

# INDIAN INSTITUTE OF TECHNOLOGY INDORE

TEQIP Sponsored Course on  
**Fundamentals of Data Analytics**  
Nov 30 – Dec 03, 2019

Organized by Discipline of Computer Science & Engineering and Discipline of Mathematics  
Sponsored by  
Technical Education Quality Improvement Programme (TEQIP)-3, 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 debuted with a rank of 351-400 in the Times Higher Education World University Rankings, 2020. The Discipline of Computer Science & Engg., and Discipline of Mathematics were set up in July 2009. The faculty members of these disciplines are from diverse streams and specializations. They are involved in many joint events. One of such joint events of these disciplines conducted successfully titled as NTU-INDIA Connect Program, "International Symposium on Computational Mathematics, Optimization, and Computational Intelligence (CMOCI 2017)" during July 17 - 19, 2017. Indore, the cleanest city of India is developing into a major IT hub in central India. Organizations like CSC and Impetus have a strong presence in the city and major players like TCS, Infosys, and Wipro are also setting up their offices.

## COURSE OBJECTIVES

Data analytics is the art and science of teasing meaningful information and patterns out of large quantities of data. It combines statistical methods for identifying patterns in data and making inferences with a number of IT technologies, including database technologies for handling massive volumes of data, intelligent and smart systems technologies, visualization and other multimedia techniques that appeal to human pattern discovery capabilities. The course offers broad background to data analytics and data mining methods and their application in practice. It brings together the state-of-the-art research and practice in related areas and provides students with the necessary knowledge and capacity to initiate and lead data analytics projects that can turn company data into commercially valuable information.

## REGISTRATION FEE

- There is **no fee for participants (students/faculty) from TEQIP sponsored colleges**. The nominations along with the registration forms must be sent through their coordinator to the e-mail address: [softcomputing@iiti.ac.in](mailto:softcomputing@iiti.ac.in).
- Non-TEQIP Colleges: The fee is **INR 2000 for students/research scholars, INR 4000 for faculty, and INR 6000 for participants from industry**.
- If there are more than **3 participants** from the same institute /organization/industry then fee is **50%** of the actual for each participant.

Registration fee includes course material, refreshment and working lunches.

*Early registration is recommended due to limited number of seats.*

**Participants are required to bring their own laptops.**

## COURSE FACULTY

**Dr. Vinti Agarwal**, Postdoctoral Researcher  
Department of Information Security and Communication  
Technology, NTNU, Norway

## COURSE MODULE

The course will cover topics from the following topics:

- **Lecture 1:** Course overview, text analysis using BOW, TF-IDF, Word2Vec model.
- **Lecture 2:** Introduction to topic modelling: Latent semantic analysis (LSA), Latent Dirichlet Allocation (LDA), Nonnegative Matrix Factorization (NMF); Topic similarity Metrics.
- **Lecture 3:** Clustering: k-means, DBSCAN, cluster evaluation metrics.
- **Lecture 4:** Introduction to Graph Analysis. Centrality measures: Degree, betweenness, Eigenvector, closeness. Demo: Identification of Central Individuals in Organised Criminal Groups and Underground Marketplaces.
- **Lecture 5:** Knowledge Graph representation learning using TransE, TransM, TransH and RESCAL model.

## CERTIFICATE

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

## TARGET PARTICIPANTS

This course is tailor made for the students, researchers, and faculty members from any discipline of science & technology.

## ACCOMMODATION

Accommodation may be available at hostels/guest house of IIT Indore on payment basis: For hostel accommodation, kindly write to [hostel@iiti.ac.in](mailto:hostel@iiti.ac.in). Ph.: +91-7324-306583

## MODE OF PAYMENT

### 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

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

Evidence of payment should be emailed in advance to confirm the participation ([Participant from TEQIP sponsored colleges are exempted](#))

## COURSE COORDINATORS:

**Dr. Aruna Tiwari**, Associate Professor,  
Discipline of Computer Science & Engineering, IIT Indore,  
**Email:** [artiwari@iiti.ac.in](mailto:artiwari@iiti.ac.in)

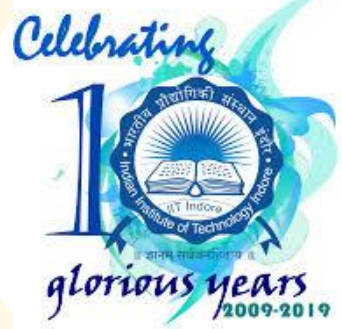
**Dr. M. Tanveer**, Associate Professor,  
Discipline of Mathematics, IIT Indore,  
**Email:** [mtanveer@iiti.ac.in](mailto:mtanveer@iiti.ac.in)

**Registration deadline: 28<sup>th</sup> November 2019**

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1.	<b>Name of the Person:</b>	
2.	<b>Designation:</b>	
3.	<b>Academic Qualification:</b>	
4.	<b>Name of the Institution/Organization:</b>	
5.	<b>Address for Communication:</b>	
6.	<b>Phone:</b>	
7.	<b>Email:</b>	
8.	<b>Payment Details:</b>	
	<b>Amount:</b>	
	<b>Payment Ref. No:</b>	
	<b>Transaction Data:</b>	
<b>Place:</b>		<b>Date:</b>
<b>Signature of Participant:</b>		
Please fill the Google form after payment, using this <a href="#">link</a> .		
<b>Approval /Permission from the Institution/Organization:</b> We approve the above application as participant for the above TEQIP sponsored course, which is being organized by IIT Indore during <b>Nov 30 – Dec 03, 2019.</b>		
<b>Authorized Signature    Institute/Organization seal</b>		

**Note:** To confirm the participation in advance, scan copy of the filled form can be emailed to [softcomputing@iiti.ac.in](mailto:softcomputing@iiti.ac.in)  
**Participants are required to bring their own laptops**