



JAYAWANT SHIKSHAN PRASARAK MANDAL'S

# Bhivarabai Sawant Institute of Technology & Research

(Approved by AICTE New Delhi, DTE Mumbai & Affiliated to Savitribai Phule Pune University)

Accredited with B++ Grade by NAAC

Gat No. 719/1 & 2, Wagholi, Pune-Nagar Road, Pune-412207

Ph : 020-067335108, 65217050, 67335100

Telefax : 020-67335100

Website : [www.jspm.edu.in](http://www.jspm.edu.in) / [www.bsiotr.org](http://www.bsiotr.org)

[EN 6311] / [CEGP-013100]



**Prof. Dr. T. J. Sawant**  
B.E. (Elec.) PGDM, Ph.D  
Founder Secretary

**Dr. T.K. Nagaraj**  
ME. (Civil Engg), Ph.D (Civil Engg)  
LMISTE, LMIGS, LMIRC  
LMISRM, LMIE  
Principal

Date : 20 /03/2023

## DEPARTMENT OF COMPUTER ENGINEERING

### Activity Report

**TITLE : One Week Online Faculty Development Program On “Block Chain Technology**

**DATE : 13th to 17th March 2023**

**Mode : Online**

**PARTICIPANTS :**

- Teaching faculty members from AICTE approved institutes from all disciplines
- Research Scholars
- Industry Personnel

**EXPERT NAME :**

- Mr. Amey Tambe Director , Softtech Data Securities , My3dworld FDM
- Dr.Sagar Rane , Associate Professor , Army Institute of Technology , Pune

The department of Computer Engg. has organized one week FDP on “**Blockchain Technology**” from 13/03/2023 to 17/03/2023 in online mode. This workshop was intended to disseminate the knowledge of block chain technology among students, researchers and academicians and to discuss the current status of the block chain development and research work in India and across the world for Teaching faculty members from AICTE approved institutes from all disciplines , Research Scholars and Industry Personnel

The Contents of FDPs are

- Getting Started with Block chain Technology
- Block chain fundamental
- Blockchain Intuition Hands-On
- Mathematical Foundation for Blockchain
- Hash Function
- Digital Signature



**Vision:-** "To Satisfy the aspirations of youth force, who want to lead the nation towards prosperity through techno-economic development."

**Mission:-** "To provide, nurture and maintain an environment of high academic excellence, research and entrepreneurship for all aspiring Students, which will prepare them to face global challenges maintaining high ethical and moral standards."



JAYAWANT SHIKSHAN PRASARAK MANDAL'S

# Bhivarabai Sawant Institute of Technology & Research

(Approved by AICTE New Delhi, DTE Mumbai & Affiliated to Savitribai Phule Pune University)

Accredited with B++ Grade by NAAC

Gat No. 719/1 & 2, Wagholi, Pune-Nagar Road, Pune-412207

Ph : 020-067335108, 65217050, 67335100

Telefax : 020-67335100

Website : [www.jspm.edu.in](http://www.jspm.edu.in) / [www.bsioir.org](http://www.bsioir.org)

[EN 6311] / [CEGP-013100]



**Dr. T.K. Nagaraj**

ME. (Civil Engg), Ph.D (Civil Engg)

LMISTE, LMIGS, LMIRC

LMISRMTT, LMIE

**Principal**

**Prof. Dr. T. J. Sawant**  
B.E. (Elec.) PGDM, Ph.D  
Founder Secretary

- Merkle Trees
- Layers of Blockchain
- Consensus Algorithms
- Blockchain Platforms
- Cryptocurrency
- Crypto Wallets
- Smart Contracts
- Solidity
- Truffle
- Ghanache
- Blockchain Applications and Case Studies

## Contents Covered Day wise

Day	Date	Topics to be covered	Expert name
1	13/3/2023	Mathematical Foundation for Blockchain, Hash Function	Dr.Sagar Rane
2	14/3/2023	Digital Signature, Merkle Trees, Layers of Blockchain	Dr.Sagar Rane
3	15/3/2023	Consensus Algorithms, Blockchain Platforms, Cryptocurrency	Dr.Sagar Rane
4	16/3/2023	CryptoWallets, Smart Contracts, Solidity, Truffle	Mr. Amey Tambe
5	17/3/2023	Ghanache, Blockchain Applications, and Case Studies.	Mr. Amey Tambe



**Vision:** - "To Satisfy the aspirations of youth force, who want to lead the nation towards prosperity through techno-economic development."

**Mission:** - "To provide, nurture and maintain an environment of high academic excellence, research and entrepreneurship for all aspiring Students, which will prepare them to face global challenges maintaining high ethical and moral standards."



# JAYAWANT SHIKSHAN PRASARAK MANDAL'S Bhivarabai Sawant Institute of Technology & Research

(Approved by AICTE New Delhi, DTE Mumbai & Affiliated to Savitribai Phule Pune University)

Accredited with B++ Grade by NAAC

Gat No. 719/1 & 2, Wagholi, Pune-Nagar Road, Pune-412207

Ph : 020-067335108, 65217050, 67335100

Telefax : 020-67335100

Website : [www.jspm.edu.in](http://www.jspm.edu.in) / [www.bsioir.org](http://www.bsioir.org)

EN 6311 / CEGP-013100



**Prof. Dr. T. J. Sawant**  
B.E. (Elec.) PGDM, Ph.D  
Founder Secretary

**Dr. T.K. Nagaraj**  
ME. (Civil Engg), Ph.D (Civil Engg)  
LMISTE, LMIGS, LMIRC  
LMISRMTT, LMIE  
Principal

## Workshop Glimpses

The screenshot shows a Microsoft Teams meeting interface. The main content is a presentation slide with the following text:

**JSPM's Bhivarabai Sawant Institute of Technology & Research, Wagholi, Pune**  
An Institute Affiliated to Savitribai Phule Pune University, Approved by AICTE, Accredited by NBA (UG Programs), Accredited by NBA and NAAC

**One Week FDP on Blockchain Technology**

DATE : 13 March 2023  
TIME:- 2.00 to 5.00 pm

**Resource Person**  
Dr. Sagar Rane  
Associate Professor,  
Army Institute Of Technology Pune

Link to Join Microsoft Team  
[https://teams.microsoft.com/\\_#/pre-join-calling/19:meeting\\_MjZhMzNkNDItNWJjNi00YzVhLTk4NTYtODM3NTcxM2M4NzM0@thread.v2](https://teams.microsoft.com/_#/pre-join-calling/19:meeting_MjZhMzNkNDItNWJjNi00YzVhLTk4NTYtODM3NTcxM2M4NzM0@thread.v2)

Meeting ID: 11:50  
Passcode: [blurred]

The second slide is titled "Cryptography" and contains the following text:

**Cryptography**

**Computer Security – Definition**

The protection afforded to an automated information system in order to attain the applicable objectives of preserving the integrity, availability, and confidentiality of information system resources (includes hardware, software, firmware, information/data, and telecommunications).

NIST

2

The interface also shows a list of participants in the meeting, including BA, BB, DV, DS, GM, JM, KP, KK, MT, MD, and MB.



**Vision:** - "To Satisfy the aspirations of youth force, who want to lead the nation towards prosperity through techno-economic development."

**Mission:** - "To provide, nurture and maintain an environment of high academic excellence, research and entrepreneurship for all aspiring Students, which will prepare them to face global challenges maintaining high ethical and moral standards."



# JAYAWANT SHIKSHAN PRASARAK MANDAL'S Bhivarabai Sawant Institute of Technology & Research

(Approved by AICTE New Delhi, DTE Mumbai & Affiliated to Savitribai Phule Pune University)

Accredited with B++ Grade by NAAC

Gat No. 719/1 & 2, Wagholi, Pune-Nagar Road, Pune-412207

Ph : 020-067335108, 65217050, 67335100

Telefax : 020-67335100

Website : [www.jspm.edu.in](http://www.jspm.edu.in) / [www.bsiotr.org](http://www.bsiotr.org)

EN 6311 / CEGP-013100



**Prof. Dr. T. J. Sawant**  
B.E. (Elec.) PGDM, Ph.D  
Founder Secretary

**Dr. T.K. Nagaraj**  
ME. (Civil Engg), Ph.D (Civil Engg)  
LMISTE, LMIGS, LMIRC  
LMISRMTT, LMIE  
Principal

**Cryptography**

**Cryptography**  
"The art or science encompassing the principles and methods of transforming an intelligible message into one that is unintelligible, and then retransforming that message back to its original form."

Plain Text → Encrypt Algorithm → Transmitted Cipher Text → Decrypt Algorithm → Plain

People: GB GAYATRI BHANDARI (G...), AJ Akshay Jain (Guest), AG Ankita Gupta (Guest), BA B A, BB Borkar Bharat (Guest), DV Deepti Varshney (Guest), DS Dr. Kavita Sultanpure, GM Gitanjali Mate (Guest), JM Jotiram Mali (Guest), KP kanchan pradhan (Guest)

**Cryptography**

**Substitution Technique**  
★ Letters are replaced by other letters or symbols.

Example:

a	b	c	d	e	f	g	h	i	j	k	l	m
n	o	p	q	r	s	t	u	v	w	x	y	z

a → M  
b → X  
x → Z  
g → A

Plaintext : bag  
Ciphertext : XMA

People: GB GAYATRI BHANDARI (G...), AJ Akshay Jain (Guest), AG Ankita Gupta (Guest), BA B A, BB Borkar Bharat (Guest), DV Deepti Varshney (Guest), DB Dr. Gayatri Bhandari (G...), DS Dr. Kavita Sultanpure, FP Farhat Patel (Guest), GM Gitanjali Mate (Guest)



**Vision:** - "To Satisfy the aspirations of youth force, who want to lead the nation towards prosperity through techno-economic development."

**Mission:** - "To provide, nurture and maintain an environment of high academic excellence, research and entrepreneurship for all aspiring Students, which will prepare them to face global challenges maintaining high ethical and moral standards."



# JAYAWANT SHIKSHAN PRASARAK MANDAL'S Bhivarabai Sawant Institute of Technology & Research

(Approved by AICTE New Delhi, DTE Mumbai & Affiliated to Savitribai Phule Pune University)

Accredited with B++ Grade by NAAC

Gat No. 719/1 & 2, Wagholi, Pune-Nagar Road, Pune-412207

Ph : 020-067335108, 65217050, 67335100

Telefax : 020-67335100

Website : [www.jspm.edu.in](http://www.jspm.edu.in) / [www.bsioir.org](http://www.bsioir.org)

EN 6311 / CEGP-013100



Dr. T.K. Nagaraj

ME. (Civil Engg), Ph.D (Civil Engg)

LMISTE, LMIGS, LMIRC

LMISRMTT, LMIE

Principal

Prof. Dr. T. J. Sawant  
B.E. (Elec.) PGDM, Ph.D  
Founder Secretary

The screenshot shows a Microsoft Teams meeting interface. The main content is a slide titled "Cryptography" with a sub-heading "Transposition Technique". The slide lists the following points:

- ★ Applying some sort of permutation on the plaintext letters.
- ★ Plaintext: NESO
- ★ Ciphertext: ESON, SONE, ONES, ENOS . . . .

The meeting controls at the bottom show a timer at 38:22 and various icons for mute, video, chat, and call. The participant list on the right includes Sagar Rane, Snehla Borude (Guest), sushama khatavkar (Gu...), Swapnil Mahajan (Guest), Swati (Guest), Sweta Khandekar (Guest), Tanvi Deshmukh (Guest), Tushar Phadtare (Guest), Vandana Purushottam ..., vidya jagtap (Guest), Vinay Shirashvad, and Vishal Puranik.

The screenshot shows a Microsoft Teams meeting interface. The main content is a slide titled "Basic terminology" with the following bullet points:

- **Plaintext:** original message to be encrypted
- **Ciphertext:** the encrypted message
- **Enciphering or encryption:** the process of converting plaintext into ciphertext
- **Encryption algorithm:** performs encryption
  - Two inputs: a **plaintext** and a **secret key**

The meeting controls at the bottom show a timer at 39:37 and various icons for mute, video, chat, and call. The participant list on the right includes Dr. Yogendra Patil (Gues), Gayatri Bhandari (Guest), Sagar Rane (Organizer), GAYATRI BHANDARI (G..), Akshay Jain (Guest), Ankita Gupta (Guest), B A, Borkar Bharat (Guest), Deeptri Varshney (Guest), and Dhanashri (Guest).



**Vision:** - "To Satisfy the aspirations of youth force, who want to lead the nation towards prosperity through techno-economic development."

**Mission:** - "To provide, nurture and maintain an environment of high academic excellence, research and entrepreneurship for all aspiring Students, which will prepare them to face global challenges maintaining high ethical and moral standards."



# JAYAWANT SHIKSHAN PRASARAK MANDAL'S Bhivarabai Sawant Institute of Technology & Research



(Approved by AICTE New Delhi, DTE Mumbai & Affiliated to Savitribai Phule Pune University)

Accredited with B++ Grade by NAAC

Gat No. 719/1 & 2, Wagholi, Pune-Nagar Road, Pune-412207

Ph : 020-067335108, 65217050, 67335100

Telefax : 020-67335100

Website : [www.jspm.edu.in](http://www.jspm.edu.in) / [www.bsiotr.org](http://www.bsiotr.org)

EN 6311 / CEGP-013100

**Prof. Dr. T. J. Sawant**  
B.E. (Elec.) PGDM, Ph.D  
Founder Secretary

**Dr. T.K. Nagaraj**  
ME. (Civil Engg), Ph.D (Civil Engg)  
LMISTE, LMIGS, LMIRC  
LMISRMTT, LMIE  
Principal

**Symmetric Cipher Model**

Plaintext input → Encryption algorithm (e.g., DES) → Transmitted ciphertext → Decryption algorithm (reverse of encryption algorithm) → Plaintext output

Secret key shared by sender and recipient

**Elliptic Curve Cryptography**

- ECC is used to create public and private key pairs
- The main benefit of ECC over other types of public key algorithms is that it requires a smaller key size
  - Requires less space to operate
    - This is a big advantage with a technology like blockchain that will be used on smart devices and other storage resource-limited hardware
  - ECC can provide the same level of security utilizing 256 bits as RSA (Rivest, Shamir, Adleman) using 3,072 bits

FDP coordinator  
**Dr. Y.V. Patil**

H.O.D.  
**Dr. G.M.Bhandari**

Principal  
**Dr. T.K.Nagaraj**



**Vision:** - "To Satisfy the aspirations of youth force, who want to lead the nation towards prosperity through techno-economic development."  
**Mission:** - "To provide, nurture and maintain an environment of high academic excellence, research and entrepreneurship for all aspiring Students, which will prepare them to face global challenges maintaining high ethical and moral standards."