



# Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching

(PMMMMNTT)

Faculty Development Programme in Data Science  
For  
Faculty in Universities, Colleges and Institutes of Higher Education  
(9<sup>th</sup> – 14<sup>th</sup> Dec 2019)

Call for Registration and Participation

Venue: K.J. College of Engineering and Management Research,  
Near Khadimachine Chowk, Kondhwa Annexe, Pune 411 048



Jointly Organized by  
Shivaji University, Kolhapur  
And  
K.J. College of Engineering and Management Research, Pune

## About Shivaji University, Kolhapur

Shivaji University, established in 1962, is named after the Great Maratha Warrior and founder of the Maratha Empire Chhatrapati Shivaji. One of the major objectives behind foundation of this University was to cater to the regional needs of South Maharashtra. The jurisdiction of the University is spread over three districts viz. Kolhapur, Sangli and Satara with strength of about 3,00,000 students studying in 280 affiliated colleges and recognized institutes. The recent phase of the University can be termed as "a pursuit of academic excellence". Since last 4-5 years, several attempts are being made to overcome the image of University as a regional University. The University's efforts towards excellence are being recognized by the substantial grants received from funding agencies like UGC, DST, DBT etc. Another indicator of recognition of University is collaborations with premier institutes in the country. Shivaji University has recently signed MOU with Bhabha Atomic Research Centre, Mumbai for research in Material Science. It has also joined hands with Indian Institute of Geo-Magnetism, Mumbai and industries like Phyto-Pharma. Prestigious institutes like Maharashtra Police Academy, Nashik and Centre for Social Studies, Surat have sought affiliation with the Shivaji University. Shivaji University has been re-accredited by National Assessment and Accreditation Council (NAAC) Bangalore, with "A" Grade (CGPA-3.16) (2014). Shivaji University has bagged the 28th position in the rankings announced by the National Institutional Ranking Framework (NIRF) of Union Ministry of Human Resource Development (MHRD). As per the INFLIBNET report, Shivaji University stands second in use of Nature publications Group's (NPG) e-journal usage in the country. The University has also signed MoU with Centre for Development of Advanced Computing (C-DAC), Pune. Under the agreement, the two institutions will exchange information and communication technology.

## About KJCOEMR, PUNE

Institute was founded with the noble vision to raise professionals and leaders of high academic caliber who can face the challenges of advancing technology and newer knowledge areas. We want to prepare our students professionally, nurture them with a strong motivation and commitment to serve humanity. KJCOEMR was established in the year 2009. We offer four year full time degree course in 'Bachelor of Engineering' with specializations in Civil(120), Computer(120), Electrical(60), Electronics and Telecommunication(60+60[DSE]), and Mechanical Engineering(180+120[DSE]) and four post graduate courses in Computer Engineering(24), Computer Networks(24), Civil-Structural Engineering(24) and Mechanical-Design Engineering(24). The College is approved by AICTE & DTE, Govt. of Maharashtra and is affiliated to University of Pune.

The modern state-of-the-art infrastructure and facilities are developed to provide conducive atmosphere for Teaching, Learning & All Round Development of the Students. In order to achieve our objectives, we have qualified teachers and staff dedicated to maintain high standards. . Majority of our faculty members are having more than 10 years of Academic and/or Industrial Experience in their respective disciplines. Teaching Methodology includes well prepared Lecture Notes, latest Presentation Techniques, Interactive Sessions, as well as dialogue between students and teachers. We encourage one-to-one interactions between teachers and students, for co-curricular as well as extra-curricular activities.

## Resource Centre in Data Sciences and Cyber Security:

National Resource Centre in Data Sciences and Cyber Security is established under the guidance RUSA Maharashtra from the grants received from the MHRD, Government of India under the 'Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT)' scheme. Objective of this centre is capacity building of human resource which is recognized as a critical element to strengthen not only the organization/ institutions but even the people at grassroots level by spreading awareness Data Sciences. There is a large gap between demand and availability of trained human resource in Data Sciences, who can beneficially utilize the available information for cyber safety. Data Science trained human resource is needed both as the provider and user of Technology. This is vital for sustainable development so that informed decision making can be done at all levels.

### About the Training:

Data Science– An interdisciplinary field, data science deals with processes and systems that are used to extract knowledge or insights from large amounts of data. Data extracted can be either structured or unstructured. Data science is a continuation of data analysis fields like data mining, statistics, predictive analysis. A vast field, data science uses a lot of theories and techniques that are a part of other fields like information science, mathematics, statics, chemometrics and computer science. Some of the methods used in data science include probability models, machine learning, signal processing, data mining, statistical learning, database, data engineering, visualization, pattern recognition and learning, uncertainty modeling, computer programming among others. With advancements of so much of data, many aspects of data science are gaining immense importance, especially big data.

Data science is not restricted to big data, which in itself is a big field because big data solutions are more focused on organizing and preprocessing the data rather than analyzing the data. In addition, machine learning has enhanced the growth and importance of data science in the last few years. Data has real value and every information extracted from it can make or break businesses. Analytics is the intersection of business and data science, offering new opportunities for a competitive advantage. It unlocks the predictive potential of data analysis to improve financial performance, strategic management, and operational efficiency. Data analytics can lead to valuable insights that can determine leads to increase sales, fraud detection, pattern recognition and risk prediction in various domains. As part of this initiative, a Faculty Development Programme (FDP) is conducted to focus on the fundamentals of data science with hands-on sessions on every topic handled using python.

### Objectives of the Training:

- Train 2000 faculties
- Building networks of professional
- Sensitizing cyber security & Data Sciences to masses at large for strengthening cashless transactions.

## Eligibility:

Faculty Members from Science and Technology, Humanities, Social Sciences, Commerce and Management discipline from Universities, Colleges, NITs, IITs, Engineering Colleges and other Institutions of Higher Education.

As the number of participants is limited to 40, preference will be given on First Come First Serve basis.

## Programme Schedule:

Dates: 9<sup>th</sup> – 14<sup>th</sup> Dec2019

Venue: K.J. College of Engineering and Management Research, Pune.

| Day and Date                    | Course Contents   |
|---------------------------------|---|
| Day 1:<br>Wednesday, 09/12/2019 | Introduction to Python, Python Basics   |
| Day 2:<br>Thursday, 10/12/2019  | Python Hands-on   |
| Day 3:<br>Friday, 11/12/2019    | Data Analytics using Python   |
| Day 4:<br>Saturday, 12/12/2019  | Hands on session on Python and Machine Learning                               |
| Day 5:<br>Sunday, 13/12/2019    | Hands on session on Machine Learning using Python                             |
| Day 6:<br>Monday, 14/12/2019    | Hands on session on Machine Learning using Python, Examination and Evaluation |

The eligible candidates will be given confirmation is available on web-portal and it will also be informed through email. All confirmed participants will have to submit a relieving letter from their institution on the first day of the training.

## Laboratory assignments:

1. Introduction to Python.
2. Introduction to Machine Learning.
3. Importing data using python for analysis
4. Exploring data sets for analysis
5. Working with loops, metrics, data submission

6. Building Data-Frames, merging data-frames and visualization with data-frames
7. Data analytics using python
8. Matrices Preview, Building Your First Matrix
9. Dictionaries in Python
10. Matrix Operations
11. Explore & Define a ML use case
12. EDA and Feature Engineering
13. Working on Machine learning using python
14. Exploring your dataset
15. Importing data into Python
16. Filtering a Data Frame
17. Renaming Columns of a Data-frame
18. Exploratory Data Analysis
19. Univariate Analysis, Univariate Analysis 2
20. Simple & Multiple Linear Regression, Regression Demo
21. Simple Network Servers
22. Package Managers

#### Registration:

- Participants must register through online web-portal only.
- No need to send any printed documents to the Resource Center Shivaji University.
- Registration Link: <http://sangnaksuraksha.com>

#### Registration details:

- Registration and participation is free of cost as program is sponsored by PMMMMNMTT

#### Instructions for the Participants:

- Attendance at all sessions is mandatory.
- Breakfast, Lunch and Tea will be provided.
- Accommodations are not provided

Important Note: This FDP under PMMMMNMTT is applicable for CAS promotions as per UGC gazette.

## Organizing Committee

### Chief Patron

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Shivaji University, Kolhapur, Maharashtra

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Head, Department of Computer Science  
Shivaji University, Kolhapur

Co-Investigator  
Dr. K.S. Oza  
Assistant Professor,  
Department of Computer Science,  
Shivaji University, Kolhapur

## Organizing Committee

Dr. D. C. Mehetre  
Convener, Head, Department of Computer Engineering,  
KJCOEMR, Pune

Prof. V.B. Maral  
Professor, Computer Engineering  
Co-convener

Prof. Kiran Thoke  
Assistant Professor, Computer Engineering  
Coordinator

Prof. Satish Yedige  
Assistant Professor, Computer Engineering  
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## Members

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Prof. N.Bogiri  
Prof. Sushma Akhade  
Prof. Aparna Hambarde

Prof. R. Kedar  
Prof. M.P. Kharche  
Prof. S.K. Shinde

For further details contact:

| Name   | Contact& Whatsapp No | Email  |
|--|----------------------|--|
| Prof. Kiran Thoke                                | 9561184053           | <a href="mailto:Kiranthoke16@gmail.com">Kiranthoke16@gmail.com</a>       |
| Prof. Satish Yedige                              | 8888827988           | <a href="mailto:satishyedge2000@gmail.com">satishyedge2000@gmail.com</a> |
| Mr. Kabir Kharade (Shivaji University, Kolhapur) | 8055801285           | <a href="mailto:kabirkharade@gmail.com">kabirkharade@gmail.com</a>       |

Shivaji University

Vidya Nagar, Kolhapur – 416 004 (Maharashtra – INDIA) Website: [www.unishivaji.ac.in](http://www.unishivaji.ac.in)

K.J. College of Engineering and Management Research, Pune, Maharashtra

Near Khadimachine Chowk, Kondhwa Annexe, Pune 411 048.

Website: <http://www.kjei.edu.in/kjcoemr/kjcoemr.html>