



National Open University of Nigeria, Abuja

Faculty of Computing
*Department of Information System
and Technology*



**UNDERGRADUATE
STUDENTS' HANDBOOK
(2024-2028)**

**National Open University of Nigeria
Headquarters
Jabi, Abuja**



National Open University of Nigeria, Abuja
University Village, Plot 91
Jabi Cadastral Zone
Nnamdi Azikiwe Expressway
Jabi, Abuja

Lagos Office
14/16 Ahmadu Bello Way
Victoria Island, Lagos

Departmental email: IST@noun.edu.ng

NOUN e-mail: centralinfo@noun.edu.ng

URL: www.nou.edu.ng



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Acknowledgements

This handbook is the maiden edition in the Department of Information Systems and Technology for the department's undergraduate and Postgraduate programmes. It is one of the efforts and contributions of the Departmental Committee on Curriculum Development chaired by Dr. Vivian Nwaocha, Dr Francis Osang and Dr Ezeanya Christiana Uchenna.

Similarly, we acknowledge the contributions of the Faculty of Computing for providing all the required information to produce this handbook. The handbook is designed for reference, and contains concise information on the Department and Programmes. It is hoped that the undergraduate and Postgraduate students will find this book quite useful.

Dr Vivian O. Nwaocha

Head of Department, Information Systems and Technology



Professor Uduma Oji. Uduma
Vice Chancellor



Prof. Chiedu Felix Mafiana fppsn, fzs

Deputy Vice-chancellor (Academics)



Prof-Sheun-Usman

Deputy Vice-Chancellor (Administration)



Professor Olayemi Mikail Olaniyi

Dean, Faculty of Computing



Dr Christiana Uchenna Ezeanya

Head of Department, Information Systems and Technology

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NATIONAL ANTHEM

Nigeria we hail thee,
Our own dear native land,
Though tribe and tongue may differ,
In brotherhood, we stand,
Nigerians all, and proud to serve
Our sovereign Motherland.
Our flag shall be a symbol
That truth and justice reign,
In peace or battle honour'd,
And this we count as gain,
To hand on to our children
A banner without stain.
O God of all creation,
Grant this our one request,
Help us to build a nation
Where no man is oppressed,
And so with peace and plenty
Nigeria may be blessed.

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

Foreword from The Vice-Chancellor

One of the important documents usually requested by Faculty accrediting agencies is the handbook. This document contains all information on registration, available courses, course contents, examinations and staff.

In the case of the National Open University of Nigeria, the handbook must contain a brief history and modus operandi of the institution as well as the organisational structure of the university.



Being a unique university, it is imperative to avail all current and prospective students with information on quality assurance, strategic plan of the university at large and the objectives and philosophy of the school.

All these have been succinctly outlined in the document which has been put together by the Faculty of Computing. It is compulsory for every student to have a copy of this handbook. This edition is a review of the university-wide volume which was given to the students upon registration. The Faculty of Computing Handbook is due for review after five years. This means that on or before the expiration of this period, there must be a review having in mind developments in the faculty.

I, therefore recommend this handbook to all students and other persons interested in the programmes run by the Faculty of Computing.

Professor Olufemi Peters.

Vice-Chancellor, National Open University of Nigeria

Welcome Address from the Dean, Faculty of Computing



It is my pleasure to welcome you to the Faculty of Computing (FOC) of the National Open University of Nigeria (NOUN). FOC was established in 2023 following senate's approval at its hybrid 104th meeting held on Tuesday, 5th September 2023. The faculty is blessed with twenty-eight full time Academic staff and several Facilitators/part time academic staff with PhD and specialisation in various fields of Computing.

Faculty of Computing has three Departments namely:

1. Computer Science
2. Information Systems and Technology
3. Cybersecurity

The curricula of our programmes are robust incorporating both theory and practical. Our mission is to develop graduates that are well grounded in computing such that they are industry ready; employable and can be employers of labour.

Our students have access to live facilitation sessions and recorded facilitation session of video lectures. This is in addition to course materials that are available to them both online and physical copies. During their studies our students participate in discussion, chat forum as well as practical.

Choosing to study Computing at NOUN is the best decision of a lifetime. NOUN is the foremost and best Open and Distance Learning (ODL) University in Nigeria. Our e-ticking platform is always available to attend to enquirers and complaints from students. Once again welcome to a fruitful journey in your chosen programme in Faculty of Computing.

Professor Olayemi Mikail Olaniyi

Dean, Faculty of Computing.

Welcome Address from The Head of Department



Welcome to the Department of Information Systems and Technology (IST) at the National Open University of Nigeria (NOUN). We are pleased to have you in our academic community and commend your pursuit of knowledge and professional excellence in the dynamic field of Information Technology. Our department provides a wide set of programs aimed at equipping you with both theoretical

knowledge and practical skills. Whether you are enrolled in the B.Sc. Information Technology program, the Postgraduate Diploma (PGD) and Master's in Information Technology programs, or the MPhil and PhD in Information Technology programs, you are embarking on a transformative journey that will shape your future and prepare you to thrive in the digital world. At the Department of Information Systems and Technology, we are committed to offering a comprehensive and adaptable educational environment designed to accommodate students from a variety of backgrounds. Our Open and Distance Learning (ODL) model facilitates the integration of academic endeavours with personal and professional obligations while providing access to more effective educational resources. You will benefit from our carefully organised curriculum, experienced faculty members, advanced technology, and a supportive atmosphere for learning. As you begin this academic journey, we encourage you to take advantage of the many opportunities available — participate actively in discussions, engage with your peers and instructors, and apply your learning to real-world challenges. Our commitment is to support your academic and professional growth every step of the way. Once again, welcome to the National Open University of Nigeria's Department of Information Systems and Technology. We are excited to see the impact you will make, and we wish you a fulfilling and successful experience.

Dr Christiana Uchenna Ezeanya

Head of Department, Information Systems and Technology

Part I – INTRODUCTION

Overview of the National Open University of Nigeria

Historical background of National Open University of Nigeria

The National Open University of Nigeria bill, after all necessary official processes was passed and ratified, including change of name into Law by President Shehu Shagari on 22nd July 1983 and was gazetted on 27th July 1983, as the National Open University of Nigeria Act No. 6 of 1983. The law governs the legal existence of the University till date.

National Open University of Nigeria 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 the National Open University Act of 1983 by which the University was established, it was on the 25th April 1984 suspended. In the Nation's search for a means of providing education, which is functional, cost-effective and flexible, for all her citizens, a National Workshop on Distance Education was held in September 2000. Consequently, eighteen years after the suspension, the University was resuscitated as the National Open University of Nigeria (NOUN) on 1st October 2002.

The University has become a leading ODL institution in Africa, providing functional, flexible, accessible and cost-effective education for all seek knowledge. It has over 100 Study centres spread across the country six geo-political zones. The NOUN operated 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.

As an ODL Institution, NOUN is an equal opportunity University determined to meet the following objectives:

- a. Provision of Education for All and Lifelong learning
- b. Filling the gap created by the closure of Satellites campuses
- c. Cost-Effectiveness
- d. Improved Economies
- e. The flexibility of the delivery system
- f. Maximum utilization of academic personnel
- g. On-the job training
- h. Poverty eradication, vocational and Lifelong learning
- i. Provision of non-formal education
- j. Reaching the un-reached
- k. Propagation of National Orientation

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. This 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 and location of study.

The 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 are established at state and community levels, and special centres at the prison, paramilitary agencies and military units. These are among the many efforts to reach all segments, communities and individuals in the society who require a continuation of their education.

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: This delivery method utilises a variety of media and technologies that is most easily available to learners. These include course materials in print and on the web as e-Courseware. They are also available in compact discs and in OER formats.

The instructional mode of delivery and learning provides the opportunity for learners who are employed or self-employed to acquire knowledge, skills and techniques relevant to their present employment or to improve their academic qualifications and aspire for higher positions in their jobs. The instructional delivery system of the University is modelled after the Indira Gandhi National Open University (IGNOU), India. Students are taught through the provision of specialized study materials based on self-learning provided at the Study centres. The teaching is provided through the use of the following: Printed Materials, Audio tapes, Videos and Computer Mediated Learning.

Philosophy

According to the University's Profile document 2022-2023, the philosophy of the National Open University embodies the University's vision, mission and objective.

Vision

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

Mission

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

Objectives

In addition to the broad vision and mission statements, some of the major objectives of the Nation Open University of Nigeria are to;

- Ensure equity and equality of opportunities in education generally but specifically in university education;
- Provide wider access to education generally but specifically university education in Nigeria;
- Enhance education for all and lifelong learning;
- Entrench global learning culture;
- Provide instructional resources via the intensive use of information and communication technology;
- Provide flexible and quantitative education; and
- Reduce the cost, inconveniences and hassles militating against easy access to education and its delivery.

Overview of the Faculty of Computing

Vision

To be the foremost Faculty of Computing globally recognized for its relevance of curriculum, research, and instruction, making qualitative training available to and accessible by all at a competitive yet affordable cost on the open distance learning platform.

Mission

The Faculty of Computing is committed to:

- Providing a comprehensive and relevant distance learning curriculum in emerging Computing Science-based programmes
- conducting high-quality research in Computing science-related disciplines
- producing well-informed graduates for careers in academia, industry, and government
- encouraging and supporting strong cross-disciplinary, interdisciplinary, and multi-disciplinary collaborations both within and beyond the University (nationally and internationally)

Core Values

Excellence:	We will continue to set our sights and standards high.
Achievement:	We will capitalise on our distinctive strengths and unique opportunities to excel in an increasingly competitive world.
Collegiality:	We will maintain an inclusive and supportive yet challenging environment that attracts the best students, staff and faculty, working together with mutual respect.
Innovation:	We will be creative in our efforts to achieve our objectives.

- Relevance:** We will seek to continually improve our programs, ensuring that they are appealing and well suited to society and development, equipping our graduates for a successful career and future.
- Collaboration:** We will initiate mutually beneficial relationships with a variety of partners to ensure the development of facilities, programmes and research for community development and service.
- Sustainability:** We will maintain our self-sufficiency by seeking efficiencies and being entrepreneurial in our approach to challenges.

About the Faculty

The faculty of Computing is one of the faculties in the National Open University of Nigeria. It comprises three departments namely:

- i. Department of Computer Science - (CIT)
- ii. Department of Information Systems/Technology - (IFT)
- iii. Department of Cybersecurity - (CYB)

The faculty values excellence, achievement and innovation. Our dream is to provide leadership in readily accessible science training and dynamically sustaining it.

Historical Background of Faculty

The Faculty of Computing was culled from the Faculty of Computing in 2023, following senate's approval at its hybrid 104th meeting held on Tuesday, 5th September 2023. This was necessitated by the growing demand for technological transformation in almost every Nigeria sector. The faculty is blessed with twenty-eight full time Academic staff and several Facilitators/part time academic staff with PhD and specialisation in various fields of Computing.

Programmes on Offer

The Faculty of Computing is located on the ground floor of the Faculty Block in National Open University Headquarters at Plot 91 Cadastral Zone, Nnamdi Azikiwe Expressway Jabi, Abuja. It is currently administering and coordinating eight undergraduate programmes and three postgraduate programmes namely

Department of Computer Science

- B.Sc. Computer Science

Department of Information Systems/Technology

- B.Sc. Information Technology
- PGD. Information Technology
- M.Sc. Information Technology
- Ph.D. Information Technology

Department of Cybersecurity

- B.Sc. Cybersecurity

Administration

The faculty has a total number of two Professors, four associate professors and twenty academic staff in ranks ranging from Senior Lecturer to Assistant Lecturers, in different areas of specialisation.

The faculty is headed by Dr. Greg Onwodi,

Each of the three departments is headed by academic staff as follows:

Dr Oluwasogo Adekunle Okunade - Department of Computer Science

Dr Vivian Nwaocha - Department of Information Systems/Technology

Prof. Olayemi. M. Olaniyi - Department of Cybersecurity

The Faculty of Computing holds its Academic Board meeting, statutorily, every month, where issues bordering on academic and student matters, the progress of the faculty and staff are discussed. All Academic staff are members of the Board while the head of the administrative unit is the Secretary to the Board.

Overview of the Department of Information Systems and Technology

Preamble

The Department of Information Systems and Technology at the National Open University of Nigeria (NOUN) is part of the Faculty of Computing, established in 2023. The department offers comprehensive programs including Bachelor of Science (B.Sc.), Postgraduate Diploma (PGD), Master of Science (M.Sc.), and Doctor of Philosophy (Ph.D.) degrees in Information Technology. These programs are designed to equip students with both theoretical knowledge and practical skills, preparing them for professional roles in various computing fields. The department is staffed by experienced academics. The curriculum emphasizes current technological trends, aiming to produce graduates who are industry-ready and capable of contributing effectively to the evolving digital landscape.

Department's Motto, Vision and Mission

Motto

The motto of the Department of Information Systems and Technology is: 'Using Technology to make life Easier'.

Vision

Our vision is to provide students with a strong foundation in Information Systems and Technology, leveraging the current technological trends to produce graduates who are industry-ready and capable of contributing effectively to the evolving digital landscape.

Mission

The Department of Information Systems and Technology is committed to:

- provide students with a strong foundation in , leveraging the affordances of safe technology
- equip students with the skills necessary to secure computer systems, networks and data from cyber threats.

- equip students with the necessary skills to conduct high quality research in Cybersecurity
- produce well-informed graduates for cybersecurity career opportunities in the academia, industry and government

Programmes Offered

The following are the undergraduate and postgraduate programmes offered in the department:

- B.Sc. Information Technology
- Postgraduate Diploma (PGD) Information Technology
- M.Sc. Information Technology
- PhD Information Technology

Programme Duration

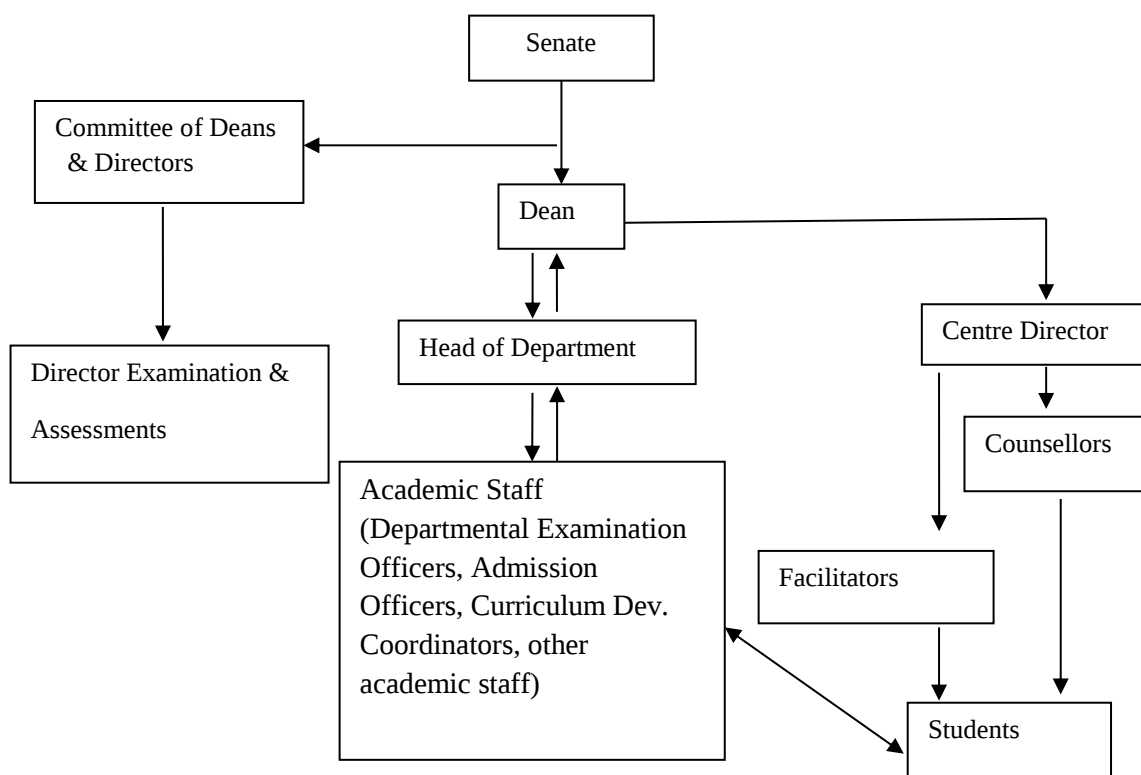
All undergraduate courses in the department run for a minimum of 4 years (8 Semesters) for 100 level entry and 3 years (6 Semesters) for 200 level entry. Postgraduate masters' courses run for 2 years (3 Semesters).

General admission requirements

Candidates seeking for admission into all the programmes in the Department of Computer Science must have five credits in the SSCE/GCE O'Level /NECO/NABTEB or equivalent obtained at not more than two (2) sittings. The five credits required should include English Language and Mathematics. Specific requirements for the different programmes are detailed in Part III

Organisational Structure

The administrative structure of the department follows the organogram below



Quality Assurance (QA)

Being an open and distance learning institution, adequate QA mechanisms are put in place in ensuring that all processes are quality assured in the following ways:

- All OPPs/DPPs are externally reviewed and signed by experts in those chosen fields of endeavour.
- All course materials are developed and edited by experts in the specific fields of study
- All exam questions and marking guides from 400 levels are moderated by external examiners
- Student's projects are assessed by external examiners

- e. Examination questions are marked externally by experts from different geo-political zones of the country by only PhD holders
- f. Only facilitators with PhD degrees are assigned as project supervisors
- g. Quality assurance committees are form at the Departmental, faculty and university level as a Directorate with each representative from each study centre
- h. The QA committee at the departmental level ensures that all processes comply with QA best practices among others

General Administration

The department is coordinated by a Head of Department, supported by the academic and non-academic staff. The department conducts regular meetings, monthly academic board meetings and emergency meetings involving all the staff of the department to deliberate over departmental issues. Some members of staff are representatives of the department at various committees within the university.

Students' Welfare

Handling of academic grievances follows the University-wide SERVICOM charter as shown in the Appendix VI

List of all Staff in the Department

S/ N	NAME	RANK	E-MAIL	TEL
1.	Prof. Olayemi M. Olaniyi	Professor/HO D	omolaniyi@noun.edu.ng	080517197 95
2	Prof. Joshua Abah	Professor	jabah@noun.edu.ng	080307108 04
3.	Dr. Gregory Onwodi	Reader/Dean	gonwodi@noun.edu.ng	080230063 65

4.	Dr. Juliana Ndunagu	Reader	jndunagu@noun.edu.ng	08033532416
5.	Dr. Vivian O. Nwaocha	Reader	onwaocha@noun.edu.ng	07033157862
6.	Dr. Morufu Olalere	Reader	molalere@noun.edu.ng	08034680087
7.	Dr. Olawale S. Adebayo	Reader	waleadebayo@noun.edu.ng	08032100361
8	Dr. Francis B. Osang	Reader	fosang@noun.edu.ng	08039720968
9.	Dr. Adenrele A. Afolorunso	Senior Lecturer	aafolorunsho@noun.edu.ng	08033288154
10.	Dr. Okunade A. Oluwasogo	Senior Lecturer	aokunade@noun.edu.ng	08067646449
11.	Dr. Adeyinka O. Abiodun	Lecturer I	aabiodun@noun.edu.ng	08034274160
12	Dr. Christiana U. Ezeanya	Lecturer II	cezeanya@noun.edu.ng	08030812977
13	Mr. Oluwaseun Oluyide	Lecturer II	ooluyide@noun.edu.ng	08101317509
14	Mrs. Oluwatoyosi V. Oyewande(Study leave)	Lecturer II	ofayemi@noun.edu.ng	08123158097
15	Mrs. Asonibare, Toyin Deborah	Lecturer II (Study Leave)	toni@noun.edu.ng	08069771591
16	Mr. Adebayo Adegboyega	Assistant Lecturer	aadebayo@noun.edu.ng	07060490938
17	Mr. Muhammed	Assistant Lecturer	maminu@noun.edu.ng	08065188204

	Aminu Abdullahi	(Study Leave)		
18	Mr. Iliyasu Muhammad Sani	Assistant Lecturer(Study Leave)	milyasu@noun.edu.ng	08066381285
19	Mr. Wada Kamal Sabo	Assistant Lecturer(Study Leave)	kwada@noun.edu.ng	08065188204
20	Dr. Farida Garki	Assistant Lecturer	fgarki@noun.edu.ng	08037612958
21	Mrs. Jane Ada UKAIGWE	Assistant Lecturer	jukaigwe@noun.edu.ng	08163611003
22	Mr. Adako KWANASHIE	Assistant Lecturer	akwanashie@noun.edu.ng	07011525889
23	Mr. Abdullateef Ebenmosi SALIHU	Assistant Lecturer	asali@noun.edu.ng	08032639840
24	Mr. Pascal ADEGHER	Assistant Lecturer	padegher@noun.edu.ng	07063421241
25	Mr. Alexander Irabor	Assistant Lecturer	airabor@noun.edu.ng	08060208086
26	Mrs. Folashade Olumodeji Auru	Assistant Lecturer	fauru@noun.edu.ng	08036272714

The portfolios for each of the members of staff in the department is presented follows:

S/N	Portfolios	Appointed Staff
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1	Head of Department/Central Administration	Dr Vivian O. Nwaocha
2	Examination/Welfare Officer	Mr Adako Kwaneshie
3	Course Materials Development and Compliance Coordinator	Dr. Francis Osang/ Dr Ezeanya Christiana
5	Seminar and workshop Coordinator	Dr Juliana Ndunagu
5	Evaluation and Monitoring Officer	Dr. V. O. Nwaocha
6	Admission/Postgraduate Coordinator	Mr Pascal Adepher
7	Student Counsellor	Dr. V. O. Nwaocha
8	Student Academic Advisor	Dr. Ezeanya Christiana
9	Secretary/Administrative Officer	Mr Samuel
10	Clerical Staff	Mr Abraham

S/N	NAME	Qualification	SEX	RANK	EMPLOYMENT STATUS
1.	Dr. Francis Bukie Osang	PhD. (ICT-2016), MSc. (IT 2010); B. Sc. (Comp. Sci – UNICAL -2002);	M	Senior Lecturer	Full time

		Information Systems Security, Software engr. and HCI			
2.	Prof. Muhtar Hanif Alhassan	PhD. (Computer control, 1993, Uni Sussex, UK); M. Eng (Industrial Automation, 1982, Belarus), MBA (Technology Mgt, 2001,); Big Data, Cyber-Security, Artificial Intelligence, MIS, Smart systems	M	Professor	Full time
3.	Dr. Gregory Onwodi,	B.Sc (Comp. Sci 1995, UNN), M.Sc (IT. 2004, UNILAG), Ph.D (Computer Science, 2015 -Babcock,); Software Engineering	M	Associate Professor	Full time
4.	Dr. Juliana Ndunagu	B.Sc (Maths, 1986 ,UNN), PGD in Computer Science ,1992, M.Sc, (Computer Science & Engineering,2003,Enugu State University), Ph.D (Info Tech- 2009 ,Ebonyi State University).	F	Associate Professor	Full time
5.	Dr. Vivian O. Nwaocha	B.Eng. (Met.&Mat.Eng 1995, ESUT) PGD Computer Engineering, 2002, ESUT); MSc. Computer Science, 2007, Ebonyi State Uni.	F	Associate Professor	Full time

		PhD. Computer Science; 2017, UNN); Cyber-Security			
6.	Dr. Adewale Adesina	B.Eng. (Chem Eng- 2000 ABU.Zaria), MSc. (Info. Tech. 2011 Loughborough Uni. UK), Ph.D (Computer Science 2016, Loughborough Uni. UK); Intelligent and interactive systems	M	Senior Lecturer	Full time
7.	Dr. Adenrele A. Afolorunso	B.Sc (Computer Science/Mathematics, Onabisi Onobanjo -1995), M.Sc (Comp. Sci – UNILAG 2005), PhD (Computer Science UNILAG 2017); Cyber-security	F	Senior Lecturer	Full time
8.	Dr. Madu Galadima	B.S.c Electrical Electronics, M.Sc Electrical Electronics, Ph.D Information Systems; Information Systems	M	Lecturer I	Full time
9.	Dr. Abiodun Adeyinka	B.Sc Computer Science, FUTA--2008,M.Sc. (Computer Science – UI-2012; Ph.D Computer Science; UI, 2020.	F	Lecturer I	Full time
10.	Dr. Okunade A. Oluwasogo	BSc. (Computer Science, UNILORIN- 2004; M.Sc. (Computer Science) – UI 2009; PhD. Computer	M	Senior Lecturer	Full time

		Science UI, 2021. Cyber-Security}			
11.	Mr. George A. Oguntala	B.Sc (Electronic /Computer Engineering 2001, LASU), M.Sc (Systems Engineering – Engineering Analysis Option 2008), MBA, (Human Resource Management 2008 LASU)	M	Lecturer II	Full time
12.	Mr. Nnabuike N. Eya	B.Sc Ed (Comp. Sci), M.Sc (Network & Communication) Ph.D. Computer Science (in view)	M	Assistant Lecturer	Full time
13.	Mrs. Asonibare, Toyin Deborah	PhD (In-view), Morgan State University USA; MSc, BSc Comp Sci, 2010, 2005 UNILORIN. Information systems	F	Lecturer II	Full time
14.	Mr. Oluwaseun Oluyide	B. Eng. Elect/Elect Engr, M.Sc. Communication and Signal Processing, PhD (in view); Network, Communication and Signal Processing	M	Lecturer II	Full time
15.	Mrs. Oluwatoyosi V. Oyewande	B.Eng. (Hons)in Electrical and Electronic Engineering- 2002 FUT Akure, M.Sc Communication and Signal Processing (2006) University of Newcastle Upon Tyne.	F	Lecturer II	Full time

16.	Mr. Adebayo Adegboyega	B.sc Comp. Sci- 2011 FUT Akure, M.S.c Computer Science - 2018, PhD Computer Science (in-view); Data Science	M	Assistant Lecturer	Full time
17.	Mr. Muhammed Aminu Abdullahi	PhD (In-view) University of East London; M.Sc Info Tech. 2014 Mahamad Ghandi; B.Sc Comp. Sci. – Kano State Univ 2010; Information technology	M	Assistant Lecturer	Full time
18.	Mr. Iliyasu Muhammad Sani	B.Sc Computer Science Kano State UNI 2005-2010, M.Sc Computer Science 2013-2015 Malaysia.	M	Assistant Lecturer	Full time
19.	Mr. Wada Kamal Sabo	B.Sc Software Engineering 2009-2013 UK, M.Sc Computer Network 2013-2015 UK	M	Assistant Lecturer	Full time
20.	Mrs. Farida Garki	B.Sc Computer Science 2010 Bayaro Kano , M.Sc Computer Science 2015 Bayaro kano, PhD in view Computer Science	F	Assistant Lecturer	Full time
21.	Mrs. Jane A. Ukaigwe	B.Sc Computer/Statistics 2008 UNN; MSc Info Tech 2016 - NOUN	F	Assistant Lecturer	Full time

Part II – Key Information for New Students

Information for New Students

Orientation Programme

Orientation for new students is organised at various study centres. The study centre will advise the student on the process accordingly. The programme takes place at the study centre to allow student to look around and identify the Study centre personnel that will be attending to requests with the continuum of the study programme. It also acquaints the students to the Culture of Open and Distance Learning and learn the various facilities and support services that will enhance learning. The Services include:

- Knowing the First Contact points at NOUN.
- Selection and Registration of Courses
- General Baselines information, guidance and counselling services
- Usage of ICT services.

Deferment of Admission

This is entertained only based on university policy and conditions. Students are required to write the Registrar through the Study Centre Director with evidence of admission and course registration.

Registration procedure

Student registration is done at their chosen study centres. The centre furnishes the candidate with the detailed registration process. To change academic programme, students are required to obtain an application form online or at the Study Centre and then follow the procedure of Change of programme. Counsellors are available at the Study centre to provide appropriate guidelines.

Course Registration portal

The opening and closing of course registration portal are specified by the university in the published university calendar for the year.

Add or Drop a Course

Student process “and/or drop courses” through study centres. The centre furnishes the candidate with details of the process.

Change of Programme of study

Registered students who wish to change their programme of study should initiate the process through their respective study centres. The students should collect the required form, fill and submit it through the same study centre.

Examination

Based on the courses assigned to PhD holders in the Department, each academic staff prepares examination questions and marking guides using the course material developed for each course. If the assigned courses are more than the maximum approved by the Senate of the University, the excess courses are outsourced to experts from other Universities for setting of questions using the conference setting scenario.

Upon completion of the setting of questions, all questions are subjected to internal moderation. This is followed by checks in by Directorate of Examinations and Assessment to avoid repetition of questions. The successful questions are then submitted for external moderation involving experts not below professorial cadre. When corrected, the questions are submitted to the DEA for administration to the students.

In addition, the academic Staff in like manner prepares Tutor-Marked Assignment (TMA) questions every semester involving external experts where appropriate. These questions are further internally moderated with the accompanying marking schemes before they are given to the students. Three sets of TMAs are expected to be set by each academic staff in every course constituting 30% of the course final grade and also serve as the continuous assessment for the course. The End of Semester Exams (ESE) constitutes 70%.

Apart from the earlier examinations conducted in 2005, 2006, 2007, 2008 and 2009 respectively, all recent ESE for the 100 and 200 level students have been conducted using electronic examination system. The conduct of the end of semester examination is usually carried out at the various study centres. The University has in place guidelines for the conduct of examinations. Results are issued after Senate ratification of the semester results.

Research Projects

At the commencement of 400 Level, students are expected to submit their project topics for approval

Grading, Moderation and Mode of Submission of Projects:

Grading of research projects: Students projects are graded by the assigned supervisors, moderated during the zonal external moderation exercises. Master of Science projects and above is subjected to project defence.

Mode of Submission of Projects: Projects and score sheets (hard and soft copies are submitted to the Faculty through the Study Centre. The study centres upload all softcopies of the submitted copies online on the PAS platform.

Results calculation and Progression

Grading System

Percentage Range	Description	Letter Grade	Point Grade
70.0% and above	Excellent	A	5
60.0% - 69.9%	Very Good	B	4
50.0% - 59.9%	Good	C	3
45.0% - 49.9%	Satisfactory	D	2
40.0% - 44.9%	Pass	E	1
00.0% - 39.9%	Fail	F	0

Source: (Senate Guideline on Grading Examinations, NOUN)

Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA)

At the end of the 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.

The formula for Calculation of GPA and CGPA

The Grade Point (GP) for each course shall be calculated by multiplying the Point Grade attained by the credit units for the course. The GPA is then calculated by dividing the total Grade Point of all the courses taken in that semester by the total number of credit units. The **GPA** is computed on a semester-by-semester basis. The formula for calculating the GPA is the following:

$$GPA = \frac{TGPE}{TCC}$$

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:

$$GPA = \frac{TGPE}{TCC}$$

KEY:

TCC	-	Total Credit Carried
TCE	-	Total Credit Earned
TGPE	-	Total Grade Point Earned (Credit Point X Weighted Grade Point)
CGPA	-	Cumulative Grade Point Average
WGP	-	Weighted Grade Point

An example of how to calculate the GPA is presented:

Course	Score (%)	Letter Grade	Credit Unit	Point Grade	Grade Point
CIT104	67	B	3	4	12
CIT108	75	A	3	5	15
CIT211	46	D	2	2	4
CIT215	54	C	3	3	9
CIT237	73	A	3	5	15
TOTAL			14		55

$$GPA = \frac{TGPE}{TCC} = \frac{55}{14} = 3.92$$

Class of Degree

Based on above computation, a student performance at the end of each semester can be in any of the class as tabulated in the table below:

CLASS OF DEGREE

S/N	CGPA	CLASS OF DEGREE
1	4.50-5.00	FIRST CLASS
2	3.50-4.49	SECOND CLASS UPPER
3	2.40-3.49	SECOND CLASS LOWER
4	1.50-2.39	THIRD CLASS
5	1.00-1.49	PASS

Good Academic Standing

In order to be in good standing, you must maintain a GPA of 1.0 and above. Any student that falls below 1.0 is not in good standing and will be advised to withdraw.

In addition, you must meet all degree award requirements that is, you must pass compulsory courses and electives up to the minimum total number of credit units required and pass all compulsory GST courses

End of Programme Clearance

Upon the release of the graduation list, graduating students are required to undergo a clearance process by doing the following:

Log into your portal, click on clearance form, which is on the left-hand side of the menu; Print out the form, and fill in the necessary information required, e.g. Name, Matric Number, etc. (student data)

Having done the above, you can return to the portal:

Click on Study Centre to clear any issues regarding the Centre. If there are none, an official stamp is required here for proof.

Click on Library for clearance on books if still having school books in your possession. If there are none, an official stamp is required here for proof.

Click on Bursary; here is the final process for clearance on Alumni, project fees, IT, etc. This part will also be stamped by the faculty representative.

Having satisfied all the above, the student is ready for the graduation ceremony.

Maintaining an Academic Atmosphere

The maintenance of academic atmosphere is carried out as follows:

- The department ensures course materials are available in any of the formats (Print, CD, and internet) to all students at the time of the request.

- The Head of Department is aware that time-tables of tutorial hours and that of the semester examination are made available to students.
- The Head of Department is aware that classrooms/laboratories used for tutorials are cleaned and suitable for receiving lectures.

The department is focused on bringing the best quality course materials to the students. This would give them the opportunity to practice the profession anywhere. Students are also given the opportunity of visiting any mass media and the media adjuncts close to their study centres in order to associate themselves with media practices.

The reading and studying of the printed course materials can, of course, take place in the home, in an environment convenient to the student, or at some designated places called Study Centres. These are places located across the geopolitical zones of the country. At present, there are over 70 Study Centres across the country.

Part III – Programme specifications

S/N	UNDERGRADUATE / POSTGRADUATE PROGRAMMES	ENTRY REQUIREMENTS: FIRST DEGREE/A LEVEL/OND/HND/NCE/POSTGRADUATE
1	<i>B.Sc.Information Technology</i>	i) Have at least credit level passes in five (5) subjects at the Senior Secondary Certificate or its equivalent NECO, GCE ‘O’ level, NABTEB or TC II ‘O’ level examinations. The credit level passes must include English language, Mathematics and Physics to form the core subjects and any other two (2) credit level passes from Chemistry, Biology/Agric, Further Mathematics and Computer Studies taken from a maximum of two (2) sittings. ii) A minimum of a credit pass in Computing-related courses at the University/ A minimum of Lower Credit pass at the National Diploma (ND) or NCE (with a merit pass in Mathematics) for consideration for entry into the 200 level of the programme in addition to (i) above. iii) Have two (2) A-level passes (graded A – E) at the GCE Advanced level in relevant subjects (Mathematics and Physics) for consideration for entry into the 200 level of the programme in addition to (i) above. iv) A minimum of a pass in BSc/Upper/lower credit in HND from any Other Science Technology and Engineering-related fields as shown below, for consideration for entry into the 200 level of the programme in addition to (i) above. v) Upper/lower credit in HND or a minimum of a pass in BSc from any computing-related fields as shown below,

		for consideration for entry into the 300 level of the programme in addition to (i) above. Note: Computing-related fields Computing-related fields from recognized institutions include: Computer Science, Data Management, Information Technology, Mathematics, Maths and Statistics, Statistics, Computer Engineering, Electrical/Electronic Engineering, Electrical Engineering, Cybersecurity, Artificial Intelligence, Data Science, Software Engineering, Communication Technology, Physics Electronics, Physics with Mathematics, System Engineering, Computer with Mathematics Other Science and Engineering-related fields: Other Science and Engineering-related fields from recognized institutions include: Statistics, Data Management (From Faculty of Computing), Electrical Engineering, Physics Electronics, Physics with Mathematics, Mechanical Engineering, Agricultural Engineering, Chemical Engineering, Metallurgical Engineering, Civil Engineering, other Science and Technology and Engineering-related fields
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A. Outlined Programme

BSc INFORMATION TECHNOLOGY (BMAS)

100 Level

Course Code	Course Title	Unit	Status
1st Semester			
GST101	Use of English and Communication Skills I	2	C
GST103	Computer Fundamentals	2	C
GST107	The Study Guide for the Distance Learner	2	C
CIT143	Introduction to Data Organization and Management	2	C
BIO101	General Biology I	2	C
CHM101	Introductory Inorganic Chemistry	2	C
MTH101	Elementary Mathematics I	3	C
MTH103	Elementary Mathematics III	3	C
CIT191	Computer Laboratory I	1	C
PHY101	Elementary Mechanics, Heat and Properties of Matter	2	C
CHM191	Introductory Practical Chemistry I	1	C
PHY191	Introductory Practical Physics I	1	C
BIO191	General Practical Biology I	1	c

	Total Credit Units - Compulsory	24	
	Total Credit Units - Elective	0	
	Total Credit Units	24	

2nd Semester

GST102	Use of English and Communication Skills II	2	C
GST104	Use of Library	2	C
MTH102	Elementary Mathematics II	3	C
CIT108	Introduction to Problem Solving	3	C
CIT104	Introduction to Computer Science	2	C
MTH102	Elementary Mathematics II	2	C
PHY102	Electricity, Magnetism and Modern Physics	3	C
STT102	Introductory Statistics	2	E
	Total Credit Units – Compulsory	17	
	Total Credit Units	19	

200 Level

Course	Course Title	Unit	Status
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Code			
1st Semester			
GST201	Nigerian Peoples and Cultures	2	C
GST203	Introduction to Philosophy and Logic	2	C
CIT211	Introduction to Operating Systems	3	C
CIT215	Introduction to Programming Languages	3	C
CIT237	Programming & Algorithms	3	C
MTH211	Introduction to Set Theory and Abstract Algebra	3	E
MTH213	Numerical Analysis I	3	E
MTH281	Mathematical Methods I	3	E
Total Credit Units – Compulsory		13	
Total Credit Units - Elective		9	
Total Credit Units		22	
<i>N/B: Students are expected to offer at least one elective course per semester.</i>			
Maximum credit units allowed per semester is			
25			

2nd Semester			
GST202	Fundamentals of Peace Studies and Conflict Resolution	2	C
GST204	Entrepreneurship and Innovation	2	C

CIT208	Information Systems	2	C
CIT212	Systems Analysis and Design	3	C
CIT236	Analog and Digital Electronics	3	C
CIT292	Computer Laboratory II	2	C
MTH212	Linear Algebra II	3	E
MTH232	Elementary Differential Equations	3	E
MTH282	Mathematical Methods II	3	E
PHY208	Network Analysis and Devices	3	E
	Total Credit Units - Compulsory	14	
	Total Credit Units - Elective	12	
	Total Credit Units <i>N/B: Students are expected to offer at least one elective course per semester.</i> Maximum credit units allowed per semester is 25	21	

300 Level

Course Code	Course Titles	Units	Status
1st Semester			
CIT303	Principles of Communication Technology	3	C

CIT305	Networking and Communication Technology	3	C
CIT309	Computer Architecture	3	C
CIT315	Operating System II	3	C
CIT353	Introduction to Human Computer Interaction	2	C
CIT216	Fundamental of Data Structures	3	E
CIT371	Introduction to Computer Graphics and Animation	3	E
CIT389	Industrial Training/SIWES	6	C
Total Credit Units - Compulsory		20	
Total Credit Units - Elective		3	
Total Credit Units		23	
<i>N/B: Students are expected to offer at least one elective course per semester.</i> Maximum credit units allowed per semester is 25			
2nd Semester			
GST302	Business Creation and Growth	2	C
CIT342	Formal Languages & Automata theory	3	C
CIT344	Introduction to Computer Design	3	C

CIT314	Computer Architecture II	3	C
CIT302	Data Mining and Data Warehousing	3	C
CIT364	Management Information Systems (MIS)	2	C
CIT332	Survey of Programming Languages	3	E
	Total Credit Units - Compulsory	15	
	Total Credit Units - Elective	3	
	Total Credit Units	21	
	Maximum credit units allowed per semester is 25		

400 Level

Course Code	Course Titles	Units	Status
1st Semester			
CIT403	Seminar on Emerging Technologies	3	C
CIT411	Microcomputers & Microprocessors	2	C
CIT415	Introduction to E-commerce	3	E
CIT427	Database Systems & Management	3	C
	Computer Networks and Communication	3	C

CIT423				
CIT421	Net-Centric Computing	3	C	
CIT463	Introduction to Multimedia Technology	3	C	
	Total Credit Units - Compulsory	16		
	Total Credit Units - Elective	5		
	Total Credit Units	20		
	<i>N/B: Students are expected to offer at least one elective</i>			
	<i>course per semester.</i>			
	Maximum credit units allowed per semester is			
	25			
2nd Semester				
CIT425	Operations Research	3	C	
CIT474	Introduction to Expert Systems	2	C	
CIT478	Artificial intelligence	2	E	
CIT484	Website Design & Programming	3	E	
CIT410	Introduction to Cyber-Security	2	E	
CIT499	Project	6	C	
	Total Credit Units - Compulsory	16		
	Total Credit Units - Elective	3		

	Total Credit Units	21		
	Maximum credit units allowed per semester is			
	25			

Course Content Specification: For graduation with a B.Sc. (Hons.) in Information Technology, the students must have passed all compulsory courses, a minimum of **130** credit units of core courses for an 8-semester structure and **91** credit units of core courses for a 6-semester structure.

SYNOPSIS OF COURSES AND DETAILED PROGRAMME PROPOSAL (DPP)

BIO101: GENERAL BIOLOGY I (2 UNITS)

Characteristics of living things; cells as the basic unit of living things, cell structure, organization, cellular organelles, tissues, organs and systems. Classification of living things, general reproduction and concept of inter-relationships of organism. Heredity and evolution. Elements of ecology (introduction) and habitats.

BIO191 GENERAL BIOLOGY PRACTICAL I (1 UNIT)

What practical work in biology involves. Laboratory organization. Handling common laboratory equipment. Microscopic handling and maintenance. Making microscopic measurements. Procuring animal materials for practicals. Killing, preserving and maintaining animal materials. Procuring plant materials. External features of plants (differences and similarities). Preparation of temporary slides. Preparation of stains and reagents. Techniques for microbial culture and grain staining. Setting up demonstration for physiological processes in plants. Setting up

an apparatus for demonstrating physiological processes in animals. Preparation required for dissection.

CHM101: INTRODUCTORY INORGANIC CHEMISTRY (2 UNITS)

Hypothesis, theory and law with appropriate illustrations, Nature of matter – 3 states of matter, atomic structure, electronic energy levels and orbital. Periodic classification of elements and its relationship to their electronic configurations, Chemical bonding, Survey of properties and trends in groups I, II, IV, VI and transition metal,

CHM191: INTRODUCTORY PRACTICAL CHEMISTRY I (1 UNIT)

Practical based of CHM 101 and CHM 103: Cations and anions – identification, Acid- base titrations, Redox reactions and determinations

GST101: USE OF ENGLISH AND COMMUNICATION SKILLS I (2 UNITS)

Listening enabling skills, listening and comprehending comprehension, note taking and information retrieval. Including data, figures, diagrams and charts. Listening for main idea, interpretation and critical evaluation. Effective reading. skimming and scanning. Reading and comprehension at various speed levels. Vocabulary development in various academic contexts. Reading diverse texts in narratives and expository. Reading and comprehension passages with tables, scientific texts. Reading for interpretation and critical evaluation.

GST102: USE OF ENGLISH AND COMMUNICATION SKILLS II (2 UNITS)

Writing paragraphs: Topic sentence and coherence. Development of paragraphs: illustration, Description, cause and effect including definitions. Formal letters; essential parts and stylistic forms, complaints and requests; jobs, ordering goods, letters to government and other organizations. Writing reports; reporting event, experiments. Writing summaries: techniques of summarizing letters and sounds in English, vowels and consonants. Interviews, seminar presentation, public speech

making, articles, concord and sentences including tenses. Gerund, participles, active, passive and the infinitive. Modal auxiliaries.

GST104: USE OF LIBRARY (2 Units)

Identifying sources of Information, concept of library and library services, history of libraries. ICT use in the library, Copyright, Plagiarism and bibliographic Citation & referencing, functions and services of research libraries.

GST103: COMPUTER FUNDAMENTALS

Introduction to Computer, basic concepts, classifications of computers, historical views of computer. Threats to computer system, Computer Hardware and Software. Overview of computer programming languages. Detailed discussion of Computer Applications in various field.

GST107: THE STUDY GUIDE FOR THE DISTANCE LEARNER. (2 UNITS)

Getting started: How to use the book, why read about skills, getting yourself organised; what is studying all about, reading and note taking; Introduction, reactions to reading, your reading strategy, memory, taking notes, conclusion. Other ways of studying: Introduction, learning in groups, talks and lectures, learning from TV and radio broadcasts, other study media. Working with numbers; Getting to know numbers, describing the world, describing with the tables, describing with diagrams and graphs; What is good writing? The Importance of writing, what does an essay look like, what is a good essay? Conclusion. How to write essays: Introduction, the craft of writing, the advantages of treating essay writing as a craft, making your essay flow, making a convincing case, the experience of writing. Preparing for examination.

MTH101 ELEMENTARY MATHEMATIC I: (3 Units)

(ALGEBRA AND TRIGONOMETRY)

Elementary set theory, subsets, union, intersection, complements, Venn diagrams. Real numbers; integers, rational and irrational numbers, mathematical induction, real sequences and series, theory of quadratic

equations, binomial theorem. Complex numbers; algebra of complex numbers; the Argand Diagram. Re Moivre's theorem, nth roots of unity. Circular measure, trigonometric functions of angles of any magnitude, addition and factor formulae.

MTH102 ELEMENTARY MATHEMATICS III: (3 UNITS) CALCULUS:

Function of a real variable, graphs, limits and idea of continuity. The derivative as limit of rate of change, Techniques of differentiation, Extreme curve sketching. Integration as an inverse of differentiation, Methods of integration, Definite integrals; Application to areas and volumes

MTH103 ELEMENTARY MATHEMATICS III: (3 Units) PRE-REQUISITE - MTH 101

(VECTORS, GEOMETRY AND DYNAMICS)

Geometric representation of vectors in 1-3 dimensions, components, direction cosines. Addition and Scalar multiplication of vectors and linear independence. The Scalar and vector products of two vectors. Differentiation and integration of vectors with respect to a scalar variable. Two-dimensional co-ordinate geometry. Straight lines, circles, parabola, ellipse, hyperbola. Tangents, normal.

STT102 INTRODUCTORY STATISTICS (2UNITS)

Measures of Central Tendency and dispersion, (grouped and ungrouped); mean: - arithmetic and geometric, harmonic, median, mode quartiles, deciles, modes, relative and absolute dispersion, sample space and events as sets. Finite probability space properties of probability. Statistical independence and conditional probability. Tree diagram. Bayes theorem. Discrete and continuous random variables. Expectation, independent Bernoulli trials. Binomial Poisson and Normal distributions. Normal approximation to binomial and Poisson distribution, Hyper geometric.

PHY101: Elementary Mechanics, Heat and Properties of Matter (3 UNITS)

Space and Time: Physical quantities: Units and dimensions of physical quantities; Kinematics: Uniform velocity motion, uniformly accelerated motion; Dynamics: Newton's laws of motion; Impulse and Linear Momentum, Linear Collision, Newton's universal law of gravitation; Work, energy and power; Conservation laws; Concept of mechanical equilibrium; Centre of mass and centre of gravity; Moment of a force; Rotational kinematics and dynamics: Torque; Moment of Inertia; angular momentum; Total mechanical energy. Simple harmonic motion

Heat and temperature, work and heat, Quantity of heat: heat capacities, latent heat; Thermal expansion of solids, liquids and gases; Gas laws, heat transfer; Laws of thermodynamics: Isothermal and Adiabatic changes, Carnot cycle; Application kinetic theory of gases; van der Waals gas.

Classification of matter into (solids, liquids and gases, forces between atoms and molecules, molecular theory of matter, Elasticity, plasticity, Hook's Law, Young's Shear and bulk Moduli) Crystalline and non-crystalline materials, Hydrostatics: pressure, buoyancy, Archimedes' principle; Hydro-dynamics-streamlines, Bernouli and Continuity equations, turbulence, Reynold's number, Viscosity, laminar flow, Poiseuille's equation; Surface tension, adhesion, cohesion, capillary, drops and bubbles.

PHY102: ELECTRICITY, MAGNETISM AND MODERN PHYSICS (3 UNITS)

Electrostatics: Coulomb's law, Gauss's law, potential and capacitance, dielectrics, production and measurement of static electricity. Current: Ohm's law, resistance and resistivity, heating. Galvanometers, Voltmeters and Ammeters; D.C. circuits: sources of emf and currents, Kirchhoff's laws; Electrochemistry; The Earth's magnetic field; Magnetic fields and induction, Faraday's and Lenz's laws; Force on a current-carrying conductor. Biot-Savart law. Flemming's right and left-hand rules, motors and generators. A.C. Theory. Atomic structure; Production and properties of X-rays; Radioactivity; Photoelectric emission.

PHY191: INTRODUCTORY PRACTICAL PHYSICS I (1 UNIT)

Graphs, Measurement, Error Analysis, Determination of Acceleration due to Gravity by Means of Simple Pendulum, Determination of force constant of a spiral spring, Determination of effective mass of a spiral spring and the constant, Determination of surface tension of water, Determination of specific latent heat of fusion of ice, Determination of the co-efficient of limiting static friction between two surfaces, Determination of the co-efficient of static friction on two surfaces using an inclined plane, Determination of Relative Density of kerosene using the specific Gravity Bottle, Determination of the Relative Density of a Granular substance not soluble in water using the specific gravity bottle.

CIT191

Computer Laboratory I (1 Unit)

The lectures will cover the concepts of Computer Hardware, Networking and Computer Programming. The course aims to assist you in gaining practical understanding of the diverse contexts of Computer Hardware Networking and Computer Programming. This course requires you to gain some practical experience on how to configure a computer network and write simple computer programs.

CIT 104: Introduction to Computer science (2 units)

What is Computer, Types of Computers, History of Digital Computer, Element of a Computer: Hardware and Software. How to work with a computer. Operating System Windows Files word processing, copying a text, saving, Changes to a document and Formatting, spelling checker and introduction to Printing a document. Spread sheet, Entering and correcting data. Using Formula, Numeric Formats Creating Charts. Types of Charts Power Points and presentation. Networking, Internet and E-mail. Reading and responding to an E-mail message.

CIT108: Introduction to Problem Solving (3 Units)

Problem solving strategies, Role of algorithm in problem solving process, implementations strategies, concepts and properties of algorithm.

CIT211: Introduction to Operating System (3 units)

Definition of an operating system; Types of operating systems; and real time (single-user/multi-user), timesharing; Examples of operating systems; DOS, CP/M, UNIX/ZENITH, LINUX, MS/9798/2000, etc. Components of an operating system; Supervisor, memory manager, I/O handlers, file system, etc. Operating system interface with the hardware; interrupts, i/o channel, multiplexer, registers, status words. Operating system interface with other systems software; linkers, translators, libraries, etc. storage organization and protection.

CIT215: Introduction to Programming (3 units)

FORTRAN programming language; Comparison of various versions of the language. Programming exercises using FORTRAN with emphasis on scientific application problems. Elements of Pascal language. Exercises in Pascal Programme structures and programming concepts; Structured design principles; abstraction, modularity, stepwise refinement, structured design techniques teaching of a structured programming language, e.g. PASCAL/JAVA, C++.

CIT 237: Programming and Algorithms (3 units)

The programme development process, programme design, coding, and testing principles of good programming styles; Programme verification techniques; Programme documentations and maintenance; Programme design tools, e.g. flowcharts, pseudocodes, etc. Illustration of the various concepts with practical programming problems of manageable complexity e.g. Knight's tour or 8-queens, life game problems, etc. Algorithms and data structures; Divide-and-conquer algorithms; Stacks,

queues, trees. A treatment of popular sorting and searching algorithms; performance analysis of algorithms. Worst-, best-and average-case performance of the algorithms. Recursion, Hill-climbing techniques.

MTH 211: Introduction to Set theory and Abstract Algebra (3 units)

Set: Binary operations, mapping, equivalence relations integers: Fundamental theorem of arithmetic, congruence equations, Euler's function (n) Group Theory: Definition and examples of groups. Subgroups, coset decomposition, Lagrange's theorem. Cyclic groups. Homomorphism, isomorphism. Odd and even permutations, Cayley's theorem. Rings: Definition and examples of rings. Commutative rings. Integral domain. Order, well-ordering principles. Mathematical induction.

MTH213: NUMERICAL ANALYSIS I (3UNITS) PRE-REQUISITE - MTH 102

Interpolation: Lagrange's and Hermite interpolation formulae, divided differences and difference schemes. Interpolation formulas by use of divided differences. Approximation: Least-square polynomial approximation, Chebychev polynomials continued fraction and rational fraction orthogonal polynomials.

Numerical Integration: Newton's-cotes formulae, Gaussian Quadrature. Solution of Equations: Graffe's method (iterative method) Matrices and Related Topics: Definitions, Eigenvalue and Eigenvectors, Algebraic Eigenvalue problems-power method, Jacobi method.

Systems of linear Equations: Gauss elimination, Gauss-Jordan method. Jacobi iterative method, Gauss-field iterative method.

CIT216: Fundamentals of Data Structures: (3 Units)

Primitive types, Arrays, Records Strings and String processing, Data representation in memory, Stack and Heap allocation, Queues, TREES.

Implementation Strategies for stack, queues, trees. Run time Storage management, Pointers and References, linked structures.

GST202: Fundamentals of Peace Studies and Conflict Resolution (2 Units)

Basic Concepts in peace studies and conflict resolution, peace as a vehicle of unity and development, Conflict issues, Types of conflicts, e.g. Ethnic/religious/political/economic conflicts, Root causes of conflicts and violence in Africa, Indigene/settler phenomenon, Peace – building, Management of conflict and security. Elements of peace studies and conflict resolution, Developing a culture of peace, Peace mediation and peacekeeping, Alternative Dispute Resolution (ADR), Dialogue/arbitration in conflict resolution, Role of international organizations in conflict resolution, e.g. ECOWAS, African Union, United Nations, etc.

GST204: Entrepreneurship and Innovation I (2 Units)

Development Entrepreneurship/Intrapreneurship: An Overview of the Definitions of Entrepreneurship and Intrapreneurship; Concepts and Theories of Entrepreneurship

The Entrepreneurship Culture; Brief Biographical Studies of Prominent Nigerian Entrepreneurs; Barrier to Entrepreneurial Practice. The Nigerian Entrepreneurial Environment: The Business External Environment; Identifying Business Opportunities and Threats; Strategies for exploring opportunities in the Environment; Approaches to addressing environmental barriers. Creativity and Intellectual Rights: Intellectual Properties and its Dimensions; Copyright Laws in Nigeria; Strategies for Protection of Intellectual Property (original ideas, concepts, products, etc.). Technological Entrepreneurship: The Interface between Technology Development and Entrepreneurship; Technological Development and Entrepreneurial Opportunities; Technological Environment and Business; New Technology and Entrepreneurship Opportunities. Management and Innovation: The Concept, Nature and Types of Innovation; Innovation Theory of Entrepreneurship; Financing

Innovation and New Ventures; Change Management; Technical Change and Management of Innovation.

Family Business and Succession Planning: The Concept of Family Business Contents; The Cultural Contexts of Family Business; Roles and Relationship in Family Business; Ownership Transfer and Succession in Family Business. Women Entrepreneurship: The Concept of Women Entrepreneurship; Role orientation and Women Entrepreneurial Aspirations; Contributions of Women to National Socio-Economic and Human Development; Barriers to Women Entrepreneurial Practice.

Social Entrepreneurship: The Concept of Social Entrepreneurship; Social Entrepreneurship and Value Creation; The Roles of Non-governmental Organizations in Social Entrepreneurship; Social Entrepreneurship and Funding Opportunities; Social Entrepreneurship Enhancement Factors. Business Opportunity Evaluation: Sources of Business Opportunities in Nigeria; The difference between Ideas and Opportunities; Scanning Business Opportunities in Nigeria; Environment and New Venture Idea Generation.

GST201: Nigerian Peoples and Culture (2 Units)

Study of Nigerian history, culture and arts in pre-colonial times, Nigerian's perception of his world, Culture areas of Nigeria and their characteristics, Evolution of Nigeria as a political unit, Indigene/settler phenomenon, Concepts of trade, Economics of self-reliance, Social justice, Individual and national development, Norms and values, Negative attributes and conducts (cultism and related vices), Re-orientation of moral and national values, Moral obligations of citizens, Environmental problems.

GST203: Introduction to Philosophy and Logic (2 Units)

An Overview of Philosophy: Definition and Scope of Philosophy; Methods of Philosophy; Branches of Philosophy; Philosophy and other Disciplines Contents; The Usefulness of Philosophy; Sources of Knowledge and Criteria for Knowing. History and Development of

Philosophy: The Ancient Age of Philosophy; Medieval and Renaissance Age of Philosophy; Modern Period of Philosophy; Philosophical Movements in The Contemporary Period; The Idea of African Philosophy. Logic: Definition and Scope of Logic; Logic's Vocabulary I; Logic's Vocabulary II; Valid, Invalid, Deductive and Inductive Arguments; Language and Its Functions. Fallacies and Definitions: Fallacies (Part One); Fallacies (Part Two); Definitions (Part One); Definitions (Part Two); Categorical Propositions Contents. Argument Forms and Law of Thought: Argument Forms; Laws of Thought.

MTH 281: Mathematical Methods I (3 units)

Sequences and Series: Limits, continuity, Differentiability, implicit functions, sequences. Series, test for convergence sequences and series of functions. Calculus: partial differentiation, total derivatives, implicitly functions, change of variables. Taylor's theorem and maxima and minima functions, of two variables. Langrangian multiplier. Numerical Methods: Introduction to iterative methods, Newton's method applied to finding roots. Trapezium and Sipsons rules of integration.

CIT 208: Information systems (2 units)

Introduction & Basic SQL Project Introduction. Advanced SQL. Conceptual Modelling and Schema Design. Database Programming, JDBC, Regular Expressions. Functional Dependencies E2: Functional Dependency & Relational Algebra. Relational Algebra. Introduction to XML. XML and XQuery. Web Services. Transactions. Recovery. Database Heterogeneity.

CIT212: Systems Analysis & Design (3 units)

General systems concepts: Systems project team organisation; Overview of systems development process; Project identification and selection; system requirements analysis and feasibility study; fact finding techniques; Systems design; Analysis techniques and tools e.g. Jackson System Development (JSD) techniques etc. Data

flow diagrams, HIPO charts. Business system design; procurement, site preparation, system installation, system testing, system conversions; system project, report writing, and presentation; system documentation; post installation evaluation; compilation of a real-life system analysis team project to provide experience in applying the principles and techniques presented above

CIT 236: Analog and Digital Electronics (3units)

Bipolar Junction Transistors: Common Emitter biasing, load lines; Small signal Amplifiers: Transistor Hybrid parameters, Analysis of a single stage transistor amplifier small signal operation, Field Effect Transistors, Introduction to feedback, Operational Amplifiers, DC power supplies, Voltage regulators, Heat sinks, Boolean Algebra, Logic gates, Karnaugh Maps

CIT 292: Computer Laboratory II (2 units)

Basic logic Operations. Combinational logic, Karnaugh maps, Simple latch and clocked flip flop, J-k flip-flops, Binary addition, Synchronous counters, up and down counters.

MTH 212: Linear Algebra II (3 units)

Vector spaces. Linear independence. Basis, change of basis and dimension. Linear equations and matrices. Linear maps. The diagonal, permutation, triangular matrices. Elementary matrix. The inverse of a matrix. Rank and nullity. Determinants. Adjoint, cofactors, inverse matrix. Determinantal rank. Cramer's rule. Canonical forms, similar matrices, Eigen values and vectors, quadratic forms.

MTH 232: Elementary Differential Equation (3 units)

Introduction, equation of first order and first degree, separable equations, homogeneous equations, exact equations, linear equations, Bernoulli's and Riccati equations. Applications to mechanics and electricity. Orthogonal and oblique trajectories. Second order equations with constant coefficients.

MTH 282: Mathematical Methods II (3 units)

Vector Theory: Vector and scalar field functions. Grad, div, curl, directional derivatives. Orthogonal curvilinear coordinates.

Complex Numbers: The algebra and geometry of complex numbers; d'Moivre's theorem. Elementary transcendental functions. The n^{th} root of unity and of a general complex number.

PHY 208: NETWORK ANALYSIS AND DEVICES (2 UNITS)

PREREQUISITE: PHY102

Circuit analysis: circuit elements, Kirchhoff's laws, complex impedances, current-voltage source transformations, circuit theorems; ac and dc circuits: resonant circuits, impedance matching, theory of passive filters, attenuators; Electron devices: vacuum tubes, semiconductor materials, p-n junction diodes, transistors.

CIT303: Principles of Communication Technology (3 units)

Drives and Sensors: Functionality, calculation, and operational behaviour of motors; Functionality and choice of sensors; Drive design and regulation; Decentralized drive systems. Communication and Networks: Functionality and integration of automation components (bus systems, automation devices, communication modules, process control systems); Networked automation technology; Service and monitoring systems, Human Machine Interface; Planning and the basic principles of project planning with *Profinet* / industrial Ethernet-based networks. Safety Engineering in Automation Technology: Project planning

for an error-proof automation system; Error-proof communication and programming; Remote diagnostics, elimination of errors, and remote maintenance. Automated Systems: Integral development methodology in automation; Economic development (planning, budgeting); Application examples.

GST302: Entrepreneurship Studies II (Business Creation and Growth) (2 Units)

Concept of Business and New Value Creation: Business Planning Process; Start-up Decision – What Motivate people to begin new businesses; Opportunity Search and Identification; Legal Issues at Start-up; & Feasibility Analysis of New Ventures and New Venture Financing.

Theories of Growth: An Overview: Concepts and Reasons of Growth; Challenges of Growth; Strategies for Growth (External Growth Strategies Franchising, Buy-In and Buy-Out); Mergers and Acquisition; Sources of Funds: Internal Sources and External Sources; Formal and Informal Sources; Efficiency in the use of Resources. Marketing: Concept of Marketing: Small and Big Business Marketing; Marketing Mix; Modern Marketing Tools. Ethics and Social Responsibility: The Importance of Ethics in Business; Ethical Behaviour and Practices in Nigeria; Community Development Projects/Welfare. New Opportunities for Expansion: E-Commerce; E-Business; E-Trade. Managing Transition: From Start up to Growth: Personal Disciplines; Learning; Decision Making; Control.

CIT 305: Networking and Communication Technology (3 units)

Introduction; Constructing data links, deploying physical media; Practical network protocols; Capitalizing on Ethernet; Harnessing Wi-Fi for user mobility; Building internetworks using TCP/IP and routers; Utilizing telecommunication circuits; Implementing security best practices; Creating enterprise networks; Planning and selection. Protocols, technologies, standards, and applications of data communications and computer networks for

both LANs and WANs. Foundation and background of Advanced WAN and LAN classes. Signal transmission analysis, modulation concepts, modems, multiplexers, digital technologies, transmission impairments, and various transmission media will be extensively discussed. Network protocols based on the OSI Reference Model, TCP/IP protocol suite, and IEEE 802 standards. Network technologies: ISDN, DSL, SONET, packet switching networks, LAN technologies, Internet and TCP/IP, and ATM

CIT315 Operating Systems II (3 Units)

Concurrency: States & State diagrams Structures, Dispatching and Context Switching; interrupts; Concurrent execution; Mutual exclusion problem and some solutions Deadlock; Models and mechanisms (Semaphores, monitors etc.) Producer – Consumer Problems & Synchronization. Multiprocessor issues. Scheduling & Dispatching Memory Management: Overlays, Swapping and Partitions, Paging & Segmentations Placement & replacement policies, working sets and Trashing, Caching

CIT 309: Computer Architecture (3 units)

Introduction, basic computer organization; Instruction formats, instruction sets and their design; ALU design: Adders, subtractors, logic operations; Boolean Algebra; Karnaugh Maps; Datapath design; Control design: Hardwired control, microprogrammed control; More on arithmetic: Multiplication, division, floating point arithmetic; RISC machines; Pipelining; Memory systems and error detection and error correction coding; [Caches](#); [Memory](#); [I/O and Storage](#); [Multiple Issue](#); Dynamic Scheduling; [Data-Level Parallelism and Vectors](#); [Shared-Memory](#); [Multiprocessors](#); [Multithreading](#)

CIT 371: Introduction to Computer Graphics & Animations (3 units)

Mathematics of 3-Ds and projections; graphical data structures; characteristics, and types of display memories; graphics hardware including digital plotters and display devices; graphics, software;

CIT302: Data Mining and Data Warehousing (3 units)

Data Mining; Definition relationship to warehousing
Classification of data mining approaches to data mining
problems application of data mining , commercial tools of data
mining, knowledge discovery, Architecture of Data warehousing
Data marts, Data warehousing lifecycle, data modelling Building
of data warehouse, OLAP, MOLAP, ROLAP Data warehouse and
views. Future open issue for data warehouse.

CIT332: Survey of Programming Languages (3 Units)

Overview of programming languages: History of programming languages, Brief survey of programming paradigms (Procedural languages, Object-oriented languages, Functional languages, Declarative – non-algorithmic languages, Scripting languages), the effects of scale on programming methodology; Language Description: Syntactic Structure (Expression notations, abstract Syntax Tree, Lexical Syntax, Grammars for Expressions, Variants of Grammars), Language Semantics (Informal semantics, Overview of formal semantics, Denotation semantics, Axiomatic semantics, Operational semantics); Declarations and types: The concept of types, Declaration models (binding, visibility, scope, and lifetime), Overview of type-checking, Garbage collection; Abstraction mechanisms: Procedures, function, and iterations as abstraction mechanisms, Parameterization mechanisms (reference vs. value), Activation records and storage management, Type parameters and parameterized types, Modules in programming languages; Object oriented language paradigm; Functional and logic language paradigms.

CIT 342: Formal Languages and Automata Theory (3 units)

Introduction to language structures; languages and their representations; Grammars; formal notations, types, Chomsky's language hierarchy; sentence generation and recognition; derivations; Ambiguity and syntax and finite state automata; context-free grammars; simplification of context-free grammars; Chomsky, Greibach Normal Forms Push-Down automata, LR(K), grammars, Recursive languages; semantics. Lab. exercises.

CIT 344: Introduction to Computer Design(3 units)

Introduction to numbers and codes. Combinational logic design and applications: adders, decoders, multiplexers, etc. Sequential logic design and applications: registers, flip-flops, etc., and general finite state machines. Memory devices: read-only memory (ROM), random access memory (RAM). Introduction to microprocessors: arithmetic logic unit (ALU), basic CPU

architecture, addressing modes and program execution. Assembly language programming: programs for simple tasks; branching, loops, and subroutines.

CIT 389: Industrial Training (6 units)

Required 6 months of Industrial Training Students experiences will be documented and presented in a Seminar and submitted as a Tutor Marked Assignment. An example of a report is a report of a case study of a Cyber Cafe.

CIT353: Introduction to Human Computer Interaction (2 Units)

Survey of human-computer interaction concepts, theories and practice. Basic components of human-computer interaction. Interdisciplinary underpinnings. Informed and critical evaluation of computer-based technology. User-oriented perspective rather than system-oriented, with two thrusts: human (cognitive, social) and technological (input/output, interaction styles devices). Design guidelines, evaluation methods participatory design, communication between users and system developers. Topics include: System interaction design patterns, User Interface Design Criteria and User Interface Design and Programming tools, Multimedia and HCI.

CIT364 Management Information Systems (2 units)

Introduction to MIS, Types of MIS, Levels of Management, Overview of Information Technology, Technologies for Information System, Internets, Modes of Information Communication, Information Representation-, Information Storage Media, Information Security.

CIT314: Computer Architecture and Organization II (3 Units)

Memory system, general; characteristics of memory operation. (Technology-magnetic recording semi-conductor memory, coupled devices, magnetic bubble). Memory addressing, memory hierarchy, virtual memory control systems. Hardware control, micro programmed

control, Asynchronous control, i/c control. Introduction to the methodology of faulty tolerant computing.

CIT 403: Emerging Technologies (3 units)

Learners are to carry out researches and write Term papers on the Current/Emerging technologies in Information and Communication Technology

CIT411: Microcomputers and Microprocessors (2 units)

Review of basic concepts in digital electronic; Microprocessors; functions, operations and architecture; comparison of current microprocessors; multi-chip and single chip; i/o organization; assembler language; comparison of instruction sets; address modes, stack operation; subroutines. i/o data transfer; bus control; daisy chaining, handshaking etc; Interrupt structures; programmed transfer, DMA microcomputer systems; types of microprocessors; uses of microprocessors, microcomputer design for specific applications; microcomputer networking; interfacing microcomputer real-time control; laboratory exercises using an assembly language

CIT 415: Introduction to E-Commerce (3 units)

Introduction of basic concepts and definitions; Techniques and methodologies for developing and managing Web-sites for e-Commerce. Topics include: Introducing pre-requisite skills, understanding Electronic business and electronic commerce, Techniques and methodology for site development, Developing and enhancing a Product Catalogue, Managing a Shopping Cart, Processing orders, Completing the Purchasing process and Tracking Shoppers Information.

CIT427: Database Systems & Management (3 units)

Basic concept of data bases, history of DBMS types of database, specific problems of data independence, data reliability, integrity,

etc, data, data management, data base generation, raw data, data definitions, data structure, storage structure data base logical and physical organization, interrogation, data model, network, hierarchical relational, security, policies, privacy quality and integrity protection mechanism.

CIT 463: *Introduction to Multimedia Technology (3 units)*

Introduction: What is multimedia, Multimedia systems, Quality of service, Synchronization & orchestration, Standards, Convergence, Value chain. *Hardware:* Multimedia computers, Video and graphics, Audio, Telephone, video conference, and networks, CD and DVD, USB and FireWire, Processors, Video for Windows, DirectX, and ActiveMovie. *Software:* Browser based software architecture, Distributed software, Servers, Network, Terminals. *Audio and Video:* Digital audio; Psycho acoustics, Digital presentation of sound, Digital images, JPEG, Video signal, Camera sensors, Colors, Color television, Equipment, Compression systems, Basics of video compression, Methods, Algorithms. *Interchange Formats:* Application areas, Requirements, Track and object model, Real-time transfer, Different transfer formats, Comparison. *Authoring Tools:* Production process, Tools, Barriers, Development areas. *Communications:* QoS, ATM, QoS implementations, Integrated Services, Differentiated Services. *Multicast:* Group control, Routing, Real-time transfer and control protocols, Resource reservation, Session control, MBone. *Video Conference:* Standards, Products, Internet telephony, CTI (Computer Telephony Integration). *Access Networks:* Cable television, Digital subscriber lines, UMTS, Digital television.

CIT 425: *Operations Research (3 units)*

Simple theories of queues, stochastic processes and random numbers, definition and uses of simulation; discrete simulation models, design of simulation experiments; simulation langs,

detailed study of a chosen simulation language; applications; Lab. exercises. The nature of operation research; allocation problems; inventory problems; Replacement; maintenance and reliability problems. Dynamic programming; sequencing and co-ordination.

CIT421: Net-Centric Computing (3 Units)

Distributed Computing, Mobile & Wireless computing, Network Security; Client/Server Computing (using the web), Building Web Applications.

Introduction to Parallel Systems. Parallel Programming Models. Message Passing Programming. Dependence Analysis, Open MP Programming, Evaluation of Programs, Optimizations for Scalar Architectures and Models for Parallel Computing. Distributed systems: Characterization of Distributed systems, system models, distributed objects and remote method invocation. Component-based development: using UML for component-based design. Distributed transactions: introduction, flat & nested distributed transactions, concurrency. Service-oriented architectures: characteristics of SOAs, Hadoop and Spark. Mobile and cloud computing: Technologies for Wireless Communication. Wireless Cellular Systems. Overview of Wireless LANs, IEEE 802.11, Personal Area Network, Bluetooth. High-Speed Wireless Networks; HiperLan. Wireless Application Protocols: Mobile IP, WAP, SMS, Bluetooth. Frameworks for mobile application development (e.g Ionic, React Native, Xamarin, Adobe PhoneGap, J2ME). Cloud computing: introduction to cloud computing, technologies, infrastructure, and architecture. Cloud computing development models (public, private, community and hybrid cloud), service models (SaaS, PaaS, IaaS).

CIT474: Introduction to Expert Systems (2 units)

Study of different classes of expert systems, e.g. Rule Based: MYCIN or PROSPECTOR, Blackboard; HEARSAY or CRYSLIS, Expert System shells e.g. Rule Based: e.g. P-MYCIN, EXPERT. S.I. Frame Based e.g. KEE, KL-ONE Merit and Demerits of natural

language interface for expert systems. Extensive independent study of recent development in the field and the submission of a group proposal for the application of Expert System in different areas.

CIT478: Artificial Intelligence (2 units)

Basic AI issues attention, Search, Control, Game trees, knowledge representation, Application of AI techniques in natural language, scene analysis, expert systems, KBCS robot planning. Lab. exercises in AI lang. e.g., LISP/Prolog.

CIT410 Introduction to Cyber-Security

Cyber Security Fundamentals: Cyber Security Fundamentals, Benefits, Cyber space and Cyber-Law; Cyber Crimes Classification and Types of Cyber Crimes; Scope of Cybercrimes. Cyber Threat Management: Firewalls; Virtual Private Networks (VPN); Security Control Management; Hardware and Software Prevention. Computer Forensics and Digital Investigation: Computer Forensics; Network, Disk, Malware and Database Forensics; Email, Memory and Mobile Forensics; Malware Analysis. Introduction to Cyber Law and Ethics: Concept of Cyber Law; The INDIA cyber-Acts; The International Laws; Cyber Ethics.

CIT484: Website Design & Programming (2 units)

What is HTML; Basic Tags of HTML; HTML Tag TITLE Tag Body Tag Formatting of Text, Headers, Formatting Tags, Pre-Tag FONT TAG Special Characters Working with Images META Tag; Links: Anchor Tag, Lists; unordered lists ordered lists, definition lists, tables : TABLE, TR and TD Tags Cell spacing and cell padding colspan and Rowspan Frames: Frameset frame Tag, NOFRAMES Tag Forms: FORM and INPUT Tag;; Text Box Radio Button, checkbox. Select tag and pull down. Lists hidden submit and reset. Some special Tags: COLGROUP, THREAD, TBODY, TFOOT, blank self, parent top, IFRAME LABEL TEXTAREA. INTRODUCTION TO Java Script: Java script variables and data

types. Statement and operators, control structures object based programming message box in JavaScript, Javascript with HTML forms

CIT499: Project (6 units)

Individual or Group projects of approved topics related to the current research interests in the department.

CIT435: Statistical Database System (2 units)

Fundamentals of Database Systems: Databases and Database Users, Database System Concepts and Architecture, Data Modelling Using the Entity-Relationship Model. The Statistical database system, Statistical Database Concepts, Statistical Data Analysis, Mining and Decision Tree Computer Security and Statistical Databases Application of Statistical Database System SPEA SMART Airport Statistical Data Management System (SMART STAT)

CIT423: Computer Networks/Communications (Units) (L 30: P 45)

Introduction, waves, Fourier analysis, measure of communication, channel characteristics, transmission media, noise and distortion, modulation and demodulation, multiplexing, TDM FDM and FCM Parallel and serial transmission (synchronous Vs asynchronous). Bus structures and loop systems, computer network Examples and design consideration, data switching principles broadcast techniques, network structure for packet switching, protocols, description of network e.g. ARPANET, etc.

B.Sc. Information Technology (CCMAS)

100 Level

Course Code	Course Title	Unit	Status
1st Semester			
GST101	Use of English and Communication Skill 1	2	C
NOU107	The Study Guide for the Distance Learner	2	C
MTH101	Elementary Mathematics I	2	C
PHY101	General Physics I	2	C
PHY191	General Practical Physics I	1	C
STA111	Descriptive Statistics	3	C
NOUN-IFT191	Computer Laboratory I	1	C
COS101	Introduction To Computer Science		
	Total Credit Units - Compulsory	15	
	Total Credit Units - Elective		
	Total Credit Units		
2nd Semester			
GST102	Use of English and Communication Skill 11	2	C
GST104	Use of Library	2	C
MTH102	Elementary Mathematics II	2	C
PHY102	General Physics II	2	C
PHY192	General Practical Physics II	1	C
COS102	Problem Solving	3	C
	Total Credit Units – Compulsory	15	
	Total Credit Units - Elective		
	Total Credit Units		

200 Level

Course Code	Course Title	Unit	Status
1st Semester			
GST201	Nigeria Peoples and Cultures	2	C
GST203	Introduction to Philosophy and Logic	2	C
COS201	Computer Programming, I	3	C
IFT203	Introduction to Web Technologies	2	C
IFT205	Introduction to Information Technology	2	C
IFT211	Digital Logic Design	2	C
IFT299	SIWES I	3	C
INS207	Introduction to Information System	2	C
NOUN-IFT213	Multimedia Computing	2	E
CYB 111	Fundamental of Cybersecurity	2	E
	Total Credit Units - Compulsory	18	
	Total Credit Units - Elective	4	
	Total Credit Units		
2nd Semester			
GST202	Fundamentals of Peace Studies and Conflict Resolution	2	C
GST204	Entrepreneurship and Innovations 1	2	C
COS202	Computer Programming II	3	C
IFT212	Computer Architecture and Organisation	2	C
INS202	Human-Computer Interface	2	C
NOUN-IFT292	Computer Laboratory II	1	C
NOUN-IFT210	Computer Hardware	3	E
NOUN-IFT236	Analog and Digital Electronics	3	E

NOUN-IFT232	Information Systems and Storage	2	E
	Total Credit Units – Compulsory	13	
	Total Credit Units - Elective	6	
	Total Credit Units		

300 Level

Course Code	Course Title	Unit	Status
1st Semester			
ICT305	Data Communications Systems and Network	3	C
IFT399	SIWES II	3	C
NOUN-IFT319	Creative Computing	2	C
NOUN-IFT363	Introduction to Multimedia	2	C
NOUN-IFT321	Data Visualization	2	C
NOUN-IFT311	Tools for Scientific Computing	2	C
NOUN-IFT359	Computer System Performance Evaluation	2	C
NOUN-IFT371	Introduction to Computer Graphics & Animations	3	E
	Total Credit Units - Compulsory	16	
	Total Credit Units - Elective	3	
	Total Credit Units		
2nd Semester			
GST302	Business Creation and Growth (Entrepreneurship and Innovation 11)	2	C

ENT 312	Venture Creation	2	C
IFT302	Web Application Development	2	C
IFT304	Web Development using Content Management Systems	2	C
CSC308	Operating Systems	3	C
IFT308	Ethics and Legal Issues in IT	2	C
IFT310	Mobile Application Development	2	C
IFT322	IT Innovation and Entrepreneurship	2	C
IFT 342	Network Servers and Infrastructure	2	C
NOUN-IFT312	Data Mining and Data Warehousing	2	C
NOUN-IFT324	Introduction to Internet Programming	2	E
	Total Credit Units – Compulsory		
	Total Credit Units - Elective	18	
	Total Credit Units	2	

300 Level

Course Code	Course Title	Unit	Status
1st Semester			
COS409	Research Methodology and Technical Report Writing	3	C
IFT403	Mobile and Pervasive Computing	2	C
FT497	Final Year Student's Project I	3	C
INS401	Project Management	2	C
NOUN-IFT413	Seminar on Emerging Technologies	3	C
NOUN-IFT469	Protocols Design and Programming	3	C
INS401	Project Management	2	C

	Total Credit Units - Compulsory	18	
	Total Credit Units - Elective	3	
	Total Credit Units		
2nd Semester			
IFT410	System Integration and Architecture	2	C
IFT442	Wireless Communications and Networking	2	C
NOUN-IFT484	Website Design & Programming	2	C
NOUN-IFT416	Introduction to E-Commerce	2	C
CYB422	Mobile Network Security	2	C
IFT498	Final Year Student's Project II	3	C
	Total Credit Units – Compulsory	13	
	Total Credit Units - Elective	0	
	Total Credit Units		

Degree Award Requirements Eligibility for Graduation

To graduate, a student shall have undergone at least 4-8 semesters of study, depending on the entry point, including field practical training. Course workload must meet the graduation requirements of the University based on minimum academic standards. However, in doing so, the student must pass all the prescribed compulsory and elective courses for the four-year programme and the three years (Direct entry) programme. The submission of an undergraduate and post graduate project thesis based on supervised research is a graduation requirement which cannot be compromised.

End of Programme Clearance

Upon the release of graduation list. Graduating students are required to undergo clearance process by doing the following:

1. Log into your portal, click clearance form on the left-hand side of the menu.
2. Print it out and fill the necessary information required in the form.
3. Click on the Study centre to clean any issue regarding the centre. If there are none, an official stamp is required for proof.
4. Click on Library for clearance of books. If there are none, an official stamp is required for proof.
5. Click on Bursary for clearance on Alumni, project fees, IT etc. If there are none, an official stamp is required for proof.
6. Having satisfied all the above, the student is ready for graduation ceremony

APPENDICES

Appendix I: Guidelines for Research Projects/Seminars

BSc Programmes

Table of Content for the project

(For Structured Software Development Methodology)

The project report shall be structured as follows:

Title Page

Certification

Approval

Dedication

Acknowledgement

Abstract

Table of Contents

List of figures

List of tables

Chapter 1: Introduction

1.0 Introduction

1.1 Background of the study

1.2 Statement of the problem

1.3 Aim of the project

1.4 Specific objectives

- 1.5 Scope of the project
- 1.6 Significance of the study
- 1.7 Definition of terms
- 1.8 Organization of the project

Chapter 2: Literature Review

- 2.0 Introduction
- 2.1 Review of Related Literature

Chapter 3: Methodology

- 3.0 Introduction
- 3.1 Analysis of the existing system
- 3.2 Limitations of the existing system
- 3.3 Design of the proposed system
 - 3.3.1 Input Design
 - 3.3.2 Output Design
 - 3.3.3 Database Design
- 3.4 Data Dictionary
- 3.5 System Algorithm
- 3.6 Use Case Diagram

Chapter 4: System Implementation

- 4.0 Introduction
- 4.1 System Implementation
- 4.2 System Requirements
- 4.3 Hardware Requirements
- 4.4 Software Requirements
- 4.5 Choice of development environment.
- 4.6 Implementation Architecture.
- 4.7 System Testing and Evaluation
- 4.8 Software Testing
- 4.9 System Change over
- 4.10 Documentation
 - 4.10.1 User Manual
- 4.11 Source code listing (attach as named appendix)

Chapter 5: Summary and Conclusion

- 5.0 Summary.
- 5.1 Conclusion

- 5.2 Recommendations
- 5.3 Contributions to Knowledge (for MSc Students)
- 5.4 Future Research

References (APA style)

Appendix A: Source code

Appendix B: Any other relevant document

Appendix II: Policy on Deferment of Examination

In the spirit of Open and Distance Learning (ODL) and the flexibility that comes with the mode, a student is qualified to apply for deferment of examination(s). The deferment permits a temporary postponement of participation in examination(s).

The guidelines of the policy include and not limited to the following:

- A. Owing to the peculiarities of the Open and Distance Learning system which gives room for flexibility, students are allowed to defer their examinations as long as the following conditions are met:
 - i. Such students must have fully registered for the semester
 - ii. Such students must have registered for the Examinations
 - iii. An application for deferment must be received before the start of Examinations
- B. All applications are to be endorsed and forwarded to the Registrar through the Study Centre Directors.
- C. All applications should be backed with relevant documents and a desk officer in the Registry is assigned to check the authenticity of the documents.
- D. Students whose applications are received and approved and who have paid examination registration fees before the examinations are not to pay the

registration fee for the same examinations when they are ready to take them.

- E. A dedicated portal would be opened within the time frame of one month before the commencement of examinations for deferment cases.
- F. The request for deferment attracts no fee.
- G. Applications for deferment as a result of emergencies such as illness, accident, Death or serious illness of person in the immediate family or another person with whom the student has a similarly close relationship, which requires the student's attention, etc. shall be addressed at the discretion of the Management.

This policy takes effect from March 2015.

Appendix III: Policy of Re-marking of Students' Examination Scripts and Re-computation of results.

An appeal against examination results should be made within 30 days from the date of publication of the results, in accordance with the following guidelines:

- A. All applications for re-marking should be addressed to the Registrar through the Study Centre Directors and a copy forwarded to the Dean in the School concerned;
- B. Applicants must submit the necessary application form (Annexure A) at the relevant Study Centre. Students must ensure that the course(s) code(s) title(s) are correct when completing the form;
- C. A non-refundable fee of ~~N~~ 10, 000.00 is charged per course for the re-marking of scripts. The said amount should be paid to a bank account designated for the purpose.

(Annexure A)

Students should note that the evidence of payment of the fees must be attached to a completed application form. Also, payments without application forms would not be processed.

- D. A receipt must be issued as proof of payment for the service;
- E. Study Centre Directors should, in all cases, ensure and supervise that payment for applications are received, receipts are issued and that all the applications are recorded;
- F. Study Centre Directors are required to forward all applications to the Registrar electronically within three days of receipt of the application form. The e-mail address is academicoffice@noun.edu.ng;
- G. The decision to remark is a prerogative of the School Examinations Committee. Remarking shall be completed within two weeks. The new score awarded shall be approved by the Dean on behalf of the School's Academic Board;
- H. If a student decides to withdraw his/her appeal before it is considered by the Committee, a notice of withdrawal shall be done in writing to make it valid;
- I. The School Board shall communicate its decisions to the Senate within a period of 14 days for ratification.

Appendix IV: Students' Examination Guidelines and Regulations

Examination constitutes a very important aspect of the University's activities. The University wishes to state categorically that the conduct of its examinations is taken seriously. *Therefore, the University will not condone any form of examination misconduct.* Students are advised to abide by the following rule and guidelines:

1. A student's matriculation number serves as his/her examination number. Only matriculated students will be allowed to sit for examinations. A student must write his/her matriculation number on his/her answer booklet before commencing answering the questions.
2. Students should normally write examinations at their designated centres.

3. Students must bring to the examination hall their writing materials and any other material, which may be permitted by the University for a particular examination. These materials must have been listed as essential for a certain question(s).
4. Students arriving an hour after the commencement of an examination shall be allowed to sit for the examination only at the discretion of the Supervisor. Such a student will not be allowed at extra time.
5. Once a student is admitted into the examination hall, he/she may not leave the hall until he/she has finished with the examination. If for any cogent reason the student must leave the Hall, he/she must do so with the permission of the Supervisor.
6. A student must be accompanied by an invigilator if permitted to leave the examination hall temporarily (e. g. visiting the rest-room, etc.)
7. No answer booklets other than those supplied by the University are allowed in the examination hall. All rough works must be done in the supplied answer booklets and crossed out neatly. All supplementary answer sheets/booklets must be tied/attached to the Main answer booklet.
8. Silence must be observed in the examination hall. Any student requiring the attention of the invigilator should raise his /her hand.
9. Any activity or behaviour which may be construed as examination misconduct or malpractice (e.g. cheating, etc.) shall be liable to discipline in accordance with the university's rules and regulations governing examination as contained in the Student Handbook.
10. Communication between students is strictly forbidden during examinations. Any student found receiving or giving assistance would be sanctioned. Such a student may be required to withdraw from the examination and subsequently made to face the university examination malpractice panel.
11. Students are not permitted to smoke or sing or pray aloud or engage in any activity that may distract others in the examination halls.

12. Students are advised to leave their bags and briefcases at home as these items would not be allowed in the examination halls. The University will not be liable for any loss or damage to a student's personal effects/property.
13. Unauthorised materials (such as textbooks, course materials, notebooks, sheets/scraps of papers) in printed or electronic form are not allowed in examination halls.
14. Pagers and mobile phones are not permitted at all in examination halls.
15. Students must observe the Supervisor's instructions regarding the commencement and end of an examination. Students who start writing before being told to do so, or who continue writing after being asked to stop would be sanctioned.

Appendix V: Decree on Examination Malpractice

In order to check examination malpractices, a decree covering miscellaneous offences was promulgated in 1999. The main sections and points of the decree which every student should be familiar with are reproduced below. The information contained in this section is also provided in your handbook *“Getting to know Your University”*. The effort at reproducing here some pertinent aspects of the decree is to demonstrate the seriousness the university has attached to Examination malpractice. Please do read it carefully.

All students of the National Open University of Nigeria are reminded that the University takes very seriously the conduct of its examinations and frowns seriously on any examination misconduct. The Decree is very relevant to you as a reminder of what could happen if you allowed yourself to be tempted to cheat in any form whatsoever during examinations. Note also that except you are under 17, **for any examination misconduct, the decree does not give room for options of fine, the individual goes to JAIL**. The University has however put in place a series of quality assurance mechanisms to ensure the sanctity of her examinations, even including those ones you will take in your homes. In fact, the online examinations are easier to control than the face-to-face ones; when we get there you will see what we mean.

Excerpts of very useful sections and points: (Source: EXAMINATION MALPRACTICES DECREE, 1999).

THE FEDERAL MILITARY GOVERNMENT
hereby decrees *inter alia* as follows:

Part 1 - Offences

A person who, in anticipation of, before or at any Cheating at examination by any fraudulent trick or device or in abuse of his office or with intent to unjustly enrich himself or any other person procures any question paper produced or intended for use at any examination of persons, whether or not the question paper concerned is proved to be false, not genuine or not related to the examination in question; or by any false pretence or with intent to cheat or secure any unfair advantage for himself or any other person, procures from or induces any other person to deliver to himself or another person any question paper intended for use at any examination or by any false pretence or with intent to cheat or unjustly enrich himself or any person buys, sells, procures or otherwise deals with any question paper intended for use or represented as a genuine question paper in respect of any particular examination; or fraudulently or with intent to cheat or secure any unfair advantage for himself or any other person or in abuse of his office procures, sells, buys or otherwise deals with any question paper intended for the examination of persons at any examination.

An offence

A person guilty of an offence under subsection (1) of this section is liable on conviction.

- (a) in the case of a person under the age of 18 years, to a fine of ₦100,000.00 or imprisonment; for a term not exceeding 3 years or to both such fine and imprisonment;
- (b) in the case of a principal, teacher, an invigilator, supervisor, an examiner, or an agent or employee of the examination body concerned with the conduct

of an examination, to imprisonment for a term of 4 years without the option of a fine; and

- (c) in any other case, to imprisonment for a term of three years without the option of fine.

Where the person accused of the offence is an employee of an examination body concerned with the conduct of examinations or a head teacher, teacher or other person entrusted with the safety and security of question papers, he shall be proceeded against and punished as provided in this section, notwithstanding that the question paper concerned is proved not to be live, genuine or does not relate to the examination concerned.

Appendix VI: Charter of Service of the National Open University of Nigeria in response to Students' Needs

Charter of Service of the National Open University of Nigeria in response to Students' Needs					
S/N	Types of Services	Delivery Target	Redresses available to the students	Official(s) Responsible for Handling Complaints in order of Sequence	Implementation Strategy
1	Award of: Diploma 1st Degree Post Graduate Diploma	2 years full time – 2 years flexible mode 4 years full time, 8years flexible mode 1½ years full time- 2/3years flexible mode	Petition the Centre Director Dean University Senate Vice-Chancellor University Council	The Centre Director The HOD The Dean The University Senate	

	Masters' Degree PhD Degree	1 1/2 years full time - 2/3years flexible mode full time- 3years flexible mode – 6years	Seek redress at the Law Court	The Vice - Chancell or The University Council Seek redress at the Law Court	
2	Enquiries: Telephone Online Ticketing Email Correspondences	Within 1 day 3 working days 3 working days 14 working days	The Dean/HOD The Dean/HOD The Dean/HOD	The Dean/Director	By making sure that all phones are working and manned between the hours of 8.00 a.m.– 4.00 p.m.

3	Admission Process	Within 8 weeks of the conclusion of sales of forms	The Centre Director Dean/HOD Registrar	The Dean	Matching students' qualifications with admission criteria
4	Students' Orientation/ Registration	Within 4 weeks	The Dean/Director Registrar The Centre Director	Registrar	Provide detailed information about course characteristics, fees,
5	Change of Programme	Within 1 week	Dean/HOD The Centre Director	The Dean	Matching students' qualifications with admission criteria
6	Addition and Dropping of Courses	Within 1 week	The Study Center Director	The Student Counsellor Study Centre Director	To be completed within an acceptable period. Otherwise,

				The Dean HOD/ Course Lecturer	students pay a specified levy after a period of grace.
7	TMA's and Tutorial classes	Within 2 weeks	Study Centre Director Programme Leader Course Coordinator	Centre Director HOD/ Course Lecturer The Dean	Effective monitoring of scheduled times Effective monitoring of personnel for tutorial classes
8	Administration of Examinations	Within stipulated time	The Dean/Director	Centre Director HOD/ Course Lecturer The Dean	Ensure Quality Security Mode of delivery
9	Collation of Results	Within 4 weeks of Examination	The Study Centre Director	Course Lecturer HOD/	Release results

			The Dean	Dean	promptly through the academic Registry.
10	Review of Programmes/ Courses	Normally every 5 years	The Dean/Director	Dean HOD/ Course Lecturer	Actual review, every 5 years. Errors detected in any course material would be corrected immediately via addendum in print and electronically.
11	The organisation of Field Trips/ Professional Experience	Within 4 weeks	Study Centre Director The Dean/Director	HOD/ Course Lecturer The Dean/Director	Ensure early and prompt contact

					with industrie s/ institutio ns for learners' placeme nts
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Disclaimer

Every effort has been made to ensure the accuracy of this Handbook. However, it should be noted that the information contained within is subject to change. Where such changes occur, we will endeavour to update this book as soon as possible.