



**A report  
on  
International Workshop  
on  
*Application of Mathematical Modelling in  
Engineering and Sciences*  
(IWAMMES-2023)  
18 -22 April 2023**

**Organized by:  
Department of Mathematics  
Swami Keshvanand Institute of Technology,  
Management & Gramothan, Jaipur  
(Rajasthan), India**

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## **Committees of the Workshop**

### **PATRONS**

Mr. Raja Ram Meel, Patron, SKIT Jaipur  
Mr. Surja Ram Meel, Chairman, SKIT Jaipur

### **Advisory Board**

Prof. V. P. Saxena, Bhopal  
Dr. M. A. Khanday, Srinagar  
Dr. V H. Pradhan, Surat  
Dr. K R. Pardasani, MANIT, Bhopal  
Dr. P. S. Rajput, Sage Group, Bhopal

### **Institute Advisory Board** Shri Jaipal Meel, Director, SKIT, Jaipur

Prof. S. L. Surana, Director (Academics), SKIT, Jaipur  
Mrs. Rachna Meel, Registrar, SKIT, Jaipur  
Prof. Ramesh Kumar Pachar, Principal, SKIT, Jaipur  
Mrs. Abba Meel, Advisor, SKIT  
Prof. R.K.Jain, Dean-Academics, SKIT, Jaipur  
Prof. Rohit Mukherjee, I/C B.Tech. I Year  
Prof. Amber Srivastava, HOD-Maths  
Prof. Anil Choudhary, HOD-IT  
Prof. Mukesh Kumar Gupta, HOD-CS  
Prof. D.K. Sharma, HOD-Civil  
Prof. Dheeraj Joshi, HOD-ME  
Prof. Mukesh Arora, HOD-EC  
Dr. Sarfarazj Nawaz, HOD-EE  
Prof. Brajraj Sharma, HOD-Physics  
Dr. Sharda Soni, HOD-Chemistry  
Prof. Neha Purohit, HOD- English  
Prof. Ona Ladiwal, HOD-MBA

### **Convenors**

Dr. Sangeeta Choudhary, Associate Professor, Department of Mathematics  
Dr. Shalini Shekhawat, Associate Professor, Department of Mathematics

### **Organizing committee**

Dr. Pramila Kumawat, Professor, Department of Mathematics  
Dr. Vijay Kumar Singhal, Associate Professor, Department of Mathematics  
Dr. Jyoti Arora, Associate Professor, Department of Mathematics  
Dr. Nawal Kishor Jangid, Associate Professor, Department of Mathematics  
Dr. Sumit Gupta, Associate Professor, Department of Mathematics  
Mr. C. P. Jain, Assistant Professor, Department of Mathematics  
Dr. Vivek Vijay, Assistant Professor, Department of Mathematics  
Ms. Surbhi Sharma, Assistant Professor, Department of Mathematics  
Dr. Deepika Jain, Assistant Professor, Department of Mathematics  
Dr. Amit Dadheech, Assistant Professor, Department of Mathematics

## Letter of Approval from College

Department Of Mathematics

S.No	Types of Event*	Title of Event	Mode of Conduction	Proposed Date	Name of Coordinator	Any Collaboration	Budget Required
1	International Conference	International Conference on Theory and Applications of Mathematics	Hybrid Mode	24-25 Feb, 2023	Dr Sangeeta Choudhary	Yet to be sought	70,000 /- ✓
2	Student Workshop	5 Day Student workshop on MATLAB	Offline	15-19 May, 2023	Dr Nawal Kishor Jangid, Dr Vivek Vijay	No	Not Required (Inhouse Activity) ✓

Approved  
Mukesh  
28-9-22

Yes permitted and forwarded to Registrar for financial approval.  
ph  
28-9-22

(Dr Amber Srivastava)  
Prof & Head-Department of Mathematics  
13/9/2022

Approved  
18/9/2022

Department Of Mathematics

S.No	Types of Event*	Title of Event	Mode of Conduction	Proposed Date	Name of Coordinator	Any Collaboration	Budget Required
1	International Conference	changed to International International Conference on Theory and Applications of Mathematics	Hybrid Mode	24-25 Feb, 2023	Dr Sangeeta Choudhary	Yet to be sought	70,000 /- ✓
2	Student Workshop	5 Day Student workshop on MATLAB	Offline	15-19 May, 2023	Dr Nawal Kishor Jangid, Dr Vivek Vijay	No	Not Required (Inhouse Activity) ✓

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(Dr Amber Srivastava)  
Prof & Head-Department of Mathematics  
13/9/2022

Approved  
18/9/2022

## Notice of Workshop



**Swami Keshvanand Institute of Technology, Management &  
Gramothan, Jaipur**

### **Notice**

Date: 27/02/2023

We are pleased to inform you that the Department of mathematics, Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT), Jaipur (Rajasthan), India is organizing an International International Workshop on “Application of Mathematical Modelling in Engineering and Sciences” (IWAMMES-2023) from 18 -22 April 2023 in offline mode.

There registration fee is as follows:

- for faculty-1000/-
- research scholar or PG students-500/-
- For UG students-300/-

For more details you can go through the brochure of the workshop on the institute website .  
The participants have to register online through the given link- <https://rzp.io/V/IM331za>

**For more information contact:**

**Dr. Sangeeta Choudhary**

Associate Professor, Department of Mathematics, SKIT, Jaipur

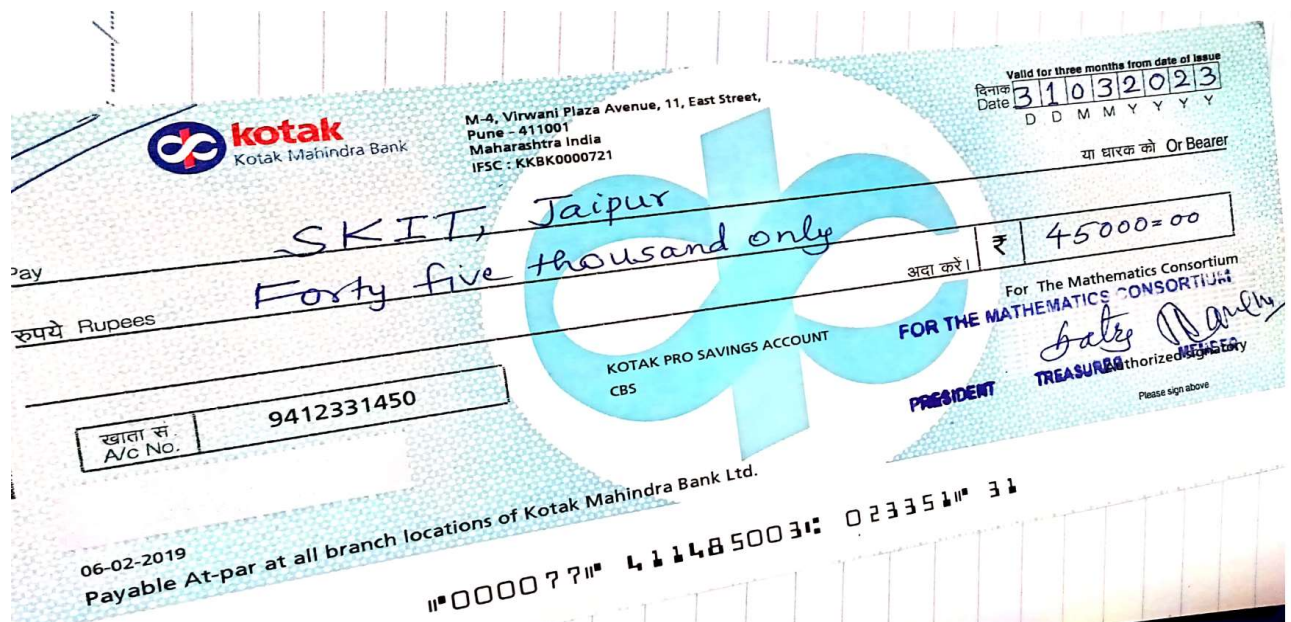
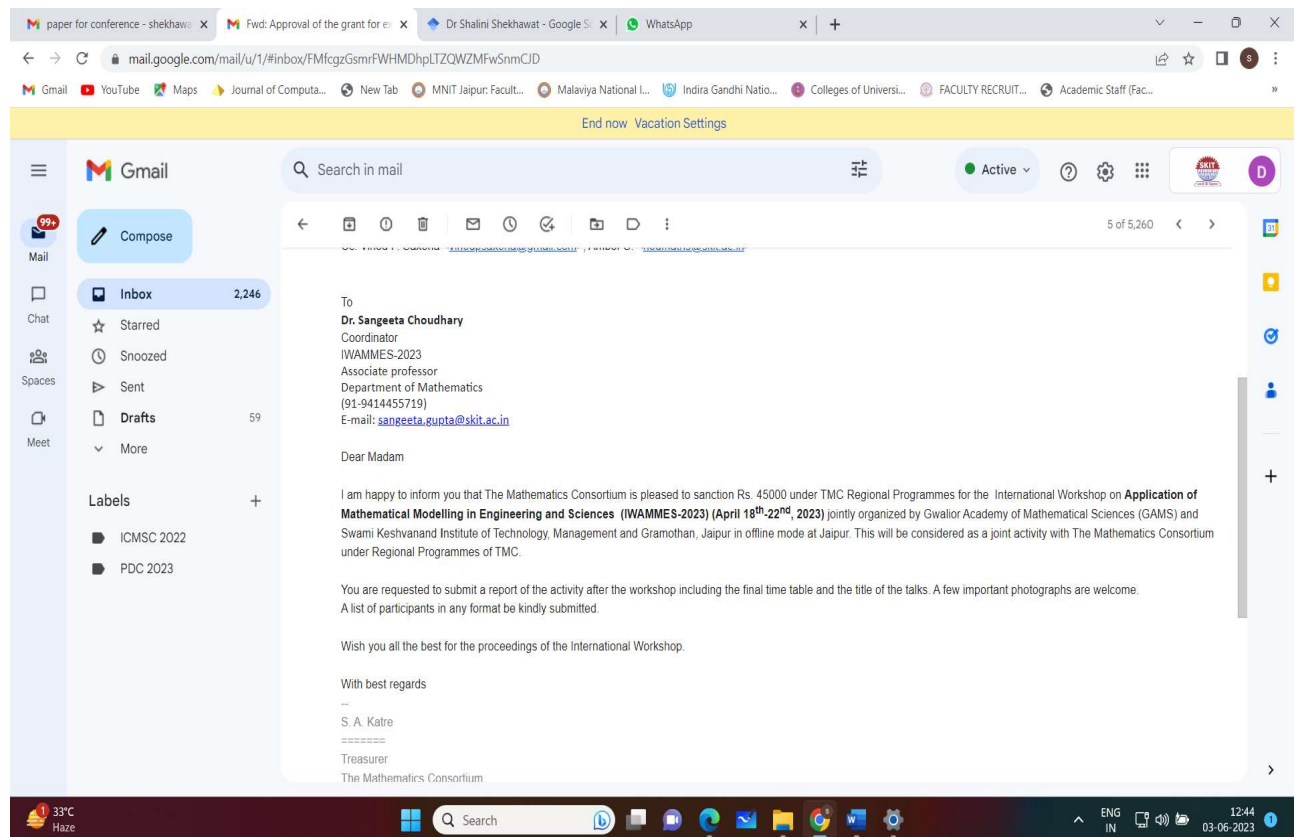
Mobile: + 91-9414455719

**Dr. Shalini Shekhawat**

Associate Professor, Department of Mathematics, SKIT, Jaipur

Mobile: +91 9461628510

# Documents of Collaboration



### **Objectives of Workshop**

The main objective of the “**International Workshop on Application of Mathematical Modelling in Engineering and Sciences**” (IWAMMES-2023) is to provide knowledge and on hand training of Advanced Techniques of Mathematical Modelling in Air Pollution, Fluid Dynamic, Biological Systems, Ecology and AI. This will be covered by oral presentation and computer-based practicals in physical mode. Experts associated with different fields of mathematics and statistics are invited to share their knowledge with us.

### **Outcome of Workshop**

Expected outcomes of the conference are to:

- 1) Disseminate research discoveries by using innovative means of lecturing and presenting.
- 2) provide a platform to the participants to upgrade their knowledge on recent Advanced Techniques of Mathematical Modelling in Air Pollution, Fluid Dynamic, Biological Systems, Ecology and AI.



# Brochure of the Workshop

## PATRONS

Mr. Raja Ram Meel, Patron SKIT, Jaipur  
Mr. Surja Ram Meel, Chairman SKIT, Jaipur

## ADVISORY BOARD

Prof. V. P. Saxena, Bhopal  
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Prof. Dheeraj Joshi, HOD-ME  
Prof. Mukesh Arora, HOD-EC  
Dr. Sarfarazj Nawaz, HOD-EE  
Prof. Brajraj Sharma, HOD-Physics  
Dr. Sharda Soni, HOD-Chemistry  
Prof. Neha Purohit, HOD- English  
Prof. Ona Ladiwal, HOD-MBA

## CONVENERS

Dr. Sangeeta Choudhary, Asso. Prof., Dept. of Mathematics  
Dr. Shalini Shekhawat, Asso. Prof., Dept. of Mathematics

## ORGANIZING COMMITTEE

Dr. Pramila Kumawat, Prof., Dept. of Mathematics  
Dr. V. K. Singhal, Asso. Prof., Dept. of Mathematics  
Dr. Jyoti Arora, Asso. Prof., Dept. of Mathematics  
Dr. N. K. Jangid, Asso. Prof., Dept. of Mathematics  
Mr. C. P. Jain, Asst. Prof., Dept. of Mathematics  
Dr. Vivek Vijay, Asst. Prof., Dept. of Mathematics  
Dr. Sumit Gupta, Asso. Prof., Dept. of Mathematics  
Ms Surbhi Sharma, Asst. Prof., Dept. of Mathematics  
Ms Deepika Jain, Asst. Prof., Dept. of Mathematics  
Mr. Amit Dadheech, Asst. Prof., Dept. of Mathematics

## PAYMENT DETAILS & LINK

Category	Payment
Faculty	1000 INR
Research Scholar/ PG student	500 INR
UG Student	300 INR

<https://rzp.io/1/IM331za>

## CONTACT PERSONS

Dr. Sangeeta Choudhary 91-9414455719  
Dr. Shalini Shekhawat 91-9461628510  
Mail Id: sangeeta.gupta@skit.ac.in ,  
drshalini@skit.ac.in

## Five Days International Workshop on "Application of Mathematical Modelling in Engineering and Sciences"

April 18-22, 2023

Sponsored by



The Mathematics Consortium

Jointly Organized by



Gwalior Academy of Mathematical Science  
(GAMS)  
and



Department of Mathematics  
Swami Keshvanand Institute of Technology,  
Management & Gramothan  
Jaipur

## ABOUT SKIT JAIPUR

Swami Keshvanand Institute of Technology, Management & Gramothan (SKIT) inspired from the learnings of Swami Keshvanand, was established in the year 2000 by Technocrats and Managers Society for Advance Learning. Today the Institution is recognized as one of the centres of academic excellence in Northern India.

The Institute is affiliated to Rajasthan Technical University (RTU), Kota for offering Ph.D, Postgraduate and Graduate Courses in Engineering and Management. The Institute is approved by All India Council for Technical Education (AICTE), New Delhi. Engineering branches are accredited by National Board of Accreditation (NBA), New Delhi and also by Institute of Engineers, Kolkata.

Located in the Pink City Jaipur, which is a blend of traditional history & modern outlook, SKIT is putting in efforts for making industry ready engineers and managers through effective Industry-Institute Interface. Apart from university curriculum SKIT also pursues activities for research and development in various fields.

SKIT has been consecutively ranked No.1 in engineering programmes for 5 years from 2017-18 to 2021-22 in Rajasthan by RTU, Kota.

For further information visit: [www.skit.ac.in](http://www.skit.ac.in)

## ABOUT GAMS

Gwalior academy of mathematical science (GAMS) was started on 11 December 1993 at Jiwaji University, Gwalior and opened its membership in January 1994. Professor V. P. Saxena, Former Vice-Chancellor of Jiwaji University, Gwalior, and the founder President along with researchers and faculty members of the Gwalior region played a vital role in the establishment of GAMS with the objective to develop research interest in mathematics amongst the scholars, to promote teaching and research areas in mathematical sciences. Since then, it has been involved toward the upliftment of mathematics by publishing news bulletins, research journals and organizing annual conferences, workshops and seminars in interdisciplinary areas. Annual conferences of the society have been held at various NIT's, universities and other reputed engineering colleges in different part of the country. GAMS has become

a highly reported society among large research communities not only from India but also abroad. GAMS is the only Indian society that is the member of the world federation of society of Mathematics.

## ABOUT THE DEPARTMENT

The Department of Mathematics, teaches various topics in Mathematics to Under Graduate and Post Graduate students of different Engineering and Management Courses. In alignment to the vision and mission of the institute, the Department has put consistent and dedicated efforts towards achieving excellence in research and teaching. Besides teaching and fulfilling various administrative responsibilities, the faculty members are also actively engaged in quality research in the areas of Applied Mathematics. To keep in touch with the ever-growing technological developments in the relevant fields, the members regularly participate in refresher courses, symposia, seminars and conferences organized by various universities and research institutions all over the country. They also hold memberships of various national academic bodies and societies.

## OBJECTIVE OF THE WORKSHOP

To provide knowledge and on hand training of Advanced Techniques of Mathematical Modelling in Air Pollution, Fluid Dynamic, Biological Systems, Ecology and AI. This will be covered by oral presentation and computer based practical's in physical mode.

## PROPOSED EXPERTS AND SPEAKERS

Professor Karmeshu	JNU, New Delhi
Professor V.P. Saxena	JU Gwalior/Bhopal
Professor Renu Jain	DAVV, Indore
Professor V.H. Pradhan	SUNIT, Surat
Dr. K. R. Pardasani	MNIT, Bhopal
Dr. Sudhir Sharma	LNMIIT, Jaipur
Dr. D. S. Chouhan	UOR, Jaipur
Dr. Jugal Prajapat	Central University, Ajmer
Professor Milan Stelhih	JKU, Austria
Dr. Praveen Agrawal	AICE, Jaipur
Professor S.A. Katre	Univ. of Pune, Pune
Professor S. Sunder	IIT, Chennai
Dr. Lata Chanchlani	UOR, Jaipur

## REGISTRATION FORM

### Five Days International Workshop on "Application of Mathematical Modelling in Engineering and Sciences"

April 18-22-2023

Name: .....

(In block letters)

Designation: .....

Organization: .....

Address for Communication: .....

Mobile No: .....

Email: .....

Payment Details:

Amount in Rs .....

Reference ID .....

Dated: .....

Bank Detail .....



## Schedule of Programme

### Tentative Technical Schedule

Venue(Inaugural Ceremony): J. C. Bose Seminar hall

Venue (Technical Sessions): A. P. J. Abdul Kalam Seminar Hall

Day/Date	Time	Event	Resource person
DAY-1 Tuesday 18/4/23	9:15 am-9:45 am	<b>Inaugural function</b>	
	9.45 am-10:15 am	<b>High tea</b>	
	10:15 am-11:45 am	<b>Plenary session-I</b> I -Function and it's Applications	Prof. Renu Jain, VC-DAVV, Indore
	11:45 am-1:15pm	<b>Plenary session-II</b> Power of Modelling-Study of Socio-Technical Systems	Prof. Karmeshu, JNU
	1:15 pm-1:45 pm	<b>Lunch Break</b>	
	1:45 pm-3:15 pm	<b>Plenary session-III</b> Introduction to Quadratic B-spline Finite Element Method & its applications	Prof. V. H. Pradhan S.V.N.I.T., Surat.
DAY-2 Wednesday 19/4/23	9:30am-11:00am	<b>Plenary session-IV</b> Mathematical modeling in data science	Prof. K. R. Pardasani, MANIT, Bhopal
	11:00am -12:30pm	<b>Plenary session-V</b> Finite Element Modelling and Applications	Prof. V. P. Saxena, Ex-VC, Jiwaji University, Gwalior
	12:30 pm-1:30 pm	<b>Lunch Break</b>	
	1:30pm -3:00pm	<b>Plenary session-VI(Online)</b> Fractional calculus of modified special functions and solution of fractional differential equations	Prof. Praveen Agarwal, AnandICE
DAY-3 Thursday 20/4/23	9:30am-11:00am	<b>Plenary session-VII</b> Use of Mathematics in Data Science and its Applications	Prof. S.A.Katre, Pune
	11:00am -12:30pm	<b>Plenary session-VIII</b> Computational Modelling of Biological Neurons: An Information Processing Approach	Dr. Sudhir Kumar, LNMIIT
	12:30 pm-1:30 pm	<b>Lunch Break</b>	
	3:30 pm -5:00pm	<b>Plenary session-XI</b> Mathematics behind Artificial Neural Network and Applications	Prof. D. S. Chouhan, UOR
DAY-4 Friday 21/4/23	11:00am -12:30pm	<b>Plenary session-X</b> Analytical Solutions of Certain Scientific Fractional Models	Dr. Lata Chanchlani, UOR
	12:30 pm-1:30 pm	<b>Lunch Break</b>	

	1:30pm -3:00pm	<b>Plenary session-XI (online)</b> Pedestrian Crowd Evacuation Models in Flood	Prof. S. Sunder, IIT, Chennai
	3:30 pm -5:00pm	<b>Plenary session-XII(online)</b> Modelling in Statistics	Prof. Milan Stelhik, Austria
DAY-5 Saturday 22/4/23	9:30am-11:00am	<b>Plenary session-XIII</b> Modeling of Physical problems by Conformal Mappings	Prof. Jugal Kishore Prajapati, CURAJ
	11:00am -12:30pm	<b>Valedictory Session</b>	

## Invitation

**Swami Keshvanand Institute of Technology,  
Management and Gramothan, Jaipur**

*Invitation for Inaugural ceremony*

**INTERNATIONAL WORKSHOP ON  
APPLICATION OF MATHEMATICAL MODELLING  
IN ENGINEERING AND SCIENCES**

**(18-22 April, 2023)**

In association with Gwalior Academy of Mathematical Sciences  
Technical Sponsor: The Mathematics Consortium, Pune




**CHIEF GUEST**  
**PROF. RENU JAIN**  
VICE CHANCELLOR  
DEVI AHILYA VISHWAVIDYALAYA  
INDORE



**PRESIDING GUEST**  
**PROF. V. P. SAXENA**  
EX-VICE CHANCELLOR  
JIWAJI UNIVERSITY  
GWALIOR

**TUESDAY,  
18 APRIL 2023**

**J. C. BOSE  
SEMINAR HALL**

**9:15 AM  
ONWARDS**

**Organized by**  
**Department of Mathematics**  
**SKIT, M&G, Jaipur**



## Media Coverage

# एसकेआईटी मे पांच दिवसीय अंतराष्ट्रीय कार्यशाला का शुभारंभ



### P3 Police Public Politics

जयपुर 7 स्वामी केशवानंद इंस्टिट्यूट ऑफ टेक्नोलॉजी, मैनेजमेंट एवम ग्रामोथान जयपुर में मंगलवार 18 अप्रैल 2023 को गणित विभाग द्वारा ग्वालियर अकेडमी ऑफ मैथेमेटिकल साइंसेस के तत्वावधान में एप्लीकेशन ऑफ मैथेमेटिकल मॉडलिंग इन इंजीनियरिंग एंड साइंसेस विषय पर पांच दिवसीय अंतराष्ट्रीय कार्यशाला का शुभारंभ किया गया। कार्यक्रम के मुख्य अतिथि प्रो. रेनु जैन, कुलपति देवी अहिल्या विश्वविद्यालय, इंदौर तथा विशिष्ट अतिथि प्रो. वी.पी. सक्सेना, पूर्व कुलपति जीवाजी विश्वविद्यालय, ग्वालियर ने मैथेमेटिकल मॉडलिंग का दैनिक जीवन में उपयोग पर प्रकाश डाला। विभिन्न सत्रों में प्रो. रेनु जैन (डीएवीवी, इंदौर), प्रो. कारमेशु (जेएनयू, दिल्ली), प्रो. वी. एच. प्रधान (एसवीएनआईटी, सूरत) की वार्ताओं का आयोजन किया गया।

उद्घाटन समारोह में संस्था के निदेशक जयपाल मील, निदेशक (एके डमिवस) प्रो. एस. एल. सुराणा, प्राचार्य प्रो. आर.के. पचार, डीन प्रो आर के जैन तथा संस्था के अन्य सदस्य सम्मिलित हुए। प्रो. एस. एल. सुराणा ने दैनिक जीवन की समस्याओं को गणितीय मॉडल के रूप में अभिव्यक्त करने और हल करने की प्रेरणा देते हुए कार्यशाला की सफलता की कामना की। प्राचार्य डॉ. रमेश कुमार पचार ने पधारे सभी गेस्ट्स एवम पार्टिसिपन्तस को विस्तार से संस्था की गतिविधियों से अवगत कराया। डॉ. संगीता चौधरी ने कार्यशाला के तकनीकी सत्रों के बारे में जानकारी दी। अंत में विभागाध्यक्ष प्रो. अंबर श्रीवास्तव ने सम्मानित अतिथियों तथा देश के विभिन्न हिस्सों से आए प्रतिभागियों का आभार व्यक्त किया। कार्यक्रम का संचालन डॉ. संगीता चौधरी तथा डॉ. शालिनी शेखावत ने किया।

## एप्लीकेशन ऑफ मैथेमेटिकल मॉडलिंग इन इंजीनियरिंग पर पांच दिवसीय अंतरराष्ट्रीय कार्यशाला

### समाचार जगत न्यूज

जयपुर. स्वामी केशवानंद इंस्टिट्यूट ऑफ टेक्नोलॉजी, मैनेजमेंट एवम ग्रामोथान जयपुर में मंगलवार को गणित विभाग द्वारा ग्वालियर अकेडमी ऑफ मैथेमेटिकल साइंसेस के तत्वावधान में एप्लीकेशन ऑफ मैथेमेटिकल मॉडलिंग इन इंजीनियरिंग एंड साइंसेस विषय पर पांच दिवसीय अंतरराष्ट्रीय कार्यशाला का शुभारंभ किया गया। कार्यक्रम के मुख्य अतिथि प्रो. रेनु जैन, कुलपति देवी अहिल्या विश्वविद्यालय, इंदौर तथा विशिष्ट अतिथि प्रो. वी.पी. सक्सेना, पूर्व कुलपति जीवाजी विश्वविद्यालय, ग्वालियर ने मैथेमेटिकल मॉडलिंग का दैनिक जीवन में उपयोग पर प्रकाश डाला। विभिन्न सत्रों में प्रो. रेनु



जैन (डीएवीवी, इंदौर), प्रो. कारमेशु (जेएनयू, दिल्ली), प्रो. वी. एच. प्रधान (एसवीएनआईटी, सूरत) की वार्ताओं का आयोजन किया गया। उद्घाटन समारोह में संस्था के निदेशक जयपाल मील, निदेशक (एके डमिवस) प्रो. एस. एल. सुराणा, प्राचार्य प्रो. आर.के. पचार, डीन प्रो आर के जैन तथा संस्था के अन्य

सदस्य सम्मिलित हुए। प्रो. एस. एल. सुराणा ने दैनिक जीवन की समस्याओं को गणितीय मॉडल के रूप में अभिव्यक्त करने और हल करने की प्रेरणा देते हुए कार्यशाला की सफलता की कामना की। प्राचार्य डॉ. रमेश कुमार पचार ने पधारे सभी गेस्ट्स एवम पार्टिसिपेंट को विस्तार से संस्था की गतिविधियों से अवगत कराया। डॉ.

संगीता चौधरी ने कार्यशाला के तकनीकी सत्रों के बारे में जानकारी दी। अंत में विभागाध्यक्ष प्रो. अंबर श्रीवास्तव ने सम्मानित अतिथियों तथा देश के विभिन्न हिस्सों से आए प्रतिभागियों का आभार व्यक्त किया। कार्यक्रम का संचालन डॉ. संगीता चौधरी तथा डॉ. शालिनी शेखावत ने किया।

## एप्लीकेशन ऑफ मैथेमेटिकल मॉडलिंग पर मंथन



जयपुर। एसकेआईटी के गणित विभाग में मंगलवार को ग्वालियर अकेडमी ऑफ मैथेमेटिकल साइंसेस के तत्वावधान में एप्लीकेशन ऑफ मैथेमेटिकल मॉडलिंग इन इंजीनियरिंग एंड साइंसेस विषय पर पांच दिवसीय अंतरराष्ट्रीय कार्यशाला का शुभारंभ किया गया। इसमें मुख्य अतिथि प्रो. रेनू जैन, कुलपति देवी अहिल्या विश्वविद्यालय, इंदौर तथा विशिष्ट अतिथि प्रो. वी.पी. सक्सेना, पूर्व कुलपति जीवाजी विश्वविद्यालय,

ग्वालियर ने मैथेमेटिकल मॉडलिंग का दैनिक जीवन में उपयोग पर प्रकाश डाला। इस मौके पर प्रो. रेनू जैन, प्रो. कारमेशु, प्रो. वी.एच. प्रधान, एसकेआईटी निदेशक जयपाल मील, प्रो. एस.एल. सुराणा, प्राचार्य प्रो. आर.के. पचार, डीन प्रो. आरके जैन ने दैनिक जीवन की समस्याओं को गणितीय मॉडल के रूप में अभिव्यक्त करने और हल करने की प्रेरणा देते हुए कार्यशाला की सफलता की कामना की।

सीमा सन्देश

श्रीगंगानगर, मंगलवार, 25 अप्रैल 2023

## एसकेआईटी में कार्यशाला



जयपुर(सीमा सन्देश)। स्वामी केशवानंद इंस्टिट्यूट ऑफ टेक्नोलॉजी एंड मैनेजमेंट, जयपुर में गणित विभाग द्वारा ग्वालियर अकेडमी ऑफ मैथेमेटिकल साइंसेस के तत्वावधान में एप्लीकेशन ऑफ मैथेमेटिकल मॉडलिंग इन इंजीनियरिंग एंड साइंसेस विषय पर आयोजित पांच दिवसीय अंतरराष्ट्रीय कार्यशाला शनिवार को सम्पन्न हुई। विशेषज्ञों के सत्र के बाद मुख्य अतिथि, जीवाजी विवि ग्वालियर के पूर्व

कुलपति प्रो. वीपी सक्सेना ने प्रतिभागियों का आभार व्यक्त किया तथा आयोजकों को बधाई दी। प्रतिभागियों ने अनुभव साझा करते हुए कहा कि कार्यशाला में बताई जानकारी शोध कार्य में महत्वपूर्ण सिद्ध होगी।

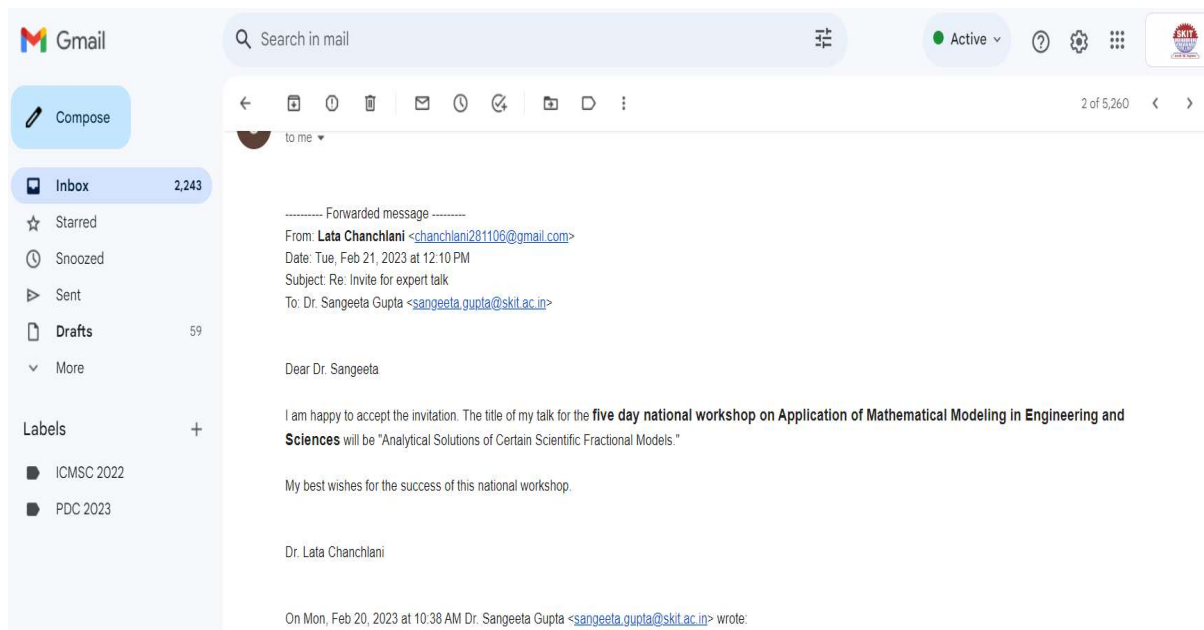
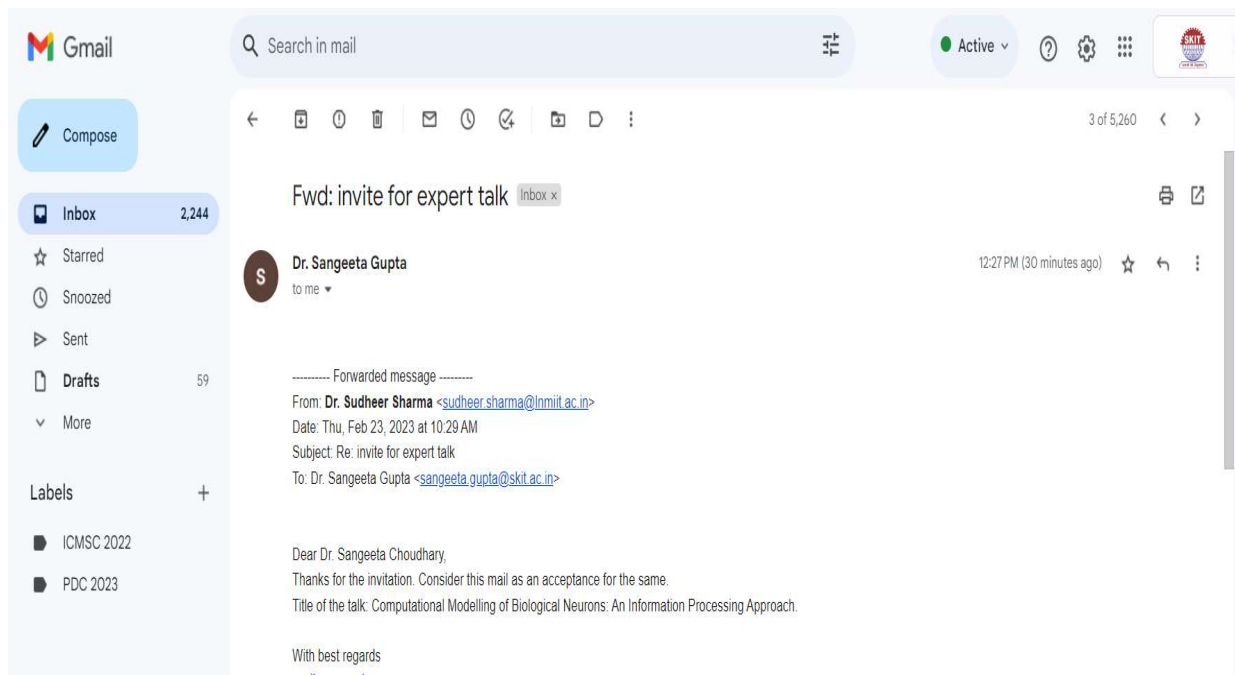
भविष्य में भी इस प्रकार के कार्यक्रम आयोजित किए जाने चाहिए। आयोजकों तथा विभागाध्यक्ष प्रो. अंबर श्रीवास्तव ने सम्मिलित सभी प्रतिभागियों को प्रमाणपत्र वितरित किए।



## **Resource Persons Details**

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5	Prof. Karmeshu	School of Computer & Systems Sciences, Jawaharlal Nehru University, New Delhi karmeshu@gmail.com
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10	Prof. V. P. Saxena	Ex VC, Jiwaji University, Gwalior vinodpsaxena@gmail.com
11	Dr. Lata Chanchlani, UOR	University of Rajasthan, Jaipur

## Consent of Guests



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Inbox 2,242

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 Sent
 Drafts 59
 

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ICMSC 2022
 PDC 2023

1 of 5,260

**Dr. Sangeeta Gupta**  
 to me

----- Forwarded message -----

From: **Jugal Kishore Prajapat** <[jkprajapat@curaj.ac.in](mailto:jkprajapat@curaj.ac.in)>  
 Date: Wed, Feb 22, 2023 at 1:06 PM  
 Subject: Re: Invitation for expert talk  
 To: Dr. Sangeeta Gupta <[sangeeta.gupta@skit.ac.in](mailto:sangeeta.gupta@skit.ac.in)>

Dear Dr. Sangeeta,

Thank you very much for your kind invitation to deliver a talk during your workshop. I will be happy to give the talk. The topic of my talk is

Modeling of Physical problems by Conformal Mappings.

With regards

## Summary of different Sessions

The Five-day International Workshop on Application of Mathematical Modelling in Engineering and Sciences” (IWAMMES-2023) was organized by the Department of Mathematics, Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur in association with Gwalior Academy of Mathematical Sciences (GAMS) and cosponsored by The Mathematics Consortium from 18<sup>th</sup> to 22<sup>nd</sup> April, 2023.



### Day 1 (18<sup>th</sup> April 2023)

#### **Session I (10:15-11:45 am)**

In the first session, **Prof. Renu Jain**, Vice-Chancellor, Devi Ahilya Vishwavidyalaya, Indore had delivered her talk on I-Function and its applications. She explained different kinds of functions like E-function, F- function, G- function, H- function, I- function etc. and their generalized forms. She shared the importance of these functions in mathematical modelling of real-world physical problems. Participants' questions were addressed, and she provided clear examples to help participants comprehend.



## Session II (11:45 am – 1:15 pm)

In this session **Prof. Karmeshu, JNU, New Delhi** delivered his talk on Power of Mathematical Modelling - Study of Socio-Technical Systems. He deliberated Mathematical Modelling Social Systems- The success of linear paradigm in dealing with natural systems motivated researchers to study and analyze social systems. He also explained about Central limit theorem, Lognormal distribution, scale free properties, System Breaking, Potential Curves, Visual Hysteresis effect, Threshold and breakpoints in ecosystems and Model of domestic political conflict process. Then he discussed about Deterministic and Stochastic models in Innovation Diffusion, its generalized model (Bartholomew JMS (1976)), its Estimation of software piracy etc. He motivated by its importance and applications in certain fields of our life.





### **Session III (1:45 – 3:15 pm)**

**Prof. V. H. Pradhan**, Sardar Vallabhbhai National Institute of Technology (S. V. N.I.T), Surat, had delivered his lecture on “Introduction to Quadratic-B-Spline Finite Element Methods and its Applications” in the third session. He discussed about variational methods like Rayleigh method, Ritz method etc. He also explained the analytical and numerical methods to solve the differential equations and also discussed that how Quadratic B-Spline is applied in basics of transport process. In the end he cleared all the queries put by the participant’s with suitable examples.

These sessions were moderated by Ms. Yashasvi and Technicality was handled by Dr. Amit Dadhich (Assistant Professor, Department of Mathematics, SKIT).

### **Day 2 (19<sup>th</sup> April 2023)**

#### **Session I (9:30 – 11:00 am)**

In this session **Prof. K. R. Pardasani**, MANIT, Bhopal delivered his talk on Mathematical Modelling in data science. He deliberated his talk with different levels – Data, Information, semi structured queries, Knowledge, Unstructured queries. He also explained about Information Systems – Operation Support Systems, Information Support Systems, MIS, DSS and EIS. Then he discussed about Big Data and Radio Frequency Identification technology, How Bid data is good or bad for consumers and its different issues. He also talked about Vagueness, Fuzzy sets, Rough sets, Intuitionistic fuzzy sets, Neutrosophic sets, soft sets, product of two soft sets and Data Mining. He also discussed about the research paper Soft and fuzzy set approaches for modeling veracity in machine learning prediction with Applications in Immunology and its results.



## Session II (11:45 am – 1:15 pm)

The second talk of day 2 was delivered by Prof. **V.P. Saxena**, Ex-Vice-Chancellor Jiwaji University, Gwalior on the topic of Finite element modelling and applications. He discussed the difference between finite element methods and finite element modeling and explained different models like Jaipur traffic model, meteorology of Jammu and Kashmir, population model, irrigation models. He suggested some softwares like ABAQUS, ANSYS, SDRC-Idea, RASNA which will be useful in mathematical modeling. The session was moderated by Dr. Shalini Shekhawat, SKIT.

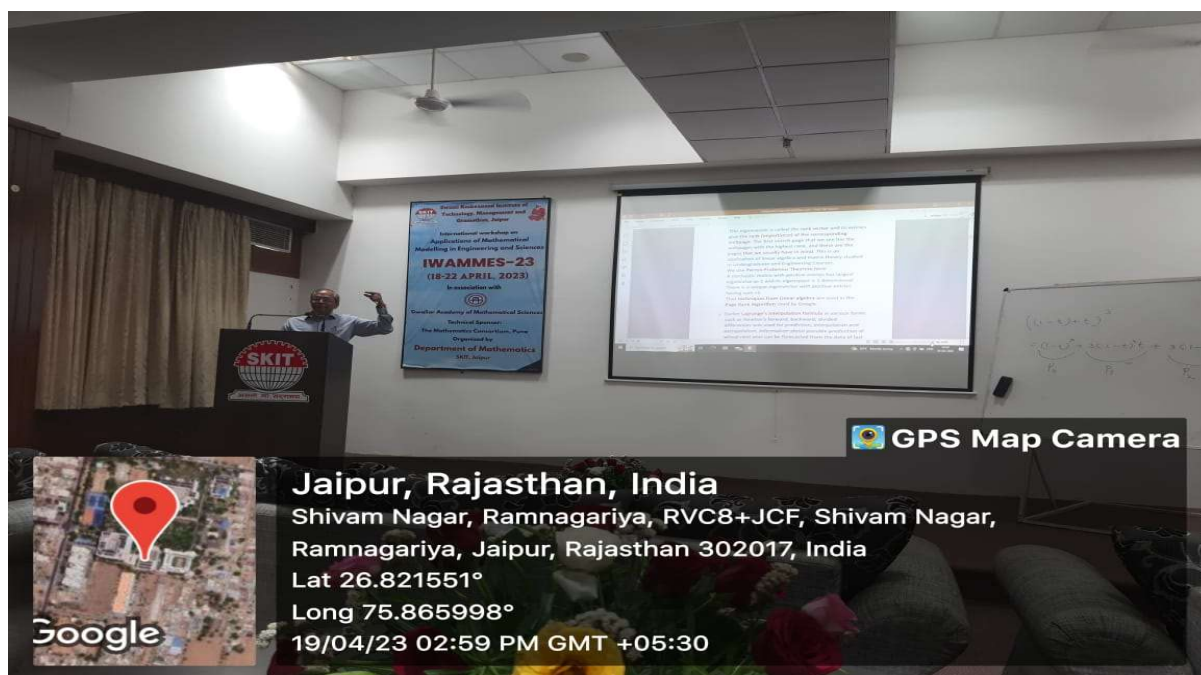


The sessions were moderated by Dr. Shalini Shekhawat (Associate Professor, Department of Mathematics, SKIT). Technicality was handled by Dr. Amit Dadhich (Assistant Professor, Department of Mathematics, SKIT). The session was extended by vote of thanks to the guests and participants.

## Day 3 (20<sup>th</sup> April 2023)

### Session I (9:30 – 11:00 am)

Third day morning session was taken by **Prof. S. A. Katre**, Pune. He told about use of data science and its applications. He shared the significance of data science in machine learning and artificial intelligence and discussed about data generation, Google search algorithm in a very interesting manner to explain the application of linear algebra and matrix theory. He put light on the wide range of applications of mathematics in data science.



## Session II (11:45 am – 1:15 pm)

In this session **Dr. Sudhir Kumar, LNMIT, Jaipur** delivered his talk on Computational Modelling of Biological Neurons: An Information Processing Approach. He deliberated his talk with Introduction: History of Neuroscience, circuit of a Neuron, Its Models– Single Neuron Models, Hodgkin Huxley Neuronal Model, Integrate and Fire Model, LIF Model – Power law behavior in ISI distribution of spiking neurons, NMDD Model – Emergence of Bimodal ISI distributions, GNMDD Model – Suppression of Multimodality in ISI distributions.

The moderator of these sessions were Ms. Surbhi Sharma (Assistant Professor, Department of Mathematics, SKIT) and Technicality was handled by Dr. Amit Dadhich (Assistant Professor, Department of Mathematics, SKIT). The session was extended by vote of thanks to the guests and participants.

## Day 4 (21<sup>st</sup> April 2023)

### Session I (9:30 – 11:00 am)

In the morning session, **Dr. Lata Chanchlani**, University of Rajasthan, Jaipur had delivered her talk on Analytical Solutions of Certain Scientific Fractional Models. She discussed about origin and recent history of fractional calculus with suitable examples. She also discussed about applications-based models of fractional calculus. She explained various important mathematical findings. She discussed about analytical methods for solving fractional

differential equations. She also explained various types of models like biological population model, time fractional biological population model etc. In the end she cleared all the queries put by the participants with suitable examples. The session was moderated by Ms. Surbhi Sharma (Assistant Professor, Department of Mathematics, SKIT).



### **Session II (11:45 am – 1:15 pm)**

On fourth day in afternoon session the talk on Pedestrian crowd evacuation models in flood was arranged. The session was taken by **Prof. S. Sunder**, IIT, Chennai in online mode. He discussed Pedestrian model, Eikonal equation, Mashree numerical scheme, flood-crowd dynamic interaction. He took different models like social force model, Hughes model etc. to explain models in flood. This session was moderated by Dr. Vijay Singhal (Associate Professor, Department of Mathematics, SKIT)

### **Session III (1:45 – 3:15 pm)**

This session was taken by **Prof. Milan Stelhik**, Johannes Kepler University, Austria on the topic Modelling in statistics via online mode. He discussed about various statistical distributions and their applications in diverse fields. He has also explained the process to select the model and method of solution according the need of parameters. This session was moderated by Dr. Vijay Singhal, (Associate Professor, Department of Mathematics, SKIT).





### **Day 5 (22<sup>nd</sup> April 2023)**

Last day in technical session Modelling of physical problems by conformal mappings was discussed by **Prof. Jugal Kishore Prajapati**, Central University of Rajasthan in online mode. Expert explained that conformal mapping allows the exact representation of very complicated domains, which are not easily discretized, even by the most sophisticated adaptive meshes. By using examples like air flows in buildings and other real-world issues, he motivated the participants to apply mapping in mathematical modelling of physical problems.

Technical sessions were followed by the completion ceremony. The workshop's chief guest, Prof. V.P. Saxena, former vice chancellor of Jiwaji University in Gwalior, acknowledged the attendees and appreciated the organizers and their entire team on an endeavor successful. Participants discussed the value and application of knowledge received from this workshop in their own study disciplines. They expected to organize more events like this workshop in the future. Finally, all of the participants received facilitation.





## List of Registered Participants

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## **Feedback of Participants**

S. No.	Pointer	Rating
1	Your experience about the sessions	9.2
2	Knowledge enhancement	9.1
3	Relevancy of topics.	9.4
4	About Expert.	9.3
5	General Arrangements	9.0
6	In future you want to attend such programme at this Institute	Yes
7	Knowledge gained by the session	Excellent
8	Overall experience of the session	Very good

## Copy of Certificate

	<p>International Workshop on <b>Applications of Mathematical Modelling in Engineering and Sciences</b> <b>(18-22 April, 2023)</b> Organized by <b>Department of Mathematics</b> <b>Swami Keshvanand Institute of Technology, Management &amp; Gramothan</b> Jaipur (Rajasthan), India In association with Gwalior Academy of Mathematical Sciences</p> <p><i>Certificate of Participation</i></p> <p>This Certificate is presented to</p> <p>Dr./Mr./Ms. _____</p> <p>of _____</p> <p>for participating in IWAMMES-2023 held during 18-22 April, 2023.</p>		
 Prof. Ramesh Kumar Pachar Principal, SKIT	Prof. Amber Srivastava HOD (Maths), SKIT	Dr. Sangeeta Choudhary Coordinator	Dr. Shalini Shekhawat Coordinator



**Swami Keshvanand Institute of Technology,  
Management & Gramothan**

**Jaipur(Rajasthan), India**

**(Accredited by NAAC with "A++" grade)**



## ***Certificate of Recognition***

This certificate is presented to

**DR. SUDHEER KUMAR SHARMA**

**LNMIIT, Jaipur**

for delivering a talk on

**Computational Modelling of Biological Neurons:  
An Information Processing Approach**

during International Workshop on  
**Applications of Mathematical Modelling in  
Engineering and Sciences (IWAMMES-2023),  
18-22 April, 2023.**

Organized by

**Department of Mathematics**

**In association with Gwalior Academy of Mathematical Sciences**

**Prof. Ramesh Kumar Pachar**  
Principal, SKIT

**Prof. Amber Srivastava**  
HOD (Maths), SKIT

**Dr. Sangeeta Choudhary**  
Coordinator

**Dr. Shalini Shekhawat**  
Coordinator

Place: Jaipur(India)  
Date: 22/04/2023