TEACHING AND LEARNING

Academic Year -2021-22

Content Beyond Syllabus Report

Course Code : 18CS645   **Type: Core/ Elective** √

Course Name: System Simulation and Modelling   **Semester a& Section: 6th A & B**

Name of the Faculty: Dr Rekha B Venkatapur

Objective : To apply the knowledge gained through the topics in simulation examples which are beyond curriculum and solve problems through collaborative learning

Gaps Identified in the curriculum: In Discrete event System simulation Examples, only Single channel and Multi channel Queuing Models are simulated manually using tables**.** Other application areas where simulation can be applied like Inventory management, reliability problems are not explored.

Course Out Come: CO1, CO2

Level : 3 Apply

CO1: Identify the System components and apply analytical modelling methods to simulate the activities of systems

CO2: Make use of the characteristics of a Discrete system and Event scheduling time advance algorithm to model the Single Queuing Simulation, Identify useful statistical models, discrete and continuous distributions

Program Out Comes: PO1, PO2, PO3, PO5, PO9, PO10 and PO12

Appropriate Method/Instructional materials: Spread Sheet exercises

Examples taught in the class room

1. **Reliability Problem**: Bearing replacement in Spinning Mill
2. **Inventory Management** –Simulation of (M,N) inventory
   Source Courtesy: Discrete – Event System Simulation Jerry Banks et.al, 4th Edition

Teaching Tool: Spread sheet

https://drive.google.com/drive/folders/1maNNgF-Dt8zhObYxZdLGGM02uUlsRTvx

Implementation by student's teams:

Date of Presentations/Problem solving : 7-5-2022

Reliability Problem: Basic analysis of inventory system through Programming (Python)

Link of Code https://kncj7k.csb.app/

 Presentation of both existing method and Proposed method and problem solving manually

Inventory Management: Solving manually the problem to find the number of back orders, Level of Inventory, Lead Time and finally calculation of Order Quantity

Order Quantity=   (Order-up-to level)-Ending Inventory +Shortage Quantity

Team Members Presentation :

Manual Simulation (M,N) Inventory Problem solved on black board

Assessment Method:

Group Discussion and Presentation by Teams after teaching the Content Beyond syllabus where students applied knowledge to compare existing method for bearing replacement and impact of proposed method on replacement cost and Order quantity calculation on daily bases in 5 days cycle in 25 days duration of Inventory Management.

Rubrics: Presentation

Sl.No	Criteria
1.	Quality of the power point/poster

2.	Technical content	
3.	Structuring of the speech	
4.	Time Management	
5.	Voice modulation	
6.	Body language	

Strategy to award marks for presentations based on the criteria for each student

Sl. No.	Criteria	Marks for assignments
1.	Assignment not submitted in time or assignment submitted in time but not presented	No marks
2.	Assignment submitted in time, presented and any 04 or more criteria not met	2 mark
3.	Assignment submitted in time, presented and any 03 or more criteria not met	4marks
4.	Assignment submitted in time, presented and any 02 or more criteria not met	6 marks
5.	Assignment submitted in time, presented and any 01 or more criteria not met	8 marks
6.	Assignment submitted in time, presented and all criteria are met	10 marks

Maximum Marks obtained: 9   **Minimum Marks obtained: 4**

Signature of Course In charge   **Signature of HOD CSE**