

Learner Guide

QUALIFICATION:	:	ND: Industrial Engineering (NDIND2)
SUBJECT NAME	:	Experiential Learning I (P1) & II (P2)
SUBJECT CODE	:	EXEI101 (P1) & EXEI201 (P2)
DURATION	:	EXEI101 (P1) – 1 semester – 24 weeks EXEI201 (P2) – 1 semester – 24 weeks
SAQA CREDITS	:	1 Credit
Name of Co-ordinator	:	Mr A.K. Naicker
Email & Telephone	:	naickera@dut.ac.za / 031 373 2467
Departmental Secretary	:	Mrs K Dhavraj
Email & Telephone	:	kershnid@dut.ac.za / 031 373 2445
Office	:	S4 – Level 0
Campus location	:	Steve Biko Campus
Web address	:	http://www.dut.ac.za/faculty/engineering/industrial_engineering
Fax No	:	031 3732014
Head of Department	:	Mr A.K. Naicker
Duration	:	6 months per course registered
Relevant Policies and rules	:	Rule G28 – Student Handbook Section IE7 – Departmental Handbook Section IE11 – Departmental Handbook` Policy and Procedure for Experiential Learning
Revision	:	000
Date of Implementation	:	01 July 2013

CONTENTS PAGE

Page

1. Welcome	4
1.1. Purpose and overview of the learner guide	4
1.2. Description of Criteria of the qualification	4
1.3. Diploma Critical Cross Field Outcomes	4
1.4. Work Intergrated Learning Outcomes (EXEI101 & EXEI102)	5
1.5. Purpose and overview of the study guide	6
1.6. Department of Industrial Engineering (Mission & Vision statements)	7
1.7. What is Industrial Engineering	7
1.8. What do Industrial Engineers do	7
1.9. What is Work Integrated Learning (WIL)	8
2. Experiential Learning	8
3. WIL Procedures for the Learner	10
3.1. Registration and submission of portfolios (as per Departmental Handbook)	10
3.2. Changing employers, sections or departments within an organisation	12
3.3. Responsibilities of the learner	12
4. WIL Procedures and Guidelines for the Employer	13
4.1. Introduction	13
4.2. Responsibility of the employer	13
4.3. Information and guidance for employers/supervisors/mentors	13
5. Assessment Criteria	15
5.1. Assessment Strategies	15
5.2. Moderation of WIL	15
5.3. The WIL Training Portfolio	15
6. The WIL training portfolio (P1 and P2 reports)	15
6.1. Suggested Structure of the WIL training portfolio	16
6.2. Project report guidelines	16

Appendix Listing:

1.	The Industrial Engineering Curriculum	17
2.	WIL Assessment Rubric	18-19
3.	Monthly Review Report	20
4.	Project Report Structure	22
5.	WIL Portfolio Cover Page	24
6.	Portfolio Declaration Page	25
7.	Overall Summary of WIL Training	26
8.	Nomenclature (For information only)	27
9.	Learner's Evaluation of WIL and the Workplace	28

1. Welcome

Welcome to the practical training component of your curriculum (Refer Appendix 1). After studying what is required of you from a theoretical perspective, this is an opportunity for you to now apply what you have learnt thus far to the work environment. The Department wishes you all the best in completing this aspect of the curriculum.

1.1. Purpose of Qualification

Graduates achieving this qualification will be component in the leading of programs regarding productivity improvement, integrated manufacturing systems, operating information systems and those of project and logistics management. The graduates will be able to register with ECSA.

1.2. Description of Criteria of the Qualification:

1. Execute operations management techniques in industry.
2. Apply Management and leadership principles in industry.
3. Apply cost control procedures.
4. Apply relevant principles and procedures to perform financial analysis.

1.3. Diploma Critical cross-field outcomes

Critical cross-field outcomes include but are not limited to-

1. Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made.
2. Working effectively with others as a member of a team, group, organisation, community.
3. Organising and managing oneself and one's activities responsibly and effectively.
4. Collecting, analysing, organising and critically evaluating information.
5. communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion.
6. using science and technology effectively and critically, showing responsibility towards the environment and health of others.
7. demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

8. contributing to the full personal development of each learner and the social and economic development of the society at large, effectively;
 - a. participating as responsible citizens in the life of local, national and global communities;
 - b. being culturally and aesthetically sensitive across a range of social contexts;
 - c. exploring education and career opportunities; and
 - d. developing entrepreneurial opportunities

1.4. Work Integrated Learning Outcomes

At the end of the student's respective training period, the student must, through a portfolio of evidence show progress to the achievement of the outcomes outlined below

1.4.1. Outcomes: Work Integrated Learning (P1) (EXEI 101)

After completion of EXEI101, a student should be able to:

1. Have an understanding of and be able to practice basic occupational health and safety within the work environment
2. Have an understanding of and should be able to demonstrate his/her ability to use basic handtools and measurement devices i.e. a measuring tape, stop watch etc.
3. Plan and execute basic studies that would incorporate principles learnt during the 4 semesters of academic study. This would include but is not limited to the following areas within the industrial engineering discipline (note: At least 50% of the areas mentioned below should be covered through the P1 and P2 training periods)
 - a. Process and/or Product design
 - b. Jig and tool design
 - c. Work Measurement and ergonomic studies
 - d. Materials Handling, Facilities and workplace design
 - e. System, procedure and policy development and design.
 - f. Cost Analysis and Quality control/assurance
4. Demonstrate an ability to work within a controlled team environment
5. Demonstrate an ability and aptitude to work with computers and the various associated software packages such as MsWord, MsExcel etc.
6. Demonstrate an ability to be able to carry out an oral/written presentation to immediate management

1.4.2. Outcomes: Work Integrated Learning (P2) (EXEI 201)

After completion of EXEI201, a student should be able to:

1. Have the ability to carry out well defined projects as designated by his/her mentor
The projects should cover the areas mentioned under point 3 above
2. Demonstrate that he/she is able to plan, execute, analyse and control a project or projects.
3. Demonstrate that he/she is able to collect, quantify, analyse and report on data in a meaningful and presentable manner
4. Demonstrate that he/she is able to lead a team on a well defined project and oversee the implementation of the project
5. Demonstrate an ability to be able to carry out an oral/written presentation to management at various levels.

Note: It is essential that the student is able to demonstrate achievement of the above outcomes (at each respective stage of registration) through the development and submission of a written portfolio.

1.5. Purpose and Overview of the Learner Guide

The purpose of this learner guide is to illustrate to the learner and his/her employer what the Department's expectations are whilst the learner is completing the Work integrated Learning (WIL) component of his/her curriculum. The learner guide also contains a brief explanation of the learning outcomes, assessment criteria and assessment strategies adopted by the Department. It is advised that after reading the guide, if the learner/employer is still uncertain of any aspect or requirement of the WIL component they should contact the Department or co-ordinator for further assistance.

1.6. Department of Industrial Engineering – Mission & Vision

▪ Vision

To be a strategic partner that communicates progressive knowledge of organized human activities and socio-technical systems.

▪ Mission

Our mission is to:

- Strengthen partnership with relevant stakeholders
- Provide and Integrate innovative teaching and learning practices
- Develop Research capacity in Industrial Engineering

1.7. What is Industrial Engineering

Modern Industrial Engineering is concerned with the integration of resources and processes into cohesive strategies, structures and systems for the effective and efficient production of quality goods and services in any undertaking.

Industrial Engineering draws upon specialized knowledge and skills in the mathematical, physical, behavioural, economic and management sciences, and fuses with the principles and methods of engineering analysis and design, to find optimal and practical solutions. They contribute to the success and prosperity of an industrial undertaking, thereby making a fundamental contribution to the creation of wealth.

1.8. What do Industrial Engineers do

There are a number of things industrial engineers do in their work which would include making processes more efficient, making products more manufacturable and consistent in their quality, and to increase productivity. An industrial engineer specialises in designing new systems and improving current systems for the optimal use of resources (including labour) to the financial benefit of any organization.

The industrial engineer must ensure that the design elements of the project are compatible and that the capital, plant, labour, and raw materials are optimally employed so that, consequently, the project is feasible and economically viable.

You, as an industrial engineer, will, therefore, co-ordinate a variety of disciplines and your work and experience will extend across the entire spectrum of the enterprise's activities.

As an industrial engineer you will be expected to specialise in the investigation, improvement, design and implementation of integrated systems comprising capital, plant, labour, and raw materials. Your objective will be to establish optimum utilisation of all the production factors and you will utilise the principles and techniques of engineering, industrial economics and management in order to design the systems to obtain the desired physical and economic results.

1.9. What is Work Integrated Learning (WIL)

Some qualifications are being designed to incorporate periods of required work that integrate with classroom study. This is called Work Integrated Learning. Where Work Integrated Learning (WIL) is a structured part of a qualification the volume of learning allocated to WIL should be appropriate to the purpose of the qualification. All WIL offering programmes must be structured, properly supervised and assessed accordingly. (HEQF 2006)

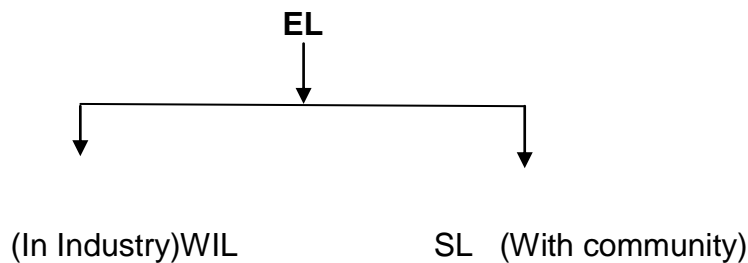
WIL is also directed at the attainment of professional or occupational learning outcomes. WIL is not exclusively experiential learning but includes a continuum of learning that is curriculum driven and is therefore designed and executed at the required NQF levels of the qualification.

Examples would include combinations and integrated aspects of theoretical learning, problem based learning, project-based learning and experiential learning.

2. EXPERIENTIAL LEARNING (EL)

The academic learning process is extended into the workplace through on-the job learning experiences which are integrated with the learning objectives of the programme. It provides progressive experiences in integrating theory and practice. (*“Knowledge is created through the transformation of experience” - KOLB*)

On-the job learning experiences may occur in commerce or industry (WORK-INTEGRATED LEARNING) or it may occur with a community (SERVICE LEARNING) or both.



EL is a defining element of a holistic educational strategy (Co-operative Education) which advocates the formal integration of structured real-life experiences (WIL/SL) into the curriculum and highlights the University of Technology=s responsiveness to the broader community.

EL is an umbrella term which includes experiential learning strategies such as:

- clinical training/ practice;
- teaching practice (in Education programmes);
- professional practice;
- internship;
- in-service learning;
- work-based learning

At this stage of your study, Work Integrated Learning training is your first exposure to the working world. You will be expected to perform your best, but in a relatively controlled environment and with the coaching of a mentor (employer) and a University of Technology lecturer. The experiential training period will also give you the opportunity to build confidence in your own abilities and to build the employers'/lecturer's confidence in your abilities to perform excellently.

During this time you will also develop an appreciation of the meaning of work and its impact on your studies, Industry and those performing it. You must thus develop empathy

for the workers who will later have to perform the tasks that you have designed and also recognise the wider impact of your recommendation on the organisation as a whole.

This period of training offers many challenges that you are expected to tackle professionally and with integrity. This is a journey of discovery, as you venture forth in applying your knowledge to the practical working environment.

3. WIL Procedures for the Learner

3.1. Registration and submission of portfolios (as per Departmental Handbook IE12)

This programme requires the student/candidate to undergo a **period of work integrated learning (not less than 12 months) as part of the course**. All prescribed compulsory and elective subjects and the prescribed experiential component must be passed in order to obtain sufficient credits to qualify for the qualification.

The employer must be accredited by the University for the purposes of work integrated learning. A work integrated learning agreement creates a separate contract between the “employer” and the student/candidate.

Students are advised to contact the Department of Co-Operative Education to submit their CVs. If the student finds employment on his/her own then it is compulsory for that student to contact the Co-operative Department and confirm if that company is accredited with DUT.

The student must maintain a portfolio outlining the experience gained through the work integrated learning component for each level.

Outlined below is the procedure that would need to be followed by the learner

- (1) Student must register for their WIL Modules (P1 or P2), within one month after commencing their training. When registering the student must complete a DUT EL 2 form, obtainable from the Department and must ensure that the form is returned to the Department completed with all the necessary details pertaining to their training.
- (2) The student is required to furnish proof of employment from the company where he/she is doing their training. If the student has enrolled into a Learner ship or a specialized training program offered by the company or a SETA accredited institution,

the student needs to verify that the content being taught or experience gathered is in line with the field of Industrial Engineering. It is preferable that the student contact the Department prior to enrolling into such a program.

- (3) It is recommended that the student submit a draft project report, completed in accordance to the guidelines given by the Department, within three months from the date of commencement for their training
- (4) The first draft of the final training portfolio (hardcopy) must be submitted by the student 2 (two) weeks before the end of their training period
- (5) The student must ensure that they receive a letter from the Department confirming receipt of the portfolio
- (6) The portfolio would then be assessed according to the assessment criteria (Refer Appendix 2), outlined by the Department, and the student would be informed of the necessary corrections that would be required (if any). This process would take 3 (three) weeks to complete. If longer then the student will be informed by the Department as to when they could expect feedback on their portfolios.
- (7) The student has a period of 2 (two) weeks thereafter to complete the necessary changes and to re-submit the final portfolio. The student is also required to submit the draft copy where the changes and/or recommendations were made by the Department as well.
- (8) Thereafter the portfolio would be re-assessed by the Department and if approved, the student would be duly informed.
- (9) If there is to be any deviation from the above process and timelines, documented evidence in the form of written correspondence, must be submitted to the HOD for approval.
- (10) If the student defaults in keeping to the above procedure without written consent from the Department, they would be required to re-register that part of their training module (P1 & P2).

Note: Students with outstanding fees are still eligible to register for their WIL modules.

Arrangements need to be made with the Finance Department regarding the outstanding fees and the Department WIL co-ordinator/HOD needs to be informed.

Once a student completed all the subjects and work integrated learning components, the student must apply for graduation by completing the application for graduation form (obtainable from the Department or Faculty Office).

Diploma shall be awarded only on successful completion of all the subjects and the work integrated learning component.

3.2. Changing Employers/Sections/Departments

When a student changes his/her employer or relocates to another branch within the organisation the learner must:

- (1) Notify the Department in writing by completing the relevant form (obtainable from the Department) form within 1 working week of the change occurring.
- (2) Ensure that he/she abides by the necessary conditions of his/her employment contract (i.e. resign as per the conditions outlined in the employment contract). Complaints by employers regarding student conduct in this regard would not be treated lightly as it could affect future placement opportunities for students in the system.
- (3) Ensure that the previous employer/manager has signed the WIL report pertaining to that particular period of employment
- (4) Comply with item (2) of the registration procedure (section 3.1.)

Failure to comply with the above may result in the learner not appearing correctly on the Department's data base and therefore, would not be visited by the Supervisor.

Students to please note that any complaints from employers would be thoroughly investigated and could result in disciplinary action against the student. Students are to be fully aware that whilst engaged in P1 and P2, they still represent the university and as such have to abide by the codes of conduct.

3.3. Responsibilities of the learner

- To ensure that he/she complies with all the guidelines as outlined in this learner guide
- To ensure that he/she complies with all the rules, regulations and codes of conduct as required by Department, DUT and the employer.
- To provide meaningful feedback to the Department on the WIL training program
- To ensure that the learning program undertaken complies with the requirements from the Department in terms of outcomes for WIL (section 1.4).
- To ensure that he/she is aware that at all time they represent the integrity of the University at the workplace.

4. WIL Procedures and Guidelines for the Employer

4.1. Introduction

The relationship between DUT and the employer is a value adding partnership where each partner strives to add value to the economy at large by contributing positively to the growth of learners. This value adding process should serve to produce productive and skilled learners that can contribute positively to the economy at large.

4.2. Responsibility of the employer

- To ensure that the learner has registered with the University for their WIL components i.e. P1 or P2
- To ensure that the learner complies with the guidelines for their WIL components as specified in this learner guide.
- To offer the learner the appropriate form of training and guidance so as to develop the learners skill and competence in the field of Industrial Engineering
- To mentor and supervise the learners' progression at the work place so as to meet the outcomes as specified in this learner guide.
- To evaluate the learners performance in the work place and to provide meaningful feedback to the learner and University so as to improve the learners competence in the field of Industrial Engineering.

4.3. Information and Guidance for Employers/Supervisors/Mentors

When a training program is being offered to the students, it is at the discretion of the employer, with limited interventions by the Department of Industrial Engineering, that the employer is requested to bear the following points in mind:

- By employing the student for the purposes of WIL (in-service training/experiential learning) the employer is committing itself to the co-operative education programme being offered by this institution.
- As the nature and type of training that the learner is going to receive will vary depending on company resources, the employer is urged to verify the training

program with the Department of Industrial Engineering in order to ensure that the learner receives the appropriate form of training as required by the curriculum.

- Although this may not be possible at all times, the employer is urged to ensure that the respective mentor/supervisor is qualified in the same field as that of the learner. Should this not be the case then the mentor/supervisor is urged to contact the Department should they have any queries with regards to the nature of the training the learner should be undertaking.
- For a learner registering for P1, who has not had any previous exposure to the working environment, it is recommended that the employer introduce an introductory/ induction module into their training program to orientate the learner to the working environment. Areas that can be covered could include an overview of the codes of conduct that needs to be adhered to, relationships with fellow workers, supervisors etc., health and safety aspects etc.
- It is also recommended that, in the P1 part of the training program, supervisors/mentors have regular meetings with the learner to discuss work done and any problems that the learner may be experiencing at the workplace. The frequency of these meetings can be reduced as the learner becomes more accustomed to the work environment.
- It is important that all staff that would be in contact with these students, be advised as to the status of the learner as they would also have a role in guiding the learner.
- Mentors/supervisors should note that the degree of difficulty of tasks allocated should gradually progress from being well clear (P1) to being unstructured and unformulated (P2)
- Employers are encouraged to enrol learners for courses and seminars. This training should ensure that the learner be better equipped to function effectively and productively in the workplace.

5. Assessment criteria

5.1. Assessment Strategies

In order to assess the achievement of outcomes outlined in the section 1.4, the following assessment strategies have been adopted.

- The department will undertake a Workplace Accreditation of the company preferably prior to the actual placement of the student.
- The learner will submit a detailed documented portfolio (for academic evaluation) of his work experience and how it relates to the the field of Industrial Engineering. This would be assessed through the means of an assessment rubric.
- A visit by a representative from the Department of Industrial Engineering at least once per registration to oversee the appropriateness of the training being received by the learner, adherence to the learner guidelines and to monitor the learner's progress.

5.2. Moderation of WIL

All work submitted by students registered for EXEI201 will be externally moderated in keeping with the current practice of externally moderating all exit level subjects. A suitable moderator will be appointed by the Department of Industrial Engineering.

6. The WIL training portfolio (P1 and P2 reports)

At the end of the specified registration period the learner is required to submit to the department (within the month after the end of the inservice period) a detailed portfolio of evidence. The suggested structure of the portfolio is given in Section 6.1. Learner's are to note that this is a suggested structure and deviations will be allowed with permission from the department. It is imperative that the work submitted by the learner must be a true relection of his/her own contribution of the work undertaken during the period of training.

6.1. Suggested Structure of the WIL training portfolio

- The standard cover page (Appendix 5)
- A contents page
- The portfolio declaration page (Appendix 6)
- A summary of training page (Appendix 7)
- Monthly review reports (Appendix 3 x 6 copies i.e. 1 per each month spent on training)
- Learners Evaluation of WIL and the Workplace (Appendix 9)
- Detailed project reports highlighting the work undertaken for the 6 months– refer section 6.2. and appendix 4
- Appendices (additional information related to the project reports, copies of certificates or confirmation of attendance to workshops, training seminars etc) if applicable

6.2. Project report guidelines

- The project reports should not exceed 450 words in length (per report) unless absolutely necessary.
- The projects must be of a nature that is representative of the engineering work undertaken by the learner illustrating the learner's ability to meet the outcomes as specified in section 1.4. relevant to the period of training registered (P1 or P2)
- Each report submitted should reflect the extent of the learner's contribution to the engineering process such as conceptualisation, design, analysis, manufacturing, implementation etc.
- The report must be set out in a way that clearly shows how engineering knowledge was applied to the problem at hand. The following is a suggested guideline as to the structure of each report with the learner choosing the appropriate headings as applicable (Refer Appendix 4 for a more detailed breakdown) :
 - Objective / Scope
 - Team members
 - Duration
 - Methodology
 - Analysis
 - Conclusion / Recommendation / Summary

APPENDIX 1: Industrial Engineering Curriculum

NATIONAL DIPLOMA: ENGINEERING: INDUSTRIAL [SAQA NO. 72229]

The programme comprises a minimum of two (2) credits formal time and one (1) credit non-formal or experiential time. All subjects for the N. Dip: Engineering: Industrial are compulsory. Subject choices are subject to change based on Departmental/Industry requirements.

SEMESTER 1	
Subject Code	Subject Description
COSK101	Communication Skills 1
CPSK101	Computer Skills 1
MATH101	Mathematics 1
MECH101	Mechanics 1
MEDR101	Mechanical Eng. Drawing 1
MMEN102	Mechanical Manufacturing Eng 1
ETEC101	Electrotechnology 1

SEMESTER 2	
Subject Code	Subject Description
EWOR103	Engineering Work Study 1
QTES101	Qualitative Techniques 1
MATH201	Mathematics 2
PEIN102	Production Engineering 1
CADN102	Computer Aided Draughting 1
MMEN202	Mechanical Manufacturing Eng 2

SEMESTER 3	
Subject Code	Subject Description
EWOR203	Engineering Work Study 2
COST201	Costing 2
MATH301	Mathematics 3
PEIN202	Production Engineering 2
FLYH201	Facilities Layout & Material Handling 2
MREL201	Manufacturing Relations 2

SEMESTER 4	
Subject Code	Subject Description
EWOR302	Engineering Work Study 3
INDA303	Industrial Accounting 3
OPRS303	Operational Research 3
AUMA301	Automation 3
QASS201	Quality Assurance 2
ILEA301	Industrial Leadership 3

Semester 5: EXEI101 Industrial Engineering Practice 1(P1)

Semester 6: EXEI201 Industrial Engineering Practice 2 (P2)

Note: Changes may occur to the curriculum as determined by the department. Please refer to the departmental handbook for the latest version of the curriculum.

APPENDIX 2:**WIL Assessment Rubric**

Criteria	Unacceptable 1	Developing 2	Accomplished 3
Achievement of outcomes. (Relevant to the period of registration)	The evidence provided for in the portfolio does not address any of the outcomes listed under section 1.4 in the learner guide.	The evidence provided for in the portfolio addresses a limited number of outcomes listed under section 1.4 in the learner guide	The evidence provided for in the portfolio addresses the outcomes listed under section 1.4 in the learner guide
Project reports: Structure and formatting	The structure and formatting of the project reports is poor, not logically sequenced and overall does not adhere to the guidelines specified in the learner guide.	The structure and formatting of the project reports needs attention, somewhat logically sequenced and does adhere to some of the guidelines specified in the learner guide.	The structure and formatting of the project reports is accomplished logically sequenced and does adhere to the guidelines specified in the learner guide.
Project reports: Data presentation and analysis	Data is not relevant and is not presented well. Tables and figures are not referenced. No explanation as to what the tables mean. Data is not technically relevant	Data is somewhat relevant and presented. Tables and figure are somewhat referenced. There is some explanation on the data. Data is limited in the relevance to the research objectives. Data is somewhat technically relevant	Data is presented well. Tables and figures are referenced and labelled. There is adequate explanation on the data. Data is relevant to the project objectives. Data is technically relevant to the problem on hand
Ability to apply Industrial Engineering Principles	From the evidence supplied the learner is unable to apply Industrial Engineering principles learnt to the work environment	From the evidence supplied the learner is able to show limited ability to apply Industrial Engineering principles learnt to the work environment.	From the evidence supplied the learner is able to apply Industrial Engineering principles learnt to the work environment.

Academic Assessment of Inservice Training

Student Name:		Student Number		P1	P2
---------------	--	----------------	--	----	----

Using the assessment rubric provided (Appendix 2) rate each of the assessment criteria listed below:

No.	Assessment Criteria	Rating
1.	Achievement of outcomes. (Relevant to the period of registration)	
2.	Project reports: Structure and formatting	
3.	Project reports: Data presentation and analysis	
4.	Ability to apply Industrial Engineering Principles	
	Averaged Rating (sum of the individual ratings / 4)	
Has the learner demonstrated through the evidence contained within his/her portfolio, as well as considering the mentor's assessment contained there-in, sufficient knowledge and practical exposure for him/her to pass. (Yes/No)		
If No to the above: Please document (in the section below) what the learner needs to undertake in order for him/her to meet the requirements for the level of inservice training registered for.		

Comments by the university co-ordinator:

University Co-ordinator

Sign

Date

Appendix 3: Monthly review report

(Note: Please make copies and complete for each month of training)

Student Name:		Student Number:	
Month:		Date of Review:	
Mentor's Name:		Position:	
Level of Training:		Contact Number:	

Detailed Description of work carried out for the month stated above:

Specific skills and competencies gained during the month of training:

Comments by mentor / supervisor:

This would include comments on the performance of the student during the month, the progress of the student towards achieving the outcomes outlined in section 1.4. of the learner guide and suggestions on how the student could improve his performance in meeting the suggested outcomes.

Supervisor Signature:		Learner Signature:	
Date:			

APPENDIX 4: Project Report Structure

(Note: The learner is required to choose the appropriate headings)

Scope

A brief background surrounding the initiation of the project

Objective

What type of project are you involved in and the reason or reasons for doing this project. Objectives should be brief and preferably in point form. It is important to note that there should be a direct link between the objectives outlined at the start of the report and the conclusions / recommendation / summary thereafter

Team Members

***Are there other people involved in this project? How are they involved?
Use of an organogram is preferable, and the reporting structure must be shown***

Duration

How much time did you spend on this project? You may be involved in more than one project at a time. Specify the start date, end date and the actual time that you have spent spent on project. As there are ongoing projects and projects that exceed the time spent on WIL, the learner is quantify the time that they have spent contributing to the project

Methodology

This section documents the method followed in achieving the objectives of the project. E.g.

- ***Visual observation of the production line***
- ***Interview with the workers***
- ***Time and method study***

It is important to note that the structure of the methodology will form the structure to the analysis section of the project report

Analysis

Using the methodology as a guideline for the structure under this heading, show how the problem was analysed, data collected and quantified. Tables, graphs and

figures shown for illustrative purposes must be labelled individually. Subsequent discussions must be relevant to the sub headings, tables, graphs and figures. The discussions under this heading must be methodical, relevant and self explanatory to the reader.

Summary

From your analysis what are your findings. Summarise your findings, make conclusions / recommendations supported by your analysis and factual findings.

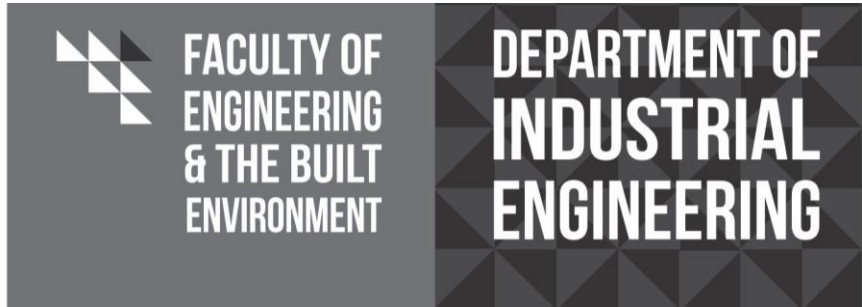
Conclusions

All conclusions derived must be relevant to the discussions undertaken under the Analysis heading. Statements made must be substantiated. The learner is advised to refrain from making arbitrary statements with no relevance to the project. Conclusions must have a direct link to the stated objectives

Recommendations

Depending on what the project objectives were, the learner can make suggestions on how to improve the process. All recommendations must be substantiated to a certain degree under the Analysis heading. Recommendations made must be within reason and applicable to the problem at hand.

APPENDIX 5:



Work Integrated Learning Portfolio

Learner details:

Qualification: ND: Industrial Engineering	Qualification Code:	NDIND2	
First name(s):	Contact Tel: (Cell)		
Surname :	Contact Tel: (Office)		
Student Number:	Period of Training: Cross the applicable	P1	P2
Current Email Address:	Training start date		
	Training complete date		

Company Details:

Company Name:			
Supervisor / Mentor First Name:		Contact Tel: (Cell)	
Supervisor / Mentor Surname:		Contact Tel: (Office)	
Supervisor / Mentor Designation:		Company Stamp:	
Supervisor / Mentor ECSA Registration No. (if applicable)			

For Departmental use:

Date of receipt :	
Departmental Sign:	

APPENDIX 6:

Portfolio Declaration Page

Mentor's Declaration:

I _____(insert mentors full name) hereby declare that I have read through the report being submitted by _____(insert learner's name) and agree with the contents being disclosed there-in. The contents of the portfolio are a true reflection of the work that was carried out by the learner.

Mentor's Signature

Date

Learner's Declaration:

I _____(insert learners full name) hereby declare that that the contents disclosed in this portfolio is of my own work and I have adhered to the guidelines as given in the learner guide for Experiential Learning (WIL)

Student's Signature

Date

APPENDIX 7:

Overall Summary of WIL Training

Month	Brief overview of activities carried out during the month		
1	Date from:	Date to:	Duration:
2	Date from:	Date to:	Duration:
3	Date from:	Date to:	Duration:
4	Date from:	Date to:	Duration:
5	Date from:	Date to:	Duration:
6	Date from:	Date to:	Duration:

Signature of Learner: _____ **Date:** _____

Signature of Mentor: _____ **Date:** _____

APPENDIX 8:

Nomenclature

AI	-	Artificial Intelligence
ANN	-	Artificial Neural Network
AVI	-	Automated Visual Inspection
3D	-	Three Dimensional
2D	-	Two Dimensional
NN	-	Neural Networks
QC	-	Quality Control
SQC	-	Statistical Quality Control
SPC	-	Statistical Process Control
MV	-	Machine Vision
2D	-	Two Dimensional
CPU	-	Central Processing Unit
JPEG	-	Joint Photographic Experts Group

Information Only

APPENDIX 9: Learners Evaluation of WIL and the Workplace

If the student has changed organisations during the registered period, then a separate form is required for each organisation.

Company Name:			
Supervisor / Mentor First Name:		Contact Tel: (Cell)	
Supervisor / Mentor Surname:		Contact Tel: (Office)	
Supervisor / Mentor Designation		Department:	

Rating scale + comments

For each of the area outlined below, please use the following rating scale in assessing the training program being offered by the company

1 – Does not meet expectations	2 – Below expectations
3 – Meets expectations	4 – Exceeds expectations

If the company scores a rating of 2 or below in any of the listed area’s under review, please record comments/suggestions to assist the Department in improving the training being offered by the company.

No.	Specific Skills and Competencies	Rating	Comments
1.	Did the company have an appropriate induction/orientation program, when you commenced training		
2.	Was the support / guidance / resources available adequate to enable you to achieve completion of your designated tasks.		
3.	Did the company offer you opportunities in furthering your knowledge in terms of training courses, seminars, workshops etc.		
4.	Were the problems that you experienced in the workplace addressed in your monthly meetings and were they adequately resolved by the company		
5.	Was the support that you received from DUT whilst training adequate and satisfactory		
6.	Did the theory that you learnt on campus applicable to the practical environment. Comment on areas that you found lacking		

Page 1 of 2 pages

7. Please provide a few comments on your overall work experience and what changes you would like to see in the Industrial Engineering curriculum that would assist future students in the practical environment

Additional comments by the student

Lecturer's Signature:		Student's Signature:	
Date:			