MEMORANDUM OF UNDERSTANDING (MOU)

Between



K.R. MANGALAM UNIVERSITY

Sohna Road, Gurugram (Haryana)-122103, India

and



Ramja

RAMJAS COLLEGE UNIVERSITY OF DELHI

University Enclave, Delhi-110007, India

MEMORANDUM OF UNDERSTANDING

The Memorandum of Understanding is executed on 15th day of September, 2022.

BETWEEN

K.R. Mangalam University, Sohna Road, Gurugram – 122103, Haryana, India (Delhi NCR Region), a state private university established under the Haryana Private Universities Act 2006, and empowered to award degrees as specified by UGC under section 2f of the UGC Act, 1956, through its Registrar, presently Gp. Capt. P. Mahajan duly authorized to enter into and sign an MOU on behalf of K.R. Mangalam University (hereinafter referred to as KRMU), PARTY OF THE FIRST PART.

AND

Ramjas College, University of Delhi, University Enclave, Delhi-110007, India through its Principal, duly authorized in this regard to sign an MOU on behalf of Ramjas College, PARTY OF THE SECOND PART.

The expression KRMU and Ramjas College shall, mean and include the Institutions/Organizations, their successors, appointees, assignees etc.

1. SCOPE OF THIS AGREEMENT

The scope of collaboration on academic and research activities in this Memorandum of Understanding includes the following categories:

- (i) Academic and Research collaboration in the areas of mutual interest. It is expected that this collaboration will in due course lead to collaborative research projects, joint publications, joint conferences/workshops/seminars, etc.
- (ii) Joint supervision of UG/PG/PhD students in the areas of interest, Faculty development programs.

2. RESEARCH COLLABORATION

Faculty from both Institutions will collaborate in the joint research in disciplines of mutual interest. All such joint research activities will be governed by the terms as given below:

a. Proposals for collaborative research work under this Memorandum will be submitted with the prior approval of the Head of each institution, or his/her nominee.

- b. Each institution will nominate one of its members as its representative in charge of the cooperative programme. Individual programme of work under this Memorandum will be jointly planned and conducted by the nominees of both parties.
- c. Procedures followed in any activity under MOU will be reviewed and approved by designated authorities of both parties.
- d. Neither K.R. Mangalam University nor Ramjas College (University of Delhi) will be held responsible for any liability to the party, and neither party shall be required to purchase any insurance against loss or damage to any property due to activities to which this agreement relates.
- e. Every collaboration will have its own agreement / contract which addresses issues such as IPR, funding pattern, usage policies of research facilities, disclosure of information etc.

3. FACULTY COLLABORATION

- i. Pursuant to the agreement for academic exchange, K.R. Mangalam University and Ramjas College (University of Delhi) may invite faculty to deliver guest lectures, organize FDPs and engage in joint guidance of research projects according to the terms mutually agreed by both parties.
- ii. Participants will be subjected to the rules and regulations of the host institution.
- iii. The scope and duration of the collaboration may be amended and/or extended through the joint agreement further with the consent and approval of both the parties.

4. COMMENCEMENT, RENEWAL, TERMINATION AND AMENDMENT

This MoU will come into force upon affixing of the signatures of the representatives of the partner institutions and will remain in effect for three years. This MoU will be renewed after each three years, with the agreement of both the partner institutions. If either partner institution wishes to terminate the MoU, it must notify the other institution not less than two months prior to date of termination.

This MoU or its renewal and the actions taken under it may be reviewed at any time. Modifications may be made by mutual agreement and any amendment or extension to the agreement may be formalized by the exchange of letters between the two parties.

For K.R. Mangalam University

For Ramjas College, University of Delhi

Gp. Capt. P. Mahajan Haryana 122103

Registrar

K.R. Mangalam University

Sohna Road, Gurugram-122103

Haryana – 122001, India

Prof. Manoj Kumar Khanna

Principal

Ramjas College, University of Delhi

University Enclave Delhi-110007, India

July

1. WITNESS:

Dr. Pawan Kumar (Associate Dean Research)

K.R. Mangalam University Sohna Road, Gurugram

Haryana-122103, India

1. WITNESS:

Prof. Hament Kumar Rajor (Vice Principal)

Ramjas College, University of Delhi

University Enclave Delhi-110007, India

2. WITNES

Dr. Seema Raj - Associate Professor (SBAS)

K.R. Mangalam University

Sohna Road, Gurugram

Haryana-122103, India

2. WITNESS:

Prof. (Dr.) Sunil Kumar

Ramjas College, University of Delhi

University Enclave

Delhi-110007, India



DEPARTMENT OF PHYSICS

RAMJAS COLLEGE

UNIVERSITY OF DELHI, DELHI - 110007, INDIA

Ph: +91 11-27667706, Fax: +91 11-27667447

Date: 8 August 2023

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To.

Ms Sejal

B Sc.(H) Mathematics, 5th Semester School of Basic & Applied Science

K.R. Mangalam University Sohna Road, Gurugram Haryana-122103, India

Subject: Completion of Internship from 11 July 2023 to 1 August 2023 in Econophysics Research

Dear Sejal,

I trust this letter finds you in excellent health and good spirits. I am delighted to inform you of the successful conclusion of your internship in the realm of Econophysics research at Ramjas College, University of Delhi.

Throughout your internship, you demonstrated remarkable commitment, passion, and an admirable work ethic. Your contributions to the ongoing econophysics research initiatives have proven to be invaluable and perceptive. Engaging in various research undertakings, such as data analysis. Interature reviews, and scholarly discussions, showcased your exceptional intellectual curiosity and sharp analytical skills.

Moreover, your proactive approach to learning and your eagerness to tackle research challenges have been truly commendable. Your ability to grasp intricate concepts and apply them in practical research settings is a testament to your academic prowess.

I would like to seize this opportunity to convey my sincere appreciation for your significant contributions to the research pursuits at Ramjas College. Your presence has served as a wellspring of inspiration for both faculty members and fellow students alike. Your collaborative spirit and scholarly rigor have greatly enriched the research milieu.

I have complete confidence that the knowledge and experience you have acquired during your internship will serve as a robust foundation for your forthcoming academic and professional ventures. Your unwavering dedication to the field of econophysics is commendable, and I am optimistic that you will continue to thrive in your chosen path.

Please do not hesitate to reach out should you require any further guidance or support along your academic journey. Lextend my best wishes for your success in all your future endeavors.

Once again, congratulations on the successful completion of your internship. I eagerly anticipate hearing about your continued accomplishments.

Warm regards,

Dr. Sunif Kumar

(Professor)

Prof. (Dr.) Sunil Kumar Professor Department of Physics, Ramjas College. University of Delhi, Delhi-110007, INDIA

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DEPARTMENT OF PHYSICS

RAMJAS COLLEGE

UNIVERSITY OF DELHI, DELHI - 110007, INDIA

Ph: +91 11-27667706, Fax: +91 11-27667447

e-mail: Shumair full and the full

October 6, 2023

Ms. Muskan

B Sc (H) Mathematics, 5" Semester School of Basic & Applied Science K R. Mangalam University Sohna Road, Gurugram Haryana-122103, India

Subject: Completion of Internship from 11 July 2023 to 1 August 2023 in Econophysics Research

Dear Muskan,

I hope this letter finds you in great health and high spirits. I am pleased to inform you that your internship in the field of Econophysics research at Ramjas College, University of Delhi, has concluded successfully.

Throughout your internship, you exhibited exceptional dedication, enthusiasm, and a commendable work ethic. Your contributions to ongoing econophysics research projects have been highly valuable and insightful. Your active involvement in various research tasks, including data analysis, literature reviews, and academic discussions, demonstrated a strong intellectual curiosity and sharp analytical acumen.

Additionally, your proactive learning approach and your willingness to tackle research challenges have been truly commendable. Your capability to grasp complex concepts and apply them in practical research scenarios reflects your academic aptitude.

I would like to take this moment to express my sincere gratitude for your substantial contributions to the research endeavors at Ramjas College. Your presence has been a source of inspiration for both faculty members and fellow students. Your collaborative spirit and academic rigor have significantly enriched the research environment.

I am confident that the knowledge and experience gained during your internship will provide a solid foundation for your future academic and professional pursuits. Your commitment to the field of econophysics is admirable, and I have no doubt that you will continue to excel in your chosen path

Please feel free to reach out if you need any further guidance or support along your academic journey. I extend my best wishes for your success in all your future endeavors.

Once again, congratulations on the successful completion of your internship, I look forward to hearing about your continued achievements

warm regards

Dr. Sunil Kumar

(Professor)

Prof. (Dr.) Sunil Kumar Professor Department of Physics, Ramjas College, University of Delhi, Delhi-110007, INDIA

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DEPARTMENT OF PHYSICS

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PROF SUNIL KUMAR

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Or Sund Kumar

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Prof. (Dr.) Sunil Kumar Professor Department of Physics, Ramjas Communic University of Pullin, Delni-110007, INDIA

Registrar K.R. Mangalam University Sohna Road, Gurugram, (Haryana)

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SCHOOL OF BASIC AND APPLIED SCIENCES

Academic Session 2022-23

SBAS/Notice/2022-23/

9 December 2022

NOTICE

WEBINAR ON "COMPLEXITY AND DATA SCIENCE APPROACH TO STUDY FRAGILITY IN FINANCIAL MARKET"

IN COLLABORATION WITH

RAMJAS COLLEGE, UNIVERSITY OF DELHI (UNDER MOU)

- [1] School of Basic and Applied Sciences is planning a Webinar on "Complexity and Data Science Approach to Study Fragility in Financial Market" on 13 December 2022 in collaboration with Ramjas College, University of Delhi under MoU through online mode.
- [2] The main aim of organizing the webinar is to provide information about the financial market and its complexity.

Resource Person: Prof. Sunil Kumar, Ramjas College, University of Delhi

MS Team link:

https://teams.microsoft.com/l/meetup-

join/19%3ameeting_MDViMDE3N2ItNmI2YS00YjMxLTkwZTMtNzE1OTY4MjRiNjMy%40thread.v2/0?context=%7b%22Tid%22%3a%2238fd5a4b-955f-455a-9ad2-

d2daa5a4e4d0%22%2c%22Oid%22%3a%222e48eed3-43d1-4cf6-9662-b63c26747f42%22%7d

Dr. Neeraj Kumari and Dr. Pawan Kumar

Event-In-Charge

Dr. Meena Bhandari (Dean, SBAS)



AJAS COLLEGE, UNIVERSITY OF DELH OF BASIC AND APPLIED SCIE IN COLLABORATION WITH SCHOOL

IPLEXITY AND DATA SCIEN APPROACH TO STUDY THE

A WEBINAR ON

FRAGILITY IN FINANCIAL

RESOURCE PERSON
PROF. SUNIL KUMAR
RAMJAS COLLEGE
UNIVERSITY OF DELHI

ATE: 13 DECEMBER

ME: 12:00PI

www.kemangalam edu in

Webinar on

"Complexity and Data Science Approach to Study Fragility in Financial Market"

In collaboration with Ramjas College, University of Delhi (Under MoU)

Date: Tuesday, 13 December 2022

Venue: Online, MS Team

Event type: Webinar

Mode of activity: Online

Target Group: UG and PG students of SBAS

Resource person: Dr. Sunil Kumar, Department of Physics, Ramjas College, University of

Delhi - 110007

Event Coordinators: Dr. Neeraj Kumari and Dr Pawan Kumar

Organized by: School of Basic and Applied Sciences

School of Basic and Applied Sciences organized a webinar on "Complexity and Data Science Approach to Study Fragility in Financial Market" in online mode in collaboration with Ramjas College, University of Delhi. The stock market is well known example of a complex system where interacting agents lead to joint evolution of stock returns and the collective market behavior exhibits emergent properties. However, it is challenging task to quantify complexity in stock market data. Therefore, the main objective of the webinar was to aware the participants about the financial market and its complexity.

The webinar was started by Dr Neeraj Kumari, event coordinator where she welcomed all the participants and gave a brief introduction about the webinar and resource person. Professor Sunil started his talk from complex system which are associated with nature, society and infrastructure. As society is divided into different components like

financial market, friendship and collaboration. The financial market is the creation of human civilization. He told that financial market are man made complex system which consists of investors. The data found in the stock market is useless until it transformed into useful information. The hidden information can be extracted by using various systems like data science, statistical mechanics, non-linear dynamics and complex network theory.

Dr Sunil emphasized on different steps used for filtration of stock market data. He also discussed about different theories used in the financial market. Random Matrix Theory which was successfully developed by E Wigner in 1951 and now a days, used in financial market on a large scale. He also highlighted network centric measures used in the financial market data analysis. He discussed about the important events in stock markets like Black Monday, Tsunami/ Fukushima Lost Decade and many more.

It was a nice session where participants became acquainted with financial market and its complex system. In the last participants asked about their queries. Dr Neeraj Kumari gave vote of thanks and expressed her gratitude to the resource person and participants.

Glimpses of the event

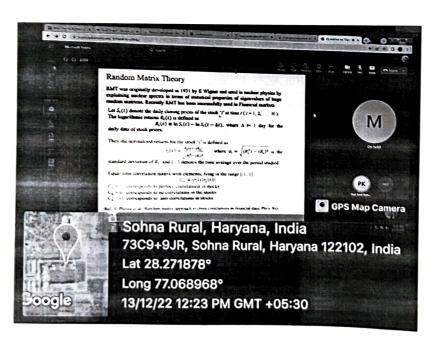


Photo 1: Experts discussing about the Random Matrix Theory

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Photo 2: Expert trying to explain about the financial market

Dr Neeraj Kumari
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Dr Pawan Kumar
Sal .
Dr Meena Bhandari
Meena greens
13.12.2022

Complexity and data science approach to study fragility in financial market

Date: 13th December 2022 Venue: Online

School of Basic and Applied Sciences

Sr. No.	Student Name	
1	Neeraj Kumari	
2	Meena Bhandari	
3	Rajni Gautam	
4	Ruby Jindal	
5	Dr. Mina Yadav	
6	Jeetika	
7	Abhay Berwal	
8	Seema Raj	
9	Pooja Vats	
10	Ms. Ritika Khatri	
11	Amit Aggarwal	
12	Chandan	
13	Prof. Sunil Kumar (DU) (Guest)	
14	Anjali	
15	Pawan Kumar	
16	MUSKAN	
17	NEHA	
18	MADHURI RAJPOOT	
19	Meghna (Guest)	

Verified by:

Signature:

Date:

Necry 1222



K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

SCHOOL OF BASIC AND APPLIED SCIENCES IN COLLABORATION WITH RAMJAS COLLEGE UNIVERSITY OF DELHI, DELHI

ORGANIZES A SEMINAR ON

"AIR QUALITY ASSESSMENT: AWARENESS OF TRENDS IN TECHNOLOGY"



Prof. (Dr.) Manoj Kumar Khanna Principal, Ramjas College University of Delhi-110007

Resource Person



Prof. (Dr.) Sunil Kumar Ramjas College versity of Delhi-110007

Date: 04 October 2022 Venue: Online Time: 12:00 Noon

Faculty Coordinator Dr. Seema Raj and Dr. Rupali

University Gurugram Campus; C 011-48884888 / 8800697010-15 88800697012

www.krmangalam.edu.in welcome@krmangalam.edu.in



Report on

Air Quality Assessment: Awareness of trends in technology

(Under MoU with Ramjas College, DU)

(Seminar)

Date: Tuesday, 04th October 2022.

Venue: Room No. B014 (Hybrid mode), B Block, K.R. Mangalam University.

Event Type: Seminar

Mode of Activity: Online Target Group: Students

Resource Person (if any): Prof. (Dr.) Sunil Kumar, Ramjas College, DU.

Coordinators: Dr Seema Raj and Dr Rupali

Organized by: School of Basic and Applied Sciences

Number of Participants (Attach Attendance as Annexure): 18

The Air Quality Impact Assessment (AQIA) is an important method for figuring out to how much extent of existing or potential sources of emissions at receptor sites contribute to ground level pollutant concentrations. Modeling and monitoring strategies for air quality are the main AQIA efforts. The purpose of this lecture is to provide exposure to the students related to air quality assessment and recent developments in this field. Prof. (Dr.) Sunil Kumar, the resource person started his lecture with note of global issues related to Air Pollution. After that he introduced the students regarding Air Quality Index and its scale. The Air Quality Monitoring Systems and Air Quality Prediction Models were explained by Prof. Sunil. Sir also talked on the difficulties and prospects in this area. He concluded his talk with highlights of improvement in the area of air pollution monitors, air pollution modelling, and the role of smartphones. Students now have knowledge of the precise methodology or concept underlying the Air Quality Index, which they previously only knew as it appeared in public reports. This seminar enables the students to execute any projects or assignment related to this field.

Registrar



Phono I: Studients attending Seminar on Air Quality Assessment in offline mode



Photo 2: Representation of records during seminar



Photo 3: The resource person Prf. Sunil delivering his Seminar on Air Quality Assessment in online mode

Report prepared by	Dr Seema Raj
Report verified by Event Coordinator	Dr Seema Raj and Dr Rupali
Report Seen by Dean / Club Coordinator / Activity	meeng
Coordinator/ IQAC Director / Registrar	

Annexure I: Attendance

Annexure II: Feedback of the students

Registrar K.R. Mangalam University

Sohna Road, Gurugram, (Haryana)