



**Pandit Madan Mohan Malaviya National Mission on  
Teachers and Teaching  
(PMMMNTT)**

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

**Call for Registration and Participation**  
Venue: JSPM's Rajarshi Shahu College of Engineering,  
S.No.80,Mumbai- Pune Expressway, Tathawade, Pune- 411033



**Shivaji University, Kolhapur  
And**

**JSPM's Rajarshi Shahu College of Engineering, Tathawade, Pune  
(Autonomous Institute Affiliated to Savitribai Phule Pune University)**

## **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 JSPM's Rajarshi Shahu College of Engineering, Tathawade, Pune**

**About JSPM:** Jayawant Shikshan Prasarak Mandal(JSPM) has been established in 1998 by Prof. T. J. Sawant, in memory of Late Shri. Jayawantrao Sawant with the aim of imparting quality education in various faculty disciplines starting from KG to Ph. D. JSPM offers education in Engineering, Management, Pharmacy and Schools through 80+ institutes.

### **About RSCOE:**

Rajarshi Shahu College of Engineering (RSCOE) has been established in 2001 with the aim of providing quality technical education and excellence in the ever expanding horizon of technical revolution of 21<sup>st</sup> century. The institute is becoming an icon in the field of engineering education in the state of Maharashtra. The institute has been approved by the All India Council for the Technical Education(AICTE), New Delhi and Autonomous Institute Affiliated to Savitribai Phule Pune University(SPPU). All Undergraduate programs are three times accredited by NBA and NACC, CII-Platinum Category, RSCOE has received the best college award by SPPU Pune. Many eminent personalities from the field of education and industry are on the college advisory committee, whose experience and guidance benefit to the society. The institute is committed to technical, moral and intellectual growth of the students and provide the best possible job placement through training and placement cell.

## **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, IIITs, 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: 4<sup>th</sup> – 9<sup>th</sup> November, 2019

Venue: S.No.80,Mumbai- Pune Expressway, Tathawade, Pune- 411033

Day and Date	Course Contents
Day 1: Monday, 04/11/2019	Introduction to Python, Python Basics
Day 2: Tuesday, 05/11/2019	Python Hands-on
Day 3: Wednesday,06/11/2019	Data Analytics using Python
Day 4: Thursday, 07/11/2019	Hands on session on Python and Machine Learning
Day 5: Friday, 08/11/2019	Hands on session on Machine Learning using Python
Day 6: Saturday, 09/11/2019	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 PMMMNMTT**

### **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 PMMMNMTT is applicable for CAS promotions as per UGC gazette.**

## **Organizing Committee**

### **Chief Patron**

Hon. Dr. Devanand B. Shinde  
Vice Chancellor  
Shivaji University, Kolhapur, Maharashtra

Hon. Dr. T. J. Sawant  
Cabinet Minister, Govt. of Maharashtra,  
Founder Secretary, JSPM Group of Institutes, Katraj  
Pune, Maharashtra

Hon. Dr. D. T. Shirke  
Pro-Vice Chancellor  
Shivaji University, Kolhapur, Maharashtra

Dr. Ravi Joshi  
Director, JSPM  
Katraj, Pune

Hon. Dr. V. D. Nanavadekar  
Registrar, Shivaji University, Kolhapur,  
Maharashtra

Prof. Sudhir Bhilare  
Executive Director,  
Tathawade, Pune, Maharashtra

### **Patron**

Dr. R. K. Jain  
Director,  
JSPM's Rajarshi Shahu College of Engineering,  
Tathawade, Pune, Maharashtra

### **Principal Investigator**

Dr. R. K. Kamat  
IQAC Director  
Director, Innovation, Incubation and Linkages  
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**

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Dy. Director,  
JSPM's RSCOE, Tathawade, Pune

Prof. Rinku Dulloo  
Head, Department of MCA  
Convener

Dr. Bapurao M. Bandgar  
Associate Professor, MCA  
Co-convener

## **Members**

Prof. Mahesh Kadam  
Prof. Manish Raut

Dr. Snehal Godase  
Prof. Bhagyashree Deshpande

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