PROJECT IMPLEMENTATION PLAN

5 April 2018

1.	**Project Code**	17-IN-06-GE-DLN-A-07
2.	**Title**	Self-learning e-Course on Smart Manufacturing: Basic
3.	**Reference**	Project Notification 17-IN-06-GE-DLN-A dated 22 December 2016
4.	**Timing and Duration**	1 May–31 December 2018 (eight months)
5.	**Implementing Organizations**	APO Secretariat and National Productivity Organizations (NPOs)
6.	**Number of Participants**	Minimum 400 participants
7.	**Self-registration**	Self-registration opens from 10:00 AM Japan Standard Time on 1 May 2018 on the eAPO web portal: http://eAPO-tokyo.org
		Note: Participants can register directly from this portal on the APO website. Those who are already registered can access the course by using the assigned username and password. If you have forgotten your username and password, please refer to the help page on the home page of the portal.

8. Objectives

The objective of this course is for participants to acquire basic knowledge of smart manufacturing through an introduction to Industry 4.0. Specifically, at the end of the course, participants will be able to:
a. explain the basic concepts of smart manufacturing;
b. understand the current digital transformations in manufacturing processes; and
c. describe the relevance and convergence of IT and operational technology (OT) under the smart manufacturing model.

9. Background

The concept of smart manufacturing is based on the merging of the physical and virtual worlds, which opens up new areas of innovation to optimize the entire sector to create higher-quality products, improve productivity, increase energy efficiency, and sustain safer plant floors. Given the widespread recognition of the value of this system, it is predicted that smart manufacturing will be the Fourth Industrial Revolution.

This course is an introduction to smart manufacturing. Starting with an overview of the current digital transformations in manufacturing processes including additive manufacturing,

it will then examine the evolution of cyberphysical systems, the central core of Industry 4.0, in which the infrastructure components are addressed primarily from a user perspective by describing the relevance of the IT/OT convergence to achieve data-driven manufacturing. The course will also explain how dynamically evolving operational data can be securely stored in the cloud for strategic decision making via online machine learning, for tactical decisions via human/machine collaboration on the shop floor, and for localized self-organizing automated decision making via machines and devices.

10. Scope and Methodology

Scope
The course will cover the following modules:

Module 1:	Introduction to smart manufacturing
Module 2:	The digital thread
Module 3:	The Industrial Internet of Things
Module 4:	Additive manufacturing
Module 5:	Intelligent and collaborative robotics
Module 6:	The Internet, communication, and OT

Final Examination

Methodology
Module study, additional study material for participants, intermittent quizzes for self-assessment, and a final examination to qualify for the APO e-certificate for eligible participants.

Self-learning e-Course on Smart Manufacturing is divided into two parts: basic and advanced. Those who have passed the basic course can continue the learning journey by taking the advanced one.

11. Qualifications of Candidates

The target groups for this course are production or manufacturing floor managers with engineering backgrounds, especially in enterprises planning to introduce smart manufacturing systems, and seeking a basic understanding of Industry 4.0.

12. Eligibility for e-Certificate

A minimum score of 70% on the final examination at the end of the course is required to qualify for the APO e-certificate.

Note: Participants from nonmember countries are welcome to take the course for self-development, although APO e-certificates will not be provided.

Santhi Kanoktanaporn
Secretary-General