

**Shri Sant Gajanan Maharaj College of Engineering Shegaon**  
**Department of Electronics and Telecommunication Engineering**

**Course Title & Course Code:** Cryptography and Network Security (7ETC01)

**Class:** Final year (4U2)

**Semester:** VII

**Name of the Course Teacher:** Mr. T. P. Marode

**Title of the innovative practice:** Virtual Lab

**Objectives/Goals of the practice:**

The primary goal of this innovative teaching practice is:

1. Enhance Conceptual Understanding by providing an interactive and visual approach to explain the Digital Signatures in Authentication process.
2. Foster Engagement and Active Learning by use interactive simulations to keep students engaged.

**Use of Appropriate Methods:**

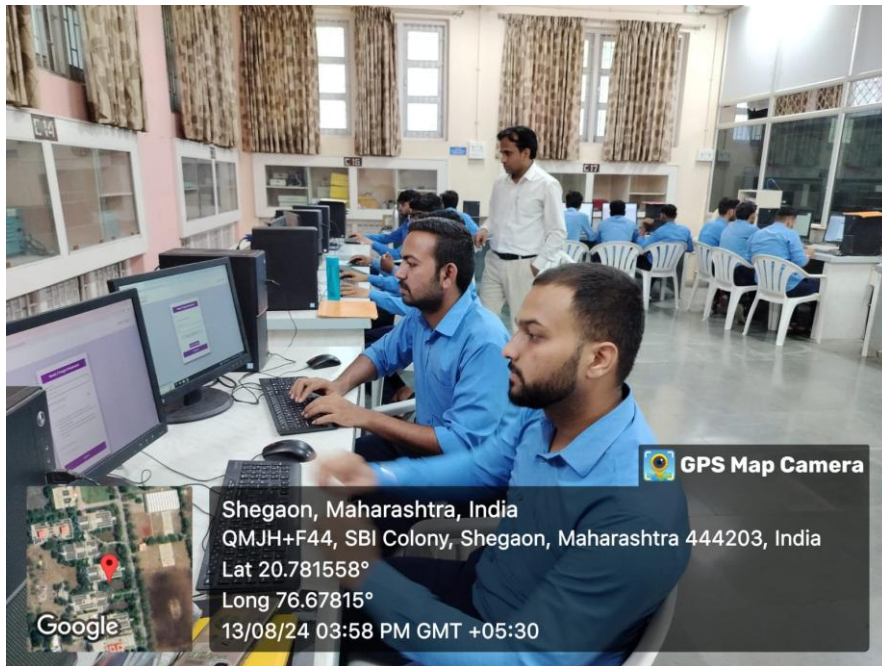
To achieve the stated goals, the following methods were implemented:

1. Utilizing IIT Bombay's Cryptography Virtual Lab to provide a step-by-step simulation of the Digital Signatures.
2. Students were allowed to input different Plain text and RSA public key keys to obtain Digital signature values in hex and base64 format.

**Effective Presentation:**

1. Digital Signatures will be explained in the classroom
2. An example considering plain text and hash output(hex) with RSA algorithm will be solved
3. Same example will be solved using Virtual Lab
4. Students will be given some work to try at their own

**Photo of the activity**



**PO's & PSO's Mapped:**

PO1, PO2, PO3, PO5, PO12, PSO2

**Reflective Critique:**

The link of Virtual Lab on Digital Signatures was shared with other faculty members.

1. Mrs. Komal Vyas suggested to add practical applications of Digital Signatures.

**Evidences of success:**

Increased Student Engagement :80% of students solved the examples given as exercise and compared the results with virtual lab

**Challenges faced during implementation:**

It is hard to keep a track of who actually compared their results with virtual lab simulation.

**Link for peer review:** <https://forms.gle/2USd25GmuwQziD636>