ERASMUS+ CBHE PROJECT

Reinforcing Non-University Sector at the Tertiary Level in Engineering and Technology to Support Thailand Sustainable Smart Industry

Co-funded by the
Erasmus+ Programme
of the European Union

Industrial Management in Industry 4.0 Era

Objectives

This module aims at developing the following competences:

1. Understand and apply science & engineering principles to the industrial management functional area to adequate it to Industry 4.0 in the local context.
2. Enable the agile management of projects and industrial processes through collaboration (teams) and the organizational culture in the context of Industry 4.0.

Learning Outcomes

Upon the completion of this module, the trainees will be able to:

1. Interpret Industrial Management processes in the new era of I4.0, using frameworks and maturity/readiness models.
2. Summarize opportunities and constraints of real-time data for industrial management processes.
3. Interpret Business Process Management and Notation production planning and control processes, based on I4.0 maturity models.
4. Interpret agile approaches for managing industrial projects in the context of Industry 4.0.
5. Develop a project of analysis of Industry 4.0 maturity level in the context of the industrial management functional area.

Prerequisite: N/A

Outline:

- **Industrial Management (IM)**
  - Industrial Management Concepts – revision and Contextualization
  - Industrial Management Relationship with Industry 4.0
- **Industry 4.0 (I4.0)**
  - Industry 4.0 concepts, key technologies, and frameworks
  - The Acatech model and its relevance to Industry 4.0
- **Agile Project Management**
  - Agile project management principles and approaches
  - Agile project management relevance for Industry 4.0
  - Organizational culture supporting agile practices and collaborating in Industry 4.0
- **Business Process Modelling (BPM)**
  - Business Process Modelling and its Importance for IM and I4.0
  - Business Process Modelling Notation (BPMN) for IM and I4.0
  - Use of BPMN and simulation in IM4.0

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- **Leveraging Real-Time Data for Industrial Management Processes**
  - Real-Time Big Data in Industrial Management – opportunities and Challenges
  - Key Indicators and IM4.0
- **Planning and coordinating Industrial Management 4.0 approaches**
  - Analyzing the Industry 4.0 maturity level in organizations
  - Integrating Industrial Management and Industry 4.0

Learning Activities:

- Think-pair-share
- Quiz
- Search and study different approaches
- Simulation
- Class Discussion
- Short Lecture
- Self-Reflection
- Group hands-on activity
- Group presentation activity

Time Distribution and Study Load:

- Training: 15 hours
- Coaching: 30 hours
- Group project: 60 hours

Assessments:

Training
- Quiz
- BPMN exercises
- Group hands-on activity with Simio and Excel files
- Group project (hands-on activity and presentation)

Coaching
- Discussion
- Project delivery
- Reflexive Portfolio

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