Module Specification

Lean Factory Design

Version: 2021-22, v1.0, 24 Jul 2019

Contents

Part 1: Information

Module title: Lean Factory Design

Module code: UFMFTB-15-3

Level: Level 6

For implementation from: 2021-22

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Engineering Design & Mathematics

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Engineering, Design and Mathematics

Module type: Standard

Pre-requisites: Quality Control Systems 2021-22

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: The aim of this module is to familiarise students with the principles and tools and techniques for modern smart manufacturing facility design and continued improvement.

Outline syllabus: Assembly layout, cells and line and balancing.

Process considerations while employing design for manufacture and assembly.

Design for Changeover and changeover reduction.

Value stream economics - what to make where.

Application of machine-material interaction evaluation, for process efficacy and efficiency.

Modelling and simulation to support process design and layout.

Developing the lean supply chain, collaboration and lean logistics.

Implementation of Industry 4.0 and the Internet of Things in modern production facilities.

Part 3: Teaching and learning methods

Teaching and learning methods: See Learning Outcomes

Module Learning outcomes:

MO1 Appraise manufacturing specific skills with respect to the principles of process measurement, management and control

MO2 Demonstrate a detailed knowledge of the Implementation of the agile principles and data exchange technologies for manufacturing systems management

MO3 Model situations and provide solutions to manufacturing problems using engineering principles

MO4 Apply continuous process improvement and problem solving strategies for the modern ‘SMART’ factory

MO5 Critically appraise justifications for Lean strategies and deployment

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/UFMFTB-15-3.html

Part 4: Assessment

Assessment strategy: The main sit strategy will be as follows:

Component A: The examination is summative and assesses the students' understanding of concepts, methods and techniques implemented in the modern Smart factory.

Component B: The portfolio is structured to verify students' competence and demonstrate their applied understanding of approaches to support the development and planning of a lean, smart production facility. This will be based around an industrial scenario.

The resit strategy will be as follows:

Component A: The examination assesses the students' understanding of concepts, methods and techniques implemented in the modern Smart factory.

Component B: The portfolio is structured to verify students' competence and demonstrate their applied understanding of approaches to support the development and planning of a lean, smart production facility. This will be based around an

industrial scenario. (Previously completed coursework will not be included).

Risk of plagiarism in component B will be mitigated by the individualised variables and data being issues to students with the assignment brief.

Assessment components:

Examination (Online) - Component A (First Sit)
Description: Online examination
Weighting: 60 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Portfolio - Component B (First Sit)
Description: Portfolio - 2000 word written report, factory design plans and auditing docs
Weighting: 40 %
Final assessment: No
Group work: No
Learning outcomes tested: MO4, MO5

Examination (Online) - Component A (Resit)
Description: Online examination
Weighting: 60 %
Final assessment: Yes
Group work: No
Learning outcomes tested:

Portfolio - Component B (Resit)
Description: Portfolio - 200 word written report, factoryplans and auditing documentation
Weighting: 40 %
Final assessment: No

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Mechanical Engineering with Manufacturing {Apprenticeship-UWE} [Sep][FT][UCW][4yrs] BEng (Hons) 2018-19

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