



## Innovative Teaching – Learning Activities

### Active & Experimental Learning

#### Simulation Tools-GNU Radio

**Class: S.Y. B.Tech.**

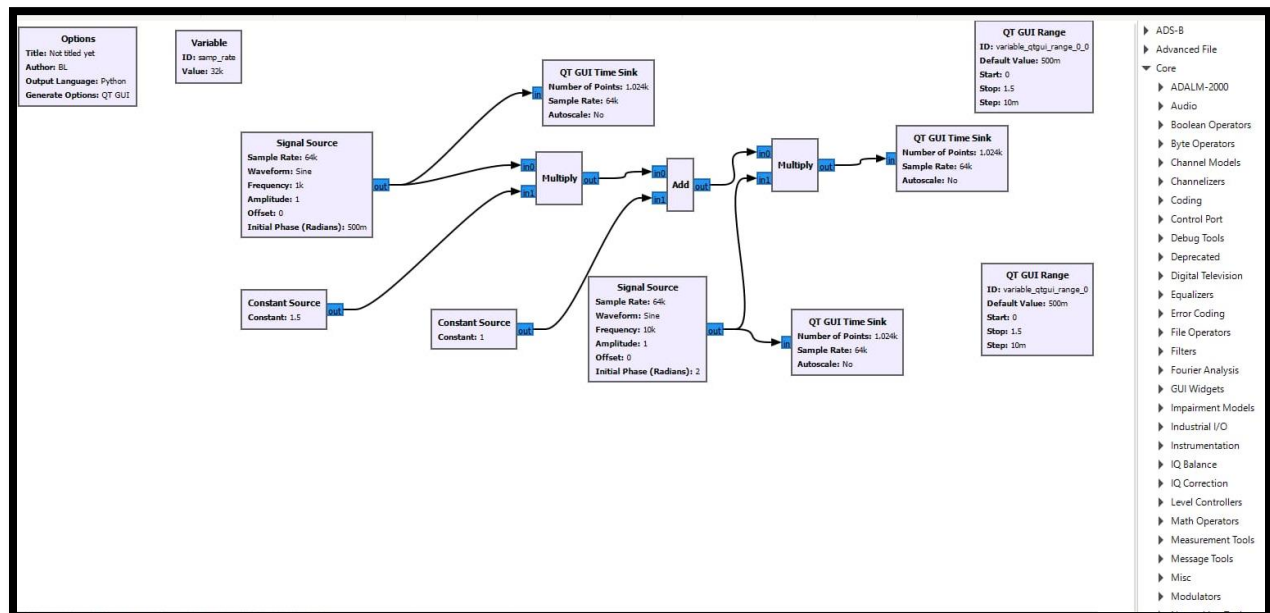
**Course: Analog and Digital Communication**

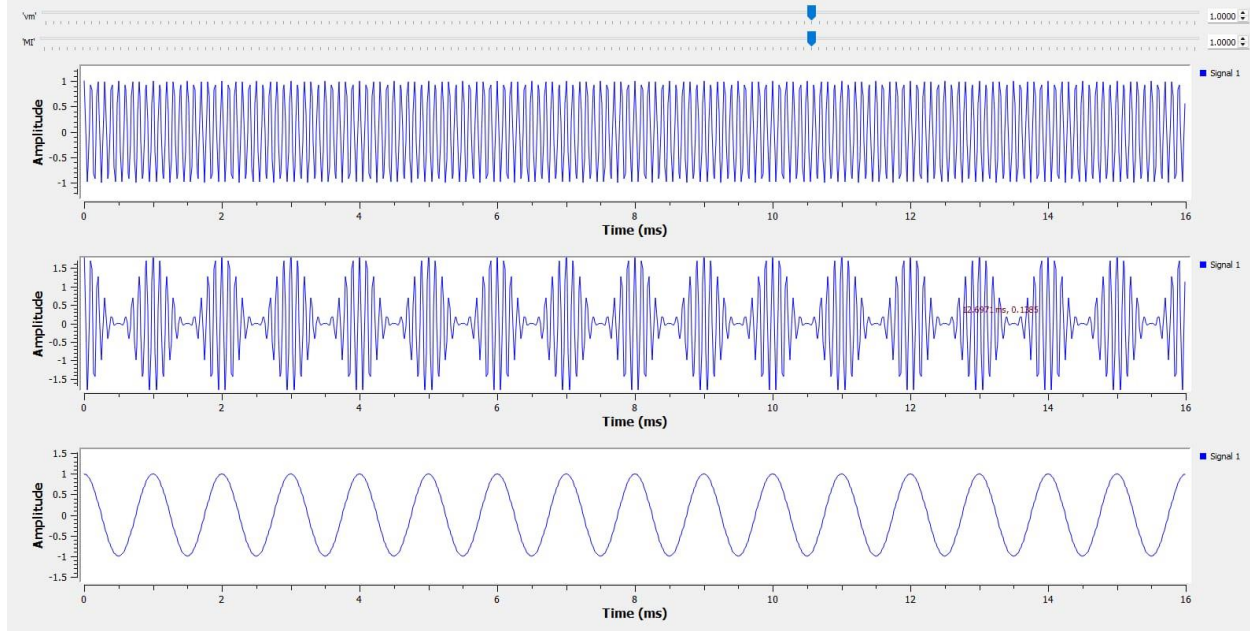
**Objective:** To equip students with hands-on experience in **GNU Radio**, an open-source signal processing framework, to understand and implement software-defined radio (SDR) applications.

#### Outcomes:

1. Practical Knowledge of SDR
2. Hands-on Experience with GNU Radio
3. Ability to Implement Signal Processing Blocks Programming and Customization Proficiency

#### Photo for Activity:





### Impact of the activity:

1. Students develop a **deeper understanding of AM and FM modulation techniques**, including carrier signals, frequency deviation, and bandwidth requirements.
2. They **visualize real-time signal waveforms**, improving their grasp of theoretical concepts.
3. They learn to **design, simulate, and test communication systems** using GNU Radio Companion (GRC).
4. Students become proficient in **signal processing, filtering, and noise analysis** in communication systems.
5. They develop **debugging and troubleshooting skills** by analyzing the performance of their transmitter-receiver designs.