



# *LEARNER GUIDE*

**FACULTY: APPLIED AND COMPUTER SCIENCES**

**DEPARTMENT: BIOTECHNOLOGY**

**TITLE: BIOTECHNOLOGY LABORATORY PRACTICE 1 AND 2  
ABBPA1A AND ABBPA2A**

**Year: SEMESTER 2 2019**

*Your world to a better future*

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## 1.1 WORD OF WELCOME

The Department of Biotechnology welcomes you as a learner to the Faculty of Applied and Computer Sciences at the Vaal University of Technology. Although Work Integrated Learning is industry based, the institution is still responsible for your training. The department hopes you will make a positive contribution to the biotechnology industry and apply the theoretical knowledge that you have gained.

## 1.2 CONTACT PERSONS

Responsible Persons	Department	Contact details	Office location
Zinhle Marrengane WIL-COORDINATOR	BIOTECHNOLOGY	zinhlem@vut.ac.za 016 950 9885	F 312B
Sandra Viljoen WIL-COORDINATOR	BIOTECHNOLOGY	<a href="mailto:Viljoens@vut.ac.za">Viljoens@vut.ac.za</a> 016 950 9329	F104a
Lieketseng Nakedi Obo HOD	BIOTECHNOLOGY	<a href="mailto:madeleine@vut.ac.za">madeleine@vut.ac.za</a> 016 950 9648	F112
Simon Mohlala Industry- liaison officer	COOPERATIVE- EDUCATION	simonmo@vut.ac.za 016 950 9343	N100
Carlen dos Santos (submission of assessments)	COOPERATIVE- EDUCATION	<a href="mailto:carlen@vut.ac.za">carlen@vut.ac.za</a> 016 950 9161	N100
Malejone Moqhoba (Registration)	STUDENT ADMISSION AND REGISTRATION	016 950 9781 malejone@vut.ac.za	CW 25

**IT IS ADVISABLE THAT YOU REQUEST AN APPOINTMENT IF BASED IN INDUSTRY TO ENSURE AVAILABILITY OF THE RELEVANT PERSON REQUIRED**

### 1.3 RATIONALE

Work integrated learning is aimed at the integration and application of the theoretical knowledge gained at the University into the workplace environment. It should be clearly understood that the student, when he/ she arrives at your institution he/she has only completed four semesters of theoretical and laboratory training and is initially not capable of making a substantial contribution to your business. It is only through the assistance and training they receive from you that they will become useful assets during their training period. Thus be prepared to invest in preparing this student to become competent.

### 1.4 PREREQUISITES

The student must have completed all the subjects from semester 1 up to and including semester 4 to enrol for work integrated learning.

### 1.5 REGISTRATION

Registration for WIL must be done within **six weeks** after training has commenced.

WIL registration takes place at CW-25 (Student Admission & Registration). For more information regarding WIL registration, please contact:

Ms Malejone Moqhoba

Tel: 27(0)16-950-9781

Fax: 27(0)16-950-9772

Email: [malejone@vut.ac.za](mailto:malejone@vut.ac.za)

The following documents are COMPULSORY for WIL registration:

1. Registration form
2. Appointment / Confirmation letter from company
3. Proof of payment
4. Certified copy of ID
5. Proof of residence
6. Certified copy of Gr 12 certificate
7. International students must also submit the checklist

The WIL registration form (downloadable) must be completed and signed by the mentor and student.

REGISTRATION IS REQUIRED FOR LABORATORY PRACTICE 1 AND LABORATORY PRACTICE 2. **Training cannot be backdated.**

**The registration form requires an institutional stamp. The stamp is available from F312B (Ms Marrengane) and F104 a (Ms Viljoen). In the event that both are unavailable, request assistance from the HOD via the Administrator.**

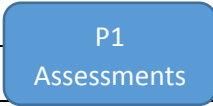
## 1.6 LEARNING MATERIAL

The learning guide serves as a guideline for WIL for the duration of 12 months.

Learning material required will vary based on the industry of placement. The materials gathered during studies at the University as well as any material that may be supplied/required by the respective employer/training institution will be of benefit to the learner. The learner must also seek information through the available resources to be better equipped to fulfil expectations of the employer. Continuous reading is advised.

## 1.7 ASSESSMENTS

Assessment event #	Assessment n	Mark allocation
1	Adaptation and communication skills	20
2	Progress report	20
3	General evaluation of student proficiency	20
4	P1 FINAL REPORT	40
5	P2 Final report/oral presentations	100



- The first and second assessments must be submitted within the first twelve weeks (3 months) of commencement of WIL.
- This only needs to be done **once** if the student remains at one company. **If not:** a progress report needs to be submitted **after three months** every time a student starts at a **new company**.
- Supervisor's evaluation report (General evaluation of student proficiency) must be completed and authenticated with the company's stamp.

- The employer is mandated to conduct the third assessment (General evaluation of student proficiency).
- The contents of the reports and presentation must be scrutinised by the employer so that confidential company information is not divulged. Students that could not be allocated projects can present part of their principal duties during the training during the WIL feedback day.
- It is the responsibility of the student to compile all the reports and submit timeously.
- To ensure eligibility for graduation, the final report must be submitted **three months** before the graduation ceremony. If submitted by post or courier service, it must be addressed to CO-OPERATIVE EDUCATION N100. It is the responsibility of the student to trace the status of the submission.
- The mentor will assess all the work done by the trainee before submitting any reports. All written final reports must be accompanied by a mentor's declaration form with an overall mark (%) based on a student's overall performance.

NB: Assessments must be submitted **by post** or **in person** to **Cooperative Education located in N100**.

## **1.8 MODULE OUTCOMES**

The purpose of the module is to equip the learner with the necessary skills that are required for a career in Biotechnology. Although the learning outcomes are given below, they only serve as a guideline. It is expected that the learner will be involved in some aspect of Biotechnology that will involve the exploitation of biological systems and organisms in the production of manufactured goods or services. The learner is also expected to assume daily responsibilities and activities within the workplace. If possible, the student must be offered a project as it forms part of assessment. The student must inform the Department of Biotechnology (WIL Coordinator) within the first six months of assumption of duties if they don't have a research project.

## CONDITIONS OF TRAINING

- The learner works under the supervision of a training official who will mentor the student during training.
- A learner must comply with all the safety rules and regulations as prescribed by the company/institution.
- The learner must adhere to the working hours and conditions as required by the training institution.
- 100% percent attendance is expected from the learner. Urgent leave has to be arranged or discussed with the relevant immediate supervisor.
- A learner is expected to be in training for consecutive 12 months and final evaluation can only be done once the period is completed. Any interruption in the training must be communicated to the WIL coordinator. The duration for P1 and P2 is six months each. Marks cannot be captured until P 1 or P 2 has been on the system for six months (count six months from the date of registration).
- For further clarity on registration cycles, do enquire when registering at CW block.
- A learner will be visited by a representative of the Biotechnology department at least once during training for evaluation and discussions with the training official (s) and student for monitoring purposes.
- In the event of change of training institution during this period, the WIL coordinator must be informed and relevant documents submitted.
- The application for graduation has closing dates. For the autumn (April) graduation, closing date is generally the last working day in January, the spring (September) graduation generally closes on the last working day in July. There are generally no extensions. Details are available from the exam office in B block.
- All submissions must be done by the time you apply for graduation.

**ASSESSMENT EVENT 1: ASSESSMENT IN THE WORKPLACE – ADAPTATION AND COMMUNICATION SKILLS**

**NAME OF THE STUDENT:** \_\_\_\_\_

**STUDENT NUMBER:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**INSTRUCTION:** Evaluation to be conducted by the immediate supervisor.

1. Relations with fellow colleagues

Exceptionally well accepted

Works well with others

Gets along satisfactorily

Has some difficulty working with others

Works very poorly with others

2. ATTITUDE- WORK RELATED

Outstanding in enthusiasm



Very interested and industrious

Average in diligence and interest

Somewhat indifferent

Definitely not interested

### 3. DEPENDABILITY

Completely dependable

Above average

Usually dependable


Sometimes neglectful or careless


Unreliable


### 4. ABILITY TO LEARN

Learns very quickly


Learns readily


 Average in learning

 Rather slow to learn


 Very slow to learn


#### 5. QUALITY OF WORK

 Excellent


 Very good

 Average

 Below average

 Very poor

#### 6. Criticism

 Accepts criticism and improves

Accepts criticism but does not change

Ignores criticism

Retaliates

7. ATTENDANCE:

Regular

Irregular

8. PUNCTUALITY:

Yes

No

9. OVERALL PERFORMANCE

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10. Has this report been discussed with the student? YES

NO

RATED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_ DEPT: \_\_\_\_\_

(SUPERVISOR)

PLEASE AUTHENTICATE THE DOCUMENT WITH A COMPANY STAMP.

VAAL UNIVERSITY OF TECHNOLOGY  
 FACULTY OF APPLIED AND COMPUTER SCIENCES  
 WORK INTEGRATED LEARNING (WIL)



**PROGRESS REPORT**

These reports must be submitted in person or by post to the WIL office (N203)

COVER PAGE

DEPARTMENT	BIOTECHNOLOGY	ABbPA1A
<p><b>STUDENT DETAILS</b></p> <p>NUMBER:</p> <p>INITIALS &amp; SURNAME:</p> <p>ID NUMBER:</p> <p>E-MAIL:</p>	<p>STUDENT'S</p> <p>POSTAL ADDRESS:</p> <p>CELL OR TELEPHONE:</p>	
<p><b>COMPANY</b></p> <p>NAME:</p> <p>STREET ADDRESS:</p>	<p>DIVISION:</p>	
<p><b>MENTOR</b></p> <p>INITIALS &amp; SURNAME:</p> <p>CELL OR TELEPHONE: :</p>		
<p><b>PROGRESS REPORT</b></p> <p>SUBMISSION:</p>		
<p>START DATE:</p>	<p>END DATE :</p>	
<p><b>VUT OFFICE USE :</b></p>	<p><b>REMARKS</b></p>	

## TABLE OF CONTENTS

- 1 COMPANY PROFILE
- 2 TRAINING COMPLETED
- 3 TRAINING SCHEDULED FOR THE NEXT PERIOD
- 4 SUMMARY OF TRAINING COMPLETED

### 1. Company profile

Company name:	
Number of employees:	
Number of students in training:	
Company's specialization field or products:	

### 2. Training completed (after three months)

DEPARTMENTS OR SECTION OF PLACEMENT	DATES	
	STARTED	COMPLETED

### 3. Training scheduled for the next three months and P2

The following table shows the training that is scheduled for the remaining period of WIL training

SECTION	ESTIMATED DATES	
	START	COMPLETION



**ASSESSMENT EVENT 3: GENERAL EVALUATION OF STUDENT PROFICIENCY**

**EVALUATION REPORT**

**(Guidelines available on page 16)**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.Theoretical Knowledge					
2. Application of Theory					
3. Use of Advanced Instruments and Equipment					
4. Skills integration/ Competences gained					
5. Working speed					
6. Accuracy					
7. Interpersonal Relations					
8. Diligence and Motivation					
9. Neatness (No parameters)					

.....

Signature

.....

Date

.....

Rank/Qualification

Company Stamp

## Evaluation guidelines

These guidelines can be used by the assessor to do student evaluation.

Rating	Theoretical knowledge	Application of theory	Use of: advanced tools / measuring equipment	Skills integration / Competencies gained	Working speed	Accuracy	Interpersonal relations	Diligence motivation
<b>1</b>	Has little knowledge	Cannot apply any theory	Cannot use advanced equipment	Has not integrated any skills	Very slow and does not successfully complete any tasks	Never accurate	Does not get along with any staff	Does nothing unless instructed
<b>2</b>	Can recall some basic knowledge	Can apply some theory with assistance	Can use advanced equipment with assistance	Has integrated some documented skills	Never completes tasks successfully on time	Has to redo and then sometimes accurate	Can interact positively with most of the staff	Does just enough to keep out of trouble
<b>3</b>	Knows the basic minimum	Can apply the basic minimum theory	Can use advanced equipment to do the basic minimum	Has integrated the basic minimum documented skills	Just complete tasks successfully on time	Just meets the minimum specifications	Interact positively with all the staff	Does the minimum expected
<b>4</b>	Good knowledge	Can apply high level theory	Can select and use advanced equipment independently	Effectively integrate skills as needed in practical applications	Normally complete all tasks successfully before/on time	Work is always better than minimum expected	Is accepted by the staff as somebody with good personal skills	Normally looks for over and above work to do
<b>5</b>	Excellent knowledge	Can analyze and synthesize	Optimally select and use advanced equipment	Innovatively integrate all theoretical and practical skills to solve problems	Always complete all tasks successfully before time	Work is always excellent.	Uses personality to positively influence other staff	Ambitious and eager to prove talents beyond requirements



**ASSESSMENT 4 AND 5: FINAL REPORT FOR P1 AND P2**

**VAAL UNIVERSITY OF TECHNOLOGY  
FACULTY OF APPLIED AND COMPUTER SCIENCES  
WORK INTEGRATED LEARNING (WIL)**



**FINAL REPORT**

This report must be submitted on completion of P1 and P2 to the WIL office (N203)

**COVER PAGE**

DEPARTMENT	BIOTECHNOLOGY		ABBPA 1A & 2A
<b>STUDENT</b> NUMBER:  INITIALS & SURNAME:  ID NUMBER:  E-MAIL:		<b>STUDENT'S</b> POSTAL ADDRESS:  CELL OR TELEPHONE:	
<b>COMPANY</b> NAME:  STREET ADDRESS:		DIVISION:	
<b>MENTOR</b> INITIALS & SURNAME:  :		CELL OR TELEPHONE:	
<b>WIL TRAINING</b> START DATE:		END DATE :	
<b>VUT OFFICE USE:</b>		<b>REMARKS</b>	

**MENTOR'S DECLARATION**

**MENTOR**

**INITIALS AND SURNAME :**

**STUDENT**

**INITIALS AND SURNAME :**

**STUDENT NUMBER :**

**ID NUMBER :**

**\* FINAL MARK :**

**%**

**DECLARATION**

I, the above-mentioned mentor, declare that the above-mentioned student has completed the work integrated learning component of the qualification under my supervision.

The student was found competent in the outcomes as specified in the final report.

The achieved credits as specified above may be awarded to the student.

The student cannot be declared incompetent at the end of work integrated learning without the relevant communication to the WIL coordinator and supporting documents from the mentor.

*Signature*

*Date*

**\* NB: THE MENTOR NEEDS TO INCLUDE AN OVERALL MARK BASED TECHNICAL COMPETENCE OF THE STUDENT.**

**DECLARATION BY THE STUDENT**

I, .....

(Full names)

hereby declare that the practical work is my own original work and that I received no help from another person in the execution thereof.

Signed on this ..... day of .....

.....

Signature

.....

Date

## **STRUCTURE of the final report:**

## **Final Report**

(The **report** must be **neatly bound, well presented** and it must **include the following**)

**Title page** (PROVIDED)

**Mentor's Declaration** (PROVIDED)

**Declaration by STUDENT** (PROVIDED)

**Assessment event 3 (Only for P2 – if submitting written document)** (PROVIDED)

**Table of contents:**

**Introduction:**

This must give an overview of the company to demonstrate the student's role in the company (Where did the trainee fit into the organizational structure)

**Roles and responsibilities:**

Outline the specific functions that the trainee was required to perform during WIL.

**Routine Work:**

In the case where routine work is performed, it is required that the following be included in the report:

- Background information/purpose of the apparatus, instruments or equipment used
- The principles of the methods and media used. (References to laboratory manuals employed are expected)
- Results **if allowed by the company** (Clarify this with the company or institution)

## Research projects

The final report for **P1** must only contain **routine work** conducted for the first six months of training.

The students are encouraged to engage in research projects that form the basis of P2 assessment. Should the company be unable to provide the student with a research project, written communication is required from the company. **Project does NOT imply that you do not continue with routine work. It supplements routine work.**

In the absence of Research projects, the student will report on Routine work. If the student cannot participate in ORAL presentations for P2, assessment 3 must be included in the final report. The format will be the same as Final report for P1.

**P2 is assessed as ORAL presentations during WIL FEEDBACK DAY held toward the end of each semester. Students are advised to enquire for the actual date by the end of the FOURTH month during each semester.**