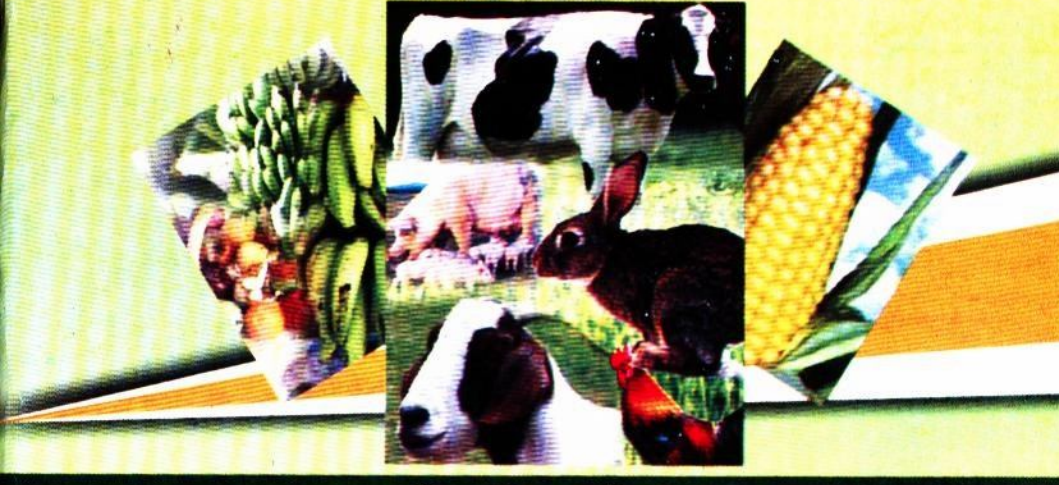
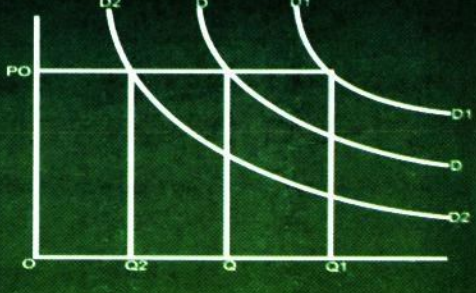
Students' Handbook

DEPARTMENT OF AGRICULTURAL ECONOMICS

SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY





FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI, NIGERIA

...Efficiency and commercialization for profitability

STUDENTS' HANDBOOK

DEPARTMENT OF AGRICULTURAL ECONOMICS

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FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI, NIGERIA

Efficiency and commercialization for profitability.

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Visitor

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President, Commander-in-Chief of the Armed Forces
Federal Republic of Nigeria

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Kuvyo II. The Akuka of Wukari

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B.Sc (Nig), M.Sc (Dundee), Ph.D (Nig)

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B.Sc, MLS, MNLA, MALA

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Prof. J.S. Orebiyi	School of Agric & Agric. Technology
Prof. S. N. Nzeata	School of Management Technology (SMAT)
Engr. Prof. E.E. Anyanwu	School of Eng. & Eng. Technology (SEET)
Prof. I. N. S. Dozie	School of Health Technology (SOHT)
Engr.Prof. Mrs) K .B. Oyoh	School of Post Graduate Studies (PGS)

Dean of Student Affairs Prof M.C. Ofoh
University Admissions Officer Prof I. C. Ndukwe

PREFACE

The Department of Agricultural Economics is one of the Departments in the School of Agriculture and Agricultural Technology (SAAT) of the Federal University of Technology, Owerri. It offers programmes leading to the award of Bachelor of Agricultural Technology (B. Agric.Tech) Degree in Agricultural Economics.

This Handbook contains information on various courses offered at different levels (years) and existing regulations governing students academic programmes at the undergraduate level.

Students are expected to acquaint themselves with all the information contained in this Handbook. Teaching staff are also guided by this Handbook on the course contents and the scope of options available in the Department. All students are also advised to go through the current edition of the undergraduates Academic Regulations of Federal University of Technology, Owerri for adequate information update.

Prof. C. C. Eze
Head of Department
Agricultural Economics
January, 2014

1.0 RULES AND REGULATIONS GOVERNING SESSIONAL EXAMINATIONS

In order to be admitted to any examination, a student must have registered for the course to be examined and must have fulfilled all university requirements concerning residence, fees, sessional / semester registration deadlines and other matters.

The student must have fulfilled all university requirements regarding attendance and satisfactory completion of course work, practicals, projects and other assignments. All students shall have the responsibility to be present for the examination in each course for which they are registered. It is the duty of the student to know the date, time and place of each examination. Students are required to be at the venue of the exams at least 30 minutes before commencement.

Any student that does not meet the requirements specified above shall not be allowed to take the examination.

1.1 EXAMINATION OFFENCES

The following constitute examination offences;

CHEATING IN THE EXAMINATION

If any candidate is caught or suspected of cheating, receiving assistance or assisting other candidates or infringing on any other examination regulations, a written report of the circumstance shall be submitted by the Chief invigilator to the Dean of the School offering the course within 24 hours after the examination. The candidate concerned shall be allowed to continue with the examination, unless he or she behaves in such a manner as to disturb other candidates.

Any candidate suspected under the regulation above, shall be required to submit a written report (immediately after the paper) to the invigilator who shall submit the same to the School Chief invigilator. Failure to make such a report shall be regarded as a breach of discipline.

The Dean shall send the report to the School Board of studies. The

school Board of studies shall investigate the alleged offence and report to the Senate at the time the examination result of such a candidate is being considered. The Senate shall also determine the appropriate penalty for each offence.

Any candidate found guilty of the offences above, shall on the approval of Senate be.

i. Expelled from the university
ii. Handed over to the police for prosecution under the appropriate laws of the state or nation

Expulsion from the University

A. Student who has been found involved in cases of gross misconduct such as (but not limited to) examination malpractices, convinced felony or other cases of criminal offences, association with membership of secret cults or organization proscribed by the University or the Government, shall on the approval of Senate and without prejudice to section 16 of the Federal University of Technology, Owerri, Law be

i. Expelled from the University
ii Handed over to the police for prosecution under the appropriate laws of the state or nation.

Probation and withdrawal

Refer to section 5 of the Handbook on Academic Regulations 1991-96, which state as follows:

Section five (5) withdrawal from the university.

Voluntary withdrawal:

(i) Students who wish to withdraw from University are required to notify the registrar in writing as well as Dean of the School through the Head of Department. The period of withdrawal shall not exceed one academic year

and subject to approval by Senate.

(ii) For returning students, a written notice of withdrawal shall be given not later than four weeks after the beginning of the semester. For fresh students notice shall be given not later than two weeks after matriculation.

(iii) Any student withdrawal shall state the reason(s) and the effective date of leaving.

(iv) In the case of such voluntary withdrawal, the refund of fees paid in excess of the period stayed in the University will be made by the Bursar's office.

(v) Such a student may retain grade made for semester examinations (in semester courses taken prior to the date of withdrawal).

(vi) Students who so withdrew from the university shall, in order to be re-admitted send a formal application to and receive official clearance from the registrar.

(vii) Senate may prescribe conditions which shall be fulfilled before students may resume their programmes of studies.

UNAUTHORIZED WITHDRAWAL

Students who withdrew from the University without authority may not be considered for re-admission until such cases have been dealt with on their individual merits by senate.

WITHDRAWAL FOR ACADEMIC REASONS:

All students who are admitted into the University are expected to maintain acceptable standards of academic performance, every student is also expected to maintain a minimum Grade point Average for his/her year of study. Specially, students obtaining a Cumulative Grade Point Average of less than 1.00 shall be asked to withdraw from the University.

WITHDRAWAL ON HEALTH REASONS:

A student may withdraw or be asked to withdraw for health reasons certified by the director of Health Services of the University on production of a valid medical report from an

approved Medical Officer, and certified by the Director of Health Services.

DISCIPLINARY WITHDRAWAL:

Students who are suspended on grounds of disciplinary action may not be re-admitted unless with the permission of the vice Chancellor.

AWARD OF DEGREE

Degrees of the Federal University of Technology, Owerri shall be awarded to candidates who by the authority of the Senate, have been found worthy in character and in learning for the award of such degrees

To be found worthy in learning, a candidate must have successfully completed and passed all the prescribed examinations and courses of instruction required for such degree, within the stipulated time, or as the Senate may otherwise prescribe.

Students who have been found involved in cases of gross misconduct such as (but not limited to) examination malpractice, convinced felony or other cases of criminal offences, association with or membership of secret cults or organizations proscribed by the University or the Government, shall by the authority of the Senate, not be worthy in character for the award of a degree of the Federal University of Technology, Owerri, Nigeria.

PROCEDURE FOR REGISTRATION AND MATRICULATION

1(a) Each student shall be required to present himself for registration for the programme of study for which he has been accepted in accordance with the procedure approved from time to time by the university.

(b) Registration Period

(i) Registration for various courses under each programme shall take place twice per session at the beginning of the semester.

Registration shall end four (4) weeks from the date the registration begins. Students shall return registration forms to their Head of Department not later than 20 working days from commencement of the semester. Students who return their forms later than this date shall be liable to late registration fee of N5000 or as may be determined by Senate from time to time.

(ii) Late registration may be allowed only in exceptional cases with the special permission of the Registrar in consultation with Schools upon the payment of a fee of N5,000. No late registration shall be allowed more than six weeks after lectures begin.

(iii) For some genuine reasons, a student is not able to return to the campus to register within the period stipulated, the Registrar must be notified immediately in writing. Approval for such late registration shall be given by the senate in exceptional cases, the -Vice-Chancellor my act on behalf of the senate. In such a case, the student will pay N5,000.

(iv) All completed registration forms shall reach the Deans of Schools not late than six weeks after commencement of semester.

c. **Registration Procedure**

(a) Freshmen shall on arrival proceed to a designated Bank and pay a prescribed non–refundable acceptance fee into FUTO School fees account and collect Bank Teller which should be exchanged with a FUTO receipt.

(b) Candidates proceed to the Registry (Admissions Unit) for collection of Admission Acceptance Form and Validity forms.

(c) Candidates proceed to the Department where admission has been offered to them with.

(I) University official receipt for payment of Acceptance fee,

(ii) Originals and photocopies of all credentials claimed (WAEC/NECO, ND, NBTE etc) together with a copy of birth certificate or statutory declaration of age and certificate of Local Government of Origin,

(iii) Student collect clearance form (Form 6) from their respective Departments.

Those whose Clearance Forms were not approved by the Department should proceed to the Registry (Admissions unit) for change of Department, subject to payment of an application fee of five thousand naira (N5,000.00) only. Such candidates are advised not to pay any other fee until alternative Course/Department is secured for them. Note that candidates who are not registrable in any Department will forfeit the admission.

(d) Registration of courses is on-line after purchase of scratch card from designated banks.
Students in School of Agriculture and Agricultural Technology (SAAT) are to log on to www.futo.edu.ng

(e) Student proceeds to the designated points in their respective Schools/Departments to submit copies of their Clearance Forms (Form 6). Credentials and payment receipts.

Thereafter, Green files will be issued to candidates at the registry.

(f) Fill all form in the students registration folder (Green File) and submit same to the Departmental Administrative Officer not later than two (2) weeks from the beginning of the registration exercise. Candidates are required to also download their on-line registration and submit same to their Head of Department.

Matriculation Procedure

(I) All new students who have completed registration and fulfilled their financial obligations are formally admitted into the University at Matriculation. Nobody may claim to be a student

of this University until he has duly completed all matriculation formalities including issuance of identity cards, which must be effected by the Registrar before the Harmattan Semester Examinations.

(ii) No matriculated student of this University shall present himself for subsequent matriculation. Any student who is absent from Matriculation shall submit an application to the registrar for deferment of Matriculation. In case of ill-health, this shall be supported by a valid medical report from an approved Medical Officer and certified by the Director of Health Services.

(iii) Only matriculated students may with the approval of the Senate to defer their admission.

(iv) All the processes of admission and registration shall end at matriculation.

(h) **Statement of Undertaking**

All students shall sign a statement of undertaking at registration that they will comply with the regulations of the University.
The undertaking Form should be processed for stamp-duty at the sub-treasury by the student himself.

(i) **Loss of Identity Card**

A student who loses his identity card must inform the Registrar immediately in writing. A duplicate identity card shall be issued on payment of a fee of five hundred naira (N500.00) only, or as may be approved.

2. ADDING AND DROPPING OF COURSES

(a)Adding of Courses

Students may be permitted to add courses not later than four weeks after lectures have started for the Semester. Approved

forms should be obtained from and returned to the Registrar after they have been signed by the Dean and the Head of Department.

(b) **Dropping of Courses**

Students may be permitted to drop courses not later than four weeks after lectures have started for the Semester. Approved forms should be obtained from and returned to the Registrar after they have been signed by the Dean and the Head of Department.

3. INDEBTEDNESS TO THE UNIVERSITY

(a) The use of University facilities shall be withdrawn from any student who is indebted to the University. Facilities include all forms of academic instruction and supervision, the University Library and residential accommodation owned/or administered by the University.

(b) Except with the permission of the Vice Chancellor, no student who is indebted to the University shall be allowed to continue his registration in the University unless such indebtedness is cleared.

4. CLASS PERIOD AND ATTENDANCE

4.1 Duration of classes

Classes are expected to begin on the hour and to end 10 minutes before the next hour. Seminars, Tutorials, Laboratory practical and workshops shall however continue as long as scheduled.

4.2 Class Attendance

Only a student who has been properly registered for a course and whose name appears on the official class list for that course shall be allowed into a class. Students are expected to attend all classes for courses which they registered. Attendance at classes, laboratories, and other practicals is compulsory.

4.3 Absence from Classes

If a student is absent from prescribed instructions for more than three weeks during any one Semester, that semester courses may not (except with the permission of the Senate or the Vice-Chancellor acting on behalf of the Senate) be included as part of the scheme of study which the student is required to complete.

4.4 CLASS PERIOD AND QUALIFICATION FOR EXAMINATION

Only students who recorded at least 75% attendance on a given course are qualified to write the examination on the course.

5.0 FINANCIAL OBLIGATION AFTER WITHDRAWAL

Students who withdraw from the University for any reason whatsoever shall be required to clear any outstanding debts before they may be considered for re-admission.

6.0 TIME LIMIT FOR RE-ADMISSION

Students who withdraw from the University for any reason and who are not re-admitted within a period of two consecutive academic sessions from the date of their withdrawal, may not be re-admitted into the university.

7.0. EXAMINATION RESULT

(a) Performance in a course shall be recorded in letter grades after due conversion from percentage scores as follows;

% Score	Grade	Grade Point Equivalent
70 -100	A	5 Excellent
60 - 69	B	4 very Good
50 - 59	C	3 Good
45 - 49	D	2 Pass
40 - 44	E	1 Poor Pass
0 - 39	F	0 Failure

Each of the letters is the equivalent of the grade point as indicated above. Where special weight is given to work done during each Semester, this must be based on formal examination written, oral or practical or on the assessment of work approved by the Board of Examiners and not mere attendance at lectures and the assessment by the lecturer without examination. For courses with laboratories the weighting shall be:

Examination 60%

Continuous Assessment (CA) 40%

For courses without laboratories the weighting shall be:

Examination 70%

Continuous Assessment (CA) 30%

(b) The number of grade points for each course completed by a student is computed by multiplying the number of units for the courses by the grade point equivalent he/she obtained in the course.

(c) When the grade points for all course units at each level of courses have been assembled, the student's cumulative grade point average (CGPA) is calculated by dividing the total number of his grade points by the total number of units taken.

(d) The minimum pass mark shall be 40% (E) for all courses.

(e) All the degree courses (required, restricted elective, unrestricted elective and General Studies) undertaken by a student as well as the successful completion of Industrial Attachment shall count towards the evaluation of his or her degree.

(f) The Class of Degree shall be determined as follows:

Class of Degree	Cumulative Grade	Point
1st Class Honour	4.50 -	5.00
2nd Class (Honours) Upper Division	3.50 -	4.49
2nd Class (Honours) Lower Division	2.40 -	3.49
3rd Class Honours	1.50 -	2.39
Pass	1.00 -	1.49
Fail	0.00	0.99

8. PUNISHMENT FOR VARIOUS EXAMINATIONS MISCONDUCT

Any student who has been found guilty in any of the examination misconduct listed hereunder shall on approval of the Senate and without prejudice to Section 16 of the Federal University of Technology, Owerri Law serve the corresponding punishment as follows:

	Nature of offence	Prescribed punishment
a.	Any student caught with a piece of paper, GSM phone or gadgets containing relevant information pertaining to the examination	Rustication for one (1) academic session Starting from year of the offence
b.	Second offender of 'a' above	Expulsion
c.	Impersonation during examination .	Expulsion of the student (s)
d	Fighting Examination Supervisor/invigilator etc	Expulsion
e.	Unauthorized handling of examination question papers	Expulsion
f	Exchange of Answer booklets	Rustication for one academic session
g.	Exchange of materials in examination hall	As above
h	Collaborative copying	Rustication for one academic session. Expel at a repeat of the offence .
i.	Refusal to appear before a panel	Rustication for one academic session
j	Forging /altering result grades and signature of officials	Expulsion
k.	Coming into the hall with a gun or any other dangerous weapon	Expulsion
l.	Threatening a staff or members of their families verbally or in writing	Expulsion
m.	Procuring and altering a medical certificate in order to obtain a deferment of examination	Rustication for one academic session
n.	Submission of forged registration materials, including add/drop card	Rustication for one academic session

9. A BRIEF HISTORY OF THE DEPARTMENT

The Federal University of Technology was established in October 1980 and its first batch of students enrolled for academic programmes in 1981. The first batch of 7 students opted for

Agricultural Economics during the 1982/83 session. In 1983/84 session there were only two academic staff; a Lecturer 1 and one Graduate Assistant. Today, the academic staff strength has increased so as to meet the increased enrollment of students in the Department. Students enrollment has risen from 7 in 1982/83 to 365 in 19987/99, 500 in 2009/2010 600 in 2011/2012 and 516 in the 2012/2013 academic year. Over 81 students had enrolled in postgraduate courses in the Department as approved by the Senate of the Federal University of Technology Owerri and satisfy the aims and objectives of both the National Policy on Higher Education and the Minimum Academic Standards of the National Universities Commission (NUC). The curricula are structured to cover all the relevant subject areas including Farm Management and Production Economics, Agribusiness Management, Agricultural Project Appraisal, Agricultural Development and Policy, Agricultural Finance, Agricultural Cooperatives and Marketing, Rural Development and Agricultural Resource and Environmental Economics and Law. Students are required to participate, before graduation, in the students Industrial Work Experience Scheme (SIWES) during their second and fourth year levels.

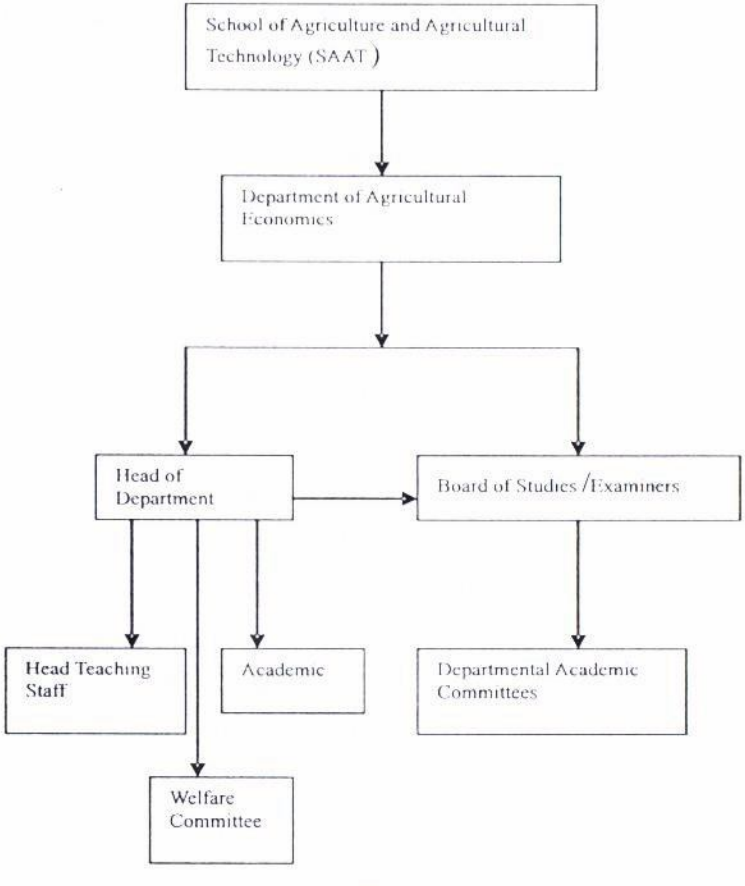
10. PERSONNEL ADMINISTRATION

(a) Organizational Structure:

Administratively, the Department has a Head of Department who is responsible to the Vice-Chancellor through the Dean of the school of Agriculture and Agricultural Technology. There is a Departmental Board of Studies, which comprises all Academic Staff in the Department. The Board takes all major decisions affecting the Department. The committee system of administration is employed in the Administration of the

Department. Some of the Departmental committees are (i) Examination and timetabling (ii) Research (iii) Postgraduate (iv) Farm Steering (v) Social Services (vi) SIWES,(vii) Direct Teaching and Laboratory cost and (viii) Staff Appraisal Committees.

ORGANOGRAM



(b) Departmental Board of Studies

There is a Departmental Board of Studies made up of all academic staff of the Department. The Board is responsible for policy formulation and implementation and takes major decisions affecting both staff and students of the Department.

The committee system is used and each academic staff performs specific functions in the Department and is responsible to the Departmental Board through the Head of Department. Members of the Department also serve in school and University committees.

(c) Heads of Department.

The Department of Agricultural Economics was headed within the following periods by:

Prof. C.E. Onyenweaku	1987 – 1990
Prof. J. E. Njoku	1990 – 1992
Prof. C. C. Asiabaka	1992 – 1999
Prof. C. E Onyenweaku	1999 – 2000
Prof. J. S. Orebiyi	2001 – 2003
Prof. M. A. C. A Odii	2003 - 2005
Prof. J S. Orebiyi	May 2005 – Sept, 2006
Prof. N. N. O. Oguoma	Oct. 2006 - 2008
Dr. J. I. Lemchi	Oct 2008 – Jan 2010
Dr. D. O. Ohajianya	Jan 2010 – June 2012
Prof. C. C. Eze	July 2012 – Date

11. MISSION OF THE DEPARTMENT

The mission of the Department is to produce graduates with in-depth knowledge in both practical and theoretical aspects of Agricultural Economics and well grounded enough to permit self-employment upon graduation.

12. ACADEMIC CONTENT

Existing curriculum for the Programme/Discipline include:

a. PROGRAMME TITLE: **AGRICULTURAL ECONOMICS**

b. Philosophy:

The Philosophy for our degree programme is to produce graduates with in-depth knowledge in both practical and theoretical aspects that is enough to permit self-employment through three years of receiving instructions in the basic sciences and general agriculture while specialization begins in the fourth year of study. In addition, one year Industrial Attachment is an important component of the degree programme. Students are generally expected to acquire thorough knowledge of economic theory and its application to contemporary Agricultural and Rural Development problems as well as the ability to use quantitative techniques in conducting research to solve agricultural economics and development problems in the society.

c. Objectives:

The objective of the Department is to train scientific and professional workers with competence in the analysis of

Agricultural Economics problems at the micro and macro levels. This is in response to increasing opportunities for our graduates in teaching, research, management, consultancy services, industries, Service industries, public administration and agricultural institutions both within Nigeria and in the Diaspora.

More specifically, the graduates of Agricultural Economics are expected to be able to accomplish the following:

1. engage in research that would provide relevant and appropriate solutions to most Agricultural Economics and Rural development problems and improve agricultural productivity in general.

2. take up employment within and outside the country in any aspect of agriculture and related areas, engage in rendering consultancy services and other services in the economy as they find opportunities.

3 profitably put their earned skills into operation by establishing and operating their own farm or related businesses.

(d) Admission requirements

To be admitted into the 5 –year B. Agric. Tech degree with specialization in Agricultural Economics, the candidate must possess either of the following:

i. University Tertiary Matriculation Examination (UTME) Entry Requirements.

In addition to an acceptable pass in UTME, candidates must have Senior Secondary School Certificate with credit passes in 5 subjects, which must include English language, Chemistry, Biology or Agric. Sc., and Physics or Mathematics. For a pass in physics, a credit in Mathematics is required and vice versa. The UTME shall comprise of English language, chemistry, Biology or Agriculture, Mathematics or Physics. The Department shall not admit candidates who entered the two subjects that should act as waivers for each other in their UTME. Generally, Candidates seeking admission into F.U.T.O must possess credit in mathematics, English Language and Chemistry and any other two subjects related to the programme of choice.

ii. Direct Entry Requirements

(a) HSC/GCE A – level passes in two relevant subjects with SC/GCE/O' level credit passes (including English language), and three other subjects at not more than two sittings.

(b) HSC/GCE A' Level passes in three relevant subjects with SC/GCE/O Level credit passes (including English Language and two other subjects at not more than two sittings

(c) Holders of OND/ND Certificates with a minimum of upper credit pass are eligible for admission into Year II while holders of HND certificate with a minimum of

upper credit passes are eligible for admission into year III.

(d) In addition, holders of OND/ND and/or HND certificates must have 5 GCE/SC O/Level credit passes including English Language, Chemistry and Agricultural Sciences or Biology, Mathematics or Physics.

Programme/Sub – discipline/Discipline are structured to include period of formal studies in the Universities, Industrial Training and Planned visits and completion of project work in their final year of study.

Students admitted into the Department spend a minimum period of 5 years in order to obtain the B Agric. Tech. Degree with specialization in Agricultural Economics. All students admitted into the B. Agric. Tech. Degree of the School of Agriculture and Agricultural Technology of this University take the same courses up to third year of study, while specialization begins in the 4th year. In the 2nd year; all students undergo a 3 months Industrial Attachment in Agriculture and related fields during the long vacation. The 4th year students again undergo a six months Industrial Attachment on the University Farm or any other farm as may be approved by the University SIWES coordinator commencing from the beginning of the rain semester and terminating in October of the same year. In the foundation year, students are taken out to visit agro- industrial establishments to observe typical farms in operation. In the 5th (final) year of the study students complete supervised research projects.

13 ACADEMIC STAFF LIST OF THE DEPARTMENT

1.	Prof. J. E. Njoku	B.Sc. (Nigeria), M.Sc. (ABU), Ph.D (Nigeria)
2.	Prof. J. S. Orebiyi	B.Sc., M.Sc. (Ibadan), Ph.D (FUTO)
3.	Prof. M. A. C. A. Odii	B.Agric. Tech (FUTO), M.Sc, Ph.D (Ibadan)
4.	Prof. N. N. O. Oguoma	B. Agric., M.Sc (Nigeria), Ph.D (FUTO)
5.	Prof. P. C. Obasi	B. Agric Tech. (FUTO), M.Sc (Ibadan), Ph.D (FUTO)
6.	Prof. C.C. Eze.	B.Agric, M.Sc, Ph. D., LL.B (LLB, Nigeria)
7.	Prof. J. I. Lemchi	B.Agric. (Nigeria), M.Sc ,Ph.D (FUTO)
8.	Dr. D. O. Ohajianya	Reader, B. Agric Tech., M.Sc., Ph.D (FUTO)
9.	Dr. U. C. Ibekwe	Snr; B.Sc (Ibadan), M.Sc, Ph.D (Nigeria)
10.	Dr. S. U.O. Onyeagocha	Snr Lecturer; B.Agric, M.Sc. , Ph.D. (Nigeria)
11.	Dr. O.C. Korie	Snr. Lecturer; B.Agric Tech., M.Sc (FUTO), Ph.D (Nigeria)
12.	Dr. Onweremadu, E.U.	Snr. Lecturer, Ph.D UNN, M.Sc (UNN)
13.	Dr. Ngwuta A.A.	Snr. Lecture, Ph., M.Sc, B. Agric
14.	Dr. Akujuobi A.B.C	Snr Lecturer, Ph.D (FMT), M.Sc, B.Sc,
15.	Dr. Akujuobi L.E.	Snr Lecturer, Ph.D (FUTO) M.Sc, B.Sc
16.	Dr. Ozurumba, B.	Snr Lecturer Ph.D, (FUTO) M.Sc (FUTO, B.Sc (ABSU)
17.	Dr. Okoroafor E.	Snr. Lecturer, Ph.D, (FUTO), M.Sc FUTO, B.Sc
18.	Dr. Iwu H.C.	Ph.D, M.Sc, B.Sc

19.	Dr. Nwaogu E.C.	Snr. Lecturer, Ph.D, MA, B.Sc
20.	Dr. Etuk E.B	Snr. Lecturer, B. Agric Tech, M.Sc, Ph.D
21	Dr. Anyanwu C.P.	Snr. Lecturer, Ph.D (UNN), M.Sc (FUTO) B.Sc
22	Dr. Okorocha K.A	Snr. Lecturer, Ph.D, M.Sc, B.Sc
23	Dr. Ogueri C.	Lecturer I: Ph.D, M.Sc, B.Sc
24	Dr. Okoro V.M.O.	Lecturer I: Ph.D, M.Sc, B. Agric Tech.
25	Dr. Anyanwu N.J.	Lecturer I: M.Sc, B. Agric Tech
26.	Dr. Anaeto F.C.	Lecturer I: Ph.D, M.Sc, B. Agric
27.	Dr. Uzoho B.O	Lecturer I: Ph.D, M.Sc, B.Sc
28.	Dr. Ogbuewu I.P.	Lecturer II: Ph.D, M.Sc, B. Agric Tech.
29.	Iheme E.E.	Lecturer II: M.Sc, B.Agric Tech
30.	Dr. Anyanwu C.N.	Lecturer II: M.Sc, B.Sc,
31.	Dr. Nkwopara U.N.	Assistant Lecturer: Ph.D, M.Sc
32	Dr. C. A. Emenyonu	Snr. Lecturer: B. Agric. Tech., M.Sc. (FUTO), Ph.D (MOUAU)
33	Mr. N. C. Ehirim	Lecturer I; B. Agric Tech. (FUTO), M.Sc (UI)
34	Mr I. I. Osugiri	Lecturer I; B. Agric ., (Nigeria), M.Sc (IMSU)
35	Ajaero, J.	Lect I: M.Sc,. B. Agric (FUTO)
36	Dr. Mrs N.G Ben-Chendo	Lecturer II; B. Agric, (Nigeria) M.Sc, Ph.D. (FUTO)
37.	Mr. C. S. Onyemauwa	Lecturer II; B. Agric Tech., M.Sc (FUTO)
38	Mr. F. O. Nwosu	Lecturer II; B. Agric. Tech. (FUTO), M.Sc. (IMSU)
39	Dr. Mrs Henri-Ukoha A.	Lecturer II; B. Agric., (UNICAL), M.Sc (RSUST), Ph.D (FUTO)

40	Mr. I. U. Nwaiwu	Asst. Lecturer; B. Agric. Tech, M. Sc. (FUTO)
41	Mrs. M. N. Osuji	Asst. Lecturer; B. Agric. Tech., M.Sc. (FUTO)
42	Mr. I. I. Igwe	Asst. Lecturer; B. Agric Tech., M.Sc. (FUTO)

14. ACADEMIC SUPPORT STAFF STATUS QUALIFICATIONS

Mr. Odii Peter	Snr. Agric Officer; HND (Agric), PGD
Mr. Okoroafor Christian	Snr Agric. Officer; HND (Agric) PGD
Chukwuagbada G.	Farm Officer II;B. Agric. Tech. (FUTO)
Anyanwu Uchechi	Technologist; B. Agric. Tech. (FUTO)
Anuforo Grace N.	Farm Officer II;B. Agric. Tech. (FUTO)
Nwanekezi Lilian	Farm Officer II B.Agric IMSU

15. SECRETARIAL STAFF STATUS/QUALIFICATIONS

Mrs Chukwu Remmy N.	Asst. Registrar
Ndukwu Joy Chioma	Clerical Supervisor, WASCE
Okeke Ifeoma M	Farm Assistant ,WASCE
Okaru Ann Chioma	Clerical Officer, NABTEB
Okeke Lilian N.	Data Processor, NECO

16. ACADEMIC PROGRAMME FOR AGRICULTURAL ECONOMICS

The Department of Agricultural Economics of the Federal University of Technology Owerri offers a 5-year programme of instructions leading to the degree of Bachelor of Agricultural Technology (Agricultural Economics). The degree programme is carefully

designed to give our students a thorough professional background in Agriculture that equips them with tools for effective Agricultural Policy formulation, implementation and analysis. The 5-year degree programme is offered to students with credit passes in General Certificate of Education Ordinary level (GCE) or Secondary School Certificate (SSSC) in Chemistry, Biology or Agric Science, Physics or Mathematics and English Language. However, the general requirement by the University is that the candidates must possess O'Level Credits in Chemistry, Mathematics and English Language. Students are required to participate in the Student's Industrial Work Experience Scheme (SIWES) in the long vacation of the second year and during the rain semester of their 4th year. Students in years two to four can only carry a maximum of 21 units and must have a CGPA of 3 points before they can be allowed carry such on application for the extra units. Final year students can take up to a maximum of 24 units on application for the extra units irrespective of their CGPA..

YEAR I
HARMATTAN SEMESTER.

UNDERGRADUATE COURSE DESCRIPTION

YEAR ONE
HARMATTAN SEMESTER

COURSE CODE	COURSE DESCRRIPTION	L.T.P	UNIT
MTH 101	Elementary Maths I	3,1,0	4
PHY 101	General Physics I	3,0,1	4
CHM 101	General Chemistry I	3,0,1	4
BIO 103	Biology for Agric & Bio I	2,0,1	3
ENG 103	Engineering Drawing I	0,0 1	1
ENG 101	Workshop Practice I	0,0,1	1
GST 101	Use of English I	1,1,0	2
GST 103	Humanities: Philosophy and logic	1,0,0	1
IGB 101or FRN 101	Igbo/ French Language	1,0,0	1
		Total	**21**

RAIN SEMESTER

COURSE CODE	COURSE DESCRIPTION	L.T.P	UNIT
MTH 102	Elementary Maths II	3,1,0	4
PHY 102	General Physics II	3,0,1	4
CHM 102	General Chemistry II	3,0,1	4
BIO 104	Biology for Agric & Bio II	1,0,1	2
ENG 102	Workshop Practice II	0,0 1	1
GST 102	Use of English II	1,1,0	2
GST 108	Social Science I	1,1,0	2
GST 110	Science Technology and Society	1,0,0	1
IGB 102 or FRN 102	Igbo/ French Language	1,0,0	1
		Total	**21**

YEAR II

HARMATHAN SEMESTER

COURSE CODE	COURSE DESCRRIPTION	L.T.P	UNIT
AGR 203	Introduction to Agriculture	1,0,0	1
CST 201	Crop Anatomy & Taxonomy Physiology	1,0,1	2
AST 201	Principles of Animal Production I	2,0,0	2

AGR 205	Agricultural Chemistry	1,0,1	2
AEX 201	Introduction to Agric. Extension & Rural Dev.	2,0,0	2
GST 201	Nigeria & African Cultural Dev.	1,0,0	1
STA 211	Statistics	2,1,0	3
CSC 201	Computer and Applications I	2,1,1	4
AGR 207	Agricultural Biotechnology	1,0,1	2
		Total	**19**

RAIN SEMESTER

COURSE CODE	COURSE DESCRRIPTION	L.T.P	UNIT
AGR 202	Farm Practice I	0,0,1	1
CST 202	Tree & Vegetable Crop Prod.	2,0,0	2
AST 202	Principles of Animal Prod. II	1,0,1	2
CST 204	Field crop Production	2,0,0	2
AEC 202	Principles of Micro and micro- Economics	2,0,0	2
FWT 202	Principles of Forestry Resources & Wildlife Management	2,0,0	2
AGR 204	Agricultural Bio- Chemistry	1,0,1	2
CST 206	Agric-Climatology & Biogeography	1,0,1	2
SST 202	Principles of Soil Science	1,0,1	2
FAT 202	Introduction to Fisheries & Aquaculture	1,0,1	2
SIW 200	Industrial Attachment	0, 0, 2	2
		Total	21

YEAR III
HARMATHAN SEMESTER

COURSE CODE	COURSE DESCRIPTION	L.T.P	UNIT
AGE 301	Farm Planning & Structure	1,0,1	2
AGR 303	Agricultural Genetics	1,0,1	2
AEC 301	Introduction to Farm Mgt & Prod. Economics	2,0,0	2
SST 301	Soil Chemistry and Fertility	1,0,1	2
CST 301	Crop Diseases and their Control	1,0,1	2
AEC 303	Agric Marketing & Cooperatives	2,0,0	2
AGR 301	Farm Practice II	0,0,1	1
AST 301	Introduction to Tropical Animal Health	1,0,1	2
AEX 301	Community Agric Extension	1,0,1	2
ENS 301	Introduction to Entrepreneurship and innovation	2,0,0	2
		Total	19

RAIN SEMESTER

COURSE CODE	COURSE DESCRIPTION	L.T.P	UNIT
AGR 306	Proc. & Storage of Agric Food Products.	1,0,1	2
AGE 202	Agric Mech. & Mechanization	1,0,2	3
SST 302	Soil and Water Management	2,0,0	3
AGR 302	Farm Practice III	0,0,1	1
		Total	20

CST 302	Crop Pest and their Control	2,0,1	3
AGR 304	Agric Statistics and Biometry	1,1,0	2
AST 302	Animal Feeds & Feeding I	1,0,1	2
AEX 302	Introduction to Rural Sociology	2,0,0	2
ENS 302	Business creation, growth and corporate governance	1,0,1	2
		TOTAL	**20**

YEAR IV
HARMATTAN SEMESTER

COURSE CODE	COURSE DESCRIPTION	L.T.P	UNIT
AEC 401	Agric Planning & Development	2,1,0	3
AEC 403	Micro- Economic Analysis	2,1,0	3
AEC 405	Agricultural Finance	2,0,0	2
AEX 407	Extension Teaching, Learning Processes and Methods	2,1,0	3
AEC 409	Econometrics	1,1,0	2
AEC 411	Operations Research Methods	2,0,0	2
AEC 413	Statistics and Research Methods	2,0,0	2
AGR 401	Farm Practice IV	0,0,1	1
MGT 405	Technical Report Writing	1,0,1	2

RAIN SEMESTER

COURSE CODE	COURSE DESCRIPTION	L.T.P	UNIT
SIW 400	INDUSTRIAL ATTACHMENT	0,0,4	4
SIW 401	INDUSTRIAL ATTACHMENT	0,0,2	2
		Total	**6**

YEAR V
HARMATTAN SEMESTER

COURSE CODE	COURSE DESCRIPTION	L.T.P	UNIT
AEC 501	Macro- Economic Analysis	3, 0, 0	3
AEC 503	Agricultural Policy	2, 0, 0	2
AEC 505	Agric Resource Economics	2, 0, 0	2
AEC 507	Farm Accounting and Records	2, 0, 0	2
AEC 515	Agric Business Mgt and Finance	2, 0, 0	2
AGR 501	Farm practice V	0, 0, 1	1
AEC 517	Research Techniques in Agric Economics 1 (Project)	0, 0, 2	2
AEX 513	Extension Org. Mgt & Supervision	2, 0, 0	2
	500 level Elective (Any Final year Course in SST or CST not less than 2 units)	0, 0, 2	2
		TOTAL	**18**

YEAR V
RAIN SEMESTER

COURSE CODE	COURSE DESCRIPTION	L.T.P	UNIT
AEC 502	Agric Prod. Economics & Farm Management	1, 0, 1	2
AEC 504	Agric Project Appraisal, Management and Evaluation	2, 0, 0	2
AEX 504	Tech. and Social change in Agric.	2, 0, 0	2
AEC 506	Agricultural Marketing	2, 0, 0	2
AEC 508 AEC 510	Economics of Agric, Coop. Introduction to Environmental Economics & Law	2, 0, 0 1,0,0	2 1
AEC 514	Agricultural Financial Management	1, 0, 1	2
AEC 516	Research Techniques in Agric Economics II (project)	0, 0, 4	4
	500 level Elective. (Any Final year Course in AST or SST not less than 2 units).	2, 0, 0	2
		TOTAL	**19**

18. UNDERGRADUATE COURSE DESCRIPTION

YEAR ONE
HARMATTAN SEMESTER

MTH 101: Elementary Mathematics I (2, 1, 1)

Set Theory: Fields, Union, Intersection, Complements, Functions and their inverses.

Real Number Systems;

Integers, rational and irrational numbers. Mathematical induction; sequences and series, arithmetic and geometric sequences and series; theory of quadratic equations, absolute values, identities, inequalities and partial fractions. Permutations and combinations- binomial theorem.

Trigonometry:

Circular measure, trigonometric functions and their properties, addition and factor formulae, solution of triangles. Complex Numbers: Algebra of complex numbers, the Argand diagram, De Movies theorem, nth roots of unity. Calculus and Real Analysis: Elementary functions of a single variable and their graphs, limits and continuity. Rates of change, tangents and normal of a curve. Differentiation of elementary function-Product, quotient, function of a function. Implicit differentiation Maxima, minima and points of inflection; geometrical and physical applications of the derivative, mean value theorem, parametric equations, Polar coordinators, Anti-derivative, integral various techniques of integration, volume of resolution, area surface of revolution.

PHY 101: General Physics I (2, 1, 1)

Elementary mechanics, Galilean invariance, work, energy, momentum, angular momentum, conservation laws; harmonic oscillator; rigid bodies; inverse square law forces; ideal fluid; heat and thermodynamics; introduction of kinetic theory of matter Prerequisites: O' Level Physics. MTH 101 should be taken concurrently with PHY 101.

CHM 101: General Chemistry I (2, 1, 1)

Fundamental concepts, including atomic and molecular structure states of aggregation of matter. Acid-base reactions; homogen, nuclear chemistry and descriptive aspects of inorganic chemistry, Kinetic and treatment of chemical reactions in terms of acid-base concepts – physical and chemical properties, state of matter.

BIO 103: Biology for Biological & Agricultural Sciences (2, 0, 1)

Common Life Forms and Processes:

The nature, characteristics and diversity of living organisms, along with a general treatment of the process of evolution. Cell structure and cellular metabolism including respiration, growth, and cellular transport; a general treatment of ecology and how living organisms relate to their environment and to each other.

Form and Function in Plants:

A general classification of plants, with emphasis on the families of higher plants that are of economic importance; general angiosperm morphology and anatomy. The processes of photosynthesis

reproduction, inorganic nutrition, growth and development in higher plants.

ENG 101: Workshop Practice I (0, 0, 1)

General: Use of engineering measuring instruments, ego Calipers, gauges, etc. introduction to hand tools. eg, practice in wood planners, saws, sanders and pattern marking; sampling and sizing techniques of raw materials. Sheet-Metal work: Production of metal products layout, cutting and shaping, welding, soldering, brazing, fastening and assembly.

Woodwork: Basic woodworking principles and tools-layout methods, cutting and shaping, finishing and evaluation; Finished Products

ENG 103: Engineering Drawing (0, 0, 1)

Introduction to the use of drawing/drafting instruments, Descriptive geometry and geometric construction. Drawing, measuring ,lettering and dimensioning objects in various positions. Principles of orthographic projection in the first and third angle.

GST 101: The Use of English (1, 1, 0)

Use of Library, use of words and sentence construction. Function of sentences-purposes structure, correct use of verbs (Action words), word order and punctuation. Essay/Composition Writing, paragraphs Structure, function, links and style. Deposition description and explanation. Special types of exposition, eg. Letter writing, layout of a business letter, technical reports-including terms of reference, drafting and editing of reports.

GST 103: Polity and Economy of Nigeria (1, 0, 0)

The nature and scope of economics. The Nigeria political system polity and means of production in Nigeria. The Structure of the Nigeria economy; aspects of Economic and Technological dualism; internal migration-rural to urban migration and the informal sector. The role of capital in growth and development; public investment criteria choice of appropriate' or 'relevant' technology. Human resources development in Nigeria-Labour utilization, education and manpower development and planning.

Agriculture in the development process. Land tenure and reform, agricultural technology and the green revolution and integrated rural development. Industrialization; role and type of industry, choice of techniques, import substitution, and export expansion. The economic role of the government expenditure and taxation; the federal structure, fiscal federalism and revenue allocation; the financial system. Prospects for the Nigerian economy.

IGB 101: Introduction to Igbo Grammar, Composition and Comprehension (1, 0, 0)

Mkpuruedemede Igbo; Akaraedemede; Nkebiokwu Igbo; Nkebiahiri Igbo; Ndakorita Udaume; Udaolu; Ntughari; Edemede; Nchikota; Ekwumekwu n'asusu Igbo; Ikwu okwu n'oha; Nsupe n'Igbo.

RAIN SEMESTER

MTH 102: Elementary Mathematics II (2, 1, 1)

Vectors and Geometry: Representation of vectors. Vectors addition and multiplication of vector by a scalar. Components of a vector and

director casines. Linear dependence and independence of vectors. Scalar and vector products of two vectors. Scalar and vector products of three vectors. Plane analytic geometry of the straight line, conics (circles, parabola, ellipse, hyperbola). Differential Equations: Occurrence of differential equation. Differential equations of first degree and first order, like-variables separable, exact homogenous with constant coefficients.

Statistics: Introduction of Statistics.

Diagrammatic representation of descriptive data. Measures of location and dispersion for discrete and grouped data. Problems of groupings and associated graphs. Introduction to probability. Sample space and events. Addition law, conditional probability and multiplication rule. Bayes Th-eorem. Use of permutation and combination in evaluating probability. Binomial distribution. Linear correlation. Linear regression.

PHY 102: General Physics II (2, 1, 1)

Electrostatics, conductors and dielectrics; magnetostatics, magnetic fields and induction, magnetic materials, Maxwell's equations; Waves and Oscillation, Electromagnetic wave; and Oscillations, Electromagnetic wave optics,. Modern physics – Experimental basis of quantum physics, Planck's constant; spectra basic phenomena of atoms, molecules and nuclei.

CHM 102: General Chemistry II (2, 1, 1)

Physical and chemical equilibrium, solids, solutions, reaction kinetics and kinetic theory. Alkanes and cycloakanes, reactions of

carbon multiple bonds; elimination and substitution, reactions of alcohols and alkyl, halides, aromatic compounds, carbon compounds, organic acids and derivates, and organic bases.

BIO 104: Biology for Biological & Agricultural Science (1, 0,1)

Form and function in Animals. A general classification of animal with emphasis on the characteristics morphology, and anatomy of the economically important groups, such as mammalian, Aves, Pisces Arthropoda, molusca and nematode. Discussion of the following processes in animals: nutrition, excretion, reproduction, movement and nervous regulation.

ENG. 102: Workshop Practice II (0, 0, 1)

Machine-shop work: Lathe-work: instruction and working process, shaping, milling, grinding, reaming and metal spinning, etc. design of simple jigs and fixtures. Finished products sample

GST 110: Science and Technology (1, 0, 0)

Section A: Science and Society

Introduction:

The need for science; modern scientific methods and evolution, selected key scientific research; innovations and inventions science and culture.

Nature of science: - history of science; classifications; science in the civilization of man; science evolution of man; social implications. Science and Man's environment-harnessing science for production, processing, conservation, distribution and utilization of agricultural

products, climate and vegetation; terrestrial and cosmic life; implications and scientific advances, e.g Population control; environmental pollution. Science and Energy Resources-energy sources and forms – solar energy, thermal energy, nuclear energy, fossil fuels, estimate of energy reserves in Nigeria; case studies of demand and supply for energy.

Section B: Technology and Society

Introduction: Technology in the development of man; role of technology in the national economy; agriculture, entertainment, transportation, communications medicine and welfare, war and crime etc. disciplines in technology; professional opportunities in technology in Nigeria.

Technology Evolution:

History of technological education and practice in Nigeria. Some key revolutions in technology, e.g electronics and computer technology, robotics and cybernetics, and their everyday applications.

Implications of Technology:

Ethics in technology; the implications of technological research and advances, e.g displacements of man by machines, space travel, threat of nuclear and neutron war, the genetic research and energy crises, etc.

Technological Products Liability:

Effects of mechanizations, products-reliability, quantity; control and cost-effectiveness, politics and environment.

GST 102: Use of English II (1, 0, 0)

Comprehension and interpretation; reading efficiency of technical and non-technical material; note taking; techniques of note reading and from lecture notes. Precise writing or summarizing methods; technical vocabulary; word formulation; use of classical terms and affixes. Special terms, acronyms, new words, choice of correct words; definition by example; synonym or autonym; analytic or operational definition; basic words in fields of specialization e.g mechanical, electrical, civil, environmental, automobile engineering, metallurgy, mathematics, agriculture, etc.

GST 108: Social Science (2, 0, 0)

A global perspective of economics, institutions and developments. The law of scarcity and technological choices open to any society. Trade and development with special reference to trade in primary products, import substitution and export possibilities in Nigeria and third world countries. Nigeria's Balance of Payment and commercial policies. Economic integration or unions; state and structure of ECOWAS countries; Nigeria and ECOWAS; Prospects for industrialization trade; fiscal and monetary policies for accelerated industrialization. Nigeria and the developed countries; problems of international economic dualism. Foreign investment; the multi-national or transnational corporations; technological transfer and technological dependence. Global interdependence and the new International Economic Order – Energy; OPEC and world economy;

raw materials and natural resources, and world food shortages. The economic and political consequences of armament and disarmament; prospects for world economy.

IGB 102: Introduction to Igbo History, Culture and Literature (1, 0, 0)

Akuko banyere ndi Igbo na ndu ha; ekele na nsopuru n'ala Igbo; ndi Igbo na nnabata ndi obia; ewumewu ndi Igbo; ewumewu nkwalite aku na uba; ewumewu okpukperechi; agumagu Igbo; ngalaba agumagu Igbo na ejimara ha; akparamagwa na uru agumagu onu na agumagu ederede; nkowa ngalaba agumagu di iche iche; njem nlegharianya.

YEAR TWO

HARMATTAN SEMESTER.

AGR 203: Introduction to agriculture (1, 0, 0)

Agriculture and the National Economy: Definition and scope of agriculture; career opportunities in agriculture; the role of agriculture in the national economy; the history of agricultural development with, particular reference to Nigeria.

CST 201: Crop Anatomy and Taxonomy Physiology (2, 0, 0)

Plant anatomy: plant cell structure , components and functions. Plant tissues and their functions . Anatomy of root, stem and leaf; flora

structure . Introduction to plant taxonomy . Plant specimen collection , identification and classification. Classification system . A brief introduction of the herbarium . Characteristics, distribution and local examples of; malvaceae, dioscoreacea, musaceae, graminae/poaceae, solanaceae, fabaceae/ leguminosae, compositae, etc. cell division. Enzymes. Some processes in crops,: photosynthesis, translocation, pollination, respiration, energy utilization, seed dormancy and germination, development, mineral nutrition etc . Growth regulation.

AGR 205: Agricultural Chemistry (1, 0, 1)

Chemistry of the S-block elements and the representative block elements. Brief introduction into the chemistry of first series transition elements Structure, reactions, and functions of hydrocarbons, alcohols, phenols, others, aldehydes, ketones, organic acids and their derivative. Atomic structure and bonding. Periodic table, colloids, chemical kinetics and equilibrium, Oxidation and reduction; Acids bases. Properties and resections of elements of importance in Agriculture.

AST 201: Principles of Animal Production I (2, 0, 0)

Pre-requisite; BIO 101/103

Introduction to the anatomy, physiology, genetics, breeding, nutrition, health economics, and management of the major tropical ruminants farm animals. Specific treatment will be given to cattle, sheep, goat, and rabbit production.

AEX 201: Introduction to agricultural Extension (2, 0, 0)

The need for agric. Extension; agricultural extension in Nigeria and the world, basic philosophy behind extension work, institutional setting for agricultural extension. Agricultural development agencies, communication and extension teaching processes, adult education principles, practical on selected oral and written communication methods and audio-visual aids (AVAS)

STA 211: Statistics (2, 1, 0)

Pre-requisites: MTH 101 AND 102

Frequency distributions, measures of location and dispersion in samples and grouped data. Laws of probability. The binomial, passion and normal distributions, estimation and tests hypothesis. Analysis of variance and covariance, simple regression and correlation, contingency table and X^2- applications.

CSC 201: Computer and applications I (2, 1, 1)

Pre-requisites: MTH 101 and MTH 102

Brief history of computer and computer Generation, Classification of computers. Structure of a general purpose computer, number systems the stored program. Technique of problem solving. Flowcharting. Stepwise Refinement. Algorithm for searching, sorting and merging of ordered lists. Data preparation 1/0 Devices. Data types. Data representations. Data Capture. Problem-orientated Languages. BASIC and FORTRAN programming: Logical Expression: arrays; sequencing; alternation and iteration; auburograms and parameters, Elementary Numerical algorithms.

GST 201: History and philosophy of science (1, 0, 0)

Concept and meaning of development, traditional Africa- its geographical and ethnographical review, its family structure, kinship system, etc, socio-economics, pre-occupations, political systems, art and music, modes of communication in art and aesthetics, nationalism and cultural revival, mass media and national development.

AGR 207 Agricultural Biotechnology (1, 0, 1).

A. What is biotechnology? Definition and its importance. History of domestication and Agriculture. Ancient plant germplasm, fermented foods and beverages.

B. Classical Biotechnology.

C. Foundations of modern biotechnology

D. Early microscopy. Development of Cell theory

E. Nature of Gene. First Recombinant Experiment. First DNA Cloning Experiment 1. Plant and Tissue Culture and Applications. Plant Tissue Culture. Micro propagation, Other uses of Tissue Culture. Plant Genetic Engineering. Plant Transformation and Agro bacterium tumerfaciers. Challenges of Foreign Gene Expression Application of Plant Genetic Engineering. Crop Improvement. Forestry-Tree Improvement. Genetically Engineered Traits. Genetically Engineered Foods. Nutritionally Enhanced Plants. Molecular Farming Gene Transfer Methods in Animals. Microinjections. Embryonic Stem cell Gene Transfer. Retrovirus and Gene Transfer transgenic ***Animals and their Application.*** Mice, Cows, pigs, Sheep, Goats, and Birds,

Animal Health, Animal Propagation; Artificial Insemination. Animal Clones, Regulation of Transgenic Animals. Patenting Genetically Engineered Animals Aquaculture: Gastropods, Bivalves and Crustacean Production, Marine Animal Health, Algae Products.

Medical Applications. Marine Natural products and their Medical potentials. Anti Cancer and Antiviral Compounds. Antibacterial Agents. Marine Toxins Transgenic Fish. Ruminant Farm Animals. Specific treatment will be given to Cattle, Sheep, Goat, and Rabbit Production.

Pre-requisite: BIO 101/103.

RAIN SEMESTER.

AST 202: Principles of Animal Production III (1,0,1)

Pre-requisites: BIO. 101/103

Introduction to the anatomy, physiology, genetics, breeding, nutrition, health economics and management of the major tropical non-ruminant farm animals. Specific treatment will be given to various kinds of poultry, as well swine.

CST 202: Tree and Vegetable crops Production (2, 0, 0)

Origin and distribution of tree and vegetable crops; soil and climatic requirements of some important crops such as cocoa, banana, plantains, citrus, kola, cashew, etc; and some important vegetable crops such as fluted pumpkin, melon, Amarantus, garden egg, etc; production practices, improvement, harvesting, utilization, processing, storage and economic aspects of some selected permanent and perennial crops.

CST 204: Field Crop Production (2, 0, 0)

Detailed treatment of the-major field crops; Yam, cocoyam, cassava, sweet potato, maize, rice, sorghum, beans, groundnut, winged beans, sugarcane, tobacco, etc. for each crop there will be detailed discussions on time of planting, site selection, land preparation, planting material, seed rate, spacing, mulching, fertilization (type, rate and frequency), crop protection (weed, pest and disease control) harvesting, processing and storage.

CST 206: Agric-Climatology and Bio-geography (1, 0, 1)

The principles, aims and scope of climatology and biogeography, the elements and controls of climate and weather and the dynamics of the earth's atmosphere radiation and heating of the atmospheric systems, atmospheric moisture, the dynamics of pressure and wind systems condensation, day length, and radiation, rainfall and evapo-transpiration equipment and maintenance of standard meteorological, relation between agriculture and climate with reference to crops, livestock, irrigation, pests and diseases.

AEC 202: Principles of Micro and Macro Economics (2, 0, 0)

Meaning and scope; the problem of economizing; scope of economic theory; basic assumptions of economic theory; the social science and their scientific characteristics; the scientific approach to economics. Approaches to economic analysis: concept of equilibrium in economics; micro and macro; partial and general; static and dynamic; positive and normative; economic systems and their takes; The

theory of consumer behavior: demand and supply functions and their derivation from alternative hypotheses; approaches to the theory of consumer behavior and their applications to agriculture; elasticity of demand and their applications to the theory of consumer behavior and their applications to agricultural problems. Theory of the firm: the nature of the firm: its goals and objective function; Generalized theory of production: meaning and nature of production function; types of transformation process; stages of production; production transformation process; the physical production schedule; variable returns to scale; the production surface and isoquants; and optimal combinations of inputs (h) changes in output; supply function; expansion path and supply function; two inputs, two output and the multi product firm; various conception of costs (m) production and cost-output relationships; Price theory, and applications; factor pricing under the various market conditions i.e under pure competition, pure monopoly; monopolistic and oligopolistic competition; product pricing under the various market conditions. Macroeconomic model and the transitional step. The circular flow of income some basic concepts of National Income; uses of national income estimates; methods of estimating national income; Problems of estimating national income; Government and the circular flow of money; the consumption and investment functions; Definition and functions of money; The quantity theory of money; the demand for money; money supply and the average price level / inflation; the banking system and the supply of money; The international

economy; distinction between international and domestic trade; concepts of comparative advantage, factor endowment balance of trade and balance of payment. Theories of international trade. Gains from trade; tariffs and other instruments of trade; Scope and definitions of Economic Development, Employment, Inflation, characteristics of underdevelopment and development planning in developing countries.

SST 202: Introduction to Tropical soils (1, 0, 1)

Fundamental discussion on the distribution and classification of tropical soil: their physical, chemical and biological properties as well as the relationship of the crop productivity will be dealt with.

FAT 202: Introduction to Fisheries and Aquaculture) 1, 0, 1

Freshwater, estuarine and marine fin fishes, primitive bony and cartilaginous fishes, their detailed basic morphology and anatomy their modification, life histories, reproduction, feeding, general ecology, systematic and taxonomy using keys and published guides for field and laboratory identification, fish museum practices.

AGR 202: Farm Practice I (0, 0, 1)

Students will be required to be intimately involved in the performance of various farm operations. Skills will be taught various farm operations in Crop Production, Fisheries, Forestry are Animals Husbandry.

FWT 202: Principles of Forestry Resource and Wildlife Management (2, 0, 0)

Fundamental principles of forest and wildlife management; Renewable natural resources: availability distribution and potential; the important forest trees and wildlife in Nigeria; classification, morphology and distribution of these trees; forest and game reserve, silviculture; aforestation; characteristics of major timber and their uses; felling and log transportation; importance of forestry and wildlife to the economy.

AGR 204: Introduction to Bio-Chemistry (1, 0, 1)

Cellular composition and morphology, chemistry, metabolism and synthesis of carbohydrates, lipids and proteins. Importance of PH and buffers, Structure and functions of enzymes.

SIW 200: Long Vacation Industrial attachment. (0, 0, 2).

YEAR THREE

HARMMATTAN SEMESTER

AGR 303: Agricultural Genetics (1, 0, 1)

Pre- requisite: BIO 103 & 104: Biology for Agricultural and Biological Students.

Elaboration of the general principles of genetics applicable in agricultural production, with specific discussions on Mendellian genetics Including functions, nature, and structure of genes; basic Concepts in the genetics of populations, and quantitative traits of economic Importance in plants and animals, Rudiments of selection; and an introduction to breeding objectives and priorities in agriculture, such objectives as yield, quality resistance, adaptation, stress tolerance and machinizability will be highlighted. Practical and field illustrations of these concepts will be emphasized.

AEC 301: Introduction to Farm Management and Production Economics (2, 0, 0,)

Pre-requisite AEC 202: Introduction to Micro Economics

Basic idea of production: meaning of production; classes of production; direct and indirect production; specialization and division of Labour in production. The scale and location of production: determinants of scale and location of production; economics of scale; diseconomies of scale; the optimum farm firm; advantages and disadvantages of small-scale production; returns to scale; combination of business units. Factors of production:

meaning; the natural and man-made resources; management / entrepreneurship as factors of production in the farm business; the reward to management; management and the decision-marking process; work division and work conditions in management decision-marking; management approaches problems in supervision of Labour and other physical inputs; risk and uncertainty in agricultural production. Management of soil, crop and livestock: the aims of soil, crop and livestock management in agricultural production; the right condition for high soil, and livestock output. Labour as a factor production: meaning and Labour; types of farm Labour; problems of farm Labour, seasonal demand and supply of farm Labour; measures for raising Labour productivity; Capital as a factor of production meaning of capital; type / classes of capital; ways of raising capital in the farm business; capital depreciation; interest and security loans; advantages and disadvantages in taking farm loans; capital formation, savings and investments; capital rationing in agriculture; measures for raising capital productivity; etc. Land as a factor of production: the economic meaning of land; land as subject to the law of diminishing returns; measures for raising the productivity of land; etc. Consumption and resource allocation in agriculture; Principles of agricultural production and resource use: factor-factor relationships in agriculture; factor product relationships in agriculture; product-product relationship in agriculture; budgeting techniques, use of break-even analysis in farm production planning, elements of time, risk and uncertainty in agricultural production. Etc. The theory of cost and revenue and their applications in agricultural production:

various concepts of costs and their applications in agricultural production; the various concept of revenue and their applications in agriculture; marginal analysis gross margins, net margins, net-farm income, etc Farm production records: general principles of record-keeping; types of farm records; uses of farm records; advantages of keeping farm records; Types of farm records; Inter and intra-farm comparison using financial and physical records. Farm production planning: advantages of a farm plan; selection of production methods; programme planning and procedure; Budgeting: types, advantages, farm budgeting under land labour and capital constraints; budgeting for new equipment; ways of raising farm profit. *Factors of production, labour, equipment, etc. cropping and farming systems overview.*

AEC 303: Agricultural Marketing and Cooperatives. (2, 0, 0)

Discussion of basic marketing concepts. Inter-relationships between agricultural production and marketing. Approaches to the study of agricultural marketing; the demand and supply for agricultural produce and products in Nigeria; factors affecting the demand and supply for crop and animal food products in the country. The organization of crop and livestock marketing in Nigeria: channels and distribution of crop and livestock production in Nigeria; Agricultural Business and food marketing: agricultural cooperative marketing in Nigeria; role of middlemen in the marketing system; middlemen and stability of price; food marketing cooperative (processing, manufacturing and sale) in the country); channels and distribution of

crop and livestock products in Nigeria; Marketing management and marketing strategy planning in Nigeria; the gathering and analysis of marketing information in Nigeria. Elements of international trade; application of marketing principles to the identification and solution of agricultural development problems. Marketing and distributive trade policies in Nigeria: the marketing boards and the current marketing policies in Nigeria.

SST 301: Soil Chemistry and Fertility (1, 0, 1)

Prerequisite: SST: 202.

The chemical properties of soil in relation to plant growth. Emphasis will be placed on tropical soils. Topics include chemical composition of soils; the origin and chemistry of plant nutrients, the origin, formation and properties of clay minerals; ion exchange and nutrient absorption; inorganic fertilizers and their management; organic manure, soil acidity soil alkalinity; soil fertility evaluation based on soil testing and plant analysis; oxidation-reduction potential.

AST 301: Introduction to Tropical Animal Health (1, 0, 1)

Introduction to occurrences, economic impacts, causes, (including environmental) etiology, treatment and methods of prevention of common diseases of livestock in the tropics. Emphasis will be placed on practical health management techniques against these diseases.

AGE 301: Farm Planning and Structure, (1, 0, 1)

Introduction to farmstead and farmstead problems. Consideration for size and citing of farms. Procedure for planning the layout of facilities. Types of farms – Private, Collective, government. Integrated study of farm houses – beef cattle, dairy cattle, hogs, sheep and goats, and poultry housing. Farm bunkery and soil with consideration for heat requirement, generation and movement.

AGR 301: FARM PRACTICE II (0, 0, 1)

Practical illustration and do-it-yourself involvement of students in the agricultural practices of crop pests and disease control, harvest, storage and processing, fertilizers and their application. Agricultural price data collection. Demonstration and communication techniques in extension. Handling, housing, feeding and disease control in sheep, goats, and rabbits, wild and aquatic life.

CST 301 : CROP DISEASES AND THEIR CONTROL (1.0.1)

Cause and control of diseases prevalent among the crops grown in the country. Topics include an introduction to the structure, life history, classification and importance of fungi, bacteria and viruses; the development and spread of plant diseases of tropical crops and stored products and their control.

ENS 301: INTRODUCTION TO ENTREPRENEURSHIP AND INNOVATION (2, 0, 0)

General philosophy and objectives of entrepreneurship education; development of entrepreneurship/intrapreneurship; the Nigerian entrepreneurship environment; creativity and intellectual rights; technological entrepreneurship; Innovations (theories and management); family business and succession planning; women entrepreneurship; social entrepreneurship; business opportunity set and evaluation; introduction to business strategy; introduction to business ethics and Corporate Governance; relationship between scientific Research innovation and products; product invention, timeliness and processes.

AEX 301 COMMUNITY AGRIC EXTENSIONS 1, 0, 1

Introduction to Agric Extension; meaning, concept, philosophy and principles of agricultural extension, role of governmental and non-governmental organizations (NGOs), Agricultural Extension Service and Agricultural Innovations. Students will visit rural communities, conduct investigations into their agricultural practices and characteristics of the farm and observe development activities of formal agencies on rural areas.

RAIN SEMESTER

AGR 302: FARM PRACTICE III (0, 0, 1)

Practical illustration and do-it-yourself involvement of students in the agricultural practices of plant spacing, orchard and plantation layouts, fish pond establishment and maintenance; manure and compost making, weeds soil conservation techniques, ante mortem inspection and slaughter management of animals, agricultural Economics questionnaire design and conduct of interviews, Field trips.

CST 302: Crop Pests and their Control (2, 0, 1)

The identification and control of pests of crops. Emphasis will be on pests of crops growth in the country. Topics include introductory aspects of the structure, life history aspects of the structure, life history, identification of insects, nematodes and weeds; principles and methods of insect control and management; introduction to weed ecology and control; the major basis and parasitic nematodes of tropical crops and stored products.

AGR 306: Processing and Storage of Agricultural Food Products (1 0, 1)

Scope, theory, practices and role of food processing technology. An overview of food spoilage, prevention and poisoning. Principles, practices and machinery involved in processing of major agricultural food products of plant and animal origin including food packaging and storage.

Pre-requisite: Course specially designed for, SAAT –students only, must be YEAR 3 Students.

AST 302: Animal Feeds and Feeding I (1, 0, 1)

Definition, importance, digestion and absorption of nutrients. Common tropical feedstuffs. Energy and protein feeds. Practical demonstration of techniques of feed formulation and feed milling.

AEX 302: Introduction to Rural Sociology (2, 0, 0)

The need for agricultural extension. Agricultural extension in the World and Nigeria, basic philosophy behind agricultural Extension Work. Institutional setting of agricultural extension. Basic concepts and principles of rural sociology to an understanding of rural situations. Importance of rural communities and institutions, social stratification, social processes and social changes in rural areas. Leadership in rural communities, role and function of rural leaders. Development of rural community leaders. The extension agent and the community. The communication techniques and strategies of change. Various agricultural extension teaching methods, aids and their Uses.

SST 302: Soil and Water Management (3, 0, 0)

Pre-requisite: SST 202

The general principles of managing soil for the optimum production of crops. Emphasis will be on the application of these principles in the management of tropic soils. Topics include an elementary treatment

of causes (wind and water) and control (cultural methods) of erosion, methods of land clearing in the forest and Savannah zones and their effects on soil properties; role of mulches; green manures, crop rotation, and fallows in the maintenance of organic matter and improvement of other soil properties; Role of no till farming on soil improvement, soil compaction and root growth, management of soil acidity; management of nitrogen, phosphorus, potassium and other nutrients; management of low native soil fertility, moisture needs of crops, soil-water-plant relationships, irrigation water application (net and gross): timing of irrigation: methods of irrigation: drainage.

AGR 304: Agricultural Statistics & Biometry (1, 1, 0)

Pre-requisite: MTH 211: Statistics.

Measures of location: the arithmetic mean; the mode; the median; the median of classified data; summation notation. Measures of Dispersion: the range; variance; standard Deviation; percentiles; Samples and sampling Techniques in field Surveys: Introduction to Statistical Inferences; hypothesis and Hypothesis Testing. Types of Tests: t-; Z-; Chi-Square and F-tests. Introduction to Economics; Definitions and Applications of Econometrics; Linear and curvilinear models in Agriculture; Correlation theory I Analysis; Introduction to simple and Multiple Regression Analysis.

ENS 302: Business Creation, Growth and Corporate Governance (1, 0, 1)

Concept of Business and New Value Creation; Introduction to Theories of Growth; Business Strategy; Sources of Capital; Principles of Marketing; Business Ethics and Social Responsibility; Opportunity Sets and Expansion considerations (E-commerce, E-Business, E-Trade); the Scientist/Engineer as an entrepreneur (opportunities and challenges); Managing transition (start-up, growth); Basic Accounting Literacy; Feasibility and Viability Studies including issues in cash flow Analysis; Crafting Business Plans; Corporate Governance and Change Management.

AGE 202: Introduction to Farm Machinery and Mechanization (1,0,2)

Short review of the development of agricultural machines. Historical development of tractor types; makes and features. Principles of operation and adjustment of tractors. Uses in various farm operations. Tractor hitch, linkage and control. Types of drive and power transmission. Introduction to field implement, their uses and modes of operation.

Laboratory

Hands-on experience: Familiarization with various tractors, tractor driving with tests. Tractor and implement operations in the field. Trips to mechanized farms as well as mechanization and research centres.

YEAR FOUR

HARMATTAN SEMESTER

AEC 401: Agricultural Planning and Development (2 ,1, 0)

The concept of Economic Growth and Development; essentials for Agricultural Development; Agricultural Development Programmes in Nigeria; introduction to Agricultural Development Theories and Models; planning Agricultural Development. Problems of Agricultural Planning in Nigeria and developing countries in general; Economic Planning in Nigeria, Urbanization and Rural urban migration: Theory and Policy.

AEC 403: Microeconomic Analysis (2, 1, 0)

Introduction to microeconomic analysis: meaning, scope; the economizing problem; the institutions of an economy and their economizing behaviour. Methods/approaches to economic analysis: micro and macro analysis; partial and general equilibrium analysis; static and dynamic analysis; the scope and method of microeconomics. Theories of Consumer Behaviour: the theory of household demand; the Marginal Utility theory; the hypothesis of Diminishing Marginal Utility; the equilibrium of the household and the derivation of the household demand curve; the Revealed Preference theory; the Income and Substitution effects of price changes; concept of elasticities of demand and supply and their applications in agriculture; etc. Theory of the firm/producer behaviour: the nature of the firm and its objective functions; goals and objectives of the firm. The Production

function – meaning and nature of Production functions; types of Production functions; linearly homogeneous production functions; short-run production functions; nature of the short-run production function; law of variable proportions; the production function and stages of production; output elasticities and the function coefficient; cost of production and cost-output relations; various concepts of costs; derivation of short-run output curves. The firm, the industry and external economies and diseconomies. Price theory: price and output under pure competition: nature of perfect competition; pricing and output in the short-run; long-run equilibrium in a perfectly competitive market; elasticity of supply; perfect competition and consumers welfare. Pricing and output under pure monopoly: meaning, origin and structure; short-run and long-run equilibrium under monopoly; bilateral monopoly; pricing and output under monopolistic and oligopolistic competition. The theory of distribution and product pricing: micro and macro theories of distribution; functional distribution and personal distribution; the marginal productivity theory of distribution. Pricing and employment of resources under different market conditions: under perfectly competitive market, under monopoly, monopsony and imperfectly competitive markets, etc. introduction to general equilibrium analysis and welfare economics.

AEC 405: Agricultural Finance (2, 0, 0)

Dimensions of Agricultural Finance: meaning and scope;

significance, role of credit in the farm business; classification of credit; evaluating credit capacity. Goals of credit management: sources, types, acquisition and control of farm credit; meaning of credit policy; optimum credit policy – lenient or stringent credit policy; benefits of credit extension; cost of credit extension. Credit analysis: credit acquisition; analysis of debt servicing capacity; interest rates and repayment forms; credit instruments and legal documentation

Capital investment decisions in agriculture: types of investment decisions in agriculture; steps in investment analysis; alternative measures of investment worth; adjusting cash flows for income taxes; estimating the cost of capital in the farm business. Risk management strategies in agriculture; evaluating risky situations in agriculture; handling risk and uncertainty; measures for reducing risks and uncertainties in agriculture. Agricultural insurance for farmers; principles of insurance; types of insurance and their adaptability to the farm operations. Credit instruments and legal documentation: basic characteristics of contracts; real and personal properties as credit instrument notes; deeds; negotiable instruments such as notes, bonds, stock certificates, etc, chattel paper account receivable, contract rights, general tangibles, real estate abstracts, title insurance, liens waivers, non-disturbance agreements, assignment and releases. Financial structure analysis: the balance sheet; Returns analysis; the Income statement; Repayment analysis: the cash flow statement. Farm business failures and remedies; causes of farm business failure; remedies for the lender e.g. foreclosure, bankruptcy

proceedings. Protective legislation for borrowers in some advanced economies that would be relevant to the Nigerian farmer. Retirement planning and investment: life cycle of a farm business; goals of farm retirement and estate planning; analyzing retirement alternatives; retirement income budgeting and other sources of retirement income; property included in the farm estate; farm ownership transfer and settlements; estate planning and farm ownership transfer; financial markets and policy; the credit institutions.

AEX 407: Extension Teaching, Learning Process and Methods: (2, 1, 0).

Nature and elements of communication process. Principles of analyzing communication problems in extension. The meaning of the concept of teaching, learning and motivation. Steps and principles of teaching and learning. Extension teaching methods. Preparation and use of teaching materials and aids.

AEC 409: Econometrics (1, 1, 0)

Pre-requisite: MTH 211: introduction to Statistics and Probability: 3Units (2, 1, 0); AGR 304: Agricultural Statistics and Biometry: 3Units (2, 1, 0)

Introduction to Statistics and Probability: Concept of random variable; sampling theory; student t-distribution; the chi-square distribution; the F-distribution. Statistical estimation; hypothesis testing; the correlation technique. The non-parametric statistics. Econometric theory in production: definition, scope and goals of

econometric analysis; divisions of econometrics; properties of econometric models; regression techniques; assumption of linear regression model and their plausibility; violations of the basic assumptions and their consequences; application of regression techniques to empirical production function analysis. Overview of econometrics and problems of classical Normal Linear Regression Model; problems of single-equation models; special models in regression analysis; regression on dummy dependent variables; various other uses of dummy variables. The matrix approach to linear regression models; simultaneous and maximum likelihood estimation models. The simultaneous equation model and the Maximum Likelihood Estimation Model; etc.

AEC 411: Introduction to Operations Research in Agriculture (2, 0, 0)

Simple techniques used in Operations Research and their applications in agriculture: inventory theory, elementary deterministic inventory models; input-output / inter-industry analysis; single channel queue models; theory of games. Decision theory: types of decision-making situations; decision-making process; overview of quantitative techniques frequently used: inventory theory; simulation, linear programming, dynamic programming, heuristic programming, non-linear programming and applications; PERT/CPM inter-industry statistical analysis.

AEC 413: Statistics and Research Methods (2, 0, 0)

Estimating population and simple statistics; introduction to statistics and probability; concept of random variable; sampling

theory; student t-distribution; the chi-square distribution; the F-distribution; statistical estimation; hypothesis testing; the correlation technique and the non-parametric statistics. Concept of science and scientific research; hypothesis, theories and models, philosophical positions in agricultural research. Analytical models and techniques used in agricultural research. Approaches to conducting a survey, questionnaire design, writing research proposal.

MGT 405: Technical Report Writing (1, 0, 1)

Introduction to principles of effective communication, principles of technical writing, organization and presentation of technical reports, feasibility studies, technical proposals, technical descriptions and instructions, technical correspondence, oral presentation of technical ideas, technical aids in presentation, practical application.

AGR 401: Farm Practice IV (0, 0, 1)

Practical illustration and do-it-yourself involvement of students in the agricultural practices of dry season vegetable production, irrigation water management, calendar of farm operations, nursery practices in forest trees, fingerling production; Beef and dairy cattle production, hay and silage management and utilization.

RAIN SEMESTER: Industrial Attachment

SIW 400 (0, 0, 4)

SIW 401 (0, 0, 2)

YEAR FIVE

HARMATTAN SEMESTER

AGR 501: Farm Practice VI (0, 0, 1)

Farm internship: Students will be assigned specific and detailed on-farm jobs in their respective programmes. The execution will require the integration of all the on-the-farm skills acquired from the previous farm practice courses.

AEC 501: Macroeconomic Analysis (3, 0, 0)

Pre-requisite AEC 201 (2, 1, 0)

Introduction to National Income Accounting and its determination: meaning of National Income; determination of National Income; flows between individual households; output and expenditure in a spendthrift economy, frugal economy, governed economy, and in an open economy; the equilibrium National Income and the effects of lags on the paths of National Income. The distribution of income; personal and functional distribution of income; the measurement and comparability of per capita income; per capita income as an index of development. Trade and development; trade theories; the dual gap policy analysis; the gains from trade; the disadvantages of free trade for development; tariffs and subsidies as means of protection; Terms of Trade, etc. the Consumption function; the Keynesian theory of consumption; propensities to consume; consumption and disposable National Income; shifts in the function relating consumption and disposable income; significance of shifts in the

consumption function. The income hypothesis; permanent income hypothesis; the life cycle hypothesis. The Investment function: meaning and determinants; investment and the level of income; investment and the rate of change of income. The Accelerated theory: investment and expectations; financing investment; savings, investment and the rate of interest. The Classical Theory and Keynes theory of interest rates. Macroeconomic Policy: goals and instruments of macro-economic policy; past and current government policies o agriculture in Nigeria and other developing countries; food policy formulation.

AEC 503: Agricultural Policy (2, 0, 0)

Overview of Policy: meaning of policy, nature of policy problems, scope of policy, policy formulation, implementation and evaluation. Current and emerging policy issues in agriculture: poverty, inequality, food security, globalization, micro-credit, farm subsidy, climate change and policy measures to ameliorate its effects on agricultural production. Nature and problems of past agricultural legislations in Nigeria: the NIRSAL, NDIC, NAIC, etc. innovations introduced by the CBN to strengthen the operations of the ACGS, e.g., the Self-Help Group Linkage with Bank Models; the Trust Fund Model; the Miscard Intervention Model, the Account / Salary Domiciliary Strategy, the Interest Draw-back programme, the IFAD assisted Credit Scheme; the SMIEIS; the Rediscounting and Refining Facility for Agricultural Export commodities. The nature and

problems of current legislations in Nigeria: the Micro Finance Programme Development; the Agricultural Credit Support Scheme, the irrigation policy and FADAMA project; the fertilizer subsidy programme; the banks' consolidation programme and financial sector reforms. Problems of Agricultural Development and Planning. Rural development planning; sectoral planning in agriculture. International policies and institutions with particular reference to agriculture in Nigeria and developing countries.

AEC 505: Agricultural Resource Economics (2,0,0)
Pre-requisite AEC 202 (2, 1, 0)

Meaning and classification of resources; farm resources and their uses by farmers to achieve the various farm business objectives; Resource Productivity and efficiency in agriculture. Natural resources: Land resource: features that influence systems of land use and patterns of farming. Labour resource: Labour as a factor of production; labour demand and supply; labour productivity and measures for increasing it; the seasonality of farm work, population growth in Nigeria and the implication for agricultural output, etc. credit resource: forms of credit; need for credit; problems of credit demand and supply in Nigeria. Capital resource: types; basic concepts associated with capital; the demand and supply of capital and the problems of its uses by Nigerian farmers; capital rationing; borrowing and risks. Water resources: meaning and uses; meaning and types of irrigation systems; methods of water supply in irrigation systems, characteristics of irrigation systems; weakness of irrigation system. Types of farms and their Resource-use / management problems: small scale peasant farms, the commercialized

medium scale farms; large scale corporate farms; measures for overcoming resource problems. The structure of agricultural resources in Nigeria: the overall framework of institutions; organizational, behavioural and technological factors which determine resource employment, output, efficiency and income from crops, livestock, fisheries and forestry in Nigeria. Livestock resources: classification, nutritional and economic role of Livestock in Nigeria; measures for modernizing the livestock industry in Nigeria Wildlife management: meaning and scope of wildlife; biological and economic role of wildlife. Forest resources: meaning, scope; structure of forestry organization in Nigeria; forestry as an economic activity and its implications for rural development in Nigeria; policies for the operational modernization of forestry resources in Nigeria. Fishery resource: meaning, scope, nutritional and economic roles of fisheries; fish capture and fish culture, riverine and pisci culture, etc in Nigeria; demand for and supply of fish products in Nigeria; policies for modernizing fisheries in Nigeria. Role of property right and related institutions in natural resource stewardship. Potential applications of these perspective to natural resource policy, both in Nigeria and internationally are considered. Classes use a discussion-base approach. The learning object is the development of critical thinking skills.

AEC 507: Farm Accounting and Records (2, 0, 0)

Farm Accounting and Records: types, uses; standard farm business accounting methods; financial measures of success; inventory, depreciation, Networth, Income tax, budgeting and cash flows, and business analysis; valuation of stock; the

increased networth method of finding profit/ incomplete record system; profit and loss statement; types and uses of Financial Statements. The Books of accounts and usages of the Financial Statements. The Books of accounts and the Double-entry book-keeping; book-keeping for the Final Accounts; capital and revenue expenditure and receipts; adjustment in final accounts; partnership accounts; the accounts of club and non-profit-making organizations; records, interpretation of final accounts; departmental accounts; manufacturing accounts; the account of limited companies; control accounts; the amalgamation of business, the purchase of business; how book-keeping records are computerized. How computers have changed book-keeping.

AEX 513: Extension Administration, Organization, Management and Supervision (2, 0, 0)

Concepts, theories, principles and guidelines of administration, organization and supervision as applied to extension. Administrative functions and responsibility in Agricultural Extension services; staff recruitment and selection, placement and supervision; budget development and fiscal control; importance of programme planning in Agricultural Extension and rural development; needs, objectives of education, learning experience, clientele participation in extension and rural developments. The role of public relations, cooperation and leadership in extension organization, administration and supervision.

AEC 515: Agribusiness Management And Finance (2,0,0)

Meaning of Agribusiness; the scope of agribusiness management. Components of agribusiness: the supply component; the farm production component; the processing component; the marketing component. The consumer and agribusiness. Role of agribusiness in economic development. Economics of agricultural processing, marketing management, enterprise selection, production planning. Public policies affecting agribusiness and farm growth. Agribusiness organizations and tax strategies. Principles of farm credit; capital needs of agribusiness organizations. Sources of loan funds; principles of farm credit; collateral for loans; credit agencies and government credit policy, and approaches to efficient credit management. Farm management; inventory; balance sheet; cash book analysis.

AEC 517: Research Project I (0, 0, 2)

Technical proposal of final year research project. Selection of research topic by student and approval by supervisor. Writing of Chapter One: Introduction, Background of the Study, Statement of the Problem, Objectives of the Study, Hypothesis of the Study, and Significance of the Study. Writing of Chapter Two: Literature Review; Theoretical Literature and Empirical Literature. Writing of Chapter Three: Methodology: Description of the study area, Sample Selection, Method of Data Collection, Data Types to be Collected, Method of Data Analysis, Model Specification, apriori expectations and Operationalization of the variables.

Next is the Results and Discussion, Conclusion, Recommendations and Policy Implications, References/Biography.

RAIN SEMESTER

AEC 502: Agricultural Production Economics (1, 0, 1)

Pre-requisite: AEC 301 (1, 1, 0)

The field of production economics: meaning, scope, subject matter, the goals of production. Theory of production; the concept of production function; types of production function; production relationships; empirical agricultural and industrial production functions, their practical uses and limitations; measurement of resource productivity. The decision-making process. The basic way of raising farm profit. Depreciation techniques; farm budgeting. Farm Cost Functions: meaning of farm costs. Concepts in Supply Relations; methods of estimating supply functions; relationship between production and supply functions; aggregate supply functions; application of supply and demand functions in agricultural production; etc. organization of production; the family farm; group farming corporate farming; cooperative farming; socialized farming; state farming; other

operating units and their inter-relationships. Growth of the farm: meaning and concept of farm growth; the necessary conditions for farm growth; the process of farm growth; the forces inhibiting farm growth rate through time; limits to the size of the farm. The problems of Food and Fibre production in Nigerian rural settings; implications of the problems for economic growth and rural development. Economics of production location; classification of the most important farm products cultivated in Nigeria; delimitations of ecological crop and livestock regions in Nigeria, and the limitations of the ecological zoning; factors affecting the location of agricultural production in Nigeria: time aspects of production; marketing and financing of production in Nigeria; etc. agricultural production planning: the simulation approach – meaning, scope, rationale, procedure. Problems of using simulation approach; an empirical simulation model. The Linear Programming (LP) approach to agricultural planning; the nature, scope, methods and limitations of LP. The Leontief approach: the meaning, scope, uses and methods of input-output analysis. An empirical input-output model.

AEC 504: Agricultural Project Appraisal And Evaluation (2,0,0)

Pre-requisite: AEC 202 (2, 1, 0)

Meaning of project; project cycle; points of view in project analysis – economic, financial, etc; project identification and project choice. Kinds of agricultural projects for which analysis is appropriate; data requirements for appraisal and evaluation of agricultural projects and programmes; procedure for estimating future benefits; identifying costs and benefits of agricultural projects; with and without costs; secondary costs and benefits; tangible and intangible benefits. Capital investment appraisal; contingency allowances; replacement costs; sunk costs; salvage value; mutually exclusive alternatives. Sources of assistance for project preparation; financial preparation of projections for agricultural projects. The arithmetic of project appraisal: capital investment appraisal; time value of money; cost-benefit analysis; Internal Rate of Return and calculations; NPV and cash flow procedures; the concept of application of shadow prices ; forecasting; sensitivity analysis. Case studies and practical problems of project evaluation in developing countries.

AEX 504:Technological and Social Change in Agriculture (2, 0, 0)

Understanding technological change; basic sociological concepts; technological change in Nigerian agricultural

development, agricultural extension, ethical consideration in introducing technological change; agricultural engineers and extension system.

AEC 506: Agricultural Marketing (2, 0, 0)

Basic economic concepts: meaning of markets; the importance of marketing; marketing efficiency; marketing margins; market structure; market conduct and performance; marketing functions and channels. Farming as a typical condition of perfect competition; special problems in agriculture. Agriculture and the structure of trade in Nigeria: the dominant crops, livestock and livestock products marketed; major contributions of agricultural exports to the national economic development; agribusiness handling of food marketing (processing, manufacturing and sale) in he country; the pricing and sale of crop and animal food products in Nigeria. Government intervention in trade in Nigeria: historical overview; the organization of crop and livestock marketing in Nigeria; channels of commodity marketing in Nigeria; government intervention and its influence on marketing. Measures for increasing the contributions of agricultural products to national economic development. Cooperative strategy for agricultural marketing in Nigeria: starting a

cooperative; important cooperative principles and their applications in agricultural marketing operations in Nigeria; the demand, availability and use of crop and livestock products and their implications for viable cooperative marketing in the country; factors affecting the demand and supply of crop and livestock products in the country; conducting marketing studies in Nigeria. Case studies of crop and livestock marketing in Nigeria; marketing management and marketing strategy planning in Nigeria; gathering and analysis of marketing information.

AEC 508: Economics of Agricultural Cooperation (2. 0. 0)

Introduction to cooperatives as a form of business: types, structure and organization of cooperatives; purpose, control and importance to agriculture; principles of cooperative; Rochdale principles of cooperatives and later modifications and/or additions. Cooperative management control and decision-making, financing, organizing of FMCS, manpower and education; legal aspects; Government and Cooperatives in developing countries; the problems and prospects of cooperatives in Africa; Cooperatives versus other businesses.

Cooperative development in Nigeria: brief review of the historical development of Cooperatives; performance of Cooperatives in Nigeria; problems of Cooperative development in Nigeria; comparative Cooperative performance in Nigeria and selected countries. Other forms of rural production; economics of corporate farms; main features; reason farmer
may want to incorporate ie become a Limited Liability

Company; advantages and disadvantages of corporate farms; economics of socialized farms; the state farms; collective farms; individual allotment. Economics of public corporations: nature, evolution, organization, advantages and disadvantages. Farm Settlement Schemes: nature, operation, performance, disadvantages and advantages. The family proprietorship and its future roles; successful co-existence of several forms and implications for rural development.

AEC 514: Agricultural Financial Management (1. 0. 1)

The nature of financial management: scope of finance function. Changing role of financial manager: traditional and new roles including decisions about ownership and use of machinery;

selection whether to own, rent or use tractor, to own new or used machines. Objectives of financial management; basic valuation models; time value of money. Financial/Investment decision: capital budgeting decision in agriculture and techniques of capital budgeting. Investments in farm buildings, machinery and labour, and draught animals; risk analysis in capital budgeting; the cost of capital; specific costs of capital from various sources of finance. Capital structure planning: features of an appropriate capital structure; determinants of the capital structure; financial leverage and its effects on shareholders' earnings; capital structure theories. Working capital management: meaning and dimensions of working capital; management of cash and marketable securities; management of receivables; inventory management. Sources of Working Capital; lending policy and factors to consider in lending; borrowing and factors to consider in borrowing; repayment capacity and measures that help to improve it. Dividend Decisions: dividend theories; dividend policies as long-term financing decisions, as well as wealth maximization decisions; stability of dividend and its significance to the firm; forms of dividends; constraints in paying dividends.

Financial analysis: nature and uses of financial analysis; forms and the preparation of financial statements for ratio analysis; significance and limitations of ratio analysis; break-even analysis/cost-profit-volume analysis. Management information control and control systems: scope; budgeting; the nature, basic principles and variance analysis; stock control records, cost control. Depreciation: meaning, causes, method and schedule for various classes of farm assets.

AEC 510: INTRODUCTION TO ENVIRONMENTAL ECONOMICS & LAW (1,0,0)

Social Science and policy perspectives on environmental issues. Emphasis is on interactions among market exchange relationships; policy action and legal rules and institutions. The role of scientific evidence in the resolution of environmental disputes is considered. Law of contracts, tort , wills and executorships and Trust.

AEC 516: Research Project II (0, 0, 4)

Design of research instrument/questionnaire/interview schedule. Data collection/main field work, processing of questionnaire/collecting of data, data analysis using calculators and computers, report preparation, referencing, appendices.

19. GUIDELINE FOR PREPARATION AND SUBMISSION OF PROJECT WORK

Project work as it affects B. Agric. Technology (Agricultural Economics) is expected to be the product of an empirical work reflecting what a student has learnt in his theoretical course work and the various practical exposures, following his expected five years of study in the University. The exercise is a central part of a series of examinations which a student must undergo in order to obtain a degree in the Department of Agricultural economics. Usually, at the end of the 4th year, a student is assigned to a supervisor who approves a project topic for the student at the beginning of the 5th year, for the B. Agric Tech. Degree Programme. The project report is made up of three essential parts and arranged as follows:

The front part

The Body or Text of the Report.

The End part

The Front part consists of Front Cover

Title page

Certification

Dedication

Acknowledgement

Abstract

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The Body of the Report, in its simplest form consists of:

Chapter One:	-	Introduction
	–	Background information
	-	Problem statement
	-	Objectives of the study
	-	Hypothesis of the study (If any)
	-	Justification of the study
Chapter Two: -		Literature Review
	-	Concepts and theories of the study
	-	Analytical framework
	-	Other aspects of the work based on the research objectives
Chapter Three:	-	Research Methodology
	-	The study Area description
	-	Method of sample selection
	-	Method of data collection
	-	Method of data Analysis

Chapter Four: - Results and Discussion

Chapter Five: - Summary, Conclusion and Recommendations

The end part consists of:

References

Appendices (If any)

It should be noted that the above are essentially guidelines and of course there might be little variations as the project presents itself. Details of these and other requirements are highlighted below.

1.0 COVER AND BINDING

2.0 (a) **Soft Cover:** - Before the project defense, four copies of the

project duly signed by the supervisor are expected to be presented to the Department in soft cover

(b) **Hard Cover:** - After a successful defence four (4) copies of the corrected version of the project duly signed by the supervisor and the Head of Department are to be submit. Any student who fails to resubmit the corrected version of the project in hard cover will not be credited with any mark. Twine and glue stitching are to be used in hard cover and not metal or spiral binding.

(c) Department Colour:- The Colour to be reflected in the back cover is deep green, which is the Department's Colour.

4.0 2.0 PAPER SIZE AND QUALITY

(a) A4 size (approximately 30 x 21cm) (b) While erasable bond paper with typing/printing/drawing on only one side of the paper. Diaze plan-printing paper is not allowed. Tracing paper may be used for drawings.

3.0 PAGINATION

Pagination of the front matter (preliminary pages) should be done in lower case Roman figure (i.ii.iii. etc) and the substantive pages (the

body or text) in Arabic figures (eg. 1,2,3, etc). Page i- Front covers replication of the words in hard cover after the blind page. (Page number is not to be shown)

Page ii - Title page:

Page iii - Certification:

Page iv - Dedication page

Page v - Acknowledgement page

Page vi - Abbreviation and Acronyms

Page vii - Abstract

Page viii - Table of Content

Page ix - List of figures (Maps, photographs and other diagrams)

Page x - List of tables

The next few pages show, respectively, samples of the front cover page, title page, certification page, page of abbreviations or acronyms (where applicable) and table of contents, of a hypothetical thesis or project.

TYPICAL PROJECT TITLE AND FRONT PAGE

Economic Analysis of small Ruminants Production in Imo State, Nigeria.

BY

ANOZIE KELVIN
(REG. NO. 2006548978)
B. AGRIC TECH. AGRICULTURAL ECONOMICS
FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI
IMO STATE
NOVERMBER, 2012

A thesis submitted to the Department of Agricultural Economics. School of Agriculture and Agricultural Technology In partial fulfillment of the requirements for the award of the Degree of Bachelor of Agricultural Technology (Agricultural Economics) of the Federal University of Technology, Owerri, Nigeria.

CERTIFICATION

This is to certify that this project was carried out by Anozie, Kelvin with Reg. No. 2009--- in partial fulfillment of the requirements for the award of B. Agric Tech. Agricultural Economics of the Federal University of Technology, Owerri, Nigeria.

	Name	Signature	Date
1.	Supervisor	----------	----------
2.	Head of Department	----------	----------
3.	External Examiner	----------	----------

20. SOME OTHER IMPORTANT INFORMATION

(a) As part of the academic regulations, the Senate of the Federal University of Technology, Owerri directs that: "With effect from the Rain Semester of the 1997/98 academic session, all

students with poor academic performance will be written warning letters, and, thereafter, if their CGPA continues to be less than 1.00, the affected students shall be asked to withdraw from the University" This is for the general information of all students especially those currently in year 1.

(b) The Senate has placed an outright ban on the production and sale of handouts in the University.

(c) Departments that run laboratories should produce appropriate laboratory manuals for their practical courses and all such manuals should be sold, when authorized, at subsidized and affordable prices to students.

(d) The Agricultural Policy Makers Association (APMA), Federal University of Technology Owerri Chapter, is a mandatory Association for all students admitted into the Department, and holds its meetings regularly. All students are required to register with the Association and participate actively in its activities, including payment of Annual dues.

21. CAREER OPPORTUNITIES

The unique practical training offered our students confers on them a competitive advantage in the Agricultural and allied sector labour market. The career opportunities arise from our emphasizes on producing well trained graduates who are confident job creators , self- employers, owners and managers of agribusiness enterprises. They are particularly groomed as academics and decision makers to occupy such positions as : Agricultural Economists, Agricultural Consultants , Farm Managers/ Accountants, Agricultural Managers in private companies and oil, gas, bank and environmental industries, Credit executives in service industries, Rural Development Specialists, Agricultural Planners, etc both within Nigeria and overseas.

Prof. Chiedozie C. Eze (Pnm,Jp)
Head, Department of Agricultural Economics