

Dear Industry Partner

Exposure to the industry, the working environment in general, as well as real-life problems is an essential part of the undergraduate studies of engineering students. The Department of Industrial and Systems Engineering is grateful to businesses that provide such opportunities.

Practical Training Requirements

All engineering students must complete practical training at the end of their second and third years of study. The minimum requirement per year is six weeks, or 30 working days of 8 hours, but this does not have to be one uninterrupted period – it may consist of several projects at different companies. At the end of every major period of practical training, the student is required to submit the following:

1. An Employer Report Form (completed by the industry mentor / employer) that confirms the work done and the hours worked.
2. A Practical Training Report (compiled by the student), which describes the operating environment as context, the projects executed, and further improvement opportunities identified. This report is to assess whether the work done was appropriate for practical training.
3. A Summary Google form (completed by the student) that is used to collect meta-data for analysis on techniques frequently used, industry sectors, etc.
4. A Reflection on Learning Google form (completed by the student) that allows the student to reflect on some of the work and personal challenges faced and how these were overcome / will be tackled in future.

Purpose of Industry Training

Industry training aims to provide students with an overview of industries and expose them to different aspects of a business, all under the guidance of skilled and experienced persons within the organization. This exposure should ideally include as many of the following aspects of business: management and personnel policy, financial, marketing, and purchasing functions, legal and social aspects, operations, and technical activities.

Apart from exposure to industry, real-life problems and projects, as well as the working environment, students must also be exposed to the world of work where self-discipline, personal time management, functioning amongst co-workers etc. are experienced. Allowing students to experience different modes of work (team / individual), expecting the student to be accountable to a manager / mentor etc, form part of the experience of honing professional workplace skills.

Projects for Industrial Engineering Students

The training that industrial engineering students undergo at the University of Pretoria enables them to complete various specialist tasks aimed at the analysis, planning, design, and operation of integrated systems where resources such as labour, material, capital, equipment, and information are optimally utilized to increase productivity. The list below indicates the techniques that students have been exposed to at each level:

By the end of the 2 nd year	Productivity calculations (labour and material)
	5S workplace organisation
	Visual management
	Standardisation
	Quality assurance (overview)
	Overall equipment effectiveness (OEE)
	Root cause analysis
	Theory of Constraints
	Value Stream Mapping
	Quick Changeover Technology (SMED)
	Just-in-Time / Kanban
	Work Study (time studies & method studies)
	Data analysis & visualisation
By the end of the 3 rd year	Facilities planning
	Information systems design
	Database engineering (Access, SQL)
	Decision analysis (AHP, MCDM)
	Forecasting and demand management
	Economic order quantities
	Lot sizing
	Simulation modelling

Contact Details of Module Coordinator

Should you have any questions regarding hosting a student for a project, please feel free to contact me. I have more than 20 years of industry experience – as operations improvement manager with a Fast Moving Consumer Goods (FMCG) company, as well as in the role of external management consultant for various companies in the mining, services, and manufacturing sectors. I will gladly assist in the scoping of student projects should you require a soundboard..

Kind Regards

Ilse Doyer

Lecturer: Productivity, Communication & Practical Training

Tel +27 (0)12 420 5410

Email ilse.doyer@up.ac.za

<https://www.up.ac.za/industrial-and-systems-engineering>

Department of Industrial and Systems Engineering

Room 3-16, Engineering 2
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa



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