



INDIAN INSTITUTE OF TECHNOLOGY INDORE

Discipline of Mathematics

Organizes

One-week Workshop under QIP

Special Functions for Scientists and Engineers

March 2-6, 2020

Sponsored by Quality Improvement Programme (QIP), AICTE / MHRD



ABOUT IIT INDORE

Indian Institute of Technology Indore, located in Madhya Pradesh, known as IIT Indore, is an institute of national importance established by the Government of India in 2009. Recently IIT Indore is ranked 13th amongst all engineering universities by MHRD as per NIRF 2019. IIT Indore started the Discipline of Mathematics in July 2009. The faculty members of the Discipline are well equipped to conduct high-quality research programs in both pure and applied mathematics, also engaged in interdisciplinary research activities. Department committed towards high quality research. Interested people are encouraged to contact the concerned faculty for collaborative research. The department is actively engaged in organizing various research activities, more details, please visit: math.iiti.ac.in/

COURSE OBJECTIVES

Special functions play an important role in solving problems from various fields of science and engineering. Efficient tools and techniques from theory of special functions are helpful to solve these problems. This short-term course will introduce participants to the concepts, methods and tools for special functions. This QIP course will cover the full spectrum of the development of theory of special functions as solution of differential equations along with their numerical aspect. We will also discuss how one can explore this theory in other area of mathematics, namely, Fourier analysis, complex analysis, and fluid dynamics etc.

REGISTRATION FEE

- There is **no fee for participants (faculty members) from AICTE sponsored colleges**. The nominations along with the registration forms must be sent through their coordinator/head to the address as given in the application form. Email confirmation in advance is suggested.
- Non-AICTE Colleges: The fee is **₹ 5000 for faculty/researcher**.
- For industry personnel, the fee is **₹ 10000**.

Registration fee includes course material, refreshment and working lunches.

Early registration is recommended due a limit on the number of seats.

Participants are required to bring their own laptops.

Registration deadline: 24th February 2020

MODE OF PAYMENT

Via NEFT:

The payment can be made By Demand Draft: Demand Draft should be drawn in favour of “**Registrar, IIT Indore**”, payable at Indore **OR** by NEFT Transfer: Registration fee can be paid through NEFT. Transfer of the amount can be done to the A/c number given below:

Name of the Beneficiary: Registrar, IIT Indore

Name of Bank: Canara Bank

Branch: IIT Indore, Simrol Campus Branch

Beneficiary Account No.: 1476101027440

Bank IFS Code: CNRB0006223

The signed registration form must be sent through their coordinator/head to the address below. Email confirmation in advance is suggested.

Evidence of payment should be emailed in advance to confirm the participation

(Participant from AICTE colleges are exempted)

COURSE FACULTY

- Dr. Santanu Manna (IIT Indore)
- Dr. Sanjeev Singh (IIT Indore)
- Dr. Antony Vijesh (IIT Indore)
- Dr. Abhinoy Kumar Singh (IIT Indore)

COURSE MODULE

This is an **active learning**-based course and comprised of lectures, tutorials, and hand-on training/demonstrations.

Module I:

Introduction to Gamma, Legendre, and Bessel functions and their properties

Module II:

Applications Involving Bessel Functions and zeros of Bessel functions

Module III:

Importance of special functions and explores their properties in wave propagation, electromagnetic theory, and quantum mechanics

Module IV:

Special functions and polynomials for estimation and filtering theory, MATLAB implementation of linear and nonlinear estimators/filters

Module V:

Recent applications of special functions in numerical analysis

TARGET PARTICIPANTS

This course is tailor made for the faculty members and researchers from the disciplines of Applied Mathematics, Electrical Engineering, Mechanical and Civil Engineering. The course will enhance the understanding of basic concepts of special function and its latest advancement. It will help the engineers to use the special functions to solve the partial differential equations arising from Mathematical Modelling.

CERTIFICATE

Participants who successfully complete the course will be awarded with a certificate.

ACCOMMODATION & TRAVEL

All the faculty members working in AICTE approved colleges will be given SL or AC III Tier Train fare for their to and from journey, free boarding and lodging facilities.

For other participants, accommodation and travel must arrange by themselves. Accommodation may be available at hostels/guest house of IIT Indore on chargeable basis.

Via Paytm:

Link for the payment through Paytm portal is available on IIT Indore website:

<http://www.iiti.ac.in/>

- ❖ IIT Indore website → Paytm Portal
- ❖ Click on URL for new students registration [LINK](#)
- ❖ Select → Registration for events → Workshops/Conference → Other Details → Proceed

COURSE COORDINATORS:

Dr. Santanu Manna

Email: santanu@iiti.ac.in Phone: +91 8878095886

Dr. Sanjeev Singh

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Dr. Antony Vijesh

Email: vijesh@iiti.ac.in Phone: +91 9644566696



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1.	Name of the Person:	
2.	Designation:	
3.	Academic Qualification:	
4.	Name of the Institution/Organization:	
5.	Address for Communication:	
6.	Phone:	
7.	Email:	
8.	Payment Details:	
	Amount:	
	Payment Ref. No:	
	Transaction Data:	
	Bank etc. Details:	
Place:		Date:
Signature of Participant:		
Approval /Permission from the AICTE Institution/Organization: We approve the above application as participant for the above short course, which is being organized by IIT Indore on 2 nd to 6 th March 2019.		
Authorized Signature		Institute/Organization seal

Note: To confirm the participation in advance, scan copy of the filled form can be emailed to santanu@iiti.ac.in Or (Room No. 512, 5th Floor, Scandium (POD 1A) Building, Indian Institute of Technology Indore, Indore 453552, M.P., India)

Participants are required to bring their own laptops.