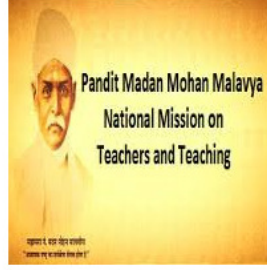Government of India
Ministry of Human Resource Development

Pandit Madan Mohan Malavya National Mission on Teachers and Teaching

Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching

(PMMMNMTT)
Faculty Development Programme on Data Science
for
Faculty in Universities, Colleges and Institutes of Higher Education

(2nd – 7th December. 2019)

Call for Registration and Participation

Venue: Department of Information Technology,
Sipna College of Engineering & Technology, Amravati,
Sipna Campus, Infront of Nemani Godown, Badnera Road, Amravati

Jointly Organized by

Shivaji University, Kolhapur

&

Department of Information Technology,
Sipna College of Engineering & Technology, Amravati.

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 Sipna College of Engineering & Technology, Amravati

Sipna Shikshan Prasarak Mandal, established in the year 1995, aims to impart higher & technical education to the enthusiastic youths and envision them for a better tomorrow.

Since its inception, SSPM has been successfully running undergraduate and postgraduate courses in emerging areas through Sipna's Arts, Science & Commerce college, Chikhaldara and Sipna College of Engineering & Technology, Amravati. Sipna COET marched towards various Postgraduate, Management and Research Programs.

 The Sipna College of Engineering & Technology (SCOET) was started in July 1999 to provide professional education to the students in the region and around. The College is located in

Amravati, an educational hub of Maharashtra. Sipna College of Engineering & Technology is an unaided Engineering college approved by the All India Council for Technical Education (AICTE), New Delhi, DTE, Mumbai and affiliated to Sant Gadge Baba Amravati University, Amravati (Maharashtra).

The Institute is accredited by IAO and Certified by ISO 9001:2015 (Quality Management System), ISO 14001:2015(Environment Management System) & ISO 17025:2005. National Assessment & Accreditation Council (NAAC) accreditation is another feather in the cap for the institution and it has received an 'A' Grade.Under the AICTE Margadarshan scheme, Sipna College of Engineering & Technology, Amravati is "A Mentee Institute" of College of Engineering, Pune (COEP). Sipna is working towards generating confidence among students to take on tomorrow's challenges of highly dynamic world.

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: 2nd – 7th Dec. 2019
Venue: Sipna COET, Amravati- 444701.

Day and Date	Course Contents
Day 1: Monday , 02/12/2019	Introduction to Python, Python Basics
Day 2: Tuesday, 03/12/2019	Python Hands-on
Day 3: Wednesday, 04/12/2019	Data Analytics using Python
Day 4: Thursday, 05/12/2019	Hands on session on Python and Machine Learning
Day 5: Friday, 06/12/2019	Hands on session on Machine Learning using Python
Day 6: Saturday, 07/12/2019	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 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.

Chief Patron

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

Hon. Jagdish M. Gupta
Chairman,
Sipna Shikshan Prasarak Mandal, Amravati

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Principal,
Sipna College of Engineering & Technology, Amravati

Principal Investigator

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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

Convener

Dr. Vijay S. Gulhane
Professor & Head,
Department of Information Technology, SCOET, Amravati

Program Coordinator

Mr. Harshal N. Datir

Department of Information Technology, SCOET, Amravati

Mr. Kabir Kharade

Shivaji University, Kolhapur

Advisory Committee Member

▪ Mr. A.B. Deshmukh   Ms. L.K. Gautam (Dept. of IT, SCOET, Amravati)

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