# GODAWARI COLLEGE

**5TH SEMESTER, SIMULATION & MODELING**

**LAB & ASSIGNMENTS**

**Lab 4:**

1. Create a GPSS model and program to simulate a barber shop for a day (9 am to 4pm), where a customer enters the shop every 10 +- 2 minutes and a barber takes 13 +- 2 for a haircut.

2. Consider that a machine tool in a manufacturing shop is turning out parts at the rate of one every 5 minutes. As they are finished, the parts go to an inspector, who takes 4±3 minutes to examine each one and rejects 10% of the parts. Now, develop a block diagram and write the code for simulating the above problem using GPSS, and also explain the function of each block used in the block diagram in detail.

3. A machine tool in a manufacturing shop is turning out parts at the rate of every 10 minutes. When they are finished, the parts are sent to an inspector, who takes 10±5 minutes to examine each one and rejects 20% of the parts. Draw and explain a block diagram for it and write a GPSS program to simulate using the concept of FACILITY.

4. Create a GPSS model and program to simulate a barber shop with the following qualities:
    - The shop contains one barber and one barber's chair, open for eight hours in a day.
    - Customers arrive on average every 18 minutes, with the arrival time varying between 12 and 24 minutes.
    - If the barber is busy, the customer will wait in a queue.
    - Once the barber is free, the next customer will have a haircut.
    - Each haircut takes between 12 and 18 minutes, with the average being 15 minutes.
    - Once the haircut is done, the customer will leave the shop.