INSTRUCTIONS FOR UNDERGRADUATE INDUSTRIAL TRAINING (TR400/EF4010)

DEPARTMENT OF MANUFACTURING & INDUSTRIAL ENGINEERING

1. Introduction

Industrial Training is a programme which aims to provide industrial exposure for undergraduate students under the supervision of professionals within a specified time frame. Through the industrial training programme, engineering undergraduates are exposed to industrial practices; hence, they are expected to gain professional skills and experiences, which are of utmost importance for them to succeed in their career. The training can be carried out either in government organizations or in private organizations (Organizations in foreign countries are also considered subject to the approval of the relevant Head of the Department and the Director of the Industrial Training and Career Guidance Unit).

Industrial Training (TR400/ EF4010) is a course offered for the engineering undergraduates who are following the Specialization Programme in Engineering. TR400 is a six (6) credit course and the successful completion of the course is a mandatory requirement to claim the degree of Bachelor of the Science of Engineering (B.Sc.Eng.). The Industrial Training and Career Guidance Unit (ITCGU) at the Faculty of Engineering, University of Peradeniya is responsible for arranging, monitoring and evaluating the industrial training in liaison with the National Apprentice and Industrial Training Authority (NAITA).

This document provides department-specific guidelines for students to identify the components of Industrial Training that they need to be aware of specific to their discipline of Manufacturing & Industrial Engineering in addition to the generic instructions provided by the ITCGU.

2. Objectives

General Objectives of TR400/EF4010

- ILO1: describe the background, Management structure, Standard Operating Procedures, Occupational health and safety procedures of the organization.
- ILO2: explain how Engineering Principles are applied in real industrial situations, practical issues arise and possible solutions in such applications and Quality assurance standards and practices.
- ILO3: describe Ethical practices, Professionalism, Social aspects and Sustainability practices in industrial/ research environments.
- ILO4: demonstrate the training experience through a daily diary, formal report, oral presentation and viva.

In addition to the general objectives stated above, the Department of Manufacturing & Industrial Engineering also expects students to obtain specific exposure relevant to the field wherever possible. This exposure will depend on the company and its industry. The relevant guidelines for obtaining this exposure are outlined in the following section.

3. Expected Industry Exposure during Training (relevant to Manufacturing & Industrial Engineering)

The undergraduates specializing in Manufacturing & Industrial Engineering are requested to pay particular attention to the following aspects which are relevant to the discipline:

No.	Category	Key areas to focus on (questions to find answers to)
1	Company profile	1. What are the key products/services of the company? 2. What are the main countries that it provides products/services to (if export oriented)? 3. If it is a listed company on the Colombo Stock Market, what is the profitability and financial health of the company (see Company Reports available at www.cse.lk)?
2	Safety, Health, & Welfare (Factories Ordinance)	1. How does the factory adhere to the Factories Ordinance? Is it explicitly stated? 2. What safety features are in place in different sections of the factory? 3. What are the KPIs that are related to safety & health which the factory keeps track of? **Factories Ordinance:** https://labourdept.gov.lk/downloads/labour_code/43.pdf
3	Sustainability Practices	1. What are the sustainability aspects the company focuses on related to the environment? For example, does the company have procedures for treating effluent? 2. What steps have been taken to reduce energy consumption? 3. To what level has renewable energy been used in the plant? What is the plan to integrate renewable energy? 4. Is the company aware of the United Nations Sustainability Development Goals? 5. What sustainability development goals do they adhere to?
4	Manufacturing Environment	1. What are the main process technologies used to make the products of the company (if manufacturing)? 2. Can you develop the value stream map for the manufacturing process? 3. What type of layout has been used in each section of the plant? 4. Does the plant implement Lean Manufacturing or any other world-class manufacturing philosophies for continuous improvement?
5	Product Quality	1. What role does quality play in the company's goals, mission, vision? 2. What quality inspection processes are implemented at the plant and where (e.g., statistical process control charts, AQL charts)? 3. How is quality ingrained in the day-to-day activities of the company employees? 4. What quality management systems does the company adhere to (e.g., ISO9001)? 5. What inspection/testing methods are applied to the final product?
6	Automation	1. Does the company have a separate, internal automation group/team? 2. What automation equipment have been used for different operations (e.g., PLCs, robots, AGVs, etc.)? 3. What are the automation goals (if any) of the company?