THE WORKSHOP **EXPLORES SIMULATION AND SYSTEMS MODELING.**

*PARTICIPANTS WILL BE ABLE TO*

UNDERSTAND THE BASICS OF **ART AND SCIENCE OF SIMULATION.**

GAIN INSIGHTS INTO **APPLYING SIMULATION FOR ANALYZING SYSTEMS.**

UNDERSTAND **INTRICATE SYSTEM BEHAVIORS AND INTERACTIONS.**

ALL APPLICANTS ARE EXPECTED TO HAVE SOME PRELIMINARY KNOWLEDGE OF COMPUTER PROGRAMMING AND STATISTICS.

**THERE WILL BE NO REGISTRATION FEE.**

# WORKSHOP : APPLICATION OF ADVANCED SIMULATION MODELLING FOR ENGINEERING & BUSINESS

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

**CONDUCTED BY DEPARTMENT OF STATISTICS**
**COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY (CUSAT)**

**18th September 2023** **VENUE** : SEMINAR HALL, DEPARTMENT OF STATISTICS

## SESSIONS

**9.15 AM - INAUGRAL CEREMONY**

**9.45AM - 10.30AM : DR K C JAMES, DEPT OF STATISTCS CUSAT**

**10.30AM - 11.15 PM: DR M BHASI, SCHOOL OF MANAGEMENT STUDIES, CUSAT**

**11.15AM - 1.15PM : DR BALAGOPAL G MENON (ONLINE), ISE, IIT KHARAGPUR**

**2 PM - 4 PM : DR ANAND JACOB (ONLINE), ISE , IIT KHARAGPUR**

## WHO CAN ATTEND

FACULTY MEMBERS OF CUSAT, RESEARCH SCHOLARS MSC/M.TECH PG STUDENTS OF CUSAT IN RELEVANT DISCIPLINES

## HARNESSING SIMULATION: EMPOWERING DECISION-MAKING THROUGH SIMULATION

DR K C JAMES, PROFESSOR, DEPARTMENT OF STATISTICS, CUSAT

Simulation is a powerful technique used to replicate real-world processes in a computer environment. By creating models that mimic the behavior of systems, researchers and professionals can test hypotheses, analyze outcomes, and make informed decisions without disrupting the actual system. This session will provide an overview of simulation methods, their applications across various industries, and how they contribute to problem-solving and decision-making.

## SIMULATION MODELING OF LARGE SYSTEMS: THE CASE OF MANUFACTURING AND LOGISTICS

DR M BHASI: SENIOR PROFESSOR, SCHOOL OF MANAGEMENT STUDIES, CUSAT

Manufacturing and logistics systems involve intricate processes with numerous variables that affect efficiency and productivity. Simulation modeling offers a practical means to optimize these systems by experimenting with different scenarios and strategies. This session will focus on using simulation to model large-scale manufacturing and logistics systems, demonstrating how it aids in identifying bottlenecks, testing improvements, and enhancing overall operations.

## SYSTEMS THINKING AND SYSTEMS MODELING

DR. BALAGOPAL G MENON, ASSISTANT PROFESSOR, ISE, IIT KHARAGPUR

Systems thinking involves understanding the interconnectedness of components within a larger system and how their interactions influence overall behavior. Systems modeling is the process of creating visual representations or mathematical frameworks to depict these relationships. This session will explore the fundamentals of systems thinking, showcase the importance of modeling complex systems, and demonstrate how to develop effective models for analyzing intricate problems.

## AGENT-BASED MODELING AND EVOLUTIONARY GAMES

DR. ANAND JACOB ABRAHAM, ASSISTANT PROFESSOR, ISE, IIT KHARAGPUR

Agent-based modeling is a dynamic approach where individual agents with specific behaviors and rules interact within a virtual environment to observe emergent collective outcomes. Evolutionary game theory studies how individuals make decisions based on their interactions with others over time. In this session, participants will delve into agent-based modeling techniques, understand their relevance in studying social dynamics and evolutionary games, and learn how to use these models to gain insights into various scenarios.

CORRESPONDANCE : Dr KC JAMES, Dept of Statistics, jamesmech@cusat.ac.in