Option Pricing: A Computational Framework

Overview

Options are frequently used nowadays as hedging instruments to protect the investors from potential losses. The associated option pricing problems are modeled through numerous types of differential equations, some of which are stochastic whereas the others are deterministic. Seeing that the values of these options depend on other assets for which these are written, an in-depth study of how these options are modeled and valued plays an important role. Furthermore, such models are very complex and hence their sophisticated approximation by means of suitable computations techniques is unavoidable. The aim of this course is therefore twofold: (a) introduce the participants with basics of option pricing, and (b) an extensive discussion on various computational tools to simulate these types of problems.

The objectives of the course are:

i) To introduce the post-graduate students and emerging researchers to financial instruments, their modeling and simulations,

ii) To equip the participants with relevant mathematical skills through sophisticated analytical and computational tools from financial engineering,

iii) To expose the participants to some robust simulation techniques which are used to price some financial instruments.

Participants will gain some advance knowledge on above topics through lectures and tutorials with hands-on experiments. Also case studies and assignments will be shared to stimulate research motivation of participants.

Course Schedule	**April 14-19, 2020** **Number of participants for the course will be limited to fifty.**
You Should Attend If…	▪ You are a Ph.D. scholar or a student have enrolled for one of the following degree programme: MBA/BBA/M.Com/B.Com/MA/BA/M.Tech/B.Tech/MSc/BSc or completed. ▪ You are an executive/business analyst/financial analyst/banker/scientist/faculty member Some quantitative background in Mathematics/Statistics/Economics may be an advantage.
Fees	**One-time GIAN Registration:** Please visit http://www.gian.iitkgp.ac.in/GREGN/index and register by paying **Rs 500/-** (those who have already been registered and paid, need not pay again) then opt the course under course registration tab and save. After completing this process please inform to the course coordinator by e-mail. The participation fees for taking the course is as follows: **Participants from abroad:** **US $ 125** **Industry/Research Organizations:** **Rs. 2000** **Academic Institutions:** **a) Faculty:** **Rs. 2000** **b) Ph.D. Scholar:** **Rs. 1500** **c) UG/PG Student:** **Rs. 1000** The above fees include all instructional materials kit, certificate, use of computer facilities for tutorials and assignments, 24 hour free internet facility. The participants will be provided accommodation on payment basis.

The Faculty

Dr. Kailash C. Patidar is currently working as a Senior Professor and Head of the Department of Mathematics, University of the Western Cape, South Africa. He received his PhD (Mathematics) in 2002 from Indian Institute of Technology (IIT) Kanpur, India. He visited universities of Tuebingen (Germany) and Pretoria (South Africa) for his post-doctoral studies. He received a C2 Rating (established researcher) from the South African National Research Foundation for the period 2010-2015 and again for 2016-2021. His research involves mathematical methods and scientific computing for application problems that arise from the interactions between natural and life sciences as well as those from the engineering domain. He has published a number of research papers in journals of international repute. He is a reviewer of several peer reviewed journals. Some of his important research publications in the field of computational finance are listed on https://www.uwc.ac.za/Biography/Pages/01Prof.-Kailash-Patidar.aspx

Dr. Gajendra K. Vishwakarma is currently working as an Assistant Professor in the Department of Mathematics & Computing, Indian Institute of Technology (Indian School of Mines) Dhanbad, India. He obtained his PhD (Statistics) in 2007 from Vikram University Ujjain, India. He worked in both theoretical as well as applied statistics and has several years of academic and industrial research experience. Further details about his academic and research credentials can be seen on https://www.iitism.ac.in/facultydetail.php?id=OTg3

Course registration fee can be paid either by NEFT (Account holder name: The Registrar, Indian Institute of Technology (ISM) Dhanbad: Account No.0986101009746; IFSC Code: CNRB0000986; Bank: CANARA BANK; Branch Name: Saraidhela Dhanbad) or by sending a demand draft in favour of "Registrar, IIT(ISM) Dhanbad" payable at Dhanbad – 826004 on or before April 10, 2020. The course fee is non-refundable. For further clarification, please contact the course co-ordinator.

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Course ID: 191058K01

Number of Credits: 02

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Course Co-ordinator

Dr. Gajendra K. Vishwakarma

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http://www.iitism.ac.in

http://www.gian.iitkgp.ac.in

REGISTRATION FORM

Option Pricing: A Computational Framework [Course ID: 191058K01]

(April 14-19, 2020)

Paste your soft copy of recent photograph

1. **GIAN Registration/Application Number:** _____
2. **Full Name:** _____
3. **Date of Birth:**_____**Category (SC/ST/OBC)**_____
4. **Participation type (Industry/Academic/Student):**_____
5. **Qualification/Degree Programme:** _____
6. **Organization:** _____
7. **Address:** _____

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8. **E-mail ID:** _____ **Mobile No.:** _____
9. **Fee Detail:** Payable to "Registrar, IIT(ISM) Dhanbad", CANARA BANK , Saraidhela, Dhanbad

   i) Transaction No. (e-transfer/RTGS/NEFT):_____Date:_____ Amount:_____

   ii) Demand Draft No. (If paid by Demand Draft): _____Date:_____ Amount:_____
10. **Accommodation Required:** Yes/No: _____in Hostel/Guest House _____

    (Rent of Hostel Rs 50/-day and Guest House Rs 400/- day on sharing basis)

Place :_____

Date : _____ **Signature of the Applicant:** _____

Welcome to

Department of Mathematics & Computing, Indian Institute of Technology (ISM) Dhanbad, India