Lean Enterprise Systems Program – Summer 2023

Dr. Rupy Sawhney

Supporting Instructors: Ms. Wanessa Velloso, Dr. Enrique Macias de Anda and Guilherme Zuccolotto

Welcome to the Lean Enterprise Systems Program – Summer 2023! This document contains important information, so please read it carefully. The program will run from June 26th through July 27th (five weeks), and it will be structured as follows:

a) An online portion

- The fundamentals of Lean and Project Management will be delivered via video. You will watch 10 hours of lectures and do 6 hours of written work based on the material taught. You will have access to the printed material and recorded lectures via Canvas, the Learning Management System UT uses.
- You will work on your English and communication skills through videos from the LinkedIn Training platform. Written work will also be assigned via Canvas. (please refer to the Language Component Syllabus attached)

b) Program core activities

- 70 hours of in-class instruction at UTK (please refer to the program calendar)
- 92 hours of in-company observation/data collection
- 45 hours of homework / written assignments

c) Supporting activities

- 12 hours for field trips (John Deere, Toyota, and Amazon - TBC)
- 21 hours for culture-related activities (Smoky Mountains, Dollywood, and Gatlinburg)

The table below reflects the distribution of hours throughout the five weeks the course in the U.S. lasts:

Activity	# Hours
Classroom	70
Homework	45
Fieldtrip	12
Company	92
Cultural	21
TOTAL	**240**

Industrial & Systems Engineering
851 Neyland Dr.   525 John D. Tickle Building   Knoxville, TN 37996
Phone: (865) 974-3333   fax: (865) 974-0588   www.ise.utk.edu

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OBJECTIVES

- Students will be able to apply the methodology they have learned to successfully diagnose or confirm a problem in a company's systems and processes. They will also be able to develop a project that presents a solution to the problem and its sustainability, focusing on enhancing shareholder value through customer satisfaction and establishing a high quality of life for the workforce.
- Students will be able to navigate cultural and linguistic competence differences to develop a project as a team successfully.

LECTURES ON CORE SUBJECT

- ***Introduction to Lean and the Toyota Production System***
  - Background of Lean and TPS
  - Overview of the sequential implementation phases of TPS and their associated tools.
    - Phase 1: Understanding your system
    - Phase 2: Fundamental workplace design
    - Phase 3: The role of standard operating procedures
    - Phase 4: Reducing setup times to allow lot/size reduction
    - Phase 5: Cell design
    - Phase 6: Scheduling and flowing through system
  - Understanding the relevance of systems design and how closely linked it is to the well-being of people involved.
  - Introduction to The Sawhney Model.
  - Effects of TPS on people's well-being.

- ***Developing Critical Problem Solving: UT DRIVES model***
  - Defining a Systems-Based Problem
    - Systems Thinking, Theory of Constraints, Network Analysis
  - Developing an Operational Excellence Solution
    - Via Reliability, Via Resilience
  - Sustaining the Solution
    - Via Design, Via Behavior Change

- ***The Sawhney Model: A People-Centric Operational Excellence Model***
  - Aligning Organizational Initiatives to The Sawhney Model Methodology and Tools
    - Methodology Alignment Mechanism Based on Little's Law
    - Designing a Hierarchy of KPIs Based on Leading and Lagging Indicators
    - Connecting Process/System Throughput to Tool Set
      - Flow Based
      - Variation Based
      - Disruption Based

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- UT Categorizing Processes Based on Uncertainty
  - Categories
    - Deterministic Processes and Initial Approach
    - Stochastic Processes and Initial Approach
    - Conditional Processes and Initial Approach
  - Process/System Mapping
    - Value Stream Mapping and its Limitations
    - Simulation Modeling
- UT Reliability of Lean Systems
  - Developing a Reliability-Based Support Structure Analysis
    - Material
    - People
    - Equipment
    - Schedules/Information
  - Known and Equivalent Reliability Structures
  - Reliability Calculations
    - Exponential Distribution
    - Weibull Distribution
- Designing People-Based Processes/Systems
  - Systems-Based Alignment of People-Oriented Stock
  - Introduction to UT Engagement Model
  - Analyzing the Impact of Culture on Lean Design – The Sawhney Model
- Global Compassionate Servant Leadership
  - Development of Skills to become a GCS Leader

NOTE: Activities involving third parties (cultural, educational and recreational) are subject to change.

AMBASSADORSHIP ASPECT OF THE PROGRAM

We invite you embrace the multicultural make-up of the Lean Enterprise Systems Program. You will live in a Residence Hall at UT for over a month, and you will share a room with other students. See yourself as an ambassador of your country in Tennessee.

We challenge you to leave your prior way of thinking at the airport and bring with you just the openness to look at people, companies, problems, and solutions from a different standpoint and with different lenses.

We look forward to exchanging knowledge and experiences with you.

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GRADE BREAKDOWN (SUBJECT TO CHANGE)

- Online Module (Intro) **......……………………………………..……..…….......... 10%**
- Attendance, Team Leader, and Peer Evaluation**..………………………………………20%**
- Project
    - Midterm **…………………………………………………….…10%**
    - UT Presentation*** …………………………………………...…………… 20%**
    - In-Company Presentation**** …………………………………...…………… 10%**
    - Poster Session **…………………………………………………...…………… 10%**
    - Final Report for Company..**…………………………………….………...…10%**
- Language Component **…………………………………………………….… 10%**

* When presenting at UT, students must:
a) demonstrate their ability to approach a problem critically
b) support their findings and solutions with technical accuracy

** When presenting at the company, students must:
a) convince the sponsor of the feasibility of the project
b) show what the impact of the project will be in terms of financial gain, customer satisfaction, and improvement of quality of life of employees

For more information, please email the program coordinator, Guilherme Zuccolotto (gzuccolo@vols.utk.du).

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