Bengal, India, 713209**



[http:// www.nitdgp.ac.in](http://www.nitdgp.ac.in)