



**NATIONAL OPEN UNIVERSITY OF NIGERIA
AFRICA CENTRE OF EXCELLENCE ON
TECHNOLOGY ENHANCED LEARNING**



**Postgraduate Student Handbook
(2019-2022)**

**M.Sc.
Artificial Intelligence (AI)**



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Enhanced Learning (ACETEL)
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The handbook is designed for easy reference, and contains concise information on the Centre and Programmes. It is our hope and expectation that students of the ACETEL will find the handbook useful.

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GLOSSARY OF TERMS

VISION AND MISSION STATEMENTS OF THE NATIONAL OPEN UNIVERSITY OF NIGERIA

Vision Statement

To be regarded as the foremost University providing highly accessible and enhanced quality education anchored by social justice, equality and national cohesion through a comprehensive reach that transcends all barriers.

Mission Statement

To provide functional, cost effective, flexible learning which adds life-long value to quality education for all who seek knowledge.

ANTHEM

National Open University of Nigeria

Determined to be the foremost university in Nigeria
Providing highly accessible
And enhanced quality education
Anchored on social justice
Equity, equality and national cohesion

Come to NOUN
For functional, cost effective and flexible learning
That adds lifelong value
For all who yearn
For quality education
And for all who seek knowledge

**PHILOSOPHY, VISION AND MISSION STATEMENTS OF
AFRICA CENTRE OF EXCELLENCE ON TECHNOLOGY ENHANCED
LEARNING
NATIONAL OPEN UNIVERSITY OF NIGERIA**

Philosophy

Leveraging on the affordances of technology to ensure digital literacy and enhance the quality of STEM education

Vision

To be recognised for excellence in research and development of ICT digital solutions and their secure deployment for learning with application to all sectors

Mission

Development of digital expertise to drive economic growth and transformation in the West African sub- region and beyond

FOREWORD FROM THE VICE-CHANCELLOR

The National Open University of Nigeria, the only single mode open and distance learning institution in Nigeria and indeed in the West African sub-region has come a long way since its establishment in 2002. The University, which began with four Schools, has blossomed into its current number of eight Faculties. The institution prides itself in the uniqueness of its vision and mission – to be the foremost university that provides functional cost effective flexible learning which adds lifelong value to quality education for all who seek knowledge- and in implementing innovative methods that facilitate an enriching learning experience.



As it assiduously works towards the realisation of its vision and mission statements, NOUN continues to take great strides especially in using technology to make education accessible to millions of Nigerians, irrespective of age, gender, and employment status. To date, the institution has its automated admission, registration, continuous assessment, examinations, and is currently providing tutorial facilitation virtually.

It is on this premise the, University won the World Bank funded project of the Centre of Excellence on Technology Enhanced Learning (ACETEL). ACETEL runs six (6) academic programmes at Postgraduate level. These programmes focus on three Masters and three Ph. D. degrees in Cyber security, Artificial Intelligence and Management Information Systems. There are also Information technology skilled based short courses. Its programmes, academic staff, and graduates are among the best to develop digital tools in for education and research.

ACETEL handbook, which has been designed to meet international standards, complements the University's General Catalogue as a reference tool for information on matters specific to the Centre, its programmes, relevant policies, rules and procedures to guide students through the new experience of learning in ACETEL.

I urge every student of the Centre to read this handbook and make it a constant companion in order to get the best out of your learning experience at ACETEL. Welcome on board.

Professor Abdalla Uba Adamu
Vice-Chancellor

WELCOME FROM THE CENTRE DIRECTOR



Welcome to the Centre of Excellence on Technology Enhanced Learning (ACETEL). The Centre was launched at the Djibouti Workshop of World Bank and Association of African Universities (AAU) as one of the ACE Impact Project in February, 2019. The Centre offers six (6) programmes at the postgraduate level. They are M.Sc. Cyber Security, M.Sc. Management Information System, M.Sc. Artificial Intelligence, Ph.D. Cyber Security, Ph.D. Management Information System and Ph.D. Artificial Intelligence. We are pleased that all of these

programmes have the approval of the National regulatory body, the National Universities Commission (NUC). In addition, the Centre will offer fourteen (14) short courses Digital Literacy, Cyber Security, Entrepreneurship, Leadership and Project Management, Learning Technology, Programming, English Language for Non English Speakers, Cloud Computing, Block Chain, Open Government Data, Data base management, Data analysis and Artificial Intelligence. Our students spans through all regions in Africa generally but West African sub-region specifically.

In the area of research, the African Centre of Excellence on Technology Enhanced Learning (ACETEL) focuses its research on digitalization of learning in postgraduate programmes using open and distance learning mode. The aim of research in the Centre is to examine the Information technology needs in the education space with application to public sector; and to develop digital software learning tools which will build digital capacity for learning, skill acquisition and research.

Our capacities lie the utilisation of computer professionals at the Department of Computer Science, Information, Communication and Technology (ICT) Unit, Management Information System (MIS) Unit and educational researchers from the Faculty of Education. Beside these academics and researchers, the Centre also collaborate with other professionals in the public sector and educational researchers in other universities in Nigeria and beyond.

In a knowledge economy, we remain committed to ensuring that we produce postgraduates that are highly valued by employers. By your enrolment in the Centre, you have become a member of this special extended community. Therefore, I encourage you to take advantage of this unique opportunity to equip yourself so that you can contribute and make a difference in the world. Please take some time to go through this student handbook. It contains important information about your programme and the degree requirements that you must fulfill to earn a postgraduate degree. Ultimately, it is your responsibility to ensure that you satisfy all the

requirements for your programme. In addition, the handbook also contains information about resources that are available at Centre such as library facilities, ICT, Virtual laboratory, recording studios and eLearning support, academic counseling services as well as University policies that will assist you as you navigate your learning experience. I encourage you to consult it regularly as a reference tool. Best wishes for a successful and fulfilling learning experience.

Prof. Grace E. Jokthan
Centre Director

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PART 1: INTRODUCTION

1.1 About the National Open University of Nigeria

The National Open University was first established on the 22nd July, 1983 by Act No. 6 of the National Assembly. It is the first and only single-mode university in Nigeria that is dedicated to the provision of higher education through the Open and Distance Learning (ODL) mode. Shortly after however, the National Open University Act of 1983 by which the University was established, was suspended on the 25th April 1984. In the Nation's search of a means of providing education for all her citizens, a National Workshop on Distance Education held in September 2000 and it called for the development and implementation of a National Policy on Open and Distance Education, the use of Open and Distance Learning to train teachers, and the re-establishment of the National Open University. Thus, in response to this call and eighteen years after its suspension, the University was resuscitated as the National Open University of Nigeria (NOUN) on 1st October 2002.

NOUN operates the open and distance education system which the National Policy on Education describes as a system that encompasses education for all, education for life, Lifelong learning, and Self-learning among others. The rebirth of NOUN, which has served as a springboard for ODL in Nigeria, is a demonstration of the country's irrevocable and unwavering commitment to education as a tool for personal and national development, and as a fundamental human right of her citizens.

The University's overall goal is to make education available to all who have the ability, and are willing and ready to benefit from functional and quality education provided through flexible and affordable distance learning.

1.2 Studying through Open and Distance Learning at NOUN

Open and Distance Learning is a mode of learning that is characterised by the separation of the teacher in space and or time from the learner, and enables learners to exercise choice over their learning regarding what, how, where they learn, pace of learning, support for learning, when and where assessment of learning takes place. NOUN's approach to ODL has the following features:

Openness: Removal of all barriers or restrictions to learning that characterise traditional education. They include restrictions by age, course and programme duration, location of study, and entry qualifications or recognition of prior learning and cognate work experience.

Flexibility of learning: The emphasis is on learning rather than teaching. It is students' responsibility to choose how they want to study, learn anywhere, anytime, and at their own pace mediated by technology. In other words, it is learner-centred rather than teacher-centred. Programmes can be completed up to double the normal duration of programmes.

Accessibility: Study Centres at state, community, and special (prison, paramilitary agencies and military units) levels to reach all segments, communities and individuals in the society who are committed to improving their circumstances through education including the disadvantaged and marginalised.

Affordability: Removal of financial barriers by allowing learners to pay as they study and by providing materials and other services on a cost recovery basis.

Multi-modal instructional delivery: Delivery methods using a variety of media and technologies that is most easily available to learners ranging from print, audio, video, radio, television, and the Internet (web-based instruction).

- Availability of course materials in Print, Compact Discs, eCourseware, and OER formats.
- NOUN's eLearning platform of Directorate of Learning Content Management System (DLCMS) has provision for video tutorial lectures, online discussion classes with facilitators and peers, and assessment quizzes and practice tests. The instructional mode of delivery and learning provides the opportunity for learners who are employed or self-employed to acquire knowledge, skills and techniques which may be relevant to their present work situation or to improve their academic qualifications for better career prospects, without leaving their current location. ACETEL keys into the operations of this Directorate to her students effective instructional delivery.

Quality Assurance in African Centre of Excellence on Technology Enhanced Learning (ACETEL)

To ensure high level of quality assurance in all the courses of all the programmes offered in ACETEL, the Centre, in collaboration with the Quality Assurance body of the university, insists on Total Quality Management (TQM) of all our programmes through qualitative method of admission that selects the best of qualified applicants. The centre also embarks on rigorous method of study material development that allows for only the best brains available to handle the develop course outline of all our courses to guide the development of study materials. In the same manner, the centre engages competent hands to develop the study materials. In addition, there is adequate supervision of all the administrative and academic activities to ensure quality in online facilitation videos, online lecture, tutorial, as well as tests and examinations administration in ACETEL. High technologies of information and communication will be deployed in all its availability to grapple with exigencies of the centre.

1.3 About the Africa Centre of Excellence on Technology Enhanced Learning (ACETEL)

The National Open University of Nigeria (NOUN) was established in 1983 as the only single mode open and distance learning (ODL) institution in Nigeria. The University has the mandate to deliver education to the door steps of Nigerians and beyond. To

achieve this, the University must seek for and develop strategies that will improve the use of technology in the education space. This is due to the fact that the country and indeed Africa faces critical digital development challenges. The continent lacks a critical mass of skilled labour due to low access to, and high incidences of dropout from the formal education systems.

According to an African Developmental Bank (AfDB) report (2017), most African education systems are facing ‘a triple crisis – scarce human capital, low quality and poor inclusion, and a lack of alignment with private sector needs’. The report also notes that there are ‘too few scientists and engineers in sectors that drive African economic transformation’ highlighting a shortage of professionals in Science, Technology, Engineering, Mathematics (STEM) on the continent. STEM education has been directly linked to economic growth as they constitute the source of core critical skills needed to drive development. Africa, especially the West African sub-region, needs to do more to ensure the continent’s transformation in access to knowledge and the acquisition of critical skills needed for economic transformation.

The investment in research and development for leading the utilisation of technology in education and indeed all sectors is the focus of this project. In order to optimise the continent’s research, innovation and development potentials with respect to the application of technology in learning, the formation of an entity known as Africa Centre of Excellence on Technology Enhanced Learning (ACETEL) is being proposed. The Centre focuses on:

- i. Development of digital tools and solutions, skills in software development and mobile-based applications to build capacity in the region and increase access to education of the next generation of digital experts (researchers and professionals);
- ii. Development of digital policies to guide the development, use and regulation of IT tools that are underpinned by sound pedagogy and learner-centred design and its mainstreaming in the public sector;
- iii. Building capacity with a focus on development of 21st century skills to produce the next generation of digital experts (researchers and professionals) through technology-based postgraduate programmes, short courses and internships, and developing cyber security tools and training to create awareness so as to ensure protection from intruders and hackers in order to mitigate against cyber space risk such as privacy and online safety for children.

These strategies are expected to lead to the (a) development of virtual learning environment (VLE); (b) production of experts and skilled graduates in software research and development; (c) higher expertise on animation and digital simulations and interactive learning to make young graduates more suited to the demands of the labour market; (c) development of projects in fields such as virtual labs, software applications, simulation and animation, in order to increase the technological readiness and enhance firm-level absorption of technologies.

The centre also facilitates the establishment of partnerships and linkages with the public and private sectors. These partners provides research opportunities, training, internship opportunities, to develop, adopt, and adapt technological tools for use in the education space and promote the mainstreaming of technology-based learning in the region. The expertise and facilities available at partner institutions are available to the Centre. A robust monitoring and evaluation mechanism that improves the Centre's management of outputs, outcomes and impact are integrated into the Centre's activities. These strategies are expected to increase digital literacy and enhance subscription to STEM education leading to economic development in the sub-region. In order to optimise the continent's research and innovation potential towards building the next generation of digital experts (researchers and professionals), the Centre focuses on the following:

- Achieve distinction in research and build capacity to address social and economic development in the region through training and improving skills of researchers in the development of digital tools, solutions, and skills in software development and mobile-based applications;
- Stimulate academic-industry collaboration in development of IT tools that are underpinned by sound pedagogy and learner-centred design principles;
- Stimulate specialisation and competencies in the higher education system and build capacity with a focus on development of 21st century skills through technology-based postgraduate programmes, short courses and internships;
- Stimulate research and networks on digital policy issues on the use and regulation of digital technologies and their mainstreaming in the public sector; and
- Develop cyber security tools and training to mitigate cyber space risks and promote cyber security.

EXPECTED OUTCOMES

The expected outcomes of the Centre include:

1. Partnerships and linkages with collaborating institutions in public and private sectors that will increase digital literacy and enhance quality of STEM
2. A developed resource Centre for e-learning strategies and Virtual Learning Environment (VLE);
3. Digital experts and skilled graduates in software research and development, animation and digital simulations and interactive learning for graduate employability;
4. Investment in research and development projects in fields such as virtual laboratories, software applications, simulation and animation to increase technological readiness enhance firm-level technological absorption;
5. Provision of safe and secure digital environment and tools for conduct of online activities;
6. Curricula that integrate pedagogical and instructional design that is learner-centred and enhances learning, research and applied development in Africa;

7. Postgraduate programmes, short courses and facilitate workshops, seminars and internships, that will build capacity for technology innovation and improve technology-enhanced learning;
8. Increased access and subscription to STEM for improved performance;
9. Engagement with stakeholders in a consultative forum for the establishment of procedures leading to enactment of digital policies to ensure smart societies, digital governance and sustainable digital economies.

NOUN, by virtue of its operations, leverages extensively on external expertise. Similarly, the Centre will identify and constitute from among its Partners a team of technical consultants to guide on technological issues. The centre will engage users, regional and national academic partners, industry and policy partners in the identification of gaps in capacity, research topics, and needed solutions through stakeholder workshops as well as in testing, dissemination and up scaling of digital solutions. It will also disseminate its research findings and ICT solutions through conferences, workshops and staff/student exchanges, as well as the uptake of its ICT solutions and tools for the education and public-private sector, through its industry, and institutional partners and networks.

1.4 Academic Programmes

ACETEL has 6 postgraduate programmes comprising 3 Masters programmes and 3 Ph. D. programmes.

The programmes are each coordinated by a Centre Leader, Academic Programme Coordinator, Academic staff members from the Faculty, Institutional and Sectoral Partners. The programmes are:

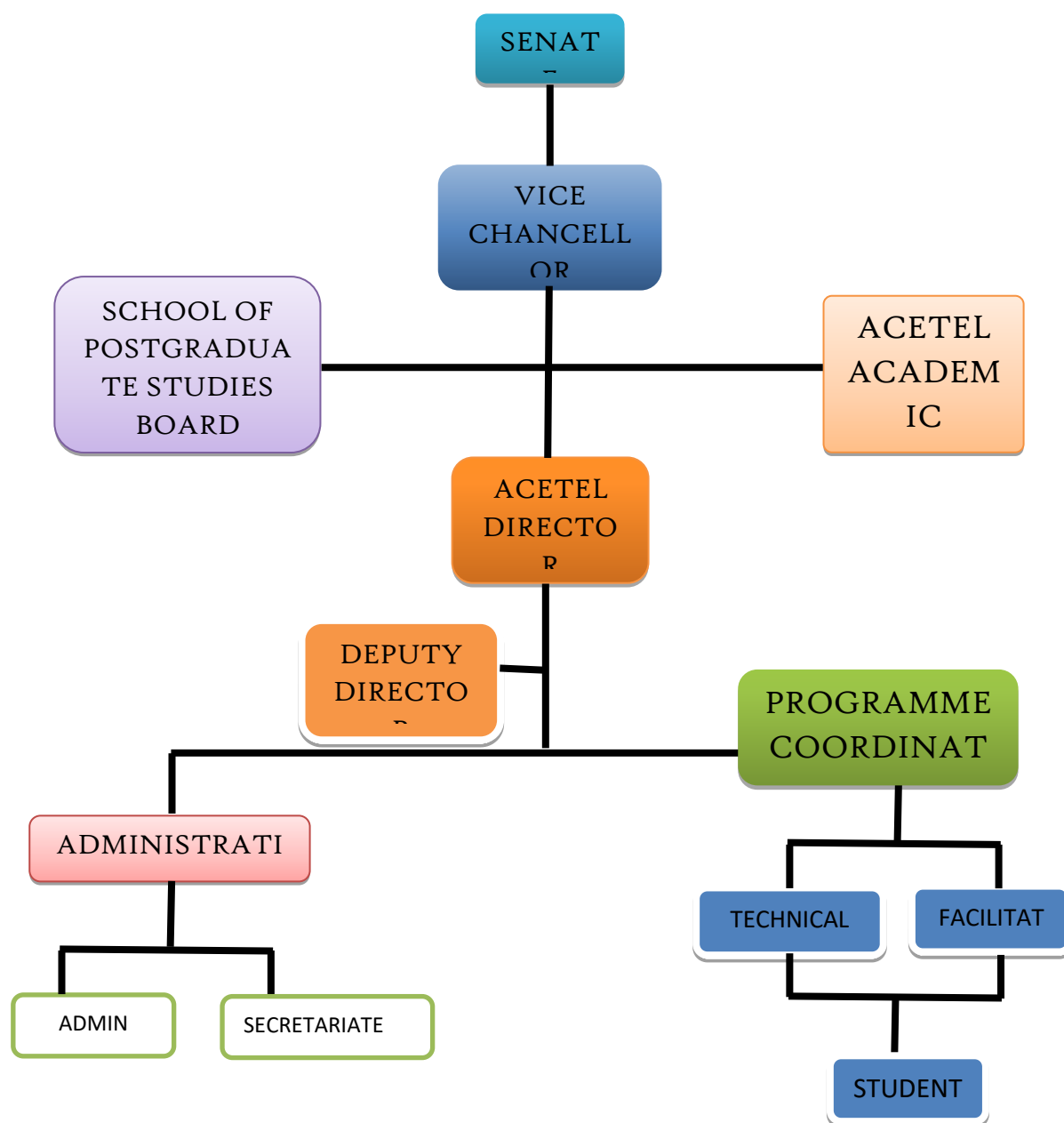
- i. M.Sc. Artificial Intelligence
- ii. M.Sc. Cyber Security
- iii. M.Sc. Management Information System
- iv. Ph.D. Artificial Intelligence
- v. Ph.D. Cyber Security
- vi. Ph.D. Management Information System

1.5 Administration

The Office of the Centre Leader/Director is responsible for the overall administration of the Centre. The Centre is headed by a Centre Leader who is assisted by other Coordinators.

For a list of current staff and their areas of responsibilities see appendix I or visit the Centre's webpage on the University's website www.acetel@noun.edu.ng.

Figure 1 illustrates the Centre's organisational structure:



1.6 Orientation Programme

Orientation programmes are organised for new students at the beginning of every academic semester during which you are familiarized with ACETEL and Open and Distance Learning (ODL) operations. The orientation programme takes place via virtual link at the various places where local and regional situated. The programme also gives you the opportunity to learn about the various facilities and support services that will enhance your learning such as first contact points at ACETEL, selection and registration of courses, information, guidance and counseling services, and use of ICT facilities. You will also have the opportunity to ask questions. You will receive information about the orientation programme through an SMS and email messages. You are advised to attend the orientation programme as it will assist you to commence your programme on good footing.

PART 2: PROGRAMME AND DEGREE AWARD REQUIREMENTS

2.1 Introduction

This section contains information on all you need to know about your programme requirements, registration, courses, research projects, industrial attachment, and plagiarism. You will also learn how to calculate your final grades.

2.1.1 Programme Duration

Masters programmes in ACETEL are for a minimum of four (4) and maximum of eight (8) semesters. For Ph. D. Programmes, a minimum of six (6) and maximum of twelve (12) semesters are required.

2.1.2 Course Registration

Course registration is done online on the University's registration portal at www.acetelnou.edu.ng. Students are expected to register for courses after they must have completed payments for the semester.

The course registration portal contains the list of all courses offered in each programme. Students are expected to register for a minimum of 10 credit units and a maximum of 20 credit units per semester and which must include a minimum of one (1) elective course per semester. Students are allowed to register for a maximum of 24 credit units where they have carried over courses failed from a previous semester.

2.1.2.1 Prerequisite Course

Some courses have prerequisites which are courses you must complete and pass before you can register for those courses. You will not be allowed to register for a course whose prerequisite course you have not passed and awarded the credit units.

2.1.2.2 Registration procedure

Students are required to visit the course registration portal at www.acetelnoun.edu.ng, and follow the instructions provided for registration. Upon completion of the exercise, you should print and keep a copy of the printout of your registered courses for your records and for clearance during end-of- semester examinations. Registration is activated only if there are sufficient funds in your e-wallet to cover the cost of the courses registered.

2.1.2.3 Opening and Closing of the Course Registration portal

The registration portal opens at the beginning of every semester and closes before the commencement of continuous assessment. Once the portal is closed, you will not be

able to register for courses for the semester until it opens again for the next semester. This means that students who were unable to register for their courses before the closure of the course registration portal are **Not Eligible** to take the TMA and examinations for the course(s).

2.1.3 Course re-registration

You are not allowed to re-register for a course that you have already passed.

2.1.4 Add and/or Drop courses

The ACETEL course registration portal makes provision for students to drop and add courses. To add or drop a course, visit the Course Registration portal and follow the instructions at www.acetelnoun.edu.ng. You should ensure that you add or drop courses before the course registration portal is closed.

2.1.5 Eligibility for Graduation

Each postgraduate programme has its own requirement for graduation. See those requirements under each programme below.

2.1.6 Research Projects

The research project is one of the requirements for the award of M. Sc. or Ph.D. degrees in ACETEL. It is a compulsory course of 6 credit units for which M. Sc. students must be duly registered in the third semester of their programme duration and 12 credit units for Ph. D. students. It is a long essay that involves research to be conducted on a topic that is approved by the Centre. The Project shall be written under the supervision of a subject matter expert that is either an academic staff in the Centre or a tutorial facilitator.

2.1.7 Grading, Moderation and Mode of Submission of Projects

Projects are submitted directly to the Centre and are graded by the project supervisor, and subjected to internal and external moderation in the Centre. All Ph. D. projects would be subjected to external defense by an appointed Professor on the area of specialization the project is addressing.

2.1.7.1 Grading of research projects

Research Projects are graded as follows:

Score	Grade	Point
70 and above	A	5
60 – 69	B	4
50 – 59	C	3
45 - 49	D	2
40 – 44	E	1
39 and below	F	0

2.1.7.2 Mode of Submission of Projects

There are guidelines for the submission of projects in ACETEL which students must comply with before a project is accepted by the Centre. All projects (whether Masters or Ph. D.) shall be printed and approved in line with the guidelines as specified for projects in the National Open University. Students are to submit 4 bounded copies of their research project, along with soft copies of the project in two (2) Compact Discs (CDs) to ACETEL.

Note: The research project must be passed to be eligible for graduation.

2.1.8 Industrial Attachment/Student Industrial Workplace Scheme (IT/SIWES)

All Masters students are expected to participate in at least six (6) weeks field attachment training before the end of the programme. It is a compulsory 6- credit unit course that must be passed to be eligible for graduation. The industrial attachment training must be carried out in a workplace that is relevant to students' discipline. Field supervisors shall be assigned to you to monitor and assess your' activities during the period of their attachment. Grading of the course is the same as for other courses and project (see Appendix III for information on Programme requirements for the IT/SIWES).

2.1.9 University Policies

2.1.9.1 ACETEL Copyright Policy

ACETEL adopts the university copyright policy to protect the Centre's research works. Portions taken from the institution's course materials should be properly acknowledged and not used for commercial purposes. Students must also respect copyrights of non-institutions materials such as text books, research projects, images, audio or video materials by properly acknowledging the source and the author. Students are liable to violating owner's copyright through acts of plagiarism and piracy.

2.1.9.2 Plagiarism

Plagiarism is defined as 'the practice of taking someone else's work or ideas and passing them off as one's own' (Oxford Dictionary.com). Plagiarism is a serious crime and is an infringement of the rights of the copyright owner. It is an act of academic dishonesty to take ideas or work that was not originally one's own and present it as one's own ideas or your work and use it without proper acknowledgement of the source and author.

Examples of Plagiarism and the infringement of copyright owner's rights may include the following:

- Failure to obtain permission for the use of portions longer than a paragraph or to acknowledge the source and the name of the author from where sentences or passages not longer than a paragraph, figures, pictures have been taken and used word-for word;
- Paraphrasing of the ideas or works of others including those obtained from the Internet without acknowledging the source and the author of the work;
- Reproduction and sale of the institution's course materials is an act of piracy;
- Copying of another student's assignment and submitting it as one's own work; and
- Paying someone to do an assignment on one's behalf and submitting it as one's own work.

To avoid being guilty of copyright violations, students must ensure that they do the following:

- Cite all sources and names of authors from which information was obtained and used;
- Obtain permission for the use of materials that are longer than a paragraph; and
- Comply with the University's copyright policy.

Students are encouraged to avoid acts of plagiarism and other dishonest acts by learning to properly cite and acknowledge sources from which they have taken materials for their research or assignment.

2.1.9.3 Degree Award Requirements

2.1.9.4 Compulsory and Elective Courses

Programmes in ACETEL comprise courses that are either compulsory or electives. Compulsory courses are core courses that must be passed to be eligible for graduation. Elective courses are courses that are optional in terms of the number that students must register for and pass per semester. Compulsory courses and elective courses are programme-specific (see appendix IV for list of courses). For a detailed description of courses visit the Centre's web page at www.acetelnou.edu.ng.

2.1.9.6 Minimum course credits for graduation

Students must pass all compulsory courses and a minimum of one (1) elective course per semester.

2.1.9.7 General Studies Courses (GST)

General Studies courses are designed to produce well-rounded, morally and intellectually capable graduates that: are equipped with digital skills to navigate through the ICT age; are capable of communicating effectively; have with the capacity to appreciate and promote peaceful co-existence; have a broad knowledge of the

Nigerian people for mutual understanding; and are independent critical thinkers capable of growing successful entrepreneurial endeavours.

General courses are compulsory courses that must be registered for and passed, in addition to the Programme's core compulsory and elective courses. Table 1 presents the general courses for the Africa Centre of Excellence on Technology and Enhanced Learning:

Table 1. Compulsory General courses for Programmes in ACETEL

LEVEL OF STUDY	COURSE CODE	COURSE TITLE	CREDIT UNIT
Masters	GST807	Study Guide for Distance Learners	2
Ph. D.	GST907	Study Guide for Distance Learners	2

2.2 Degree award requirements

2.2.1 Masters Degrees

2.2.2 Name of the Programme: Master of Science (MSc.) Artificial Intelligence

2.2.3 Programme Code: 5413

2.3 Entry Requirements

To be admitted into the MSc. Artificial Intelligence programme, a Candidate is expected to fulfill the following requirements:

- A Bachelor's Degree with a minimum of Second Class Upper in a computer related degree or Mathematics, Physics, Engineering or other degrees with substantial mathematics content. OR

A minimum of 3.5-points at the PGD level in a computer related degree E.g. Computer Science, Computer Engineering, Information Technology.

Note: For candidates from Physics, Mathematics, Statistics and Engineering (except Computer and Electrical/ Electronics Engineering), a PGD can serve as a bridge Course to qualify for admission into MSc AI.

- Candidates are expected to have taken the following background (or their equivalents) courses:
 - i) Algorithms (ATI823)-Programming, Algorithm design and analysis.
 - ii) Basic probability, statistics and algebra (ATI821)-Linear algebra and Discrete Math.

- In addition, candidates must possess a minimum of five credits in SSCE/GCE/NECO/NABTEB or its equivalent, at not more than two (2) sittings, in the following subjects: English Language, Mathematics, Physics, Chemistry, Biology or Further Mathematics.

2.3.1 Duration of Programs

The programme minimum duration is 3 semesters and the maximum is 6 semesters.

2.3.2 Graduation requirements

- i. The student must earn a minimum of 45 credit units to graduate as follows:
- ii. Core courses=39 credit units including dissertation
- iii. Elective courses= 6 credit units electives
- iv. The student must present two seminars before the final defense
- v. The student is expected to publish in acceptable peer reviewed conference proceedings /journal
- vi. The minimum CGPA to proceed to dissertation is 3.00 and the minimum graduation CGPA is 3.00

2.4 Aim and Objectives

Artificial Intelligence (AI) tackles complex real-world problems including web search, face and speech recognition, machine translation, autonomous driving, and automatic scheduling with rigorous mathematical tools. In this course, you will learn the foundational principles that drive these applications and practice implementing some of these systems.

2.4.1 Aim

The MSc. Artificial Intelligence programme aims to provide high quality education and skills relevant to research and industry application in AI, in Africa and internationally.

2.4.2 Objectives

The programme is geared towards familiarizing graduates on core areas of Artificial Intelligence and their applications with a view to acquiring the basic skills required for advanced postgraduate studies and research. The main goal of the course is to equip you with the tools to understand and implement AI. On successful completion of the MSc. in Artificial Intelligence, graduates will be:

- Equipped with an understanding of the fundamental approaches to implementing intelligent behavior in machines;

- Equipped to produce computer applications that appropriate Artificial Intelligence (AI);
- Able to develop frameworks and design solutions to problems that are uniquely African and hence may not be adequately addressed by imported Artificial Intelligence (AI) technology;
- Provided with sufficient awareness of the importance of Data analysis, how to accumulate data, process and make productive inferences from it.

2.5 Programme Structure and Degree Rules

2.5.1 Outline of Course Structure

S/N	Course Code	Course Title	Credit Unit	Status
1	ATI801	Principles and Techniques of Artificial Intelligence	3	C
2	ATI802	Natural Language Processing	3	C
3	ATI803	Programming for artificial Intelligence	3	C
4	ATI804	Machine Learning II	3	C
5	ATI805	Machine Learning I	3	C
6	ATI806	Introduction to Robotics	3	C
7	ATI808	Probability and Statistics	3	C
8	ATI810	Seminar	2	C
9	GST809	Good Study Guide	2	C
10	ATI899	Dissertation	6	C
11	SCI801	Management and Entrepreneurship	2	C
12	SCI802	ICT and Research Methodologies	2	C
13	SCI803	Emerging Technologies	2	C
14	SCI804	Science, Environment and Innovation	2	C
15	ATI821	Basic Probability, Statistics and Algebra	2	E
16	ATI822	Computational Logic	2	E
17	ATI823	Introduction to Algorithms	2	E
18	MIS 804	Data Warehousing and Analytics	2	E
19	MIS 807	Innovation Management and Organizational Change	2	E
20	CST802	Malware and Digital Forensics	3	E
21	CST807	Secure Software Engineering	2	E

Courses

The MSc. Artificial Intelligence programme is structured into 3 semesters as presented in the tables shown below:

1ST SEMESTER

Course Code	Course Title	Credit Unit	Status
ATI801	Principles and Techniques of Artificial Intelligence:	3	C
ATI803	Programming for Artificial Intelligence	3	C
ATI805	Machine Learning I	3	C
SCI801	Management and Entrepreneurship	2	C
SCI803	Emerging Technologies	2	C
GST807	Study Guide for Distance Learning	2	C
	*Students are required to take two electives	4	E
Total		19	

ELECTIVES- 1ST SEMESTER

Course Code	Course Title	Credit Unit	Status
ATI821	Basic Probability, Statistics and Algebra	2	E
ATI823	Introduction to Algorithms	2	E
MIS 807	Innovation Management and Organizational Change	2	E
CST807	Secure Software Engineering	2	E

2nd SEMESTER

Course Code	Course Title	Credit Unit	Status
ATI802	Natural Language Processing	3	C
ATI804	Machine Learning II	3	C
ATI806	Introduction to Robotics	3	C
ATI808	Probability and Statistics	3	C
ATI810	Seminar	2	C
SCI802	ICT and Research Methodologies	2	C
SCI 804	Science, Environment and Innovation	2	C
	*Students are required to offer one elective	2	E
Total		20	

ELECTIVES- 2nd SEMESTER

Course Code	Course Title	Credit Unit	Status
ATI822	Computational Logic	2	E
MIS 804	Data Warehousing and Analytics	2	E
CST802	Malware and Digital Forensics	3	E

3rd SEMESTER

Course Code	Course Title	Credit Unit	Status
ATI899	Dissertation	6	C
Total		6	

Total Core (15+18+6=39) Total Elective (4+2=6)

All students of the MSc. Artificial Intelligence programme are required to obtain a minimum of 45 credit units.

DETAILED COURSE CONTENT SPECIFICATION**ATI801: Principles and Techniques of AI (3 Units)**

This introductory course exposes the student to the fundamentals of AI including the scope and limitation of the algorithmic approach to problem solving giving a broad overview of modern artificial intelligence. The course also explores several applications of AI and discusses related field such as big data and internet of things. Specific topics include search, game playing, Markov decision processes, constraint

satisfaction, graphical models and logic, Knowledge Representation and Reasoning, Ethics, Privacy, Artificial Intelligence in Society.

Recommended reading:

- Russell & Norvig , *Artificial Intelligence: A Modern Approach* , Prentice Hall, 3rd edition
- Amit Konar, *Artificial Intelligence and Soft Computing*

ATI802: Natural Language Processing (3 Units)

This course provides the fundamental concepts and ideas in Natural Language Processing (NLP), an understanding of both the algorithms available for processing linguistic information and the underlying computational properties of natural languages. The course progresses from word-level and syntactic processing to question answering and machine translation. *Topics to be covered include;* Computational properties of natural languages; Co-reference, question answering, and machine translation; Processing linguistic information; Syntactic and semantic processing; Modern quantitative techniques in NLP; Neural network models for language understanding tasks.

Recommended reading:

- Uri Wilensky, *Introduction to agent-based Modeling: Modeling natural, social and engineered complex systems with NetLogo*, MIT Press
- ANSI Common Lisp Book
- Paul Graham, *ANSI Common Lisp*, Pearson/Prentice-Hall

Software:

- IBM Watson Tone Analyzer
- Microsoft Language Understanding Intelligent Service (LUIS)
- Google Cloud Natural Language
- Merlin

ATI803 Programming for Artificial Intelligence (3 Units)

This course develop students skills in using the Python Programming language to implement algorithms that manifest intelligence behavior. The basics of Python programming as expressed in iteration and recursion over variables, lists and tuples within modules and functions will be reviewed. Reading from and writing to files via File I/O syntax will also be explained. The principles of Object Oriented Programming (OOP) as expressed in encapsulation, composition, inheritance delegation and polymorphism will be introduced. Finally, Python libraries for Scientific Computing in general such as NumPy, Scikit-learn, iPython Notebook and Matplotlib and specific AI libraries such as TensorFlow and NLTK will be taught.

Recommended reading:

- Ahmed Ph. Abbasi , *Python Machine Learning*
- Francois Chollet, *Deep Learning with Python*

ATI808: Probability and Statistics (3 Units)

This course presents important probabilistic modeling languages for representing complex domains and how the graphic models extend to decision making. Use ideas from discrete data structures in computer science to efficiently encode and manipulate probability distributions over high-dimensional spaces. Apply and learn how to construct Probabilistic Graphical Model representation, using both human knowledge and machine learning techniques for good decision making under uncertainty.

Recommended reading:

- William Feller, *Introduction to Probability theory and application*
- Trevor Hastie, Robert Tibshirani & Jerome Friedman, *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, Second Edition Springer Series in Statistics

ATI804: Machine Learning II (3 Units)

This course will provide you with (i) the foundations of Deep Learning, understand how to build neural networks; (ii) a solid introduction to the field of RL, the core challenges and approaches in the field, including generalization and exploration. And learn how to lead successful machine learning projects. You will learn about Convolutional networks, RNNs, LSTM, Adam, Dropout, BatchNorm, Xavier/He initialization, and more. *Topics to be covered include;* Foundations of neural networks and deep learning: Techniques to improve neural networks: regularization and optimizations and deep learning frameworks; Convolutional Neural Networks and its applications (e.g. object classification, object detection, face verification, style transfer); Recurrent Neural Networks and its applications (e.g. natural language processing, speech recognition).

Recommended reading:

- Ian Goodfellow, Yoshua Bengio & Aaron Courville, *Deep Learning*
- M. T. Hagan, H. B. Demuth, M. H. Beale, O. D. Jesus, *Neural Network Design*, 2nd Edition. A PDF version of the textbook can be downloaded FREE from <http://hagan.okstate.edu/NNDesign.pdf>
- Jeremy Watt, Reza Borhani & Aggelos K. Katsaggelos, *Machine Learning Refined: Foundations, Algorithms, and Applications*, 1st Edition

Lab:

Learning the usage and real world applications of the software below

- TensorFlow
- Keras
- Neural Designer
- Deep Learning Studio

ATI805: Machine Learning I (3 Units)

This course provides a broad introduction to machine learning, data mining and statistical pattern recognition. It will also discuss recent applications of machine

learning such as robotics control, autonomous navigation, bioinformatics, text and web processing and speech recognition. *Topics to be covered include;* Learning theory; Basics concepts of machine learning; Generative learning algorithms; Evaluating and debugging learning algorithms; Bias/variance tradeoff and VC dimension; Value and policy iteration; Q-learning and value function approximation.

Recommended reading:

- Ian Goodfellow, Yoshua Bengio & Aaron Courville, *Deep Learning*
- Christopher M. Bishop, *Pattern Recognition and Machine Learning*
- Tom M. Mitchell, *Machine Learning*
- Patrick Hebron, *Machine Learning for Designers*

Lab:

Learn the essential foundations of AI: the programming tools (Python, NumPy, PyTorch), the math (calculus and linear algebra), and the key techniques of neural networks (gradient descent and backpropagation).

ATI806: Introduction to Robotics (3 Units)

This course introduces students to robotic design and autonomous agents through the integration of mechanical devices, sensors and intelligent agents. Students will explore the application of intelligence in the control of motion. They will be exposed to such topics as Spatial descriptions, Kinematics, Statics and Dynamics. In addition they will study Motion Planning and Control, Trajectory Generation, Active Modelling and Simulation.

Recommended reading:

- Maja J. Matarić, *The Robotics Primer*, MIT Press 2007.
- Saeed Niku, *Introduction to Robotics: Analysis, Systems, Applications*, Prentice Hall, 2002.
- Siegwart and Nourbakhsh, *Introduction to Autonomous Mobile Robots*, The MIT Press, 2004.

SCI801: Management and Entrepreneurship (2 Units)

The course will cover business environment, general management, financial management, entrepreneurship development, feasibility studies, marketing and managerial problem solving.

SCI803: Emerging Technologies (2 Units)

Nanotechnology, stretchable silicon, pervasive wireless, nuclear reprogramming, nano biomechanics, epigenetics and cognitive radio.

SCI802: ICT and Research Methodologies (2 Units)

This course should cover essentials of Spreadsheets, Internet technology, Statistical Packages, Precision and Accuracy of Estimates, Principles of Scientific Research,

Concepts of Hypotheses Formulation and Testing, Organization of Research and Report Writing.

SCI 804 Science, Environment and Innovation (2 Credit Units)

Elements of global warming, environmental protection issues, biodiversity, pollution, species at risk, social and ethical implications of science, enterprise and productivity, intellectual property rights, private public partnership and investment.

ATI899: Dissertation (6 Units)

Students are required to work independently on a project related to a self-selected problem in the field of artificial intelligence. At the beginning of the second semester, students are expected to commence their supervised project work. Students are required to defend the project which will be evaluated by a departmental committee. Note that, no student shall be permitted to defend, except he/she has fulfilled the requirements.

ELECTIVES

ATI821: Basic Probability, Statistics and Algebra (2 Units)

This course will introduce students to the basics of Probability & Statistics, and basics of algebra. Topics Included: Algebraic expressions, algebraic fractions, Binomial expressions, quadratic trinomials, analyzing categorical data, summarizing quantitative data, exploring bivariate numerical data, sampling distributions, analysis of variance (ANOVA)

Recommended reading:

- William Feller, *Introduction to Probability theory and application*
- Trevor Hastie, Robert Tibshirani & Jerome Friedman, *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, Second Edition Springer Series in Statistics

ATI822: Computational Logic (2 Units)

This course introduces students to the computational dimensions of Logic. It takes computation beyond the manipulation of numerical data to the realm of manipulation of symbolic data. Students will learn to encode information in the form of logic statements and thereby develop the capacity to implement automated reasoning. They will study Knowledge Representation in logical statements by the integration of information and the rules for its application. They will be exposed to the alternative programming paradigm of Logic Programming in Prolog as a declarative programming language in contrast to the more common procedural programming paradigm. They will investigate the application of these ideas in areas such as mathematics, Science, Engineering, business and law.

Recommended reading:

- Steve Reeves & Mike Clarke, *Logic for Computer Science*
- Russell & Norvig, *Artificial Intelligence: A Modern Approach*, Prentice Hall, 3rd edition

ATI823: Introduction to Algorithms (2 Units)

This course gives students a soft landing into Algorithms for those lacking a strong background in it. The course will explore the common algorithms, algorithmic paradigms, and data structures used to solve actual problems. Topics included: searching, sorting, recursion, and graph theory.

Recommended reading:

- Rudolph Russell, *Data Structures and Algorithms: An Easy Introduction*

MIS 804 Data Warehousing and Analytics (2 Credit Units)

This course addresses data warehousing and data analytics concepts. Areas to be covered include: contemporary architectures for designing and implementing data warehouses, creating a scalable infrastructure for big data, creating information architecture for organizations, data collection and method selection for big data analytics, designing and implementing architectures for organizational content management systems.

Learning Resources

Scholarly Articles, E-books (Text books),

Recommended Reading

- Flory, André & Soupirot, Pierre & Tchounikine, Anne. (2001). A Design and implementation of a data warehouse for research administration universities.. 259-267.
- Kimball, R & Reeves, L & Ross, M & Thornthwaite, W. (2008). The Data Warehouse Lifecycle Toolkit.
- Leonard, Edward M. (2011). "Design and Implementation of an Enterprise Data Warehouse" Master's Theses (2009). Paper 119.
- Rogers, Denise. "Data Warehousing Architecture - Designing the Data Staging Area." Database Journal. 22 June 2010. Web. 20 Oct 2011.
- Krishnan, K. (2013). Data Warehousing in the Age of Big Data. 10.1016/C2012-0-02737-8.
- Alan S. (2014). "Modern Enterprise Business Intelligence and Data Management: A Roadmap for IT Directors, Managers, and Architects"
- Steve W. (2016). "Business Intelligence Strategy and Big Data Analytics: A General Management Perspective"

Assessment methods:

Group Essay, Group presentation, Examination

MIS 807 Innovation Management and Organizational Change (2 Credit Units)

This course addresses understanding how organizations can recognize, innovate and cope with change due to updates in current and new information technologies to address business opportunities. Areas to be covered include: monitoring the technology environment, managing innovation with emerging technologies, adoption and diffusion of innovation, applying innovative thinking to solve technology-related issues, understanding organizational development and change management methods, change management in project lifecycle.

Learning Resources:

Scholarly Articles, E-books (Text books),

Recommended reading:

- Tidd, J., and Bessant, J., 2013. Managing Innovation: Integrating Technological, Market and Organisational Change, Wiley, 5th edition. (e-book)
- Thomas JM. Diffusion of innovation in systematic review methodology: Why is study selection not yet assisted by automation? *OA Evidence-Based Medicine* 2013 Oct 21;1(2):12.
- Rogers, E. M. (2003). *Diffusion of innovations*. New York: Free Press.
- Ivancevich, J. M., Konopaske, R., & Matteson, M. T. (2011). *Organizational behaviour and management*. New York, NY: McGraw-Hill Irwin.
- Pollack, Julien & Algeo, Chivonne. (2015). *The Contribution of Project Management and Change Management to Project Success*.

Assessment methods:

Individual Essay, Group presentation, Examination

CST802: MALWARE AND DIGITAL FORENSICS (3 UNITS)

Malware Analysis, Malware Incident response; Analyzing Physical Process Dumps for Malware Artifacts; Discovering and Extracting Malware and Associated Artefacts from Windows and Linux; Advanced Malware; Investigative and Forensic Methodologies; Forensic Analysis, Preservation and Examination of Volatile Data; Recovery of Deleted Files; Building Live Response Toolkit; Volatile Data and Non-Volatile Data Collection methodologies in Windows and Linux Live Systems; Data analytics; Windows System Forensics; Incident Response Tool Suites for Windows; Memory Forensics Methodology for Windows and Linux; Windows Memory Forensics Tools; Linux Memory Forensics Tools; Forensic Examination of Compromised Systems; Filesystem Forensics, Network Forensics, Using Linux as a Forensic Platform, Audit Trail, Report Writing, Expert Witness

Suggested Lab Work

For the practical component of this course, students should be introduced to using antivirus tools to confirm maliciousness, using hashes to identify malware, gleaning information from a file's strings, functions, and headers. Perform static and dynamic analysis, demonstrate understanding of Sandboxing and Anti-sandboxing. Conduct investigative forensic methodologies to demonstrate the use of hex editors to extract

file formats and systems, use of a Linux system as forensic station, artefact extraction from web browsers, recovering deleted files using forensic tools, write report on the investigation.

Tools: md5deep, PotentialKeylogger, ApateDNS, NetCat, Wireshark, VMware, FTK, Winhex, X-Ways Forensics, Autopsy/ The Sleuth Kit.

Textbooks

Digital Forensics 1st Edition by Andre Arnes Wiley; 1 edition (2017) ISBN-10: 1119262380

Practical Windows Forensics by Ayman Shaaban and Konstantin Sapronov (2016) Packt Publishing

The Art of Memory Forensics: Detecting Malware and Threats in Windows, Linux, and Mac Memory by Aaron Walters, Andrew Case, Jamie Levy, and Michael Hale Ligh, 1st edition (2014) Publisher Wiley ISBN: 1118825098

File System Forensic Analysis by Brian Carrier, Addison-Wesley Professional 1st Edition (2015), ISBN-13: 978-0321268174

CST807: SECURE SOFTWARE ENGINEERING (2 UNITS)

Security requirements; Specification of security requirements; Software development lifecycle and Security development lifecycle; Programming languages and type-safe languages; Best security programming practices; Writing secure distributed programs: The security ramifications of class, field and method visibility. Character codes (i.e. ASCII, EBCDIC, UNICODE, Excess-3, Grey code, Error checking codes etc. with their needs and utilities.); Secure software, risk analysis, threat modeling, deploying cryptographic algorithms, defensive coding, penetration testing, static analysis, and security assessment; Security for web and mobile applications

Suggested Lab Work

Programming assignments leading to extensive practice in problem solving and program development involving the use of the various data structures, encryption, algorithms implemented in the course.

Textbooks

Software Security: Building Security In by Gary McGraw. Addison-Wesley, ISBN 978-321-35670-3

Software Security Engineering: A Guide for Project Managers by Julia H. Allen, Sean Barnum, Robert J. Ellison, Gary McGraw, and Nancy Mead. Addison-Wesley, ISBN 978-0-32-150917-8

GST807: STUDY GUIDE FOR DISTANCE LEARNING (2 UNITS)

Introduction to the Open and Distance Learning (ODL) System: History of the Open and Distance Learning System, Characteristics of the Open and Distance Learning System, Teaching and Learning in the Open and Distance Learning System. Study Skills for the Distance Learner: Listening, Speaking, Reading, Writing, Study Strategies. Assessment and Evaluation Modes in Open And Distance Learning (ODL): Overview of Assessment in ODL, Instructional-Based Assessment Modes, Semester Examination, Assessment of Non-Examinable Courses. Learners' Support Services: Definition and Purposes of Learners' Support Services, Types of Learners' Support Services, Sources of Learners' Support Services, Benefits of Learners' Support Services.

Recommended Reading

COTTRELL, S., 2003. The Study Skills Handbook. 2nd Edition .Basingstoke: Palgrave.
LEE-DAVIES, L. and BAILEY, S., 2007. Developing work and study skills. [electronic resource]. London: Thomson Learning.

Assessment methods:

Group Essay, Seminars, Group presentation, Examination

Software

1. Java Programming Language
2. Anaconda 3.0
3. Cloudera UM Environment
4. Matlab
5. Python IDE
6. WEKA
7. Python interpreter and IDE

Platforms and Libraries

1. Tensorflow
2. Theano
3. Torch
4. Keras
5. Azure ML
6. Caffe
7. Amazon ML
8. Microsoft Cognitive Toolkit
9. IBM Watson
10. Scikit – Learn

2.12 LIST OF ACADEMIC STAFF AND FACILITATORS

ACETEL has chosen to operate on academic Staff supported on the field by Instructional Facilitators to ensure quality in instructional delivery. Therefore, ACETEL has the following academic staff and facilitators to man the programmes:

2.12.1 ACADEMIC STAFF

S/N	NAME	DISCIPLINE	AREA OF SPECIALIZATION	QUALIFICATION	RANK	EMPLOYMENT STATUS	MODE OF APPOINTMENT	GENDER
1.	Dr. Francis Bukie Osang	Computer Science	Information System Strategies	P.hD. (Information and Communication Technology), M. Sc. (Information Technology), B. Sc. (Computer Science)	Senior Lecture/HOD	Full time	Full time	Male
2	Prof. Saheed O. Ajibola	Computer Science	Computational Logic, Probability, statistics and algebra	Ph.D (Mathematics), M. Sc (Mathematics), B. Sc (Mathematics)	Professor	Full time	Full time	Male
3.	Prof. Muhtar Hanif Alhassan	Computer Science	Neural Network, Robotics, Machine Learning	M.Eng (Industrial Automation) MBA (Technology) PhD (Computer control)	Associate Professor	Full time	Full time	Male
4.	Dr. Gregory Onwodi,	Computer Science	Big Data and Programming	B.Sc (Comp. Sci) M.Sc (Information Technology), Ph.D (Computer Science)	Associate Professor	Full time	Full time	Male

4.	Dr. Juliana Ndunagu	Computer Science	Management Information System	B.Sc (Maths), PGD, M.Sc, (Computer Science), Ph.D (Information Technology)	Associate Professor	Full time	Full time	Female
5.	Dr. Vivian O. NWAOCHA	Computer Science	Forensic and Malware Analyst	B,Eng(Met.&Mat.En g) PGD Computer Engineering, MSc. Computer Science, PhD Computer Science.	Associate Professor	Full time	Full time	Female
6.	Dr. Adewale Adesina	Computer Science	Software Development and Information Security	B.Eng (Chem Eng), MSc. (Information Technology), Ph.D (Computer Science)	Senior Lecturer	Full time	Full time	Male
7.	Dr. Adenrele A. Afolorunso	Computer Science	Web Security and Cryptography	B.Sc (Computer Science/Mathematics), M.Sc (Comp. Sci), P.hD (Computer Science)	Senior Lecturer	Full time	Full time	Female
8.	Dr. Madu Galadima	Computer Science	Information Systems	B.S.c Electrical Electronics, M.Sc Electrical Electronics, PhD Information Systems	Lecturer I	Full time	Full time	Male
9.	Mr. Okunade A. Oluwasogo	Computer Science	Computer Science	B.Sc (Computer Science), M.Sc. (Computer Science) Ph.D Computer Science in view	Lecturer I	Full time	Full time	Male

10.	Mr. George A. Oguntala	Computer Science	Computer Engineering	B.Sc (Electronic/Computer Engineering), MBA, M.Sc (Engineering Analysis), Ph.D (Computer Engineering)In view B.Sc	Lecturer II	Full time	Full time	Male
11.	Mr. Nnabuike N. Eya	Computer Science	Computer Science	B.Sc Ed (Comp. Sci), M.Sc (Network & Communication) Ph.D. Computer Science in view	Assistant Lecturer	Full time	Full time	Male
12.	Mr. Oluwaseun Oluyide	Computer Science	Electrical and Electronic Engineering	B. Eng. Electrical and Electronic Engineering, M.Sc. Communication and Signal Processing, PhD in view	Assistant Lecturer	Full time	Full time	Male
13.	Mrs. Oluwatoyosi V. Oyewande	Computer Science	Forensic IT	B.Sc (Computing), M.Sc (Forensic IT)	Assistant Lecturer	Full time	Full time	Female
14.	Mr. Adebayo Adegboyega	Computer Science	Computer Science	B.sc Computer Science, M.S.c Computer Science, PhD Computer Science in view	Assistant Lecturer	Full time	Full time	Male
15.	Mr. Muhammed Aminu	Computer Science	Information Technology	B.Sc Computer Science, M.Sc Information	Assistant Lecturer	Full time	Full time	Male

	Abdullahi			Technology				
16.	Mr. Iiyasu Muhammad Sani	Computer Science	Conuass 2	B.Sc Computer Science, M.Sc Computer Science	Assistant Lecturer	Full time	Full time	Male
17.	Mr. Wada Kamal Sabo	Computer Science	Software Engineering	B.Sc Software Engineering, M.Sc Computer Network	Assistant Lecturer	Full time	Full time	Male

2.12.2 FACILITATORS

ARTIFICIAL INTELLIGENCE

S/N	NAME OF ACEDEMIC STAFF	DISCIPLINE	AREA OF SPECIALIZATION	QUALIFICATIONS	RANK	EMPLOYMENT STATUS	MODE OF APPOINTMENT	GENDER
1	NNANNA Nwojo	Computer Science	Optima control of Dynamics Systems and Application	Ph.D Maths & Comp. Sci, MSc. Mech. Engr, BSc. Mech. Engr	Professor	Facilitators	Facilitators	Male
2	SAHEED Ajibola	Mathematics	Computational Logic, Probability, statistics and algebra	Ph.D (Mathematics), M. Sc (Mathematics), B.Sc (Mathematics)	Professor	Full-Time	Full-Time	Male
3	AZETA Ambrose	Computer Science	Computer Science	Ph.D Computer Science , MSc. Computer Science., BSc. Computer Science	Professor	Facilitators	Facilitators	Male
4	OLADIPO Francisca	Computer Science	Computer Science	Ph.D Computer Science MSc. Computer Science, BSc. Computer Science	Professor	Facilitators	Facilitators	Female
5	RUFAl Aliyu Yauri	Computer Science	Computer Science	Ph.D Computer Science , MSc Computer Science ., BSc. Computer Science .	Professor	Facilitators	Facilitators	Male

6	MUHTAR H. Alhassan	Computer Science	Neural Network, Robotics, Machine Learning	Ph.D Computer Control Machines (1993, M.Sc Engineering Industrial Automation (1982)	Professor	Full-Time	Full-Time	Male
7	AWODELE Oludele	Computer Science	Computer Science	Ph.D Computer Science , MSc. Computer Science ., BSc. Computer Science .	Senior Lecturer	Facilitators	Facilitators	Male
8	OSONDU Oguike	Mathematics	Mathematical Modelling and Computational Mathematics	Ph.D Maths & Comp, MSc. Info. Tech. BSc. Maths & statistics.	Associate Professor	Facilitators	Facilitators	Male
9	ADEYAJU Adepoju Ibrahim	Computer Science	Digital Image Processing and data Communication	Ph.D Comp. Sci, MSc. Computing Info. Engr., B.tech Comp. Engr.	Associate Professor	Facilitators	Facilitators	Male
10	GREGORY Onwodi	Computer Science (Telecom)	Big Data and Programming	Ph.D. Computer Science (2015), M. Sc Information Technology (2004), B. Sc Computer Science (1995)	Associate Professor	Full-Time	Full-Time	Male
11	SAMBO-MAGAJI Amina	Artificial Intelligence	Artificial Intelligence	Ph.D Artificial Intelligence, MSc. Info. Egnr. BSc. Tech. Comp. Sci.	Senior Lecturer	Facilitators	Facilitators	Female
12	VINCENT Olufunke	Computer Science	Computer Science	Ph.D Computer Science, MSc. Computer Science, BSc. Comp. Sci.	Associate Professor	Facilitators	Facilitators	Female
13	EBEM Deborah	Computer Science	Computer Science	Ph.D Computer Science, 2007,MSc. Comp. Sci Egnr.2001, BSc. Egnr 1991	Associate Professor	Facilitators	Facilitators	Female
14	AKEEM Disu	Mathematics	Probability, statistics and Robotics	Ph. D (Mathematics), M. Sc(Mathematics), B. Sc, (Mathematics)	Senior Lecturer	Ful-Time	Full-Time	Male
15	ADEKANBI Janet	Computer Science	Computer Science	Ph.D Computer Science , MSc. Computer Science, BSc. Computer Science .	Lecturer	Facilitators	Facilitators	Female

16	SALISU Aliyu	Data structure and Algorithm	Artificial, data structure and Algorithms	Ph.D Info Tech 2019, MSc. Comp. 2013 Sci., BSc. Comp. Sci. 2009	Lecturer I	Facilitators	Facilitators	Male
17.	ADEWALE Adesina	Computer Science	Software Development and Information Security	Ph.D Comp. Sci, MSc. IT., B.Eng. Chem. Engr.	Senior Lecturer	Full-Time	Full-Time	Male
18	ADENRELE Afolorunso	Computer Science	Web Security and Cryptography	Ph.D. (2017), M. Sc Computer Science (2006) B. Sc Computer Science and Mathematics (1995)	Senior Lecturer	Full-Time	Full-Time	Female
19.	HASSAN Muhammed	Computer Science	Design and Analysis of Algorithm	Ph.D Comp Sci. & Engr.2018, MSc. Comp. Sci.2011, BSc Maths.2008		Facilitators	Facilitators	Male
20.	AMINU Muhammed Bui	Computer Science	Natural Language Processing	Ph.D Comp. Sci. (Artificial Intelligence) 2016, MSc. Comp. Information Engr. 2007 Info. Comp. Sci. 2004	Senior Lecturer	Facilitators	Facilitators	Male
21	ADENIJI Sola Adenike	Information System	Information System	Ph.D Comp. Sci. (AI), MSc. Comp. Info. Engr	Senior Lecturer	Facilitators	Facilitators	Female
22.	OLAIDE Nathaniel Oyelade	Computer Science	Data Structure Algorithm and Complexity	Ph.D Comp. Sci. 2018, MSc. Comp. Sci. 2014, BSc. Comp. Sci. 2010	Lecturer	Facilitators	Facilitators	Male
23	JIMOH Falilat	Computer Science	Computer Science	Ph.D Comp. Sci., MSc. Comp. Sci. BSc. Comp. Sci.	Senior Lecturer	Facilitators	Facilitators	Female
24	ADEGBOLA Tunde	Computer Science	Computer Science	Ph.D Comp. Sci., MSc. Comp. Sci. BSc. Comp. Sci.	Senior Lecturer	Facilitators	Facilitators	Male
25	ABAYOMI-ALLI Adebayo	Computer Science	Pattern Recognition	Ph.D Comp. Sci.2015, MSc. Comp. Sci. 2009, BSc. Comp. Egnr. 2005	Senior Lecturer	Facilitators	Facilitators	Male
26	AHMED Abdulkadir	Computer Science	Computer Science	Ph.D Comp. Sci. M.Sc IT. Bsc. Comp	Senior Lecturer	Facilitators	Facilitators	Male
27	Faith Uzoka Micheal	Computer Science	Object Oriented Programming	PhD Comp. Sci. 2003 M.Sc Comp. Sc. 1998 B.Sc. Maths. 1991. Ph.D Comp. Sci. M.Sc IT	Professor	Facilitators	Facilitators	Male

				Bsc. Comp				
28	Hillary Ijeoma Owamah	Civil Engineering	Civil Engineering	PhD Civil Egnr. 2016, M.Egnr. 2010, B.Egnr. 2006	Assc Prof.	Facilitators	Facilitators	Male
29.	Salihu Aisha Abdulkarim	Computer Science	Computer Science	Ph.D Comp. Sci 2018. M.Sc Comp Sci. 2009 Bsc. Comp 2002	Chief System Analyst	Facilitators	Facilitators	Female
30	Joseph Budu	Information Technology	Information Technology	Ph.D Comp. Sci 2016. M.Sc IT 2013 Bsc. IT 2015	Assc. Prof.	Facilitators	Facilitators	Male
31	Baroon Isma'eel Ahmad	Computer Science.	Information Technology	Ph.D IT 2016. M.Sc Comp. Sci. 2011 Bsc. IT 2016	Senior Lecturer	Facilitators	Facilitators	Male
32	Saheed yakub Kayode	Computer Science.	Bioinformatic and Machine Learning	Ph.D Comp. Sci 2018. M.Sc Comp Sci. 2014 B.Sc. Comp 2011	Senior Lecturer	Facilitators	Facilitators	Male
33	Dr. Madu Galadima	Computer Science	Information Systems	B.S.c Electrical Electronics, M.Sc Electrical Electronics, PhD Information Systems	Lecturer I	Full time	Full time	Male
34.	Mr. Okunade A. Oluwasogo	Computer Science	Computer Science	B.Sc (Computer Science), M.Sc. (Computer Science) Ph.D Computer Science in view	Lecturer I	Full time	Full time	Male
35.	Mr. George A. Oguntala	Computer Science	Computer Engineering	B.Sc (Electronic/Computer Engineering), MBA, M.Sc (Engineering Analysis), Ph.D (Computer Engineering)In view B.Sc	Lecturer II	Full time	Full time	Male

It is envisaged that additional academic staff would be appointed as the years go by. They would be responsible for a whole range of activities of *Learning and Tutoring*: admission of students into the programme; registration of students into the programme; recruitment of facilitators; editing of course materials, development of some course materials, proof reading of galleys for printed course materials; preparation of the Semester examinations, and Coordination of the marking of examination answer scripts.

PART 3: GRADE POINT AVERAGE (GPA) AND CUMULATIVE GRADE POINT AVERAGE (CGPA)

At the end of examinations, they are graded and scored. The raw scores are recorded and are weighted to produce a single point average for each of the courses registered for and for which students have written the Tutor Marked Assignments and Examinations.

3.1 Formula for calculation of GPA and CGPA

The Grade Point Average shall be calculated by multiplying the Grade Point (GP) attained in each course by the credit units for the course. The GPA of all the courses are added up and divided by the total number of credit units taken in a semester or session. The **GPA** is computed on semester by semester basis. The formula for calculating the GPA is the following:

$$\text{GPA: } \frac{\text{GPE}}{\text{TCC}} = \text{GPA.}$$

The cumulative grade point average is the Total Grade Point Earned (TGPE) divided by the Total Credits Carried (TCC). The **CGPA** is calculated at the end of two (2) or more semesters. The formula for calculating **CGPA** is the following:

$$\frac{\text{TGPE}}{\text{TCC}} = \text{CGPA}$$

KEY:

TCC	-	TOTAL CREDIT CARRIED
TCE	-	TOTAL CREDIT EARNED
TGPE	-	TOTAL GRADE POINT EARNED (CREDIT POINT X WEIGHTED GRADE POINT)
CGPA	-	CUMMULATIVE GRADE POINT AVERAGE
WGP	-	WEIGHTED GRADE POINT

3.2 Grade Points

70 and above	-	A	-	5
60 - 69	-	B	-	4
50 – 59	-	C	-	3
45 - 49	-	D	-	2
40 – 44	-	E	-	1
39 and below	-	F	-	0

3.3 End of Programme Clearance

Upon the release of the graduation list, graduating students are required to undergo a clearance process as contained in the Centre website.

PART 4: ASSESSEMENT AND EVALUATION

4.1 Introduction

Assessment and Evaluation are the means by which students' learning outcomes are measured against the stated learning objectives for each course and programme. Three types of assessment are employed in NOUN:

- (i) **Self-Assessment exercises:** These are exercises found within each study unit of the course materials. Although not graded, they are designed to help students assess their progress as they study.
- (ii) **Continuous Assessment:** This type of assessment is designed to provide students an opportunity to assess their learning and progress over the duration of the course. The results constitute 30% of students' final score in a course.
- (ii) **End of Semester Examinations:** As the name implies, semester examinations assess students on the entire course at the end of a semester. The examinations constitute 70% of students' total score in a course.

Note: Students must be duly registered for each course in the semester to be eligible for the continuous assessment and the End-of-semester examinations.

4.2 Tutor Marked Assignments (TMA)

Continuous assessments in NOUN are automated in the form of computer marked assignments and are administered online. This would take the form of projects, modelling, practicals as approved by ACETEL Academic Board. You can access the TMA portal at [aceteltma@noun.edu.ng/](mailto:aceteltma@noun.edu.ng).

The TMA portal opens after course registration for the semester and it closes just before the examinations begin.

4.3 End-of-Semester Examinations

Two types of examinations are employed at the Centre of Excellence on Technology Enhanced Learning. They are the eExamination and the Pen-on-Paper (PoP) examinations. The examinations are conducted at the end of every semester at the Study Centres or any other location as may be arranged by the Centre. For undergraduate students, the examinations account for 70% of the total score for the course.

4.3.1 Pen-on-Paper (PoP) Examinations

PoP examinations are written a writing based examination administered in a face to face context to Masters and Ph. D. students. The number of questions per course is according to the credit units of a course. For a three (3) credit unit course, there are 5 questions of which four (4) must be attempted while for a 2 credit unit course, there are 4 questions of which three (3) must be attempted for the digital programmes.

4.3.2 General Assessments Modes

M. Sc.

S/N	Academic Programmes	Modes of Assessment						
		Portfolios (10%)	Mini-projects with presentation (20%)	Laboratory Practical (10%)	Internship (10%)	Assignment (20%)	Final Examination (30%)	Total (100%)
1.	Ph.D Artificial Intelligence	√	√	√	√	√	√	

4.3.3 Opening and Closing of Examination Portal

As it is for course registration, students must also register for examinations they wish to undertake. The portal for examination registration opens alongside the course registration portal. Students who do not register the examinations will not be allowed to write examinations in the relevant course.

4.4 Examination Procedures

Examinations are a very important component of a learning process. Therefore credibility and integrity of the processes must be maintained. Thus, there are policies, rules and regulations to guide the conduct of examinations.

4.4.1 Policies

Policies guiding the administration of examinations in NOUN include the following:

(i) Deferment of Examinations

In conformity with the provisions of Open and Distance learning (ODL), the University has set guidelines for the deferment of examinations and the conditions that warrant deferment thereof: For instance, students who wish to defer their examinations must apply well in advance instead of waiting until the end of semester when examinations are about to commence. These guidelines are laid out in the **“Policy on Deferment of Examinations”** (see Appendix V). Students are advised to read the document and acquaint themselves with the requirements for deferring their examinations or even courses.

(ii) Remarking of Scripts

The University has put a policy in place to guide requests for remarking of scripts and re-computation of results. The provisions of this policy can be found on “**Policy of Re-Marking of Students’ Examination Scripts and Re-computation of Results**” For instance, a student who wishes to request for the re-marking of his/her script(s) must appeal within 30 days from the date of publication of the results. There is a fee per course for this service (see Appendix VI). Students should familiarise themselves with the procedures before making requests for the remarking of their scripts.

(iii) Examination Rules and Regulations

There are laid down rules and regulations guiding the end- of -semester examinations. Students are advised to read these rules carefully before they proceed to write any examination as examination misconduct is taken very seriously in NOUN and strict disciplinary measures have been put in place for defaulters (see Examination Rules and Regulations in appendix VII).

(iv) Examination Misconduct

Malpractice refers to any breach of the Matriculation oath. Examples of examination malpractice are: cheating, fighting, impersonation, verbal or physical attack on lecturer(s) and staff. Examination malpractice is regarded as a very serious offence by the university and so it attracts high sanctions. The penalty ranges from a warning to outright expulsion. Students are advised to desist from all forms of examination misconduct.

4.5 Disciplinary measures for Examination Malpractice

The punishment for examination malpractice is premised on a decree promulgated by the Federal Government on Examination Malpractices in 1999. The main sections and points of the decree which every student should be familiar with are contained in the NOUN General Catalogue (2104-2017) and have been reproduced in Appendix VIII.

4.6 Students’ Challenge of Results

Students who are not satisfied with the grade / results receive from any course after receipt have opportunity to challenge the results by writing a letter of complaint to Centre Director through the Programme Coordinator requesting for the review or remark of the papers.

PART 5: LEARNER SUPPORT SERVICES

5.1 Introduction

Learner support refers to the facilities and services that the institution makes available to facilitate students' learning. The facilities which include eLibraries, laboratories and eLearning platform are designed for you to meet physically and virtually, study, socialise and work collaboratively regardless of your location.

5.2 Facilitation

5.2.1 Introduction to ACETEL eLearning Platform

NOUN is leveraging on the advancements achieved in Information Communication Technology (ICT) by using technology to mediate the distance between students and teachers who are tutorial facilitators in a distance learning and eLearning context. ACETEL eLearning platform that is designed to enable student learn at their own pace and location. The platform has several features such as course content in e-book and video formats, online class discussions, general forum for interaction among peers, facilitation for interaction with tutorial facilitators, and assessment for practice quizzes, tests and assignments.

The course materials for the programmes in ACETEL are available on the platform in e-book format for students. This is accessible on smart phones, notepads, or any system that uses safari, iOS, chrome or internet explorer. There is an introductory demo to the elearning platform that shows students how to use the platform. Students are encouraged to visit the eLearning platform and register at www.acetelnoun.edu.ng.

5.2.2 Tutorial Support

The facilitation feature on the platform enables facilitators to interact with students through several features such as online class discussions, general forum, and assessments.

Facilitation procedure: Students are expected to ask questions about aspects of the course content that may not be clear; participate in online class discussions initiated either by the facilitator or their peers; and assess their understanding through practice quizzes provided by tutorial facilitators on the eLearning platform.

Role of Students: As distance learners, students are responsible for their learning. The course materials are designed for interactive and self-instructional learning. Students are therefore expected to study their course materials before interacting with their tutorial facilitators and peers on the eLearning platform.

Role of Facilitators: The tutorial facilitators comprise academic staff of the Centre and other tutorial facilitators that have qualifications that are comparable with lecturers in conventional universities. These facilitators are available to guide students through the course content towards achieving their learning goals. Students are encouraged to interact with their facilitators on the platform.

5.3 Library Services

Centre of Excellence on Technology Enhance Learning has a standard and well equipped library at the Headquarters in Lagos as well as an online eLibrary known as “[Information Gateway](#)” to support teaching, learning, and research activities of the university. Its major aim is to facilitate access to scholarly resources that will enrich in students’ learning. The main hub of the Library is located at the headquarters of the University, while each study centre also has a library. The ACETEL Library has both print and electronic resources. The electronic resources from the e-library of University will help you in your studies, research in pursuit of scholarship. Each resource provides very helpful tools to assist you navigate through the contents.

5.4 Language Services

The Centre will leverage on the language laboratory facilities for English and French located at the Faculty of Arts to solve language problems the students might face. The services of English and French Faculty members would be involved to assist the students in developing deep understanding of the two languages. The centre will also utilize the facilities at that Visitors Information & Call Centres (VICC) Unit of the University to interpret course into French and English languages and during the language training for the students.

5.5 Information Communication Technology (ICT)

ACETEL has the ICT Unit that demonstrates the significant role that ICT plays in the Centre operations. It is responsible this Unit to provide IT services and infrastructure to facilitate electronic handling of your data and activities in the Centre relating to admissions, registration, examinations and student identity cards.

5.6 Channels of Communication

Direct all enquiries to acetel@noun.edu.ng, +234-8182972097.

PART 6: STUDENTS' ISSUES AND POLICIES (<https://acetel.nou.edu.ng>)

6.1 Introduction

This section informs you of your rights and responsibilities as a student of ACETEL. Your obligation is to abide by the code of conduct of the University. It is the University's responsibility to provide high quality services and channels through which students' complaints can be addressed and resolved.

6.2 Code of Conduct

As a student, you are expected to observe all the rules and regulations of the University which include but not limited to the following:

- Students of the ACETEL are required to be self-disciplined and responsible, as they study at their own pace.
- Students are strongly advised to desist from cultism and other acts that may lead to indiscipline.
- Students are expected to conduct themselves in an orderly and peaceful manner.

6.3 Studying Tips

Studying at the ACETEL gives you the unique opportunity to study while you are engaged in work or other activities. It is therefore important for you to note that this new mode of learning requires a different approach to studying:

- Excellent time management skills will be needed to keep up with the pace of work.
- It is necessary to study consistently as it is easier to spread out work than to do so much within a short space of time especially if you are engaged in an employment.
- You need to develop a weekly study plan – timetable.
- Review your work at the end of each week and modify your plan accordingly.
- Attempt all activities recommended in your course materials.
- Use memory enhancing aids (e.g. mnemonics, visualisation, revision etc).
- For self-help study groups with other ACETEL students within your locality as this helps spur you on to achieving your goals as you will not want to let yourself down.

6.4 Students' complaints

The ACETEL has made provision to address any grievances or needs that students may have.

6.5 Sexual Harassments Policy (<https://acetel.nou.edu.ng>)

The Centre is at the fore front of promoting gender equality in the University community. It also encourages the formation of an enabling work and study environment for both staff and students. ACETEL, acknowledges that while sexual harassment is not limited to women, and therefore, as part of efforts to create this enabling environment, will continue to raise the level of moral standards among staff and students. The Centre is therefore dedicated to enlightening its public on the evils of sexual harassment and other associated anti - social conduct.

Sexual harassment has very grave effects on the overall productivity of staff and students in the university. Consequently, it is a very serious infraction, requiring punitive actions.

Examples of conducts that may constitute sexual harassment, among others are:

- Sexual pranks, teasing, vulgar jokes
- Verbal abuse of a sexual nature
- Physical touching of a sexual nature
- Giving sexually suggestive gifts
- Making sexually suggestive gestures
- Posting sexually suggestive pictures
- Unwanted hugging
- Groping without permission.
- Forceful sexual intercourse (Rape)

Policy Statement 1

To enlighten all staff / learners about the impacts and ills associated with sexual harassment, and thereby create a sense of social responsibility.

Implementation Strategies

- i. Adopt and implement the university's Anti - Sexual Harassment policy.
- ii. Produce and disseminate a code of conduct leaflet and on the university's website issues on anti- sexual harassment at the start of every academic session.
- iii. Incorporation of the anti-sexual harassment policy into the staff conditions of service.

Policy Statement 2

The University ensures an environment, free of sexual harassment for all and achieve gender equity and equality.

Implementation Strategies

- i. Formulate procedures to be followed in cases of sexual harassment.
- ii. Institute structures like the Anti-Sexual Harassment Committee to ensure fair hearing for all parties.
- iii. Institutionalise support for victims of Sexual harassment by designated Counsellors.

Procedures to be followed by Complainants

- i. Filing complaints
- ii. Follow up with face-to face interaction with members of the Anti-Sexual Harassment Committee.
- iii. Complainants are encouraged to provide substantial or circumstantial evidence.

N.B

- The composition of the committee will have a representative for either staff or student depending on the complainant.
- Where the matter is reported to the Police or other Security Agencies directly, the Centre will not take any action, in order not to interfere with the police investigation and findings. On completion of the police investigations, the Centre can take appropriate actions according to its policies, code of conducts and bylaws.

Review Mechanisms

- i. When the complainant is a student, and is not satisfied with the outcome, he/she can appeal to University Senate.
- ii. Where the complainant is a staff, and is not satisfied with the decision, he/she can appeal to the University Council.

Advice to prevent Sexual Harassment

- i. Students/staff should be security conscious always, and must avoid situations that can compromise their safety, therefore students are advised to avoid lonely, remote places and paths.
- ii. Counselling on Sexual harassment should be an integral part of the Orientation exercises.

Responsibilities of the university management

- i. The university shall implement the Anti- Sexual Harassment Policy.
- ii. There shall be prompt investigation of cases of sexual harassment.
- iii. The university's management should institute appropriate disciplinary action for offenders.

Policy Statement 3

The university advises all staff and students to report incidences of sexual harassment and vices to the designated quarters for appropriate action., while the university ensures the privacy of all complainants

The university recognizes that there are incidences of false accusations of sexual harassment, it shall take appropriate measures to punish accusers, if claims of sexual harassment is discovered to be false.

Implementation Strategies

The Anti-Sexual Harassment Committee will:

- i. Obtain the victim's consent to proceed and write a report to the Centre/ University management.
- ii. Start appropriate processes outlined in 8.1 above.
- iii. Make recommendations commensurate with offence, such as suspension, demotion, loss of remuneration, loss of promotion, dismissal, expulsion (students) and warning.

The university's management will:

- iv. Implement sanctions/ recommendations within the shortest time possible.
- v. Create an institutionalized procedure for workshop training on Anti-Sexual Harassment for counselors and other interested members of the Centre Community.
- vi. Ensure that the policy shall be extensively disseminated to every member of the University community through appropriate channels.
- vii. Be fully committed to the implementation of the policy.
- viii. Initiate an internal complaints procedure that ensures privacy of all parties involved.

Policy Statement 4

To regularly monitor and evaluate the policy process to determine the level of implementation and progress in attaining aims of policy

Implementation Strategies

The university's management will:

- i. Ensure that there is a mechanism in place for tracking cases of sexual harassments and their resolutions.
- ii. Compile reports annually on the implementation progress of this policy, for research purposes and evaluation.

Disciplinary Actions

The Centre shall create and implement a disciplinary action process to ensure equality and consistency across all cases of sexual harassment in the university as contained in the Staff Conditions of Service and student handbook.

6.6 Risk Mitigation Policy (<https://acetel.nou.edu.ng>)

Risk Mitigation is an enabling function that adds value to the activities of the organisation and increases the probability of success in achieving our strategic objectives. It's about managing uncertainty and creating an environment where surprises are minimised. This document defines the practices adopted by the Centre to identify risk, in order to reduce potential negative impacts, and improve the likelihood of beneficial outcomes. The benefits of creating a practical Risk Mitigation Framework that can be applied across all parts of the Centre include a consistent, structured approach to identifying and managing risk, supports the achievement of the

University's strategic and operational goals by managing risks that may otherwise impede success and encourages an open and transparent culture where risk discussion and awareness are supported. Others are better decision making practices that support risk informed choices, prioritize actions and distinguish between alternative courses of action; encourages an understanding of the risk environment within which the University operates and provides assurance to the Vice Chancellor and Centre Director that critical risks are being identified and managed effectively.

The Mitigation of risk happens every day across all parts of the University, in many different ways. The following examples are put in place on how the University will mitigate risk of health and safety at work, code of conduct, research, physical security, internal audit, academic quality, business continuity and emergency management. The process used to identify and manage risk at University aligns with the ISO 31000:2009 Risk Mitigation Standard.

An Effective Enterprise Risk Management System

For risk Mitigation to be effective, it is important that University staff and stakeholders have a shared understanding of what an effective system for risk Mitigation looks like, and how we will achieve this. The ISO 31000:2009 Standard recommends organisations adopt the following principles that risk mitigation adds value, is an integral part of organizational processes, part of decision making, explicitly addresses uncertainty and its practices are systematic, structured and timely. Also, the principle of available available information, alignment with university and internal risk management; dynamic iterative and responsive to change facilitates continual of the university at large and ACETEL in particular. The Risk Mitigation Office will periodically review and confirm that each principle continues to be satisfied and is tailored to meet the needs of the University.

Risk Mitigation is embedded within University and ACETEL systems and processes to ensure that it is part of everyday decision making. In particular risk mitigation must be embedded in the following key processes like annual planning and budgeting processes, project and programme management and development and review of University policies and procedures and procurement and asset management. The Centre is exposed to a diverse range of internal and external factors and influences that make it uncertain whether, when and the extent to which our objectives will be achieved. The objectives referred to are expressed in the Standard as 'the overarching outcomes that the organisation is seeking. These are the highest expression of intent and purpose, and typically reflect its explicit and implicit goals, values and imperatives or relevant enabling legislation. The Centre articulates its strategic intent and purpose through its Implementation Plan. Risk treatment options should be based on cost benefit analysis of outcomes, i.e. does the cost of applying the required treatment or control outweigh the impact or the benefit? Treatments are essentially based on one (or a mixture) of the following options.

The assessment is used to determine the severity of the risk and identify those which are unacceptable to the University and require Management attention and further treatment. It also forms the basis of ongoing monitoring. The following table is to be used as a guide to determine whether a risk requires additional treatment. If the assessed risk rating is above the tolerable level for that impact area, then treatment is required that will either reduce the likelihood of the event occurring, or the impact should it be realised. If the risk rating is at or below the target level as indicated then the risk may be accepted. (Please note that project risk tolerance and acceptability should be specified as part of a risk and issues Mitigation plan for the project.) The Risk Mitigation Office will support risk owners in this process, and undertake an annual review of identified risks and controls, encompassing strategic, environmental, and annual planning changes.

The Centre treats and accepts risks by avoiding, mitigating, retaining, transferring and accepting the risk if the benefits outweighs the cost.

6.7 Environmental And Social Safeguards Policy (<https://acetel.noun.edu.ng>)

Identification of specific hazard

1. Environmental pollution resulting from use of hazardous materials

Policy 1: Hazardous Materials ACETEL develops

1. a hazardous materials inventory and update yearly.
2. work practices and procedures for handling hazardous materials for either routine maintenance or major renovation/demolition.
3. and implement any required training for the supervisors and/or workers involved with the handling of hazardous materials, as well as emergency response personnel.
4. a plan to move to "green" building materials and "sustainable sites" for routine maintenance and renovations.

Policy 2: Contamination resulting from improper waste disposal
ACETEL would:

1. Connect sewage component of waste to a central/ municipal sewage disposal system. In the event where the municipal treatment plant is not available, a sewage treatment plant would be integrated into the projects civil works.
2. Provide civil works with deliberate and appropriate technology plan for signage of collection points and storage points for waste, and tidiness of waste management areas.
3. Recycle, re-use and refurbish/repair the listed categories of solid wastes in the workshop/works department.
4. Train staff regularly on current practices of waste management.
5. E-mail staff (ACETEL) to inform them of achieved successes and challenges in waste management.

2. **Insensitivity to human rights.**

Policies 3: Human Rights and Physically Challenged Persons

Based on the identified disabilities in the work place/school, the following policies are formulated:

1. **Employability:** Physically challenged individuals in ACETEL would be given a fair share of total employment and student enrolment.
2. **Competitive, Integrated Employment:** Physically challenged individuals would benefit from having jobs in ACETEL alongside those without disabilities and are paid the same wages for same or similar work.
3. **Supportive Employment and Return-to-Work/Stay-at-Work:** ACETEL would provide a Social Security Disability Insurance or Supplemental Security Income for people who became permanently disabled while on the job.
4. **Para-Transit Access:** ACETEL would provide access to transit systems which allows people with disabilities to reliably get to work/learning environment and participate in a rich social life.
5. **Communication and Assistive Technology in the Workplace:** ACETEL would provide advanced information and communication technology which have helped in the development of working tools for people with various disabilities such as: computers with QWERTY keyboards and refreshable Braille displays, websites, online systems, digital screen magnification and software products such as JAWS (Job Access with Speech) for windows and NVDA (Non-Visual Desktop Access) for interaction.

In addition, there would be provision for on-site American Sign Language services or Video Remote Interpreting to assist with in-person communication in the workplace/learning environment, as well as providing employees/scholars with hearing disabilities access to Video Relay Services to aid in communication with outside parties.

6. **Physical Barriers, Building Access, and Workplace/Learning Environment:** ACETEL would ensure the accessibility of physical spaces and the availability of reasonable workplace/learning environment.
 - In cases of **Ambulatory disability**, ramps and elevators and special provisions in the design of their conveniences shall be considered in the architectural design of the structure.
 - ACETEL would ensure that office equipment that allows for height adjustable work surfaces to accommodate different wheelchair heights and limb mobility are purchased and installed.

7. **Flexible Hours and Extended Medical Leave Policies:** ACETEL would support physically
8. ACETEL would provide smoking zones for people with smoking habits, while smoke detectors should be installed in other no smoking zones including the toilets.
9. ACETEL would ensure there is no marginalisation or stigmatisation of HIV carrying persons.

4. Political and Religious Induced Insurgency

Policies 4: Political and Religious induced insurgency

ACETEL would ensure:

1. Religious needs like break periods within prayer times and holidays during festive periods are accommodated.
2. Incentives and welfare packages be given to workers during festivities.
3. That the organization dress code (if any) would not interfere with religious beliefs and requirement.
4. The hosting of religious based programs when the need arises for interested members.
5. Employees/Learners records are verified for past possible criminal activities prior to engaging their services or enrolment as the case may be.
6. Unauthorised gathering and unlawful groups within the university/centre be sanctioned.

5. Crisis and Emergency Management

Policy 5: Crisis and Emergency Management

ACETEL would ensure;

1. That there is a sick bay with a stand-by ambulance service and first aid kit for employees and learners. The University would consider retaining specific medical consultants which patients under crisis can be referred to.
2. That during construction a certified safety officer frequently briefs the site on safety tips and provides them with safety gears to be worn at all time within the construction site. Also, safety signs like; slippery floor, glass transparency, heavy machine area and caution lines in multi-storey structures should be displayed at all times.
3. Periodic Health and Safety Education to staff/student and also taking part in realistic practices.
4. Visible muster points, fire exits and fire alarms to alert occupants in case of fire. In addition, exit points in the building have to be clearly labelled, and so should assembly points. There should be legible notices on the walls that direct people what to do in case of an emergency
5. That there is provision of adequate fire fighting devices within the structure which are checked regularly for maintenance.

6. There are procedures in place for routine responsive cleaning and caution signs for wet areas.
7. That there is proper security detailing for staff/student on official field trips to sensitive areas.

6. Unfavourable work/learning environment

ACETEL would ensure:

1. That the structures are designed to accommodate more natural light with wide windows and open lobbies. The use of open courtyards and atrium courts where applicable to light up spaces in the structures should be adopted.
2. It adopts the use of burning fossil fuel (to power generators) as a back-up for power failure from the national grid. It should however be emphasised that zero emission is part of the projects objective to minimise contributions to green house effect. Solar and Wind Energy are strongly recommended as an alternate source of power supply.
3. Temperature: Provisions should be made to modify the external climatic conditions (hot or cold) in the working/learning environment. These modifications can be done artificially or naturally.

ACETEL would ensure:

- i. That structures are designed with adequate ventilation (to specifically take care of stuffiness, dampness and suffocation) by introducing ventilation lobbies and all the spaces within the structure should be cross ventilated (minimum of two windows on either walls of the space).
 - ii. That artificial interventions for ventilation and temperature modifications are included in their design by use of central air conditioning systems, split and window units. The service of a competent technician for these systems should be involved during periodic maintenance to avoid failure resulting from poor design and execution.
 4. Pollution: this could be caused by emissions and poor oxygen diffusion within the structure. Emissions could arise from the proximity to waste dumping sites or failures from the conveniences.
- ACETEL would ensure:
- i. That these emissions are taken care of during the design stage of the structure by providing adequate vents and drains in the conveniences to take out stench and waste water that could cause discomfort in the environment. Proper waste management by provision of waste basket in the conveniences for solid wastes should be provided.

- ii. That oxygen diffusion would be controlled by introduction of potted plants and green areas within the structure at the conceptual design stage. Ventilation fans should be a component of the ventilation system in the design of the structure.
5. ACETEL would ensure that pest control is considered from the conceptual stage of the design by avoiding dead corners and dark neglected spaces in the structure. Organic pesticide treated nets should be used where necessary. There should be periodic fumigation of the structure to control sporadic, endemic and epidemic pest conditions.
6. ACETEL would ensure that constant and adequate water supply is provided for in the structure. A central hot and cold water supply through the structure with taps or drinking fountains points at the lobbies should be provided to service the users at all times. A water treatment plant should be captured in the design of the structure to control the quality of water supply to the building.
7. **Human Factor:**
ACETEL would ensure:
 1. That a worker/learner is not assigned workload beyond his/her ability and professional capabilities to ensure efficient delivery of projects and assignments.
 2. That a worker/learner is not oppressed and should get adequate support such as: sponsorship, resources and encouragement from the supervisors/superiors/management.
 3. Positive cordial relationships is maintained amongst staff to guarantee a harmonious working environment. Staff should be made to understand their individual roles within the organisation.
 4. Frequent board and welfare meetings is organised with staff/learners to provide a conducive working/learning environment.
 5. A mixture of closed and open office design to accommodate sensitive tasks and interaction for easy flow of work.
8. **Conveniences:**
ACETEL would ensure:
 1. That at the design stage of the structure, adequate conveniences with good proximity are provided for the staff/learners to ensure maximum comfort.
 2. Offices and other spaces are equipped with comfortable furniture and working equipment that can be used to facilitate delivery of the assignment. In cases of multi-storey buildings, adequate and convenient circulation (lifts, staircases, walkways, and ramps) would be provided for the users

6.8 Noun-Acetel Scholarship Policy (<https://acetel.nou.edu.ng>)

ABOUT THE AWARD: There are two categories of Award: The Centre awards Scholarships to Postgraduate candidates to enable them undertake higher degree studies in ACETEL at Masters and Doctorate levels and for short professional training in ICT.

ACETEL awards scholarships on the affordances of technology to ensure digital literacy and enhance the quality of Science, Technology, Engineering and Mathematics (STEM) education, and also provides access to postgraduate education, training and professional development opportunities for suitably qualified Africans. ACETEL scholarship alumni are expected to contribute actively to development in their Countries.

TO BE TAKEN AT: Africa Centre of Excellence on Technology Enhanced Learning (ACETEL), National Open University of Nigeria.

PRIORITY FIELDS:

- 1) **Artificial Intelligence**
- 2) **Cyber Security**
- 3) **Management Information System**
- 4) **Short Courses**

Internet of Things	English language for non-English Speakers
Cloud Computing	Digital Literacy
Block Chain	Cyber Security
Open Government Data	Entrepreneurship
Data Base Management	Leadership and Project Management
Data Analysis	Learning Technology
Artificial Intelligence	Programming

COMMENCEMENT: 2020

Type: Masters, Doctorate Degrees and Short Courses

Eligibility: To be considered for a postgraduate scholarship or short course award, applicants must meet the following requirements:

- Citizen of African country.
- Minimum academic requirement: Bachelor's or Master's degree or equivalent for Masters and Doctorate Degrees, or a minimum of 5 credits at O'levels for short courses
- Demonstrate a clear vision of how the knowledge and training gained through the scholarship will be used to improve reform in their home countries
- Satisfactory English or French proficiency to enable full participation in a training course delivered in English or French
- Satisfy all requirements of the Nigerian Government for the appropriate student visa.

Target Group

- Nationals of African Countries.
- Professionals working in the Public Sector, the Private Sector or a Non-Governmental Organisation (Civil Society).
- Qualified candidate who wishes to undertake a Masters degree or Doctorate degree in one of the listed priority fields of study.
- You have a clear vision on how you will use the knowledge and training gained through the programme to improve reform in the proposed field of study.
- Gender Equality: ACETEL targets equal participation of females and males. Applications from female candidates are strongly encouraged, and mechanisms are in place to support female applicants and awardees.
- Disability Inclusion: ACETEL aims to ensure that people with disabilities are given fair and equal opportunity to apply and obtain a scholarship.
- Inmates: Qualified inmates.
- Special consideration will be given to Regional candidates (West African Sub-Region)

Number of Scholarships: 15 for Postgraduate and 40 for Short courses annually

Value of Scholarships: The scholarship budget is valued at \$3000 for Masters students, \$4000 for Doctorate Degree students and \$100 for Short Courses

Duration of Scholarship: For the duration of candidate's programme

GLOSSARY OF TERMS

Course

A course is a major content segment comprising topics in a particular subject. At ACETEL, multiples of related courses make up a programme of study leading to a postgraduate degree qualification.

Course Credit Unit System

This should be understood to mean a 'quantitative system of organisation of the curriculum in which subject areas are broken down into unit courses which are examinable and for which students earn credit(s) if passed'. The courses are arranged in progressive order of difficulty or in levels of academic progress. ACETEL also has a policy of odd number representing first semester and even number representing second semester.

Credit

A Credit is the unit of measurement for a course. At ACETEL, 1 credit unit is estimated to be the equivalent of 7 study units. A 1 credit unit course is estimated to take 30 study hours to complete and is broken down as follows: Study time- 21 hours, TMA-4 hours, and Facilitation-5 hours.

Semester

A **Semester** is an academic period of twelve weeks, excluding examination period. ACETEL offers two semesters of study per year: January to March and July to September.

Core/Compulsory Course

A course which every student must compulsorily take and pass in any particular programme at a particular level of study.

Elective Course

A course that students take within or outside the Centre. Students may graduate without passing the course provided the minimum credit unit for the course had been attained.

Module

A module is made up of a number of thematically related study units.

Study unit

A study unit is the smallest segment of a course material that treats a topic within a module. The content should take about 3-4 hours of study.

Programme

A programme comprises a set of prescribed courses offered at different levels of study. It also refers to a particular field of study made up of courses e.g. Masters programme in Cyber security. At ACETEL, a programme of study leading to a degree qualification is made up of general, compulsory and elective courses.

Pre-requisite Course

A course which student must take and pass before taking a particular course in a following semester or at a higher level.