

**FEDERAL UNIVERSITY OYE-EKITI,
EKITI STATE, NIGERIA**



FACULTY OF SCIENCE

**DEPARTMENT OF PLANT SCIENCE AND
BIOTECHNOLOGY**

UNDERGRADUATE ACADEMIC PROSPECTUS

2017 – 2020

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Dr. Abiodun A. Ajiboye
Ag. Head, Plant Science and Biotechnology
Federal University Oye Ekiti, Ekiti State.

FORWARD

This Handbook is written for staff and students of the Department of Plant Sciences and Biotechnology. It is a compendium of information on academic programme and activities of the Department and also the primary operating apparatus or road map to effective teaching and learning.

The Department presently offers B.Sc. Degree programme only in Plant Science and Biotechnology. It plans to expand its programme leading to the award of Post graduate Degrees in Plant science and Biotechnology and other areas in phases in the foreseeable future.

The handbook therefore provides detailed and necessary information on the vision, mission, philosophy and objectives of the Department in addition to basic entry requirements, curriculum and course description of the Bachelor of Science (B.Sc.) degree programme in Plant Science and Biotechnology.

This handbook will be useful for both staff and students and I encourage you to study it thoroughly. The Department has so much to offer and be assured that your choice of this great Department would not be regretted.

You are most welcome to the Department of Plant science and Biotechnology, Federal University Oye Ekiti, Ekiti State, Nigeria.

Dr. Abiodun A. Ajiboye

Ag. Head of Department

Department of Plant Science and Biotechnology (PSB).

Federal University Oye Ekiti

Ekiti State.

Nigeria.

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1.0 HISTORY OF THE DEPARTMENT

The Department of PLANT SCIENCE AND BIOTECHNOLOGY is one of the Departments that were calved-out from the defunct department of Biotechnology in the Faculty of science, Federal University Oye Ekiti, established at the inception of the University. The Department offers B.Sc. degree programme in Plant Science and Biotechnology.

The Department took off with a Professor, an Adjunct Reader, Senior Lecturer, Lecturer I and Assistant Lecturer. The Department now has two Professors, one Senior Lecturer, one Lecturer I, one Lecturer II and four Assistant Lecturers. The current acting Head of Department is Dr. Abiodun A. Ajiboye, a senior Lecturer with many years of experience. The academic staff are supported by two Technologists II, three Laboratory Assistants, two Administrative officers II, and one Higher Executive officer.

There are two functional laboratories in the Department that serve the academic programme of the Department. The laboratories are well equipped to cope with the teaching of students and for the use of academic staff for research purposes. Classroom and Lecture rooms are shared with other Department in the Faculty of science.

Thirteen students thirteen (13) registered as pioneer students of the Department in the 2011/2012 session, five (5) students registered in the 2012/ 2013 session and six (6) students registered in the 2013/2014 session while thirteen (13) students registered in the 2014/2015 academic session. The total students' population in the Department currently stand at thirty-seven (37).

The students registered in the Department offer same courses at 100 level but start to offer courses in their chosen disciplines from 200 level. At the long holiday of 200 and 300 level Second Semester all Students in the Department are required to proceed on 3-6 months Student Industrial

Work Experience Scheme (SIWES) as part of their graduation requirements under the supervision of an academic staff.

The academic programme of the Department operates academic curricular that are tailored along the stipulation contained in the National Universities Commission (NUC) Benchmark Minimum Academic Standards.

2.0 PHILOSOPHY AND OBJECTIVES

2.1 PHILOSOPHY

The Department of Plant Science & Biotechnology is designed to provide a sound understanding of the concept of Plant science and Biotechnology through the use of both theoretical and practical skills in solving national problems. The programme is structured to elaborate the relevance of Plant science and Biotechnology in industry, agriculture, health and environmental sectors of the society. The programme is also planned to equip undergraduates with sound knowledge in Plant science by using some basic tools of Biotechnology. Efforts are geared towards making the training relevant to research institutes, industries, agriculture, health sectors; and to inculcate in students the entrepreneurial and problem solving ability towards national development. It also provides sufficient knowledge-based theoretical principles that would enable prospective graduates to undertake postgraduate study in Plant science and Biotechnology and other related fields.

2.1 OBJECTIVES

The main objective of the programme is to broadly educate students for positions in the industry, health sector, research institutes and to prepare them for graduation and professional studies in the applied areas of Plant Science and Biotechnology

3.0 ADMISSION REQUIREMENTS

3.1 GENERAL

For admission into any of the first degree programme of the University, a candidate shall be required to possess the following minimum qualifications:

1. Senior Secondary School Certificate (SSCE) or its equivalents with credit level passes in five (5) subjects at not more than two sittings. The candidate must also earn an acceptable score in the Unified Tertiary Matriculation Examination (UTME).
2. Candidates seeking admission by direct entry into the 200 level, must satisfy the university SSCE/GCE O/Level requirements and in addition have GCE A/Level, OND or ND upper credit as stated for each course.

3.2 DEPARTMENTAL ADMISSION REQUIREMENTS

U.M.E. Candidates

For admission into the first degree programme in Plant Science and Biotechnology, a candidate must have the Senior Secondary School Certificate (SSCE) or its equivalent with credit level passes in five (5) subjects: English Language, Mathematics, Biology, Chemistry and Physics at not more than two sittings. The candidate must also earn an acceptable score in the Unified Tertiary Matriculation Examination (UTME).

Direct Entry Candidates

Candidates seeking admission by direct entry into the 200 level Plant Science and Biotechnology programme must have Advanced level passes in at least two (2) of the following: Biology, Botany, Chemistry, Mathematics and Physics, in addition to credit level passes in five of the subjects listed in 3.2 above at the SSCE or its equivalents. Candidates with ND and approved equivalents in relevant fields with at least upper credit may be considered for direct entry into the programme.

Post UTME Screening

All Candidates seeking admission into the University irrespective of their UTME scores shall be required to pass the University post UTME Screening test before being admitted.

Registration Procedure

- a) Students shall normally complete registration at the beginning of the semester.
- b) Any addition or deletion from the courses for which a student is formally registered must be made with the consent of the course coordinator.
- c) A student may be allowed to withdraw from a course by the course administrator before a third of lectures have been given. Such a student who withdraws after this time or who fails to sit for examination without reasons acceptable to the appropriate Faculty Board shall be deemed to have failed the course.

Duration of Degree Programme

The minimum numbers of years to be spent to be awarded a first degree in a programme of study in non-professionals area in the University shall be four years (or three years minimum for direct entry candidates). Registration shall not exceed an additional 50% of the duration of the programme if the student fails to graduate within the minimum number of years.

Graduation Requirements

To qualify for the award of a degree of the Federal University Oye Ekiti, a student is required to have:

- i. Completed and passed the prescribed number of units including all compulsory courses specified by the University.
- ii. Completed and met the standards for all required and optional courses.
- iii. Obtained the prescribed minimum CGPA.

4.0 GENERAL ACADEMIC REGULATIONS

4.1 Student Work Load/ Contact Hours

In compliance with the stipulations in the NUC “Course system and Grade point Average” document, every full-time student of Federal University Oye Ekiti shall be required to register for a minimum of 15 Credit Units per semester and a maximum of 24 credit units.

The Credit Unit is used as a measure of course weighting as well as an indicator of student’s workload. The number of credit hours for the award of a degree shall be approved by senate on the recommendation of the appropriate Faculty Board.

Academic Year and Scheduling

The University shall operate a two semester year (First and second semesters) for regular courses and a long vacation period for vacation courses. The first and second semester shall last for 17 to 18 weeks, (including registration, teaching and examination period). Not less than 13 weeks shall be devoted to actual teaching with about 2-3 weeks for examinations.

Instructional Method

The University shall take full advantage of the leverage and versatility provided by advances in Information & Communication Technologies (ICT) in its teaching and learning activities within a learner-centred pedagogic framework.

Academic staff of the University is being specifically trained on a continuous basis, in the use of ICT, which shall be fully integrated into all facets of the academic activities in the University. Furthermore, lectures shall be actively encouraged to adopt appropriate combinations of Instructional methods (lectures, tutorials, seminars, laboratory/workshop/studio practice) in the implementation and delivery of the various curricular in different academic disciplines to be taught in the University.

Assessment, Scoring And Grading System: student performance in the various courses shall be assessed as follows:

- **Assessment and scoring for Class work and Practical courses**
 - I. Final theory Examinations 60%
 - II. Continuous assessment test (Quizzes, assignments, Term paper etc) 40%

Grading System

The University shall ensure the use of common assessment scale and grading system for all courses taught throughout the University. The grading system shall be as indicated in the table below:

Percentage Score	Letter Grade	Quality Point	Level of Achievement
70-100	A	5	Excellent
60-69	B	4	Very Good
50-59	C	3	Good
45-49	D	2	Satisfactory
40-44	E	1	Fair
0-39	F	0	Fail

Cumulative Grade Point Average (CGPA), which is an important assessment parameter, is used to determine the level of the final pass grade obtained by a student in all programmes in the university as follows:

Cumulative Grade Point Average (CGPA)	Class of Degree
4.50-5.00	1 st Class Honour
3.50-4.49	2 nd Class Honours Upper Division
2.40-3.49	2 nd Class Honours Lower Division
1.50-2.39	Third Class
0.00-1.49	Fail

Academic Standing

Good Academic Standing

To be in good standing, a student must maintain a cumulative grade-point average (CGPA) of not less than 1.50 at the end of any session during his/her study in the University.

Probation

A student whose CGPA is below 1.50 at the end of a particular semester of study, goes on probation the following semester.

Withdrawal

A student would be required to withdraw from the University if:

- I. He/she maintain a Cumulative Grade Point Average (CGPA) that is **below** 1.50 for three consecutive semesters
- II. He/she has spent the maximum period of study allowed for his/her programme of study and still has one or more courses outstanding.

Termination of Studentship

A student may have his/her studentship terminated and be required to withdraw from the University if he/she fails to register for the required minimum number of courses/units of instruction for two consecutive semesters without due approval.

Semester Examination

Each course shall normally be completed and examined at the end of each semester in which it is offered. The examination shall be conducted as prescribed by senate.

Dissatisfaction with Examination Result

- I. A student who is dissatisfied with the result of an examination affecting him/her may request for a review by submission of an application to the Senate through the appropriate academic board

of studies of the University within three (3) weeks of release of the result.

- II. The senate of the University has the full prerogative to, or not to, effect any amendment of the result after the cross examination of it.
- III. Any student with frivolous, ill motivated or speculative complaint(s) on result(s) shall be sanctioned.

Transfer

Any student who seeks transfer from the university to another is free to do so. Request for transcript for this and any other relevant purpose should be directed to the Admission Officer on fulfilment of every necessary requirements.

PROGRAM STRUCTURE

OUTLINE OF COURSE STRUCTURE

The duration for the B. Sc (Plant Science and Biotechnology) programme shall be four academic sessions for students that entered the University by UTME admission and three academic sessions for those by direct entry admission. To be awarded a Bachelor of Science (B.Sc) Degree in Plant Science and Biotechnology the student must pass a minimum of 156 Credit units (for UTME candidates) and 112 Credit units (for Direct Entry candidates), distributed as follows:

OUTLINE OF COURSE STRUCTURE

Level	Seme ster	General courses		Compulsory courses		Electives		Total	
		No. of courses	No. of credit units	No. of courses	No. of credit units	No. of courses	No. of credit units	No. of courses	No. of credit unit
100	1	03	05	08	17	-	-	11	22
100	2	04	07	07	15	-	-	11	22
200	3	02	03	09	19	-	-	11	22
200	4	02	03	09	18	-	-	11	21
300	5	-	-	07	15	01	3	08	18
300	6	-	-	07	16	01	3	10	19
400	7	-	-	05	14	01	2	06	16
400	8	-	-	06	16	01	2	07	18
	Total	11	18	57	128	04	10	75	156

5.0 EXAMINATION REGULATION AND GUIDELINES

5.1 Appointment of Examiners

1. University examiners for degree programme shall be appointed by the Senate on the recommendation of the appropriate Faculty Board.
2. The Faculty board shall be responsible for the details of organisation and administrative arrangements for University examinations.
3. University examinations shall be conducted by Departmental Boards of Examiners.
4. The Head of Department, as Chief Examiner, shall make arrangement for the invigilation of examinations in the Department.
5. Each examination room shall have a minimum of two invigilators, one of whom shall be designated senior invigilator.

Eligibility to Write Examination

1. Only candidates who have registered for courses are eligible to take the Semester examination.
2. In order to qualify to sit for an examination, a student must have attended a minimum of 70-75% of the lectures.
3. To be qualified to take an examination, a student must have paid 100% of the prescribed fees at the beginning of the first semester during the registration period.

Examination Time-Table

1. The Sub-Committee on Examination Time-Table shall make available the Semester Teaching and Examinations Time-Table at the beginning of each Semester to guide students in the selection of courses.
2. The Academic Affairs Unit shall re-circulate the examination Time-Table for all courses at least 4 weeks before the examination date to avail students the opportunity of submitting complaints on clashes .All clashes shall be submitted to the Head of Department who shall remit same to the Examination Time-Table Committee
3. The final time-table shall be displayed on all notice-boards two weeks before the examination after which there shall be no adjustments without the permission of the Registrar.
4. The time and venue for each examination shall be strictly adhered to and when it is absolutely necessary to reschedule an examination, the Head of Department will do so after due consultation with the Dean and such a change shall be published giving the affected candidates a minimum of 48 hours notice of the change.

Invigilation Arrangements

1. It is misconduct for an invigilator to arrive late to the venue of an examination. It is the responsibility of the Head of Department and

- Chief invigilator to ensure that all invigilators are aware of their responsibility.
2. One hour before an examination, all examination halls shall be vacated and prepared for the examination. Candidates shall be checked into examination halls by invigilators who will determine the sitting arrangement of candidates.
 3. No student without an identity card will be allowed into an examination hall.
 4. Checking-in of candidates into the examination hall shall commence 30 minutes before commencement of an examination.
 5. Candidates who arrive late shall not be allowed extra time except in special circumstances such as instances of unresolved clashes of which the candidate had duly notified the Chief Examiner in writing.
 6. In case a candidate has to leave the examination room temporary, he shall be accompanied by an invigilator.
 7. Invigilators shall maintain vigilance throughout the examination period and at no time will an examination hall be without an invigilator.
 8. Until the time when candidates are allowed to leave the examination hall at the end of the examination, no copy of the examination question paper shall be removed from the examination hall. If for any reason a candidate has to leave the examination hall one or two hours into the examination for a three hour paper, he shall hand over both the answer script and examination question paper to the invigilator before leaving.
 9. Invigilators shall complete attendance sheets in duplicate and the signed sheets shall be considered as the final list of candidates in the examination. One copy will be forwarded to the Registrar while the other copy will be enclosed in the envelope containing the answer scripts.
 10. At the end of an examination, candidates shall hand over their answer scripts to the invigilator who shall check the candidates' answer script against the attendance list to ensure that the scripts

are complete. The invigilator shall then seal the envelope containing the answer scripts together with copies of the relevant question paper and a copy of the attendance sheets and deliver them to the Examination Officer.

11. Where an examination malpractice is committed, the candidate involved shall be required to make a statement by completing the required examination malpractice form. The candidates shall however be allowed to complete the examination. Under no circumstance shall an invigilator seize a candidate's answer script, tear answer script or forcibly eject a candidate from an examination hall. Where a candidate's behaviour constitutes a breach of the peace, the security official on duty shall intervene.
12. Where a candidate falls ill in an examination hall, the invigilator shall contact the medical officer on duty for immediate medical attention. Telephone numbers of the security and medical personnel shall be made available to all invigilators.

Examination malpractices

The following procedures shall apply in handling all suspected cases of examination malpractice in the university.

- 1) The attention of any other invigilator present should be drawn to the suspicious circumstance(s), if an invigilator suspect that a candidate has committed an examination malpractice offence, if another student suspects that there is misconduct he/she should alert invigilators.
- 2) The invigilators should approach the suspected candidate and inform him or her of the suspicion and give the candidate an opportunity to make a written statement.
- 3) The invigilator(s) should withdraw the candidate's script and issue a fresh script for him/her to continue the examination. If any unauthorized material is discovered it should be confiscated by the invigilators and tender in the evidence against the candidate.
- 4) Within 24hours the invigilator(s) should make a written report to the Chief Examiner, who is the Head of the Department.

- 5) Written account of the incident by the invigilator(s), suspect's script, any unauthorized materials by the invigilators, the Chief Examiner and other candidates and the student's statement must be submitted under confidential cover to the Registrar who shall forward it to the Central Student Disciplinary Committee within 24 hours at the end of the course examination.
- 6) If however, during the marking, moderating or collating of examination materials, an examiner or any member of staff suspects that malpractice has taken place, the examiner or member of staff must confer with the Chief Examiner. As soon as a prima facie case has been established, the examiner or member of staff must submit written reports with the student's script and other corroborating evidence to the Dean of faculty through the Chief Examiner within 72 hours. The student so affected must be informed immediately of the allegation and made to submit a written statement.
- 7) The suspect will be invited to appear before, and be heard by the Examination Misconduct Committee.
- 8) The decision of the examination misconduct committee as approved by Senate shall be conveyed to the candidate.
- 9) All cases of examination malpractice must be disposed off within the shortest possible time but not longer than 6 months.
- 10) All materials confiscated from students in proven cases of malpractice shall be kept by the university until punishment has been served.

Absence from Examination

1. Any student who fails to register for courses during the semester without permission shall be scored zero (OF) in 15 units which is the minimum number of units required for registration for full-time students.
2. Candidates who registered for courses, attended classes, and took the required tests but failed to take the required semester examination without permission should be given grade of Zero (0) in the examination.

3. When a student falls ill before an examination, he is under obligation to send a medical report countersigned by the medical doctor of the University Health Centre not later than one week after the examination to the Chief Examiner. Cases of submission of medical reports outside this period shall be considered on their merit.
4. A candidate applying for leave of absence on medical grounds must forward his application through his Head of Department to the Faculty Board. The medical report must be countersigned by the medical doctor at the University Health Centre.
5. Absence from examination other than on medical grounds may be considered on its own merit.
6. A candidate who is permitted to discontinue with an examination by the medical officer on health grounds shall not be penalized and shall be allowed to take the examination at the next available opportunity.

Guidelines for Processing of Results

1. Course Lecturers shall collect sealed packaged of answer script from the Examination Officers within 24 hours of completion of examination.
2. Computed grades must be submitted to the Departmental Examination Committee for consideration within two weeks after the completion of the last examination paper.
3. The Departmental Examination Committee comprising the following membership shall meet within three weeks after examination.
 - a) Head of Department- Chairman
 - b) University Examiners as approved by Senate for the Department.
4. The Faculty Board shall meet to consider recommendations from the Departmental Examination Committee four (4) weeks after examinations.

5. The grades of students from other Departments including grade for Special Electives shall be forwarded through the Head of Department within two days of the meeting of the Departmental Examination Committee.
6. The Faculty Board shall meet to consider the recommendations from the Departments which shall be presented by Heads of Departments and Departmental Examination Officers. Such meeting(s) shall be held within four weeks of the completion of the Semester Examination.
7. Matter arising shall be provided in all cases requiring explanation such as cases of students with no results in some or all courses, students with zero (OF) in some courses as well as students who registered for less than 15 Units and students on leave of absence or with no registration information.
8. All presentations of results shall include the master mark sheet, reflecting grades, pass list by name, the summary of results and key to courses.
9. Semester results shall be ready for the consideration of Senate not later than six weeks after the completion of the last paper.

Examination Related Offences and Corresponding Penalties

Misconduct Before Examination

S/N	OFFENCES	PENALTY
1	Involvement in and bearing responsibility for examination question leakage	Expulsion from the University.
2	Participating in or benefiting from question leakage.	Expulsion from the University.
3	Attempting to participate in or benefit from examination question leakage	Suspension for two (2) semesters.
4	Coming into the examination hall after thirty (30) minutes of the commencement of an examination	The candidate should not be allowed into the examination hall and he/she should be scored 0 (F) in the course examined.

Misconduct During Examination

S/N	OFFENCES	PENALTY
5	Sitting for an examination for which a candidate did not register for or is not qualified to sit for.	The result of the candidate in the course should be nullified. He/ She should be scored 0 (F) and be issued a letter of warning.
6	Representing/ Standing in for another in the course of an examination.	The candidates representing and the represented should be expelled from the University.

7	Conniving with another candidate/ Student/ person to represent/ stand in for another in an examination.	Expulsion from the University.
8	Destroying, defacing, mutilating, and swallowing of potentially incriminating material relating to a course of an examination.	Expulsion from the University.
9	Displaying inappropriate or antisocial behaviour (e.g smoking, singing, cat calls etc) capable of causing delay and/or disrupting of an examination process.	Suspension for one (1) semester.
10	Displaying of inappropriate or antisocial behaviour leading to disrupting and suspension of an examination.	Suspension for two(2) semesters.
11	Giving, receiving, or in any way benefitting from information relating to a course in an examination through electronic, personal dress material, part of the body in any manner or form whatsoever.	Suspension for two(2) semesters
12	Leaving the examination hall without the permission of the invigilator.	Letter of warning. In addition, the candidate should be scored 0 (F) in the course examined.
13	Leaving the examination hall with examination before the end of the examination without the permission of the invigilator.	Suspension for two(2) semester

14	Substitution or exchanging the answer script given to a candidate in whatever manner or form during the examination.	Expulsion of all the students involved from the University
15	Exhibiting insulting, rude, impolite behaviour to another student during course of an examination without the permission of the invigilator.	Suspension for two(2) semesters
16	Exhibiting insulting, rude, impolite behaviour to another student during course of an examination.	Expulsion of all the students involved from the University.
17	Physical assault or battery on staff during the course of an examination.	Expulsion from the University.
18	Physical assault on another student during the course of an examination.	Suspension for two(2) semesters.
19	Talking to or communicating with another candidate without due permission during the course of an examination.	Suspension for two(2) semesters.
20	Brining in unauthorized material(s) into the examination hall by a candidate	Suspension for two(2) semesters. The candidate should also be scored 0 (F) In the course.
21	Bringing in unauthorized material(s) into the examination hall by a candidate with proven evidence of using material(s) or any part therefore.	Suspension for two(2) semesters. The candidate should also be scored 0 (F) in the course.
22	Failure by a candidate to submit his/her answer script after taking part in an examination.	Suspension for two (2) academic semesters. In addition, the

		candidate should be scored 0 (F) in the course.
23	Giving / receiving irregular assistance, cheating or aiding and abetting by a candidate/ student in an examination.	Suspend for two(2) semesters.
24	Refusal to sign the Attendance Register	Letter of Warning.
25	Involvement in an attempt to substitute or change or remove or effect changes in Examination script(s), record sheet(s), attendance register or any examination related material/ document	Expulsion from the University.
26	Exertion of influence with a view to obtaining undue advantage in the grading of scripts or award of marks by an internal or external examiner	Expulsion from the University.

6.0 STAFF LIST

6.1 Academic staff list

S/N	Name	Qualification	Designation	Area of Specialization
1	Dr. Abiodun A. Ajiboye	<i>B.Sc., M.Sc. Ph.D (Abeokuta)</i>	Senior Lecturer & Ag. Head	Plant Physiology
2	Prof. Sylvia.V. A Uzochukwu	<i>B.Sc (Botany), M.Sc, Ph.D (UNN)</i>	Professor	Food/Plant Biotechnology
3	Prof. Benjamin O. Akinyele	<i>B.Sc., M.Sc., Ph.D</i>	Professor	Plant Biosystematics and Genetics
4	Prof. Akinola R. Popoola	<i>B.Sc. M.Sc. Ph.D</i>	Professor	Plant Pathology
5	Dr. Segun I. Oyedeji	<i>B.Tech (LAUTECH) M.Sc. (Ibadan) Ph.D (Ibadan)</i>	Senior Lecturer	Molecular Cell Biology/Parasitology
6	*Dr. James O. Agbolade	<i>B.Sc. (LAUTECH) M.Sc. (Ibadan) PGDE, Ph.D. (Cytogenetics), (Abeokuta)</i>	Lecturer I	Cytology & Cytogenetics
7	Dr. Modinat A. Adekoya	<i>B.Sc. (OOU) M.Agric (Abeokuta), Ph.D (China)</i>	Lecturer II	Plant breeding
8	Mrs Ronke J. Komolafe	<i>B.Sc. (FUTA), M.Sc. (UNILAG).</i>	Lecturer II	Cell Biology & Genetics

**On Post-Doctoral*

6.2 Administrative staff list

S/N	Name	Qualification	Rank	Area of Specialization
1	Mr. Falade Taiwo O.	B.Sc (1999)	Administrative Officer II	Sociology
2	Jimoh Agnes B	B.Ed. (2009)	Administrative Officer II	Adult Education
3	Abioye Omolola	WAEC (2006) OND (2009)	Clerical Officer	

Technical staff list

S/N	Name	Qualification	Rank	Area of Specialization
1	Mr. Babatunde S Awoyemi	ND (Science Laboratory Tec), 1996; Final Diploma (HND, Equivalent in Microbiology/ Biotechnology), 2000; P.G.D (Microbiology), 2004; NIST (Equivalent in Microbiology/ Virology), 2000; ANISLT (2003); ISCT (England), 2005.	Technologist I	Microbiology/ Virology/ Biotechnology
2	Mr. Oluwasegun S Fayemiro	B.Agric (Ibadan) 2006; P.G.D, 2009. (FUTA).M.Sc (FUTA) 2015,	Technologist II	Crop Protection and Environmental Biology
3	Mrs Rita I. Omotosho	SSCE, NCE, (2012)	Senior Laboratory Assistant	NCE
4	Mr Ife P. Ogunjimi	SSCE	Senior Laboratory Assistant	SSCE
5	Miss Ruth O. Oguntuase	SSCE	Senior Laboratory Assistant	SSCE

7.0 DEPARTMENTAL ADMINISTRATION

7.1 General Administration of the Department

The Head of Department directs and coordinates the academic and administrative activities of the Department and he/she is responsible to the Vice - Chancellor through the Dean of the Faculty.

The Department disseminates information emanating from senate, University and Faculty Board meetings at Departmental meetings chaired by the Head of Department. Regular Departmental meetings are held to ensure that every staff member is part of the decision making process. At such meetings, decisions are taken and duties/responsibilities are shared among the members to ensure that the goals of the programmes and that of the Department are realized.

Students' Welfare

The welfare of students is of importance to the Department. Apart from the University Counselling Unit that handles cases requiring student counselling, the Department operates Staff/Students interactive forum where students are properly guided on all aspects of their academic development. Every student is also allocated a staff adviser, who handles all aspects of the students' academic development. Students with complex cases bothering on emotional and physical problems are referred to the Students Affairs Unit of the University for appropriate counselling while those that have health problems are handled by the University Health Centre. Indigent and brilliant students are also recommended to the appropriate University Committee for consideration for University scholarships.

Handling of Academic Grievances

The Department has in place a robust system of handling academic grievances of students. These students are required to contact the Head of Department and after initial counselling are advised to write officially through the Head of Department to appropriate units of the University.

Apart from endorsing such letters, HOD also monitors such students' requests to ensure appropriate responses from units concerned.

Student Academic Advising

At the beginning of every session, all students in the Department are attached to academic staff of the Department as Staff Advisers. The Staff advisers are required to counsel the students on all aspect of their academic work including courses to be registered for registration for carry over courses and attendance at lectures.

8.0 TEACHING AND RESEARCH FACILITIES AVAILABLE IN THE DEPARTMENT

	EQUIPMENT AND MATERIALS	QUANTITY AVAILABLE
1.	Micropipette (20-20 μ L)	2
2.	Micropipette (20-200 μ L)	2
3.	Micropipette (100-1000 μ L)	2
4.	Pipette tips in boxes	20
5.	Pipette tips in boxes	30
6.	Pipette tips in boxes 100-1000NL	10
7.	Laminar Flow Hood	1
8.	PCR Machine (Thermocycler) With 3 PKT of tubes	1
9.	Water bath	1
10.	Membrane filtration unit	1
11.	Heating Block	2
12.	Vortex mixer	2
13.	Text Tube Holder 20x1.5ml Tubes	200
14.	Printer	1
15.	Multimedia projector with screen & UPS	1
16.	Desktop flat screen personal computer	1
17.	White board marker	10
18.	Rain boots	10

19.	UPS 1570volts	1
20.	Stabilizer 5,000watts	1
21.	GPS (Hand held Gemini)	2
22.	Toner	4
23.	Dissecting Boards	20
24.	First Aid Box (Big)	2
25.	Knapsack Sprayer	2
26.	Big Envelop	10
27.	Micro-slide	100
28.	Cover slip	100
29.	Petri Dishes	500
30.	Standing Fridge	1
31.	Binocular Compound Microscope	5
32.	Micropipette (0.5-10 μ L)	2
33	Tripod stand with cast iron top	5
34	150x150mm ceramic gauge	5
35	Stainless steel dissecting set	10
36	Retort clamp 3 prong	20
37	Magnifier glass lens	10
38	Mortal and pestle	20
39	Laboratory jack 150x150mm	5
40	Laboratory jack 200x200mm	10
41	Ice cube maker complete with accessories (UK)	1
42	Colorimetre WPA color wave	1
43	Microscope biological, monocular complete (china)	4
44	Binocular biological microscopic	1
45	Projection lens	1
46	Retort stand rod 750mm	30
47	Overhead projector	1
48	Park, tubing rubber	
49	Burette clamp	20
50	Dissecting dish of aluminium	12
51	Rotational viscometer	1

52	Stereomicroscope complete with fittings	4
53	Microscope dissecting	4
54	Dissecting stainless steel	12
55	Digital incubator	(1) 75 litres
56	Autoclave(Gaint size)	1
57	Forceps	5
58	Petri dishes (glass)	5
59	Micropipette	1
60	Measuring cylinder(glass)	10
61	Connecting rubber for gas cylinder	5
62	Retort stand	2
63	Thistle funnels	1
64	Micro-tube homogenizer	1
65	Mini centrifuge	1
66	Infrared micro sterilizer	1
67	Amber color reagent bottle	10, 9 given
68	Fire extinguisher	1
69	Heating mantle	100ml, 500ml
70	Flat bottom flask	500ml
71	Wash bottle	250ml(2), 500ml(2)
72	PH meter digital (bench top)	1
73	Stirrer hot plate	1
74	Microscope	1
75	Bunsen burner	10
76	Hand lens	5
77	Specimen bottles 50ml, 100ml, 250ml	25 each
78	Porcelain crucible with lid 50ml	1
79	Triple beam balance	5

9.0 DEPARTMENTAL CURRICULUM

Curriculum for B.Sc. Degree in Plant Science and Biotechnology

Course Code	Course Title	Status	Credit Units	Servicing Department
GST 101	Communication in English I	R	2	GST
GST 103	Use of Library and ICT	R	2	GST
GST 105	Introduction to Entrepreneurial Skills I	R	1	GST
CHM 101	General Chemistry I	C	3	Chemistry
CHM 107	Practical Chemistry I	C	1	Chemistry
PHY 101	General Physics I	C	3	Physics
PHY 107	Experimental Physics I	C	1	Physics
BIO 101	General Biology I	C	3	Biology
BIO 107	Experimental Biology I	C	1	Biology
MTH 101	Elementary Mathematics I	C	3	Mathematics
CSC 101	Introduction to Computing I	C	2	Computer
	Total Credit Units		22 Units	

100 LEVEL FIRST SEMESTER

100 LEVEL SECOND SEMESTER

Course Code	Course Title	Status	Credit Unit	Servicing Department
GST 102	Communication in English II	R	2	GST
GST 106	Evaluating Opportunities & Business Concept	R	1	GST
GST 108 OR GST 110	Government, Society, Economy OR African Culture & Civilization	R	2	GST
CHM 102	General Chemistry II	C	3	Chemistry
CHM 108	Practical Chemistry II	C	1	Chemistry
PHY 102	General Physics II	C	3	Physics
PHY 108	Experimental Physics II	C	1	Physics
BIO 102	General Biology II	C	3	Biology
BIO 108	Experimental Biology II	C	1	Biology
MTH 102	Elementary Mathematics II	C	3	Mathematics
CSC 102	Introduction to Computing II	C	2	Computer
	Total Credit Unit		22 Units	

200 LEVEL FIRST SEMESTER

Course Code	Course Title	Status	Credit Unit	Servicing Dept
BIO 201	Introductory Genetics	C	2	PSB
BIO 203	General Physiology	C	2	AEB
BCH 203	Molecular Biology and Biotechnology I	C	2	Biochemistry
CHM201	Inorganic Chemistry	C	2	Chemistry
CHM203	Physical Chemistry I	C	3	Chemistry
PSB 201	Seedless plant	C	2	PSB.
PSB 203	Field Course	C	1	PSB
BCH 201	General Biochemistry	C	3	Biochemistry
MCB201	General Microbiology	C	2	Microbiology
GST 203	Feasibility Plan & Decision Making	R	1	GST Unit
GST 205	Introduction to Philosophy, Logic & Human Existence	R	2	GST Unit
	Total Credit Unit		22 Units	

200 LEVEL SECOND SEMESTER

Course Code	Course Title	Status	Credit Unit	Servicing Dept
BIO 202	General Ecology	C	2	AEB & PSB
BIO 204	Biological Techniques	C	2	PSB & AEB
CHM 204	Organic Chemistry	C	2	Chemistry
CHM 208	Experimental Organic Chemistry	C	1	Chemistry
CHM 206	Analytical Chemistry	C	2	Chemistry
BCH 204	Molecular Biology & Biotechnology II	C	2	Biochemistry
PSB 202	Seed Plant	C	2	PSB
PSB 206	Techniques in Plant Diversity	C	2	PSB
MTH234	Statistics for Agriculture and Biological Science	C	3	Mathematics
GST 202	Peace Studies & Conflict Resolution I	Chemistry	23	GST Unit
GST 204	Resources Management / Organisational Behaviour		1	GST
	Total Credit Unit		21 Units	

300 LEVEL FIRST SEMESTER

Course Code	Course Title	Status	Pre-req.	Credit Unit	Servicing Dept
PSB 301	Plant Taxonomy	C	PSB 201	2	PSB
PSB 303	Plant Pathology	C	PSB 202	2	PSB
PSB 305	Plant Ecology	C	BIO 202	2	PSB
MCB 302	Microbial genetics and Molecular Biology	R		3	MCB
MCB 312	Mycology	C		3	MCB
PSB 309	Plant Biotechnology	C	PSB 206	2	PSB
PSB 311	Medicinal Plant	C	PSB 202	2	PSB
PSB 313	Conservation and Biodiversity	C		2	PSB
	Total Credit Units			18 Units	

300 LEVEL SECOND SEMESTER

Course Code	Course Title	Status	Pre-req.	Cour se unit	Servi cing Dept
PSB 300	Comparative Plant anatomy	C		2	PSB
PSB 302	Soil Science	C		2	PSB
PSB 304	Plant Physiology	C	PSB 305, PSB 301	2	PSB
PSB 306	Plant Biotechnology Techniques	C		2	PSB
PSB 308	Paleobotany/ Paleontology	C		2	PSB
BIO 302	Genetics	C	BIO 201	3	AEB & PSB
BIO 304	Research Methods	R		3	PSB & AEB
	Electives: Students are to take any of the following courses:				
PSB 310	Plant Biochemistry	E	BCH 201& BCH 203	3	PSB
PSB 312	Industrial Biotechnology	E	BCH 204	3	PSB
MCB 308	Food Microbiology	E	MCB 201	3	MCB
	Total Credit Unit			19 Units	

400 LEVEL FIRST SEMESTER

Course Code	Course Title	Status	Pre-req.	Course Unit	Servicing Dept
PSB 401	Seminar	C		2	PSB
PSB 403	Plant Reproduction	C		2	PSB
PSB 399	SIWES	C		6	PSB
PSB 405	Economic Botany	C		2	PSB
PSB 407	Plant breeding	C		2	PSB
	Electives: Students are to take any of the following courses:				
PSB 409	Ethnobotany	E		2	PSB
PSB 411	Bio resources Management	E		2	PSB
PSB 413	Bryology	E		2	PSB
	Total Credit Unit			16 Units	

400 LEVEL SECOND SEMESTER

Course Code	Course Title	Status	Pre-req.	Cour se Unit	Servi cing Dept
PSB 402	Plant Virology	C		2	PSB
PSB 404	Plant Tissue Culture	C		2	PSB
PSB 406	Plant Cytogenetics/ Biosystematics	C	BIO 302	2	PSB
PSB 408	Nigerian Vegetation	C		2	PSB
PSB 412	Mushroom cultivation Technology	C	MCB 307	2	PSB
PSB 499	Project	C		6	PSB
	Electives: Students are to take any of the following courses:				
PSB 410	Horticulture	E		2	PSB
PSB 414	Biosafety	E		2	PSB
	Total Credit Unit			18 Units	

COURSE DESCRIPTION

BIO 101 GENERAL BIOLOGY I: (3 Units)

The scope of Biology and its place in human welfare including characteristics of life concepts in Biology, topical issues in biology and career opportunities. Diversity and classification of living things. Cell structure and organisation; functions of cellular organelles; diversity, general reproduction, interrelationship of organism, heredity and evolution; elements of ecology and types of habitat. Differences between plants and animals.

Variation and life cycle of plants to include non-vascular plants like algae, fungi, bacteria, viruses, bryophytes and petridophytes. Varieties and forms of life cycles and functions of flowering plants.

BIO 102 GENERAL BIOLOGY II: (3 Units)

A general survey of the animal kingdoms based mainly on study of similarities and differences in the external features, ecological adaptation of these forms. Structural, functional and evolutionary study of protozoans, coelenterates, platyhelminthes, nematodes, annelids, arthropods, echinoderms and molluscs. Evolutionary sequence in the form and functions of protochordates and various classes of vertebrates. Introduction to ecology to include simple ecological factors affecting organism in terrestrials and aquatic habitats such a biotic and abiotic factors and the relationship between an organism and its environment.

BIO 107 INTRODUCTION TO EXPERIMENTAL BIOLOGY I (1 unit)

Introduction to laboratory techniques, rules and regulation, elementary precaution, safety and health in the laboratory. The Students shall be introduced to microscopy, identification and classification of living things, cell structure, identification of unicellular and multicellular organisms, observation of plants and animal cells, drawing and labelling techniques in biology. Students shall also be introduced on the field to aquatic, terrestrial and soil environment. Identification and drawing of

algae, fungi, bryophytes and pteridophytes, dissection of flowers, bulbs such as onions. Structural features and differences between plants i.e. what makes each plant adapt to its habitat.

Microscopy, specimen identification, drawing and labelling techniques in biology. Identification/drawing of algae, fungi, bryophytes and pteridophytes. Dissection of flowers, bulbs among others.

BIO 108 INTRODUCTION TO EXPERIMENTAL BIOLOGY II(1 unit)

Identification and drawing of protozoans, such as amoeba, paramecium, euglena, etc. Identification of hydra, flatworms, roundworms.

PSB 102: INTRODUCTORY BOTANY (2 Units)

General classification of plants, features of vascular and non-vascular plants. Duration of life, life cycles and life or growth forms of plants. Cell structure and functions. Botanical drawings and use of microscope.

B10 201 INTRODUCTORY GENETICS (2units)

Hereditary and non-hereditary characteristics. probability and tests of goodness of fit. quantitative inheritance; DNA - the Genetic Code, Structure, Replication, and Manipulation of DNA, Transcription and Translation, Transmission, genetics basic and advanced principles of heredity, the chromosomal basis of heredity, Linkage, Mapping, and Chromosomes, Gene Linkage and genetic mapping, human Karyotypes and Chromosome Behaviour, genetic engineering and genomics, mechanisms of mutation, gene action: From DNA to trait, gene expression and epigenetics, Mutations and genetic disease, Meiosis and Development, Single gene inheritance, Pedigree analysis, Genetic linkage, Sex-linked inheritance, chromosome abnormalities, Human Genome Project, Genetic Variation, Genetics of chronic and common diseases (diabetes, obesity, etc), Genetics and behavior disorders (autism, schizophrenia), Genetics of Cancer, Genetic counselling.

MCB 201: GENERAL MICROBIOLOGY (3 Units)

Review of general characteristics of major groups of microorganisms. Basis principles of isolation, identification and classification of microbes and their ecological distribution. Relationships and succession between microorganisms in nature. Microbial variation and heredity, cycles of elements in nature and nitrogen fixation.

BIO 202 GENERAL ECOLOGY: (2 Units)

Concept and definition of ecosystem, ecology at community level, ecological classification of habitat types, terrestrial and aquatic biomas, specific features of each, biotic components of habitat. Natural distruction, factors of communities, success of community interaction, natural cycle, dynamics of population. Practicals: to include among others community and population studies of each species in a habitat. Primary and secondary succession .

BIO 203 GENERAL PHYSIOLOGY: (2 Units)

Physical and chemical processes in basic plants and animal physiology. Basic elements of respiration, photosynthesis, transportation or circulation. Reproduction, germination, growth hormones and enzymology .

BIO 204 BIOLOGICAL TECHNIQUES: (2 Units)

Preparation of microscope slides, biological drawings, microtomy, colorimetry, photometry, cytological techniques, chromatography, collection and preservation of biological specimens. Herbarium Techniques, experimental design

BCH 201 GENERAL BIOCHEMISTRY: (3 Units)

Chronological listing of important events, experimental discoveries and the enunciation of ideas in the history of biochemistry. Contributions of the following biochemists to the subjects: Nueberg, Emil Fisher, Warbury, Michaelis-Menton, Krebs, C. Cori and G. Cori, Hills, Ochoa,

Calvin and Benson, Wastson and Crick, Jacob and Monod, Niremberg, Sanger, Kornberg and others.

Chemistry of amino acids, proteins and their derivatives; methods of isolation and identification,

Primary, Secondary, tertiary and quaternary structures of proteins; determination and biochemical applications of the structures. acidity and alkalinity, PH and PKa values and their effects on cellular activities; Buffers, Classification of enzymes. Chemistry/Structures of carbohydrates, lipids and nucleic. acids.

BCH 203 MOLECULAR BIOLOGY AND BIOTECHNOLOGY (2 Units)

Historical developments. Expression of Genetic information, genetic code, Central Dogma of molecular biology. DNA Replication. Gene expression – Transcription. Gene Expression – Translation. Definitions of Gene cloning, Tools of gene cloning, including – Restriction enzymes for cutting DNA, DNA ligase for joining DNA, Gel electrophoresis for separating DNA fragments, plasmid and viral vectors as vehicles for DNA transfer and cell transformation. The polymerase Chain Reaction (PCR).

BCH 204: MOLECULAR BIOLOGY AND BIOTECHNOLOGY II (2 Units)

Applications of molecular biology and biotechnology. Implications of molecular biology and biotechnology including ethical issues, Biosafety, Intellectual property Rights, and social controversies.

CHM 201: INORGANIC CHEMISTRY (2 Units)

A quantitative introduction to the basic principles of inorganic chemistry. Atomic structure, electronic structure of the elements. Chemical bonding-covalent, molecular orbital and valence bond theories. Hybridization and the structure of inorganic molecules. Three centre ionic bond electronegativity, ionic solids and lattice

energy, Hydrogen bonding; molecular solids, introduction to coordination chemistry of first row transition metals. (Pre-requisite: CHM 102)

CHM 203 PHYSICAL CHEMISTRY (3UNITS): Kinetic theory of gases, behaviour of real gases, Laws of thermodynamics, Entropy and free energy for reactions and phase equilibrium; photochemical reactions; basic electrochemistry. Pre-requisite CHM 101

CHM 206 ANALYTICAL CHEMISTRY (2 Units)

Theory of errors, statistical treatment of data, theory of sampling; chemical methods of analysis including volumetric, gravimetric and physicochemical methods, optical methods of analysis; separation methods.

CHM 208 EXPERIMENTAL ORGANIC CHEMISTRY (1Unit)

A course designated to illustrate the principles covered in lectures course Chemistry topics which include separation, purification and identification of organic compounds by solvent extraction, distillation, crystallization followed by determination of physical constants. Simple organic synthesis and qualitative analysis by chemical methods.

MCB 201: GENERAL MICROBIOLOGY (2UNITS)

Review of general characteristics of major groups of microorganisms. Basic principles of isolation, identification and classification of microbes and their ecological distribution. Relationships and succession between microorganisms in nature. Microbial variation and heredity, cycles of elements in nature and nitrogen fixation.

MTH 234 STATISTICS FOR AGRICULTURE AND BIOLOGICAL SCIENCES (3Units)

Scope for statistical methods in Biology and Agriculture, Measures of location, partition and dispersion, Elements of probability, probability distribution: binomial, Poisson, geometric, hypergeometric, negative binomial normal. Estimation (point and interval) and test of hypothesis concerning population means, proportions and varieties. Regression and

correlation. Non-parametric tests, Contingency table analysis, Introduction to design of experiments, Analysis of variance.

PSB 201 SEEDLESS PLANT: (2 Units)

Morphology and reproduction of algae, bryophytes and pteridophytes including fossils. Economic importance of algae. Morphology and reproduction of Thallophytes, Bryophytes and Pteridophytes. Alternation of generation. Fossils and their formation patterns.

PSB 202 SEED PLANT: (2 Units)

Morphology and reproduction of seed plants. General characteristics, similarities and differences between the Gymnosperms and the Angiosperms. The various groups and orders (living and extinct) of gymnosperms. Studies of examples in each group of the angiosperms, root types, stem types and functions. Fruit formation. Taxonomy of some related plants.

PSB 203 FIELD COURSE (1Unit)

Independent field research work involving current techniques in plant science and biotechnology. Sampling techniques in local habitat. This is designed to give students an opportunity to carry out a small independent research project dealing with plant materials approved by the departmental board; under the supervision of one or more members of staff.

PSB 204 TECHNIQUES IN PLANT DIVERSITY (2 Units)

Introduction to plant diversity, taxonomic diversity of flowering plants: reproductive, life history and growth characteristics, biodiversity, patterns of species diversification and its causes, geography of evolutionary diversification, trait evolution: comparative and microevolution approaches, evolutionary transitions: pollination systems, DNA barcoding, plant morphology .

BIO 302: GENETICS (3 units)

Aspect of human genetics, Pedigree analysis. Consideration of various deviations from basic principles. Gene interaction, Hard –Weinberg law. Mutagenesis and sex determination, Genetic mutation. Aspect of cell and nuclear divisions. Morphology and behavior of chromosomes Chromosomal aberration and polyploidy. An introductory consideration of mathematical models for analysis of gene frequencies and genetic variation.

MCB 302 MICROBIAL GENETICS AND MOLECULAR BIOLOGY (3 Units)

A survey of current status of microbial genetics (Bacteria, viruses, protozoa and fungi) including discussions on methods and findings in the areas of mutagenesis induction, isolation and biochemical characteristics of mutants: adaptation, transformation, transduction, conversion and conjugation. DNA replication, regulation, recombination and repair. General and specialised methods and techniques in microbial genetics. Experiments with virulent phages, temperate phages and lysogenic bacterial. Fungal and other lower eukaryotic genetics. Recombinant DNA techniques. Restriction enzymes, restriction endonuclease analysis, finger-printing, blotting techniques, electrophoresis. Applications of genetic engineering.

BIO 304: RESEARCH METHODS (2 Units):

Research needs. Methodology; materials and methods, data collection, personnel, finance, materials etc. Analysis of data and results. Preparation of project reports.

PSB 300 COMPARATIVE PLANT ANATOMY (2UNITS)

Characteristics and classifications of tissue system, organization of meristem, evolution of vascular tissues, comparative wood anatomy. Anatomical adaptations to specialized habitats. Applied aspects of plant anatomy. Applications of wood technology for industrial purposes.

PSB 301 PLANT TAXONOMY (2 Units)

Taxonomy and its significance, principles and concepts in plant taxonomy. Construction and use of taxonomic keys. Experimental taxonomy with special emphasis on cyto-taxonomy and chemataxonomy. Sources of taxonomic data and Methods of Analysis. Historical development of plant taxonomy, Botanical nomenclature, construction and use of keys, Taxonomic hierarchies, methods in plant taxonomy, Taxonomic characters.

PSB 302 SOIL SCIENCE: (2 Units)

Classification and characteristics of soils; chemical component and analysis of soils; soil and plant tissue. Plant, soil water relationships; soil management; chemical component and analysis of soils, soil physical properties, soil profile, field view of soils, soil formation and weathering processes, importance of soil to plant growth. Mineral constituents of soil, mineralogy, soil chemistry, soil physics, soil microorganism, soil biology.

PSB 303: PLANT PATHOLOGY: (2Units)

Principles and concepts in plant pathology. The concept of disease, infection, pathogenesis, host-pathogen relationship and methods and theory of biological and chemotherapy.

PSB 304: PLANT PHYSIOLOGY (2 Units)

Growth physiology, growth regulators and phytochromes, dormancy, physiology of seed germination, juvenility, maturity, senescence and death. Physiology of special plants – trees, angiosperm parasites, and plants under stress. Secondary plant products. Nitrogen metabolism. Plant water relation, Photosynthesis, Respiration, Growth and growth regulation, flowering dormancy, Seed germination, senescence; Physiological aspects of Crops yield. Carbohydrates, Proteins and Lipids metabolism. Principal physiological processes in plants, including mineral nutrition, absorption of water, transpiration and stomatal movements, ion uptake and transport, ion antagonism, sap flow,

photosynthesis and food storage, translocation and flowering. Pre - requisite -B10 203.

PSB 305 PLANT ECOLOGY: (2 Units)

Study of various plant communities and their ecological framework ; Nigerian vegetation, desert and semi-desert plant productivity. Interdependence between plant and animal, importance of plant in ecological system, components of ecological system, ecotypes, biome, pyramids of number, energy and biomass; inter/intra plant community interactions. Distribution of plant according to various strata, conditions responsible for plant distributions in the ecosystem, inter or intra specific competitions in plant; Modern concepts in ecology.

Pre-requisite -BIO 202.

PSB 306 PLANT BIOTECHNOLOGY TECHNIQUES (2UNITS)

Techniques in general biotechnology methods - Safety Procedures , Preparation of Solutions, Disposal of Buffers and Chemicals, Equipments , Micropipets , Using a pH meter , Autoclave operating procedures, Operating instructions for spectrophotometer, Working with DNA, Sterile Technique. Instructions for Notebook keeping. Molecular Biology Methods - Genomic DNA preparation methods, PCR amplification of DNA Restriction enzyme digestion of DNA, Agarose gel electrophoresis , Polyacrylamide gel electrophoresis. Transformation of E. coli by electroporation, Methods for purifying DNA from agarose gels, Transfection of mammalian cells, Southern Blotting , Western Blotting, Preparation of sequencing gels, Isolation of RNA from cells. Cell culture Methods - Types of cells grown in culture, Work area and equipment, Preservation and storage, maintenance, Safety considerations, Tissue culture methods, Determining cell counts.

MCB 312 MYCOLOGY: (3 Units)

Mycological techniques, structure, form and function, reproduction and the life cycle of higher and lower fungi. Fungal interactions with other

organisms; ecological distribution and economic importance of representative group of fungi. Field and laboratory study of fungi used by man. Plant and animal pathogens and roles in ecosystem.

MCB 308 FOOD MICROBIOLOGY (3 Units)

Food and microorganism factors affecting microbial growth in foods. food spoilage, condition of storage, consequences of micro growth in foods. General view of poisoning in foods, poisoning by microorganism and their products, seafood toxicants, chemical poisoning. Investigation of food borne diseases outbreaks, food preservation, food sanitation. Pre –requisite MCB 201.

PSB 308: PALEOBOTANY AND PALEONTOLOGY: (2 units)

Morphology and Classification of Spores and Pollen; their stratigraphic and pale environment application. Study of fossils. Oil implications of Fossils; Fossil record and evolution of plants. Methods and application of paleobotanical research.

PSB 309 PLANT BIOTECHNOLOGY (2 units)

Introduction to plant biotechnology and plant tissue culture, Plant improvement- traditional and molecular plant breeding processes. Genetic modification of plants (Gene transfer system, case studies and regulatory and ethical issues), Genomics, molecular markers, molecular genetics, Germplasm conservation, metabolic engineering of plant quality traits such as mineral- and protein content, carbohydrate composition, cisgenesis, where only the plants own genes are used in developing GMO, molecular based breeding methods, including selection based on phenotype and genotype, genomic selection in plant breeding.

PSB 310 PLANT BIOCHEMISTRY (2units)

Biochemistry of the organization of plant cells, photosynthesis, alkaloids and flavonoids, plant hormones. Structure-function relationship of plant hormones. Biosynthesis of carotenoid pigments. Biochemistry of plant

development. The biochemistry of plant cell wall-structure, formation and growth. Lignin formation, free amino acids, pyrimidines, purines and nucleosides in plants. Metabolism of auxin, gibberellins and cytokins. Synthetic growth regulators and herbicides. Pre-requisite: BCH 201 General Biochemistry

PSB 311 MEDICINAL PLANT: (2 Units)

Description, identification and classification of medicinal plants. Preparation of Extracts from various organs of plants. Gathering of ethnomedical information. Collection and preservation of medicinal plant, Description and identification of toxic plants.

PSB 312 INDUSTRIAL BIOTECHNOLOGY (2 Units)

Microorganism of industrial importance and their roles, culture techniques and maintenance of selected strains, improvement of strains through mutation, gene amplification hybridization, protoplast fusion, transformation & DNA techniques and future impact. Basic fermentation design and operations. Single cell proteins, Bioinsecticides and Biofertilizers. Development and prospect of enzymes technology. Biodegradation of industrial materials. Industrial production and principles of processing organic acids, amino acids, antibiotics, vitamins.

PSB 313: CONSERVATION AND BIODIVERSITY (2 Units)

Plant breeding concepts and methods. The course covers applications of community ecology, population biology and genetics to the management of natural resources, environmental problems and conservation of biodiversity. Principles are conveyed using examples from terrestrial and marine flora and fauna, with a focus on the nature and importance of global diversity, and the design and management of programs for the conservation of species and ecosystem.

PSB 315 PALYNOLOGY (3 Units)

Morphology and classification of pollen spores; their stratigraphic and its environment application. Study of fossils. Oil implications fossils

PSB 399: INDUSTRIAL WORK EXPERIENCE (SIWES) (6 Units)

Students will be posted to industrial establishments such as industries, research institutes, pharmaceuticals, forestry and agricultural establishments for a period of six months of supervised training. They must present seminar while a report be submitted for grading.

PSB 401: SEMINAR (2 Units)

Under the supervision of a staff in the department, a student is expected to select a topic which must be of biotechnological and current trends in plant sciences for detailed study. The course is presumed to give the student the opportunity for independent thought and expression. This will also prepare a solid ground for the student to carry out sound literature review research during the final year project.

PSB 402 PLANT VIROLOGY (2 Units)

Origin and nature of viruses; structure, properties and classification of viruses; the chemical and physical properties of bacterial and plant viruses; principles of isolation, cultivation, purification and maintenance of bacteriophages and other viruses *in vitro*; transmission of viral diseases in plants; interference phenomenon and interferon; systematic virology especially those endemic in Africa-polio, measles, rabies oncogenic viruses etc. Viral genetics, viruses and genetic engineering; application of cell culture techniques in virology. General characteristics of plant bacterial viruses. Viral multiplication, selected viral diseases in plant.

PSB 403: PLANT REPRODUCTION (2 Units)

Development trends of sexual and asexual reproductions. Plant propagation involving a detailed study of the concepts, techniques, equipment, and facilities involved in sexual and asexual multiplication in

plants, plant biology (taxonomy, morphology, anatomy and physiology. Morphogenesis, functions and forms of spores. Palynological techniques and applications. Pollen formation, taxonomy and morphology. Characteristics of agents of pollination. Types of pollination, Current findings and trends on the study of spores and pollination.

PSB 404: PLANT TISSUE CULTURE: (2 Units)

Meristem culture, organ cultivation, embryo culture. The role of plant hormones and vitamins. Techniques of plant tissue culture. Applications of plant tissue culture in plant breeding.

PSB 405: ECONOMY BOTANY: (2 Units)

A study of the botany and cultivation of plant species with particular reference to Nigerian economic plants. The botany, cultivation, processing and uses of tropical plants with particular reference to Nigerian economic plants producing oils, rubber and wood products, fibres, dyes and leather tanning materials, sugar and pharmaceutical products.

PSB 406: PLANT CYTOGENETICS/ BIOSYSTEMATICS (2 Units)

Morphology and behaviour of Chromosomes in plant, Chromosomal aberration and Polyploidy importance of polyploidy, Population cytogenetics.

PSB 407: PLANT BREEDING (2Units)

The objectives of plant breeding; origin and domestication of basis of breeding, self and cross pollinated crops. Breeding methods, pure line breeding and mass selection, pedigree method bulk population breeding, backcrossing. Recurrent selection, heterosis, chromosome manipulation.

PSB 408 NIGERIAN VEGETATION: (2 Units)

A study of Nigerian forests, savannah grass lands and special emphasis on arid zones. Nigerian vegetation types:- mangrove swamp forest, fresh water swamp forest, tropical rain forest, savanna environment, structure

and management. The impact of human activities on the Nigerian vegetation, analysis of vegetative sampling. Pre-requisite: PSB 201/202
Seedless and seed plant.

PSB409: ETHNOBOTANY (2 Units)

History and current trends in ethnobotany. Ethnomycology, modern ethnobotany, Ethnobotanicals, uses of plants to mankind, preservation of plants for man's use. Identification of local plants for biotechnological and antimicrobial activities. Ethnobotanical survey, preparation of plant and plants extracts.

PSB 499: PROJECT (6 Units)

Under the supervision of staff student is expected to carry out a research on any topic of biotechnology and plant science of interest. A detailed report on the research in form of dissertation is to be submitted and examined before a board of internal and external examiners in an oral examination at the end of the research work.

PSB 410: HORTICULTURE (2 units)

Identification of tropical plants. Culture of trees, shrub and flowers. Shade trees, ground covers, annual flowers, perennial shrubs and hedge plants, bedding and foundation of flowers and plants, nursery management, aquatic plants, orchards and ornamental plants. Nursery management techniques and implication for horticultural crops. Factors of nursery establishment, selection and preparation of nursery sites. Landscaping, hard landscaping, soft landscaping, maintenance and management of established land scape.

PSB 411: BIORESOURSCCE MANAGEMENT (2 Units)

Biological diversity, genetic diversity, specific diversity, species of local creals, local legume species, local fruit tree species, genetic diversity expressed through large number of associations or combinations of genes in individuals of single species, wild local plants related to cultivated

species and whose genetic diversity is crucial ingredient to co-breeding or hybridization processes aimed at giving more vigour to the crop varieties that have been cultivated over so many years, loss of genetic variability of crops or genetic erosion, species disease resistance, utilization of plant and animal genetic resources, local germplasm, conservation of plant and animal genetic resources, the effects of destruction of natural environment on local plant and animal genetic resources; importance of conserving the biological heritage of plant and animal kingdoms, development of seed and gene banks, modes of operation of gene banks, germplasm collections of local crops, gene bank and breeding selection of resistant varieties, biotechnologically-based alternatives to live animal experiments; biotechnological protection of forest plantations and economic plants, germplasm appropriation and privatization for crop improvement, patents and plant breeders rights, production of improved plants and animals.

PSB 412: MUSHROOM CULTIVATION TECHNOLOGY (2 Units)

Definition of mushroom, Mushroom hunting, Mushroom biology, Nutrition values of mushroom, medicinal values of mushroom, Mushroom Genetics and Breeding, Ecological classification, Sexuality in edible mushroom, Mating system in Mushroom, mushroom cultivation, Principles of mushroom cultivation, mushroom cultivation pattern, mushroom nutritional and medicinal properties, mushroom nutraceuticals, selection of acceptable mushroom species and strains, Mushroom Spawning, Mushroom development, Mushroom diseases, Post harvest handling of mushroom, Myco-remediation, recycling of organic wastes into mushroom, restoration of damaged environment by mushroom, Economic and social impact of mushroom.

Pre-requisite: MCB 307 Mycology

PSB 413: BRYOLOGY (2 Units): Evolutionary emergence of bryophyte, morphology, life cycle and reproduction of bryophyte, study of spore formation and dispersal mechanism. Life history of bryophyte; gametophytic and sporophytic generations. Taxonomic classification of

bryophyte. Economic importance of bryophytes. Current trends and recent findings on bryophyte.

Pre-requisite: PSB 201 Seedless Plant.

PSB 414 BIOSAFETY (2 Units) : Overview of safety applications and issues in various products and services. Environmental risks associated with Biotechnological studies. Risk assessment and management. Recent studies in risk management of the environment.

10.0 STAFF BRIEF PROFILE



Name: Prof. Uzochukwu Sylvia V.A

Qualifications: B.Sc (Botany) (UNN), M.Sc, Ph.D (UNN).

Status: Professor

Area of Specialization: Plant and Food Biotechnology, Biosafety of Genetically Modified Organisms

State of origin: Anambra state

On-Going Research: Evaluation of food imports and locally grown maize and soy beans for the presence of genetically modified organisms (GMOs).

Carotene-rich cassava as a source of carotenoids for vitamin A deficiency alleviation: is genetic modification necessary?



Name: Prof. Akinyele Benjamin Oluwole

Qualifications: B.Sc, M.Sc, Ph.D (Botany)(Ilorin)

Status: Professor

Area of Specialization: Plant Biosystematics and Genetics

State of Origin: Ondo State

On- Going Research: Development of an aloe genotype with phytochemicals that are highly effective in controlling some plant diseases.



Name: Prof. Popoola Akinola Rasheed

Qualifications: B.Sc,(OAU) M.Sc,(UI) Ph.D (JOS)

Status: Professor

Area of Specialization: Plant Pathology and Biotechnology

State of Origin: Oyo state

On- Going Research: Marker-assisted screening of tomato germ plasms for disease resistance, In-vitro micro propagation of disease-free pineapple, Field cultivation of wilt-tolerant iodine-enriched tomato lines



Name: Dr. Ajiboye Abiodun A.

Qualifications: B.Sc, M.Sc, Ph.D (Botany) (Abeokuta)

Status: Senior Lecturer

Area of Specialization: Plant Physiology

State of Origin: Osun state

On- Going Research: Physiology of seed germination and seedling growth of forest and savanna tree seeds. Ecophysiology and ethnobotanical studies of some important economic tree seed species.



Name: Dr. Agbolade James Oludare

Qualifications: B.Sc (Pure & Applied Biology) (LAUTECH) M.Sc (Cell Biology/Genetics) (Ibadan); Ph.D (Cytogenetics) (Abeokuta)

Status: Lecturer I

Area of Specialization: Cytology/ Cytogenetics

State of Origin: Osun state

On- Going Research: Molecular characterisation of varieties of different miscellaneous legume species.



Name: Dr. Adekoya Modinat Adejoke

Qualifications: B.Sc (Botany) (OOU) M.Sc (Abeokuta); Ph.D (China)

Status: Lecturer II

Area of Specialization: Plant Breeding and Biotechnology

State of Origin: Ogun State

On- Going Research: Screening protocol for drought resistance in rice, genetic modification and yield improvement in plants.



Name: Mrs. Komolafe Ronke Justina.

Qualifications: B.Tech. (FUTA), M.Sc (UNILAG)

Status: Assistant Lecturer

Area of Specialization: Cell Biology/Genetics

State of Origin: Ondo state

On- Going Research: Genetic Variation in cultivated West African Okra (*Abelmoschus caillei*) Accessions in South Western Nigeria.