VAAL UNIVERSITY OF TECHNOLOGY

Inspiring thought. Shaping talent.

LEARNER GUIDE

Faculty	APPLIED AND COMPUTER SCIENCES
Department	BIOTECHNOLOGY
Course	LABORATORY PRACTISE 1 & 2
Title	ABBPA1A & ABBPA2A
Compiled By	S. Viljoen
Year	2022
NQF Level	6 – ABBPA1A, 7 – ABBPA2A
Credits	60

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Item   **Page number**

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
Sandra Viljoen WIL-COORDINATOR	BIOTECHNOLOGY	viljoens@vut.ac.za 016 950 9329 **Whatts App ONLY** 0824985476	F104a
Grace Mbola PA HOD	BIOTECHNOLOGY	graceml@vut.ac.za 016 950 9648	F112
Simon Mohlala Industry- liaison officer	COOPERATIVE-EDUCATION	simonmo@vut.ac.za 016 950 9343	N203
Carlen dos Santos (submission of assessments)	COOPERATIVE-EDUCATION	carlen@vut.ac.za 016 950 9161	N213
Malejone Moqhoba (Registration)	STUDENT ADMISSION AND REGISTRATION	malejone@vut.ac.za 016 950 9781	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 enroll 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)16-950-6730

Fax: 27(0)16-950-9772

Email: **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.

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 therespective 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	10
2	Progress report	10
3	General evaluation of student proficiency	10
4	P1 FINAL REPORT	20
5	P2 Final report/oral presentations	50

P1 Assessments

- 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 scrutinized 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 open 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 **two months** before the graduation ceremony. If submitted by post or courier service, it must be addressed to CO-OPERATIVE EDUCATION N203. 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.

NB: Assessments must be submitted **by post** or **in person** to **Cooperative Education located in** N203.

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.
- 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.

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

_____

_____

_____

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

COVER PAGE

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

DEPARTMENT	BIOTECHNOLOGY	ABᵦPA1A
STUDENT DETAILS NUMBER:	**STUDENT'S** POSTAL ADDRESS:	
INITIALS & SURNAME:		
ID NUMBER:		
E-MAIL:	CELL OR TELEPHONE:	
COMPANY NAME:	DIVISION:	
STREET ADDRESS:		
MENTOR INITIALS & SURNAME:		
CELL OR TELEPHONE:	:	
PROGRESS REPORT SUBMISSION:		
START DATE:	END DATE :	
VUT OFFICE USE :	**REMARKS**	
DEPARTMENT WIL OFFICIAL	SIGNATURE	DATE

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 six months

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 15)

	1	**2**	**3**	**4**	**5**
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

……………………………..

    Rank/Qualification

………………………..

    Date

    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
1	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
2	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
3	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
4	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
5	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
STUDENT NUMBER:		STUDENT'S POSTAL ADDRESS:	
INITIALS & SURNAME:			
ID NUMBER:			
E-MAIL:		CELL OR TELEPHONE:	
COMPANY NAME:		DIVISION:	
STREET ADDRESS:			
MENTOR INITIALS & SURNAME: :		CELL OR TELEPHONE:	
WIL TRAINING START DATE:		END DATE :	
VUT OFFICE USE:	REMARKS		

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*

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

1.7 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)

Table of contents:

Introduction:

This must give detailed information about the company to demonstrate the student's role in the company with references (Where did the trainee fit into the organizational structure)

Roles and responsibilities:

Discuss the specific functions (in detail) that the trainee was required to perform during WIL, include color pictures with references, if possible.

Routine Work:

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

- o Background information/purpose of the apparatus, instruments or equipment used with color pictures

- o The principles of the methods and media used. (References to laboratory manuals employed are expected)

- o Results **if allowed by the company** (Clarify this with the company 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.
The students that are unable to conduct research are required to perform oral presentations to the department. Industry representatives and mentors are encouraged to attend the presentations if available.

WBL REGISTRATION FEE
DIPLOMA:

- The cost for WBL registration is R2 472.00 for the year 2022.

ADDITIONAL FEES:

The following University fees will be automatically added to the student's account when registering for WBL. These fees remain the responsibility of the student:

- Registration levy – R252.00

- Student levy per semester – R154.00

- Access card – R127.00

For queries regarding these fees place contact the VUT Finance Department.

WBL REGISTRATION
PREREQUISITES:

- Students need to have completed all the credits required for the specific discipline of study

- WBL students can register all WBL subjects simultaneously

- Validation/accreditation of WBL employers will be done by the Faculties

- Placement will be administered by the Co-operative Education Department

WBL registration takes place at CW-25 (Student Admission & Registration). For more information regarding WBL registration, please contact Ms Malejone Moqhoba on +27(0)16-950-6730 or email wilregistration@vut.ac.za
All WBL registration forms should be completed electronically on screen and printed afterwards. Registration forms should NOT be completed by hand.

The following documents are COMPULSORY for WBL registration:

- WBL registration form

- Appointment/Confirmation letter from company

- Proof of payment

- Certified copy of ID

- Proof of residence

- Certified copy of Senior certificate

- International students must also submit the checklist

- Tourism & NDT students must submit the letter from the lecturer

- ALL students must also submit their CV's at Co-operative Education (N108)

Students **MUST** register within **ONE MONTH** from starting with training!
It is the student's responsibility to follow up on his/her registration.

PAYMENT FOR WBL
BANKING DETAILS

WBL COURSES, CONTACT DETAILS & DOCUMENTATION

WIL New Qualification

All final semester students need to submit their CV's to the Co-operative Education Department: the CV, academic record and certified copy of ID.

WIL registration documents:

- WIL registration form
- ID Copy (certified)
- Proof of payment OR NSFAS stamp OR bursary letter
- Proof of residence
- Snr certificate
- Company letter with correct date (date of WIL registration – no outdated letters will be accepted

Students should not be financially blocked when applying for WBL registration.

It is the student's responsibility to follow up on his/her registration.

Students **MUST** register within **ONE MONTH** from starting with training!

REGISTRATION CYCLES

VUT has an annual (Jan – Dec) academic calendar set in line with the census dates; end of March and end of September. Please see below analysis, which should be adhered to by both administrators, WIL Coordinators and Academic HoD's:

Cycle 1

Students that register before the end of March will have their results released in June, justifying the minimum period required for WIL, six (06) months, these students can only graduate in September.

Cycle 2

Students that register before the end of September will have their results released in December to make the March graduation ceremony the next academic year.

WIL - Registration Cycles

VAAL UNIVERSITY OF TECHNOLOGY
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FACULTY OF APPLIED & COMPUTER SCIENCES WORKPLACE BASED LEARNING (WBL) REGISTRATION

Biotechnology -
Course code: DI1510

www.vut.ac.za

STUDENT INFORMATION: Sponsored by: SETA / NSFAS / Bursary / Other _____

Student Number				
Name				
Surname				
Gender *(Please Tick)*	M		F	
Home address				
Postal address				
Contact number				
Email address				

SITE ADDRESS (IF APPLICABLE):

PLACEMENT DETAILS:

Company Name	
Company Address	
Company Contact Number	

MENTOR DETAILS:

Mentor Name	
Mentor Address	
Mentor Contact Number	
Mentor Email Address	
Mentor Qualification	

SUPERVISOR DETAILS:

Mentor Name	
Mentor Address	
Mentor Contact Number	
Mentor Email Address	
Mentor Qualification	

WBL DURATION:

From (start)		To (finish)	

WBL SUBJECT: (PLEASE TICK WBL SUBJECT THAT YOU ARE REGISTERING FOR)

Biotechnology	AACIP1A		AACPR2A	
Student Signature				

UNIVERSITY APPROVAL:

Signature of WIL Coordinator		Approved		**STAMP**
		Declined		
Date				