

ES2D0-15 Industrial Engineering for Business Improvement

26/27

Department

School of Engineering

Level

Undergraduate Level 2

Module leader

Mukund Janardhanan

Credit value

15

Module duration

10 weeks

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

ES2D0-15 Industrial Engineering

[Module web page](#)

Module aims

This module aims to equip students with the skills to design, develop and install integrated systems of people, materials, equipment and energy.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Industrial Engineering "...draws upon specialised knowledge and skill in mathematical, physical and social sciences, together with the principles and methods of engineering analysis and design to specify, predict and evaluate results to be obtained from such systems" (adapted from a

definition US Institute of Industrial Engineers)

Indicative Contents is as follows:

Method Study - The Attack on Non Value Added Work

Facilities Planning - Organising People, Facilities, Space and Materials

Work Measurement - The Analysis of Work Performance

Ergonomics - Human Physical Performance, Cognitive Ergonomics, Health & Safety

Work Design - The Essentials

Productivity - Efficiency versus Effectiveness

Project Management

Linear Programming and Goal Programming

Lean & Industrial Engineering - Equal Impact

Learning outcomes

By the end of the module, students should be able to:

- Evaluate and apply project management techniques to design and improve the performance of industrial systems. (C15,M15)
- Explain and apply Industrial Engineering methods within the context of Operations Management. (C2, C3, M2, M3)
- Assess workplace ergonomics and design appropriate improvement solutions in line with relevant Health and Safety regulations (C5, C15, C16(D), M5, M15, M16(D))
- Design and evaluate factory layout solutions to optimise the use of people, space, and facilities. (C5, C6, M5, M6)
- Analyse ethical, social, and legal requirements relevant to Industrial Engineering practice. (C8, M8)

Indicative reading list

[Reading lists can be found in Talis](#)

Subject specific skills

Plan and manage the design process, including cost drivers, evaluating outcomes, and working with technical uncertainty

Knowledge and understanding of the need for a high level of professional and ethical conduct in engineering and the use of technical literature, other information sources including appropriate codes of practice and industry standards

Knowledge and understanding of risk issues, including health & safety, environmental and commercial risk, risk assessment and risk management techniques and an ability to evaluate commercial risk

Knowledge of professional codes of conduct, how ethical dilemmas can arise, relevant legal and contractual issues.

Transferable skills

Communicate (written and oral; to technical and non-technical audiences) and work with others

Awareness of the nature of business and enterprise in the creation of economic and social value
Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue
Appreciation of the global dimensions of engineering, commerce and communication

Study

Study time

Type	Required
Lectures	10 sessions of 2 hours (13%)
Seminars	1 session of 10 hours (7%)
Private study	120 hours (80%)
Total	150 hours

Private study description

120 hrs independent learning

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A3

	Weighting	Study time	Eligible for self-certification
Assessment component			
Individual assignment	100%		Yes (extension)
Individual Assignment			

Reassessment component is the same

Feedback on assessment

Feedback on Assignment is by mark sheet and cohort overview
Cohort level feedback on examination

Availability

Courses

This module is Core for:

- Year 2 of UESA-HN15 BEng Engineering Business Management
- Year 2 of UESA-HH75 BEng Manufacturing and Mechanical Engineering
- Year 2 of UESA-HN11 BSc Engineering and Business Studies
- Year 2 of UESA-HH76 MEng Manufacturing and Mechanical Engineering

This module is Option list A for:

- Year 2 of UESA-H335 BEng Automotive Engineering
- Year 2 of UESA-H112 BSc Engineering
- Year 2 of UESA-HN11 BSc Engineering and Business Studies
- Year 2 of UESA-H336 MEng Automotive Engineering