Students Handbook

Federal University Oye-Ekiti
Department of Mechatronics Engineering

Students Handbook

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FOREWORD

This handbook provides useful course information on the B.Eng. in Mechatronics Engineering degree programme at the Federal University Oye-Ekiti. The vision and mission of the University are presented, in addition to the philosophy and objectives of Mechatronics Engineering programme. The courses required for the award of the degree and their respective outlines are presented in this handbook.

The department of Mechatronics Engineering has well trained and highly experienced academic staff as well as very competent technical and administrative staff. In general, the department provides an excellent and a congenial atmosphere for teaching, learning and research.

The department is composed of three academics groups which define the major thrust of work in the department, namely: Computer Aided Engineering Group, Process Automation, Artificial Intelligence and Robotics Group. Students learn to create innovative products through the application of Mechatronics in ways that are economically viable and environment friendly.

The department focussed on providing the students with the skills that will enable them design and manufacture reliable, economical, and versatile products.

Current students, Prospective students, Prospective academic and technical staff as well as the general public will find this book very valuable.

Dr. (Engr.). Matthew Oluwole AROWOLO

Ag. Head

Department of Mechatronics Engineering

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1.0. Name of the Programme

Bachelor's Degree in Mechatronics Engineering

2.0. History of The Programme

The Department of Mechatronics Engineering started in July 25, 2012 (2012/2013) academic session) with a vision to become one of the best in the nation in the near future. The philosophy of the department is to marry theory with practical and hence produce innovative graduates who will be empowered to strengthen the weak or virtually non-existent manufacturing base of Nigeria in particular and Africa in general. This philosophy is the bedrock of the Mechatronics Engineering undergraduate programme of Federal University Oye-Ekiti. The 5-year programme of is hosted by the Faculty of Engineering in the Ikole Campus of Federal University Oye-Ekiti.

2.1. About Federal University Oye-Ekiti

Federal University Oye-Ekiti (FUOYE) is one of the nine Universities established in February 2010 by the Government of Federal Republic of Nigeria to prepare the next generation of skilled and ethical professionals by providing robust curricula across and within disciplines to foster economic development activities that are innovative, research-driven, integrating cutting-edge technology in multidisciplinary and disciplinary research.

- ### The Vision

The Motto of the University is Innovation and Character for National Transformation. The strategic vision of the University is to become an academic giant, the pace-setter among universities in the Third World, in the quality of its scientific research, the level of its innovative teaching, and the robustness of its community service.

- ### The Mission

As her mission, FUOYE aspires to become an institution of first choice recognised for providing critical opportunities for student success; acknowledged as a primary, regional and global resource for entrepreneurial educational and best practices in mining and farming technologies; and valued as a university where there are faculty, students, and professional staff who are active in integrating cutting-edge technology in multidisciplinary and disciplinary research.

The mission of the university includes:
- To advance the community of learning by engaging in scientific research, humanistic scholarship, multidisciplinary research, entrepreneurship and technological integration

- To provide a robust and high-quality educational experience for students in a diverse learning environment while promoting the values and indigenous learning that is responsive to the needs of our society

- To create an institution that values and prepares students to lead lives of personal integrity and civic responsibility in a global society

- To prepare the next generations of skilled and ethical professionals by providing robust curricula across and within disciplines that prepare graduates to be research minded and able to compete effectively in diverse world market

- To advance best practices in farming and mining, foster economic development activities that are innovative, research-driven, and will result in a better quality of life for Nigerians.

3.0. Philosophy and Objectives of the Programme

3.1. Programme Philosophy

The philosophy is to produce skilled manpower who understand the fundamentals and principle of Mechatronics Engineering discipline and who can generate technologies for the nation's development and technological advancement. Such knowledgeably professional manpower has to be produced in an atmosphere with the widest possible human and material resources, through the adoption of effective techniques of instruction, and exposure to the actual practice of engineering. Consequently, there are opportunities for formal training at the Undergraduate and postgraduate levels for the acquisition of basic and higher degrees respectively.
These training programmes are mounted through classroom instruction, laboratory practical, field demonstration, and workshop practice.

3.2. The Objectives of the Programme

The general aims and objectives of Mechatronics Engineering Programme are in consonance with the realization of national needs and aspirations vis-à-vis industrial development and technological emancipation. The benchmark statements give the minimum academic standards required to meet these needs and to produce graduates in Mechatronics Engineering with sufficient academic background and practical experience who would be able to rise to the challenges of a developing economy. Therefore, Mechatronics Engineering graduates must be resourceful, creative, knowledgeable and able to perform the following functions:

- Design engineering projects and supervise their construction.

- Design and make components, machines, equipment and systems.

- Design and develop new products and production techniques in industries.

- Install, operate, maintain and service complex engineering systems so that they can perform optimally in our environment.

- Adapt and adopt exogenous technology in order to solve local engineering problems.

- Exercise original thought, have good professional judgement and be able to take responsibility for the direction of important tasks.

- Apply management skills to solve a wide scope of management and organization problems related to any Engineering set up.

- Improve on indigenous technology to enhance local problems solving capability.

- Communicate Engineering concepts and ideas by oral, written and graphical means and to assimilate, interpret and evaluate information from a wide range of sources including IT based systems; and

3.3.   Practical Training

Relevant Work Experience through Students Industrial Work Experience Scheme (SIWES). This is a central feature of education at FUOYE and an integral part of undergraduate degree programmes. Aside the laboratory, workshop, field practical and field trips, Students from the B.Eng. Mechatronics Engineering programme are also expected to undertake compulsory SWEP and SIWES training. This practical training is sub-divided into the following areas, as shown in the Table below:

Practical Training Programme

S/N	Training Programme	Course Code	Period	Duration (weeks)
1	Students' Work Experience Programme I (SWEP I)	ENG200	Long vacation of 200 level	8
2	Students' Work Experience Programme II (SWEP II)	ENG300	Long vacation of 300 level	8
3	Students' Industrial Work Experience Scheme (SIWES)	ENG400	Second Semester and Long vacation of 400 level	24
			Total	40

3.4.   Career Opportunities

Graduates with a Mechatronics Engineering degree therefore have opportunities of getting employment in a wide range of engineering based such as in production and manufacturing industries i.e. pharmaceutical, cement, breweries, chemical, automotive, aerospace, food and beverages, printing, textile, refrigeration and air-conditioning, oil and gas, etc. They can also find employment in defence industries and public buildings. Within these industries, Mechatronics Engineering graduates may be design engineers, software engineers, project planners, product designers or project managers.

4.0.   Entry Requirements

4.1.   UTME Entry Requirements:

Admission to 100 levels is through UTME in subjects such as English Language, Mathematics, Physics, and Chemistry. To be eligible for admission, candidate must have Ordinary Level of General Certificate of Education (GCE), Senior School CertificatesExamination (SSCE) or its equivalents with at least five credit passes, including English Language, Mathematics, Physics, Chemistry and one science or social science subject at not more than two (2) sittings. The Department accepts result from only Government approved examination bodies such as WAEC, NECO, and NABTEB or its equivalents.

4.2.   Direct Entry Requirements

To qualify for placement into the degree programme through Direct Entry to 200 Level, candidates must first satisfy 'O' level requirements as applicable to UTME candidates and they are expected to meet the following requirements:

(i)   Obtain two 'A' level passes from Physics, Chemistry and Mathematics.
(ii)   Obtain National Diploma (ND) Upper Credit in Mechatronics Engineering or Mechatronics Engineering.

5.0.   Admission and Registration

5.1.   Admission

Applicants follow the National Universities Commission (NUC) and the FUOYE admission procedures. Prospective students must possess the relevant credits at O' Level and pass both the UTME and Post-UTME screening exercises. Students must pay all the necessary fees and must be of good character. After due process of screening at the faculty and departmental offices, the candidate(s) will be provided with the list of courses for registration purposes.

5.2.   Registration of Courses

Courses for the session are registered on-line at the beginning of the session. In addition, a student is required to go to his/her level adviser after the on-line registration in order to complete the registration process. Failure to register before the stipulated deadline given by the university may result in loss of that session or voluntary withdrawal from the programme. A student cannot re-register for a course already passed.

5.3.   Duration of Programme

This programme is essentially a 5 or 4 years programme. Candidates admitted with O'level certificates or equivalent with UTME spend five (5) years and those admitted with ordinary diplomas spend four (4) years, starting at the second year of the programme.

5.4.   Dropping of Courses

A student who wishes to drop a course, after the registration deadline, must do so at least six weeks to the commencement of examinations in the semester. This is done by making the

request in writing, stating why he/she wishes to drop the course(s), to the Vice Chancellor through the Dean of Faculty and Head of Department. Such requests typically pass through the department and faculty boards before being collated by the Academic Affairs unit for University Senate approval.

6.0.   Graduation Requirements

In order to graduate from the 5-year Bachelor of Engineering (B.Eng.) degree programme in Mechatronics Engineering, students must have:

(i)   passed all core/compulsory courses and electives,
(ii)   accumulated a minimum of 200 Credit Units if he/she was admitted into the Department through UTME and a minimum of 156 Credit Units if the admission is through Direct Entry into 200 Level; within the minimum period of five (5) and four (4) years and maximum of seven (7) and six (6) years, respectively.
(iii)   obtained a CGPA of not less than 1.50;

Table 1: The Distribution of course credits by levels of study for the programme is as shown below.

Level		General Studies/ Entrepreneur	Basic Sciences	Basic Engineering	Core Courses	Electives	SIWES/ SWEP/ Project	Total
100	1st	5	16	2	–	–	–	23
	2nd	5	14	2	–	–	–	21
200	1st	3	–	17	–	–	–	20
	2nd	3	–	19	–	–	–	22
300	1st	–	–	2	20	–	–	22
	2nd	–	–	3	20	–	–	23
400	1st	–	–	–	20	2	–	22
	2nd	–	–	–	–	–	6	6
500	1st	–	3	–	13	4	–	20
	2nd	–	–	–	11	4	6	21
TOTAL		**19**	**30**	**45**	**84**	**10**	**12**	**200**

7.0. Instructional Methods and Grading System

7.1. Grading of Courses

The rating of grades obtained in a course in terms of credit points per load unit is as stated in the following table.

Federal University Oye-Ekiti Grading System

Level of Performance	Grade	Rating (Credit Points Per Unit)
70-100%	A = Excellent	5.0
60-69%	B = Very Good	4.0
50-59%	C = Good	3.0
45-49%	D =Satisfactory	2.0
40-44%	E = Poor	1.0
0-39%	F = Failure	0.0

Based on the above, a student who obtains a grade of' 'A' in a 4-unit course will score 20 (4×5) credit points and another who obtains a grade of C will score 12 (3×4) credit points.A credit point is thus the product of the course units and the rating in each course. The sum of all credit points for a semester is the Total Credit Point (TCP).

As an illustration, a student took 4 courses of 5 units each and obtained C, B, F, D grades respectively. The TCP will be 5×3 + 5×4 + 5×0 + 5×2= 45. The Grade Point Average (GPA) is the TCP divided by the Total Credit Units (TCU). Hence, this student has a GPA of 45 divided by 20, which is 2.5.

The highest GPA that can be earned is 5.0 and the lowest is 0 (zero). The Cumulative Grade Point Average (CGPA) is the summation of the TCP for all semesters divided by the summation of TCU's for the semesters. Like the GPA, the CGPA obtained range from 0 to 5. The CGPA is calculated from all courses taken, including first year (100 level). A student whose CGPA is below 1.50 is placed on probation for the next two semesters after which he/she is advised to withdraw or transfer to another department, if CGPA remains below 1.50.

Definition of Terms

S/N	Term	Definition
i	Total Credit Points (TCP)	This is the sum of the products of the course units and rating in each course for a particular single semester
ii	Total Credit Unit	This is the total number of course units registered by a student in a particular semester. It is summation of credit

	(TCU)	units on all courses in the semester
iii	Grade Point Average (GPA)	This is total credit points (TCP) divided by total credit units (TCU). The highest GPA that can be earned is 5.0 and that is when a student has earned grade "A" in every course taken during the semester.
iv	Cumulative Credit Point (CCP)	This is the summation of total credit points across all semesters that a student registered till date
v	Cumulative Credit Unit (CCU)	This is the summation of total course units across all semesters that a student registered till date
vi	Cumulative Credit Point Average (CGPA)	This is neither the summation nor average of GPAs for all semesters. Rather, it is summation of TCPs for all semesters (CCP) divided by summation of all TCUs (CCU). CGPA obtainable ranges from 0 - 5.

The class of degree a student graduate with is determined by the final CGPA after passing all compulsory and required elective courses prescribed in the curriculum. The different groups are shown in the table below.

Class	Range of CGPA
First Class Honours	4.50 – 5.00
Second Class Honours (Upper Division)	3.50 – 4.49
Second Class Honours (Lower Division)	2.40 – 3.49
Third Class Honours	1.50 – 2.39

7.2. Teaching Methods

Students are taught through arrange of methods including lectures, tutorials, laboratory practical sessions, assignments, term papers, seminar presentations, prescribed self-study, design projects, group work among others.

7.3. Language of Instruction

The language of instruction is English Language.

7.4. Mode of Assessment

Performance in a course is measured in terms of;

   a) The result of prescribed theory and practical examinations and/or
   b) Assessment of other deliverables such as essays, assignments, laboratory and seminar report as might be prescribed for each course.

7.5. Scoring system

The Scoring System adopted is as stipulated by the National Universities Commission. Under this system, marks are allocated for continuous assessment (typically 40%) as well as Examinations (typically 60%); however, laboratory practical courses have no written final examinations. Continuous assessment shall be done through assignments, tests and practical exercises. (a) Scores from continuous assessment shall normally constitute 30-40% of the final marks for courses which are primarily theoretical. (b) For courses which are partly practical and partly theoretical, scores from continuous assessment can constitute 50% or more of the final marks. (c) For courses that are entirely practical, continuous assessment shall be based on a student's practical work or reports and shall constitute 100% of the final marks.

Description	Scoring (Typical)
Continuous Assessment	40%
Examination	60%
TOTAL	100%

8.0. Examination

8.1. Examination Malpractice

A student who is involved in University Examination malpractice or violates examination regulation shall be referred to the University disciplinary committee which will recommend appropriate disciplinary actions.

8.2. Absence from Examination

A student who is absent from a course examination, after having registered for the course, without approval of a written request to drop the course will receive a grade of 0(F)at the end of the semester. Exemptions may be granted only on substantiated or on compassionate grounds as recommended by the Faculty Board and approved by University Senate.

8.3. Final Year Undergraduate Project

Students are expected to submit their final year (B.Eng.) project reports to the department through their respective supervisors. A preliminary report is submitted during the first semester of the final year where first 2-3 chapters (Introduction, Literature Review and Methodology) are assessed in writing together with an oral defence. The first semester assessment contributes 30% towards the overall score of the project (MTE599) which is registered in second semester as a 6-units course. Similarly, the complete report is assessed in writing towards the end of the second semester with an internal oral defence before a panel of at least four members of staff headed by Senior lecturer or above from the department. An assessment by an appointed external examiner is also organised and can be done simultaneously during the internal oral defence and assessment. Every project is thus assessed by the supervisor, internal assessor(s) and the external examiner.

8.4. Setting Examination

Each lecturer sets examination for the course he/she teaches and such questions are vetted by

Quality Assurance team, who has the responsibility of moderating the questions with the cooperation of the lecturer. However, for final year examinations, the set questions are sent to the University appointed external examiner to further vet, write and submit a report to the Vice-Chancellor regarding his finding(s). The Department is also obliged to accept the modifications to the questions. These apply only to semester examinations and not test or mid-semester examination. Also, the external examiner only vet's questions for final year students.

8.5. Conduct of the Examination

All semester examinations are conducted by the University, including the selection and distribution of invigilators and examination venues under the supervision of a University appointed Chairman of Examination Committee whose members are selected by the Faculty.

8.6. Evaluation Schemes

After a lecturer has graded the scripts, he submits them to the HOD. The HOD then ensures that the scripts are vetted by quality assurance team. This applies to all courses at all levels including the final year. The examiner ensures that the marking scheme and model answers are forwarded to the HOD as soon as the question papers are submitted. Once the grading process is completed, a meeting of the Departmental Board of Examiners with the Head of Department as chairman is convened. The board will discuss the results, ensuring that probity, integrity and rule of competence have been observed in grading the scripts. Consensus is the rule at the board of examiners' meeting and where this is not possible, the matter is passed on to the Faculty Board of Examiners.

8.7. Faculty Board of Examiners

The Faculty Board of Examiners is the forum in which all examiners in the faculty as members, meet and ensure that all departments comply with Senate regulations on university examinations. The result is put in the full glare of the faculty board of studies (comprising the Dean, Deputy Dean, all HODs and their Exam officers) and deliberated upon. The decision of the Faculty Board must be complied with and where this is not so the issues are moved to Senate for final determination.

8.8. University Senate

Results go to Senate in summary form and there the results are electronically presented analytically and issues that escaped either the department and/or faculty are thrashed out and resolved.

8.9. Moderation Scheme

Internal and External moderation of the degree examinations are ensured as follows:

i.   Examinations (Undergraduate): After setting the questions, the lecturer submits them for moderation and advice by the quality assurance team; subsequently the lecturer modifies the questions and they are from that point placed in the custody of the HOD until the time to be produced for the examination.

ii. For final degree examinations, as soon as the questions have been internally moderated, a secure arrangement is made to take them to External Examiner for vetting moderation

and immediately returned by the emissary, usually the Examinations Officer or the HOD.

8.10. Correction of Results

Results are only corrected after the Senate has given approval. The HOD collects and collates students result complaints in form of a written request through the departmental level advisers. The lecturer is required to endorse any necessary corrections together with the HOD and, the Dean of Faculty. The university Senate Examination must the approve the student result correction, before it is updated on the student's results database.

8.11. Quality Assurance

To maintain high quality, the course materials are updated with current information. The Head of Department and his/her quality assurance team ensure that members of the Department work effectively to deliver the possible highest quality academic programme. The quality assurance team of the department assesses the following for each course:

- Course questionnaires and teaching feedback

- Internal moderation of tests and examination questions.

- Course and programme reviews.

- External examiners' report.

- Annual academic evaluation.

- Industrial inputs to course design.

- Vetted marked answer scripts.

8.12. Issuance of Results

Results are only issued after the Senate has given approval. In other words, no student is expected to have any knowledge of the examination results until after the Senate meeting which considers such results.

8.13. Policy on Academic Standards and Academic Atmosphere

Lecturers are encouraged to have office hours within which students can come to ask questions related to the courses they are teaching. Such office hours must be publicized in class as well as pasting a copy on their office doors. Lecturers are also encouraged to plan for adequate question time during classes. This policy enables the academic atmosphere to be cordial while encouraging freedom of expression by staff and students.

9.0. Curriculum

The curriculum which is compliant with the Minimum Benchmark Academic Standard of the National Universities Commission (NUC-BMAS) is a five-year programme outlined as follows.

COURSE OUTLINE

100 Level

	Code	Title	Status	Unit	Code	Title	Status	Unit
	FIRST SEMESTER				**SECOND SEMESTER**			
BASIC SCIENCES	MTH101	Elementary Mathematics I	C	3	MTH102	Elementary Mathematics II	C	3
	MTH103	Elementary Mathematics III	C	3	MTH104	Elementary Mathematics IV	C	3
	PHY101	General Physics I	C	3	PHY102	General Physics III	C	3
	PHY103	General Physics II	C	2	PHY108	Practical Physics II	C	1
	PHY107	Practical Physics I	C	1	CHM102	General Chemistry II	C	3
	CHM101	General Chemistry I	C	3	CHM108	Practical Chemistry II	C	1
	CHM107	Practical Chemistry I	C	1				
BASIC ENG'	CPE101	Computers & Computing for Engineers	C	2	MEE102	Technical Drawing	C	2
GENERAL STUDIES	GST101	Communication in English I	C	2	GST102	Communication in English II	C	2
	GST103	Use of Library & ICT	C	2	GST106	Evaluating Opportunities and Business Concepts	C	1
	GST105	Introduction to Entrepreneurship	C	1	*GST108	Government, Society and Economy	E	2
					*GST110	African Culture and Civilisation		
	TOTAL			**23**	**TOTAL**			**21**

*Student chooses one out of the two elective courses

200 Level

	Code	Title	Status	Unit	Code	Title	Status	Unit
			FIRST SEMESTER			**SECOND SEMESTER**		
BASIC SCIENCE								
BASIC ENGINEERING	ENG201	Engineering Mathematics - I	C	3	ENG202	Engineering Mathematics - II	C	3
	ENG203	General Engineering Laboratory – I	C	3	ENG204	General Engineering Laboratory – II	C	3
	ENG205	Engineer in Society	C	1	EEE204	Electrical & Electronics Engineering-I	C	3
	MTE201	Computer Aided Engineering - I	C	1	MTE204	Computer Aided Engineering – II	C	2
	MEE201	Workshop Technology-I	C	1	MEE204	Workshop Technology-II	C	1
	MEE207	Engineering Drawing-I	C	1	MEE208	Engineering Drawing-II	C	1
	MEE203	Applied Mechanics	C	3	MEE206	Fluid Mechanics - I	C	2
	MME201	Materials Science	C	2	CVE204	Strength of Materials	C	2
	MEE205	Thermodynamics- I	C	2	MTE206	Introduction to Mechatronics Engineering	C	2
GENEAL STUDIES	GST203	Feasibility Plan and Investment Decision	C	1	GST202	Peace Studies and Conflict Resolution	**C**	**2**
	GST205	Introduction to Philosophy, Logic and Human Existence	C	2	GST204	Resources Management and Organizational Behavior	**C**	**1**
		TOTAL		**20**		**TOTAL**		**22**
	***Course Registration in 400 Level (2nd Semester)**				ENG200	Student Work Experience – I (SIWES-I)	**R**	**0**

300 Level

	Code	Title	Status	Unit	Code	Title	Status	Unit
	FIRST SEMESTER				**SECOND SEMESTER**			
BASIC ENGINEERING	**ENG301**	**Engineering Mathematics-III**	**C**	**2**	**ABE302**	**Engineering Statistics**	**C**	**3**
CORE COURSES	**EEE303**	Electric Circuit Theory	C	2	**EEE302**	Control Engineering - I	C	3
					EEE304	Electrical & Electronic Engineering-III	C	2
	EEE341	Electromagnetic Fields and Waves -I	C	2	**MME302**	Engineering Metallurgy	C	2
	MTE305	Computer Aided Design-I	C	2	**MTE306**	Computer Aided Design-II	C	1
	MEE307	Thermodynamics-II	C	2	**MEE308**	Fluid Mechanics - II	C	2
	MEE309	Manufacturing Technology	C	2	**MEE310**	Workshop Technology - III	C	2
	MEE311	Theory of Machines-I	C	3	**MTE308**	Signal & Systems	C	2
	EEE343	Electromechanical Devices and Machines -I	C	2	**EEE346**	Electromechanical Devices and Machines -II	C	2
	MTE311	Mechatronics System Design - I	**C**	**2**	**MTE312**	Mechatronics System Design –II (Project Course)	R	2
	EEE323	Analogue Electronic Circuit	C	2	**EEE324**	Digital Electronic Circuit	C	2
	MTE309	Laboratory Practical - II	C	1	**MTE310**	**Physical Electronics***	E	3
	TOTAL			**22**	**TOTAL**			**23**
	Registration in 400 Level (2nd Semester)				**ENG300**	Student Work Experience -II (SIWES II)	R	0

400 Level

	Code	Title	Status	Unit	Code	Title	Status	Unit
	FIRST SEMESTER				**SECOND SEMESTER**			
CORE COURSES	**MEE405**	Thermodynamics - III	C	2				
	MEE407	Mechanical Engineering Design-I	C	2				
	MEE411	Fluid Mechanics-III	C	2				
	MTE403	Introduction to Autotronics	**C**	**2**				
	MTE405	Control Engineering - II	C	2				
	MTE407	Sensors & Actuators	C	2				
	MTE409	Introduction to Robotics	C	2				
	MTE411	Digital Systems and PLCs	C	2				
	MTE415	Laboratory Practical-III	C	1				
	MTE417	Laboratory Practical-IV	C	1				
	ENG401	Engineering Report Writing & Communication	**C**	**2**				
ELECTIVE	**MEE401**	Theory of Machines - II	E	2				
	MTE401	Computer Hardware Engineering	E					
	MEE421	**Measurement and Instrumentation**	**E**					
	MTE413	Numerical Methods	E					
	MEE403	Automotive Engineering & Workshop	E					
SIWES					**ENG200**	SIWES - I	R	0
					ENG300	SIWES - II	R	0
					ENG400	SIWES - III	R	6
	TOTAL			**22**		**TOTAL**		**6**

500 Level

	Code	Title	Status	Unit	Code	Title	Status	Unit
		FIRST SEMESTER				**SECOND SEMESTER**		
CORE COURSES	**MEE501**	Thermodynamics - IV	E	2				
	MEE503	Fluid Mechanics - IV	E					
	MTE501	Process Automation	C	2	**MTE502**	Automation and Robotics	C	2
	MEE505	Mechanical Engineering Design-II	C	2	**MEE504**	Heat Transfer - I	C	2
	MEE507	Engineering Management	C	2	**MTE504**	MEMS and VLSI	C	2
	MTE511	Microcomputers and Microprocessor Systems	C	2	**MTE512**	Microcomputers and Embedded Systems	C	2
	MTE507	Laboratory - V	C	1	**MTE508**	Laboratory –VI	C	1
	MTE513	Power Electronics and Devices	**C**	**2**	**MTE514**	Digital Signal Modeling	**C**	**2**
ELECTIVES	**MTE521**	Reliability Engineering	E	2	**MTE506**	Engineering Vibrations	E	2
	MEE517	Renewable Energy Systems	**E**		**MTE516**	Micro-fabrication Technology	**E**	
	MTE517	**Lean Production Management and Industrial Logistics**	**E**		**MEE510**	Air Conditioning & Refrigeration	**E**	
	MTE505	Control Engineering -III	E		**MTE518**	Machine Vision	E	
	MTE509	CAD/CAM & Engineering IV	E		**MTE510**	Communications Systems	E	
	MTE515	**Mobile Robotics**	**E**		**MTE520**	Machine Learning	E	
PROJECT /GS	**ENG501**	Law & Management	**C**	**3**	**MTE599**	**Project - II**	C	6
		TOTAL		**20**		**TOTAL**		**21**

*Students are to registered for any two elective courses in each semester

Course Synopses

Course Description – 100 Level
First Semester – 100 Level

CHM101   General Chemistry I   (3 Units)

Physical quantities and Units, Error treatments, States of matter: Derivation and calculations involving the use of the laws of gases. The mole concepts and determination of relative masses. Chemical equation and Stoichiometry: Modern electronic theory of atoms and electronic Configuration. Building up of periodic table and the periodicity. Chemical bonding and intermolecular bonds. Concept of Acid, Base and Salts. Chemical equlibria. Chemical Kinetics. Thermochemistry. Electrochemistry. Introduction to Nuclear Chemistry.

CHM107   General Chemistry Practicals I   (2 units)

A course designed to illustrate the principle covered in lecture course of CHM 101 Viz; Measurements using measuring Cylinder and use of the Top loading Balance, Data treatments; Volumetric Analysis: titration of strong acid against strong base/weak base, Standardization of Potassium tetraoxomaganate, Ethanoic acid; Back titration.

CPE101   Computers & Computing for Engineers – I   (2 Units)
System Architecture; Linux Installation and Package Management; GNU and Unix Commands
Devices, Linux File systems, File system Hierarchy Standard; Shells, Scripting and Data Management; User Interfaces and Desktops; Administrative Tasks; Essential System Services; Networking Fundamentals; Security

GST101   Communication in English I   (2 Units)

Communication in English will focus on two languages skills: listening and speaking as word classes; Listening skills: listening strategies, note-taking; Speaking skills: segmental consonants, vowels; supra-segment-stress, intonation; dictionary and pronunciation skills in English; grammatical structures and communication: nouns, verbs, pronouns, adverbs, prepositions and adjectives in communication, English, sentence types, punctuation marks, vocabulary development, common errors, figures of speech, and effective communication, spelling.
Students are to read two recommended texts.

GST103   Use of Library and ICT   (2 Units)

Introduction to Library and conceptual clarification; Types of Libraries; Library organisation

Serial and Research departments; Readers services division and reference collections. Library rules and regulations; Library Automation; Hands on online databases such as TEEAL, MIT Courseware, HINARI, OARE, AGORA, etc

The basic concepts of processes, programs and the components of an Operating System; Basic knowledge of computer hardware; Demonstrating knowledge of Open Source Applications in the Workplace as they relate to Closed Source equivalents; Navigation systems on a Linux Desktop and where to go for help; A rudimentary ability to work on the command line and with files; The use of basic command line editor.

GST105   Introduction to Entrepreneurship   (2 Units)

History and background of entrepreneurship; Theories of entrepreneurship thought; Definition of entrepreneurship and management; Entrepreneurship theory and Nigeria experience; Approaches to entrepreneurship; psychological approach, sociological approach and distinctive competence
Understanding the entrepreneurship mindset; Business opportunities profile; Entrepreneurship case analysis/training workshop.

MTH101   Elementary Mathematics I   (3 Units)
 (Elementary Set Theory and Numbers)

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. Demoivre's theorem, nth roots of unity. Circular measure, trigonometric functions of angles of any magnitude, addition and factor formulae.

MTH103 Elementary Mathematics III   (3 Units)
(Vectors, geometry and dynamics)
Geometric representation of vectors in 1-3 dimensions, components, direction cosines. Addition and Scalar multiplication of vectors, linear independence. 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, normals. Impact of two smooth sphere, and of a sphere on a smooth sphere.

PHY101   General Physics I   (3 Units)
(Mechanics, Thermal Physics and Waves)
Space and Time, frames of reference, Units and dimension, kinematics; Fundamental laws of mechanics, Statics and dynamics; Galilean invariance; Universal gravitation, work and energy; rotational dynamics and angular momentum, conservation laws.

PHY103   General Physics II   (2 Units)
(Electricity, Magnetism and Modern Physics)
Electrostatics, Conductors and Currents, dielectrics; magnetic fields and induction, maxwell's equations, electromagnetic oscillations and waves; Applications.

PHY107   Practical Physics I   (2 Units)

This introductory course emphasizes qualitative measurements, the treatment of measurement errors, and graphical analysis. A variety of experimental techniques will be employed. The experiments include studies of meters, the oscilloscope, mechanical system, electrical and mechanical resonant systems, light, heat, viscosity e.t.c covered in PHY 101, PHY 102, PHY 103.

Second Semester -100 level

CHM102   General Chemistry II   (3 Units)
Introduction to Organic Chemistry: Hybridization in carbon Sp3, Sp2 Sp. Nomenclature and classes of organic compounds. Homologous series of hydrocarbons, functional groups. Types of organic reactions: elimination, addition, substitution and rearrangement. Isomerism: structural and stereoisomerism. Chemistry of benzene, alcohols, phenols, aldehydes, ketones, acids, amines and amides. Structure of simple sugars, polysaccharides such as starch and cellulose, peptides and proteins, fats and oils. Isolation and purification of organic compounds.

CHM108   Practical Chemistry II   (1 Unit)
A course designed to illustrate the principle covered in lecture course of CHM 102 Viz; Test for Organic functional groups: Unsaturated hydrocarbons, alcohols, aldehydes and ketones, carboxylic acids, Ester, Phenol. Determination of melting point; determination of suitable solvent for recrystalization; separation by distillation

GST102   Communication in English - II   (2 Units)
In communication in English II, two language skills, writing and reading in communication will be emphasized. Writing: getting started, strategies in writing, planning a good writing, parts of an essay, paragraph development, transitional devices, types of writing – definition, narrative, explanatory, argumentative, instructions; Report writing, its features, types, technical and non-technical reports; technical type: laboratory, project report eg dissertation or thesis writing; non-technical report: term paper; Reading skills: reading and literary appreciation – literature and its features, types, elements and relevance; genres of literature; Application of the literary features and genres to three recommended reading texts on the three genres of literature. A review or critique of a specified txt must be submitted by each student shortly before the end of the semester.

GST106   Evaluating Opportunities and Business Concepts   (1 Units)

Perceiving market opportunities, sources of new ideas including census data. Method of generating ideas. Creative problem solving. Developing the business concept. Concluding market research. Product planning development process. Legal issues in developing a business. Creativity, business innovation and products development.

GST108   Government, Society and Economy   (2 Units)

This course looks at the evolution of state as a political unit and the role of individual in the development of a state (the organization and structure of government, evolution of the state, political philosophy), socio-political economy of the society (system of government, the rule of law, resources and resource system, social mobility and social change), the influence of government in the management of the society (environment and culture, social stratification)

GST110   African Culture and Civilisation   (2 Units)

This course covers the study of African cultural history and characteristics, arts in pre-colonial times. It also at the evolution of Africa as a political unit; phenomenon of indigene/settlers and its conflicting outcome as well as traditional concept of trade, social justice, individual and national development. Moreover, peculiar norms and values, national attitudes and conducts (cult activities and related vices), reorientation, moral obligations of citizens, national values and environmental problems will be discussed. Particular attention will be on Nigerian local cases.

MEE102   Technical Drawing   (1 Unit)

Introduction to engineering drawing as a means of communication, use of drawing instruments, drawing paper format, types of lines and their uses in engineering drawing, plane geometry, circles and tangents, conic sections, Loci (cycloid, epicycloids, hypocycloid, involute, Archimedean spiral, Eclipse, hyperbola, parabola, including approximate method), theory of projection, parallel projection, orthographic projection, axonometric projection, perspective projection multi-view representation, 1st and 3rd angle projection, isometric drawings, oblique drawings, Freehand sketching.

MTH102 Elementary Mathematics II   (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, volumes (including approximate integration), and trapezium and Simpson's rules.

MTH104 Elementary Mathematics IV **(3 Units)**
(Elementary Algebra and Trigonometry)
Mapping, bijection, composition, inverse mapping, binary operations, associativity, identity elements and inverse element and distributivity. Relations: fundamental theorem of equivalence relations. Trigonometric ratios, sums and products formulae, multiple and sub-multiple angles, graphs of trigonometric functions and inverse circular functions. Solutions of triangles and trigonometric equations. Heights and distance in 2 and 3 dimensions geometry. Equations of line and planes, and other applications. Angles between two lines.

PHY102   General Physics III **(3 Units)**
Molecular treatment of properties of matter, Elasticity; Hooke's law, Young's shear and bulk moduli. Hydrostatics; Pressure, buoyancy. Archimedes' Principles. Hydrodynamics; Stream-lines, Bernoulli and continuity equations, turbulence, Reynold's number; viscosity; laminar flow, Poiseuille's equation. Surface tension, adhesion, cohesion, capillarity, drops and bubbles. Temperature; the zeroth law of thermodynamics; heat: gas laws; laws of thermodynamics; Kinetic theory of gases. Applications.

PHY108   Practical Physics II **(1 Unit)**
This introductory course emphasizes quantitative measurements, the treatment of measurement errors and graphical analysis. A variety of experimental techniques will be employed. The experiments include studies of meters, the oscilloscope, mechanical system, electrical and mechanical resonant systems, light, heat, viscosity e.t.c covered in PHY101, PHY102, PHY103

Course Description – 200 Level

First Semester – 200 Level

ENG201   Engineering Mathematics - I **(3 Units)**
Complex analysis -Elements of complex algebra, trigonometric, exponential and logarithmic functions. Real number, sequences and series. Vectors -Elements, differentiation and integration. Elements of linear algebra. Calculus -Elementary differentiation. Relevant theorems. Differential equations -Exact Equations. Methods for second order equations. Partial differential equation. Simple cases -Applications. Numerical Analysis -linear equations, non-linear equations. Finite difference operators: Introduction to linear programming.

ENG203   General Engineering Laboratory - I **(3 Units)**
Laboratory investigations and report submission on selected experiments and projects drawn from introduction to applied mechanics, thermodynamic, materials science and workshop technology courses.

ENG205   Engineer in Society   (1 Unit)

Philosophy of Science; History of Engineering and Technology - Introduction, career, who is an engineer, basic skills and requirements in engineering, career development in engineering, the needs of the society, developmental needs of the third world countries; Safety in Engineering and Introduction to Risk Analysis; The Role of Engineers in Nation Building - the engineer role in Nigerian local content initiative, the development of different branches of engineering, engineering and the different specializations, Engineering ethics and conducts, the engineers role in vision 2020, public interest and the professional, the engineers code of practice, design specifications and standards; Lectures from invited Professionals.

GST203   Feasibility Plan and Investment Decision   (1 Unit)

Business concept: nature of investment: agro-arable and poultry production, production of soap and cosmetics, tie and dye, fabrication, industry/market analyst, sources of raw materials; management teams, Product/Service Development Analysis, Financial Analysis (Cash Flow) Sources of start-up Capital, Basis of investment decision, Risk return relationship. Financial market. Nigerian Stock Exchange. Methods of raising capital on the capital market. Capital market efficiency. Stock exchange transaction and transfer procedure. Interpretation and analysis of financial statement and introduction to portfolio management. Training workshop and visitation to some business outfits within the state. Students must be able to come up with implementable business proposal.

GST205   Introduction to Philosophy, Logic and Human Existence   (2 Units)

The course is designed to equip students with the capacity to adequately understand the concept of human existence (meaning, methods and application of Philosophy, Philosophical foundation of Human existence) and man's role in the affairs of life (the values of Philosophy to man society, ethics and human conduct, the significance of Philosophy, Culture and Religion to national development. It aims at providing ways and means through careful reflection, purposeful thinking and reasoning (Philosophy and Education, Philosophy of language), a useful foundation for a meaningful life (The nature of logic, the meaning, structure and types of arguments, fallacies and the use of truth table, symbolizing statements and argument in prepositional logic)

MEE201   Workshop Technology - I   (1 Units)

Elementary introduction to types and organisation of engineering workshop, covering jobbing, batch, mass production. Engineering materials: their uses and properties. Safety in

workshop and general principles of working. Bench work and fitting: Hand tools, instruments. Carpentry: Hand tools and working principles. Joints and fastenings: bolt, rivet, welding, brazing, soldering. Measurement and marking: for uniformity, circulatory, concentricity, etc. Blacksmith: Hand tools and working principles. Joints and fastenings: Bolt, rivet, welding, brazing, soldering, measurement and marking: for uniformity, circulatory, concentricity, etc. Standard measuring tools used in workshop: Welding, brazing and soldering: Principles, classification, power source.

General principles of working of standard metal cutting machine tools. Invited lectures from Professionals.

MEE207   Engineering Drawing - I   (1 Unit)

Use of draughting instruments, lettering, dimensioning, layout. Engineering graphics - Geometrical figures, comics; Machine drawing, introduction to assembly drawing, working drawings, Pictorial, freehand sketching, conventional practices. Graphical calculus and applications development, intersection of curves and solids; Projections - lines, planes and simple solids. Principle of Tangency, Orthographic projection, Isometric projection, Oblique projection (with harder examples), Auxiliary Views, Sectioning, True length of Lines and shapes, Interpenetration of Solids, Development of Surfaces. Simple examples such as threaded fasteners.

Introduction to Computer Aided Drafting and Architectural drawings. Electronic draughting packages: principle and use in engineering design. Simulation packages: principle and use in engineering.

MEE203   Applied Mechanics   (2 Units)

Statics: Principles of mechanics. Forces, Moment Couples, Laws of Mechanics. Coplanar forces and their resultants. First and Second Moments of area. Centroids. Distributed line loads and their resultants. Application of vectors to resolution of forces. Equilibrium of particles. Free body diagrams, friction.

Dynamics: Kinematics of particles and rigid body kinematics in plane motion. Application of Newton's laws of motion. Rigid body translation, rotation about fixed axis and the velocity and acceleration of general plane motion. Relative motion of two particles. Dependent motion of particles. Instantaneous centre of rotation. Kinetics of particles, kinetic energy; principles of work and energy, impulse and momentum analysis, moment of inertia, Simple harmonic motions.

MEE205   Thermodynamics - I   (2 Units)

Basic concepts, energy and energy conversions and surroundings, temperature of scales. Quantitative relations of zeroth, first, second and third laws of thermodynamics and definitions and laws. The first Law of thermodynamics, applications to open and closed

systems. Second law of thermodynamics and Heat Cycles. The steady State flow equation (Bernoulli's Equation) and applications. The ideal gas, Heat and Work. Use of steam tables and charts

MTE201   Computer Aided Engineering - I   (2 Units)

C Programming: Introductory concepts, C fundamentals, operators and expression, data input and output, preparing and running a complete C program, control statements, functions, program structure, arrays, pointers, structures and unions, data files and low level programming. Advanced C Programming: Control statements, functions, program structure, arrays, pointers, structures and unions, data files and low level programming. Advanced UNIX/Linux shell programming: types of shells, shell scripts, command substitution, conditional execution, iteration constructs, conditional execution, automatic repetitive tasks, passing parameters to shell scripts.

UNIX/Linux shell programming: types of shells, shell scripts, command substitution, conditional execution, iteration constructs, conditional execution, automatic repetitive tasks, passing parameters to shell scripts.

Introduction to CAELinux packages for solving simple engineering problems – CFD software like Code-Saturne, OpenFOAM, Finite Element software like Salome-Meca, Analysis software like wxMaxima, Scilab, MATLAB, R Commander.

MME201   Material Science   (2 Units)

Structure of matter, crystal imperfection, simple phase diagrams of alloys. Physical properties of material (i.e. wood, cement, plastics and alloys). Mechanical properties of engineering materials. True stress-strain curves, ultimate strength, ductility, impact strength, hardness, creep and fatigue failure. Electrical properties: conductivity, semi-conductivity; Optical and magnetic properties of materials. Stability of materials in the service environment, corrosive media, sub-zero and elevated temperatures, irradiation. Basic criteria for the selection of materials for engineering applications.

Engineering properties of wood, concrete, ceramics, polymers, ferrous and non-ferrous metals and alloys, cryogenic, corrosive media and nuclear application.

Second Semester – 200 Level

CVE204   Strength of Materials   (2 Units)
Force equilibrium - free body diagrams. Concept of stress, strain; Tensile test. Young's moduli and other strength factors. Axially loaded bars, composite bars, temperature stresses and simple indeterminate problems. Hoop stresses in cylinders and rings. Bending moment, shear force and axial force diagrams for simple cases, Simple torsion and application. Advance topics in bending moments and shear force in beams. Theory of bending of beams. Deflection of beams. Unsymmetrical bending and shear centre, and applications Strain energy. Biaxial and triaxial state of stress. Transformation of stress. Mohr's circle, Failure theories, Springs, Creep, fatigue, fracture and stress concentration. Concepts of Stress and Strain, Torsion, Failure Theory. Design of Beams and Shafts for Strength. Columns. Thick walled cylinders; Compound cylinders. Rotating disks. Bending of flat plates. Beams on an elastic foundation. Membrane stresses in shells of revolution. two-dimensional theory of elasticity. Elementary Plasticity and Elastoplastic, problems, torsion of non-circular section. Limit theory.

EEE204   Electrical & Electronics Engineering-I   (3 Units)
Circuits - elements, DC and AC circuits, Basic circuit laws and theorems. Resonance, power, power factors, 3-phase circuits. Introduction to machines and machine designs. Physics of devices -Discharge devices, semi-conductors, diode and transistors. Transistor characteristics, devices and circuits; Electrical and electrical power measurements. Instrumentation systems including transducers, signal conditioners, and read out devices. Oscilloscope, recorders, bridges. Measurement of voltage, current, resistance, impedance, frequency, phase difference, electric power, energy, force, displacement, temperature, flow, pressure, and other engineering parameters.

ENG200   Student Work Experience – I (SIWES-I)   (0 Units)
Introduction to practices and skills through supervised hands-on workshop exercises in each engineering departments: Mechanical Engineering (Fabrication, welding, Machining, Foundry, Automotive operations, etc), Chemical Engineering (bar and liquid soap, creams, paints, etc), Civil Engineering, Computer Engineering (soldering and de-soldering, building of different circuits, etc), Petroleum Engineering, Electrical Electronics (surface and conduit wiring, etc), Information and Communication Technology (Satellite Dish installation). Working in the construction site if available during the period. Introduction to Networking Operation Centre (Satellite Broad casting), Bakery Operation (Bread Production), Water Table, sachet and Juice Production, Printing Technology, Fire-fighting Exercise and other available related general engineering practice on campus. These exercises include familiarisation with basic tools, troubleshooting. Safety precautions in handling devices in each workshop.

ENG202   Engineering Mathematics II   (3 Units)
Partial Differentiation: Functions of several variables, continuity and partial derivatives. Total differentials, approximate calculations using differentials. Chain rule. Implicit differentiation. Series representation of functions (Maclaurin & Taylor's), Taylor's Theorem. Extremum

problems, (analytic method) without and with constraints, Lagrange multipliers, global extremum. Ordinary Differential Equations: Definition, degree, order, linear, non-linear, solution. First order equations, separable variables, equations reducible to separable form, exact equations, integrating factors, homogenous differential equations. Modelling of engineering systems leading to first order differential equations- electric circuit, mixing/dilution, radioactive decay, bacterial culture.

2nd order differential equations with constant coefficients, homogeneous, non-homogeneous, complementary functions, particular integrals, D-operator method. General linear second-order differential equations (without using matrices). Power series solution, Legendre's differential equation. Modelling of engineering systems leading to 2nd order differential equations- electric circuit, Mechatronics oscillations-free and forced, resonance. Matrices and Determinants: Solution of system of linear equations by determinants. Linear dependence and independence, rank of a matrix. General system of linear equations, existence and properties of solution, Gaussian elimination. Matrix inverse by elementary matrices, adjoint, and partitioning methods. Characteristic polynomial, characteristic equation, eigenvalues and eigenvectors.

ENG204　　General Engineering Laboratory - II　　　　　　(3 Units)
The aim of this practical course is to train the students on how to build simple electronic circuit which can solve problems, and to let them have a basic knowledge of the main units of every device which are electronically designed. Working with Resistors and Diodes, Bridge Circuits, Oscilloscopes and Capacitors, Relays and Transistors; Fluid Mechanics experiments; Strength of Materials experiments

GST202　　Peace Studies and Conflict Resolution　　　　　(2 Units)
The course looks at basic definition of peace and conflict; it exposes the student to concepts in peace studies and conflict analysis. Conflict resolution, transformation and Mediation processes in peace education are evaluated for students understanding. Moreover, environmental factors, human rights issues and gender related conflicts in Africa are treated in relation to development and peace building. Students are taken through theories in Peace Studies in explaining ethnicity, religion and major causes of violent conflict in Africa.

GST204　　Human Resources Management and Organisational Behaviour　(1 Unit)
The entrepreneur as a team leader and coach. Managerial skills and roles. Emerging trends in the workplace; Changing demographics and the impact of technology. Emphasis on team work. Job design Behavioural consideration on job design. Physical consideration in job design. Practicum: Students of like mind work together in an organization-like group performing different roles.

MEE204　　Workshop Technology-II　　　　　　　　　　(1 Unit)
Tools and machines for woodwork; Metal cutting: various cutting tools, saws, files, flame cutting, abrasive cutting; Metal joining: various welding techniques, soldering, screws, nuts, bolts, riveting. Casting techniques: Sand moulding, centrifugal, die casting and investment casting; Heat Treatment; Principles of rolling-hot and cold rolling, defects in rolled products; Drawing and deep drawing; Introduction to the economics of production processes;

Individual project; Machine operation practice. Use of hand tools, and safety measures in these fields.

MEE206 **Fluid Mechanics - I** **(2 Units)**

Introduction: Properties of fluids: Density, Pressure, surface tension, viscosity, compressibility etc. Fluid statics. Buoyancy of floating bodies. Fluid dynamics. Basic conservation laws. Friction effects and losses in laminar and turbulent flows in ducts and pipes. Dimensional analysis and dynamic similitude.

MEE208 **Engineering Drawing - II** **(1 Unit)**

Auxiliary Projections; Mechanical Drawings of machines parts – Cams, Gears, Couplings, Bearings, Pipes, Joints and valves; Structural Drawing – material representation, dimensioning of structural details and welds, wood and concrete structures, structural detailing; Introduction to CAD/CAM, Area of its applications and important. How CAD/CAM works. Extensive introduction to CAD package i.e. AutoCAD. Hand-on practical approach is used especially for CAD application

MTE206 **Introduction to Mechatronics Engineering** **(2 Units)**

Introduction to mechatronics systems-Measurement Systems – Control Systems – Microprocessor based Controllers; Sensors and Transducers – Performance Terminology – Sensors for Displacement, Position and Proximity; Velocity, Motion, Force, Fluid Pressure, Liquid Level. Temperature, Light Sensors – Selection of Sensors; Pneumatic and Hydraulic Systems – Directional Control Valves – Rotary Actuators; Mechanical Actuation Systems – Cams – Gear Trains – Ratchet and Pawl – Belt and Chain Drives – Bearings; Introduction to CNC Programming; Electrical Actuation Systems – Mechanical Switches – Solid State Switches – Solenoids – DC Motors – AC Motors – Stepper Motors

MTE204 **Computer Aided Engineering - II** **(2 Units)**

Importing various CAD formats, assembly and animation of the results of analysis, static modals, nonlinear, contact, impact, failure, thermal and multi-physics analysis, and computational fluid dynamics for design. Introduction to Pro/ENGINEER, Pro/MECHANICA by PTC Inc; Introduction to ANSYS by ANSYS inc; Introduction to Fluent and Gambit by Fluent Inc; Introduction to Simulink and SciLab for Control Engineering. Introduction to Autodesk Multiphysics CFD. Advanced use of CAELinux packages for solving simple engineering problems – CFD software like Code-Saturne, OpenFOAM, Finite Element software like Salome-Meca, Analysis software like wxMaxima, Scilab, MATLAB, R Commander.

Course Description-300 Level

First Semester – 300 Level

EEE303   Electric Circuit Theory   (2 Units)
Network theorems. Network topology, General network solutions. Network transformations. Time and frequency domain analysis of networks. Application of Fourier series in network analysis. Fourier and Laplace Transforms and their applications. Transfer function concepts. Two port networks and their parametric representations. Characteristic impedance. Two port network synthesis. Foster and Causer's methods of synthesis. Application of computers in the analysis of linear and nonlinear circuits

EEE323 Analogue Electronic Circuit   (3 Units)
Review of single – stage transistor amplifiers using BJTS and EETs Equivalent circuit and calculation of current gain, input and output impedance. Operational Amplifiers: parameters and applications. Feedback, Broadband and harrowed band amplifiers. Power amplifiers. Voltage and current stabilizing circuit. Voltage amplifiers, multi storage amplifier. Using BJTs and FETs.

EEE341   Electromagnetic Fields and Waves - I   (2 Units)
Electromagnetism; magnetic circuit; magnetizing curve; characteristics of magnet materials; Electromagnetic Induction; Excitation of Magnetic Circuits; Hysteresis and Eddy Current Losses; Energy Stored in Magnetic Circuits; Mutual Inductance and Transformers; Electromechanical Energy Conversion. Principles of Direct current Machines. Semi-Conductor devices, Electrical Measurement Instrument. Electric Charge and the law of electrostatics; Electric Field and lines of forces; Electrostatic Induction; Electric Field Intensity; A charge particle in an Electric Field; Electric Flux and Electric Flux Density; Electrical Potential and Energy; Dielectric Materials and their Properties; Poisson's Equation and Laplace's Equation; Capacitor; Insulation, Resistance of a cable; Energy stored in a capacitor.

EEE343   Electromechanical Devices & Machines - I   (2 Units)
Magnetic circuits and magnetic materials, Transformers, Electromechanical-energy-conversion principles; Rotating machines; Synchronous machines; Induction machines; DC machines; Variable Reluctance machines and Stepping motors; Introduction to Power electronics; speed and torque control.

ENG301   Engineering Mathematics-III   (2 Units)
Matrices and Determinants: Matrices, some special matrices, matrix operations. Determinants and some useful theorems. Laplace's development. Solution of system of linear equations by determinants. Linear dependence and independence, rank of a matrix. General system of linear equations, existence and properties of solution, Gaussian elimination. Matrix inverse

by elementary matrices, adjoint, and partitioning methods. Characteristic polynomial, characteristic equation, eigenvalues and eigenvectors. Diagonalization of matrices, application to system of first order linear differential equations. Multiple Integrals: Iterated integrals, multiple integrals over elementary regions. Change of variables, Jacobians. Differentiation of integrals involving a parameter, Leibniz's rule.

Vector Algebra: Vector field, gradient and directional derivative, divergence, curl. Line and surface integrals, Stoke's theorem. Volume integrals, divergence theorem. Orthogonal transformations, scale factors, basis vectors. Cylindrical and spherical polar coordinate systems, gradient, divergence and curl in these systems. Fourier Series: periodic functions, trigonometric series. Fourier coefficients, Parsevals theorem, Functions of arbitrary period, even and odd functions. Half range expansion. Complex form of Fourier series. Integral Transform: Derivation of transforms and inverses (Fourier and Laplace). Applications of these transforms in boundary and initial value problems. Z transforms. Partial Differential Equations: Elementary properties of Gamma, Beta, Error, Bessel functions and Legendre polynomials. Basic concepts of partial differential equations. Classification of 2nd order linear partial differential equation into basic types. The principle of superposition. The wave, diffusion and Poisson's equations. Boundary and initial-value problems. D'Alembert's solution for wave equation. Method of separation of variables. Bi-harmonic equation.

MTE305   Computer Aided Design-I   (2 Units)
Introduction to machine drawing and its uses, use of standards, Conventional representation and specifications. Drawing layouts and Simplified Methods, Sections and Sectional Views, Dimensioning Principles, Screw Threads and Conventional Representations, Nuts, Bolts, Screws and Washers, Keys and Keyways, Limit and Fits, Geometric Tolerancing and Datums, Application of Geometric Tolerances, Maximum Material and Least Material Principles, Positional Tolerancing, Cams and Gears, Springs. Manual/Mechanical Drafting and the use of CAD Software (Autodesk Inventor Professional) for Mechatronics Drafting (Detail drawing, Part Drawings Working, Assembly and of machine components).

MEE307   Thermodynamics-II   (2 Units)
Review of the Basic Concepts of Thermodynamics including first and second law. The second law of thermodynamics and its applications; Entropy; Exergy; Fuels and Combustion. Engine cycles, heat pump and refrigeration cycles. Gaseous mixtures. Vapour power cycles: Rankine cycle, Binary vapour cycle, Cogeneration, Reheat and feedwater heaters; Gas power systems: Ideal Gas Cycles, Air standard Brayton cycle, Air craft engines, Otto, Diesel, Ericson and Stirling Cycles, combined gas turbine-vapour power cycle.

MEE309   Manufacturing Technology   (2 Units)
Definition of manufacturing technology, Casting Processes, pattern design and other foundry work, Forming processes (rolling, forging, extrusion, wire drawing, deep drawing, sheet metal operations, etc.), Fabrication processes (welding methods, brazing, soldering, diffusion and adhesive bounding, Mechanical joining), metal removal processes (sawing, turning,

milling, drilling, shaping and planning, grinding, broaching, etc), Finishing operations (honing, lapping, polishing, burnishing, etc), break even analysis, design process and concurrent engineering, processing of plastics, ceramics and composites, introduction to some modern manufacturing technologies: rapid prototyping, powder metallurgy, lean and agile engineering, flexible manufacturing, computer numerical control machining, Micro-electronics processing, Virtual Manufacturing, Just In Time Manufacturing. etc

MEE311   Theory of Machines-I   (3 Units)
Fundamental concept in kinematics and motion, Mechanism, Instantaneous Centre: Forces and motion relationships in constrained mechanisms. Relative velocity and accelerations in mechanisms, analysis of cam and followers, gear, linkage, belt drive and chain drive systems for motion and power transmission. Vehicular mechanism: brake and clutch systems. Velocity and acceleration diagrams of mechanisms, tongue diagrams; fluctuations of energy and speed. Introduction to analytical methods and computation in analysis of mechanism. Static and inertia force analysis in machine. Static and Dynamic equivalent systems. Kinetics and balancing of rotating and reciprocating masses and the balancing of their out-of-balance forces. Flywheel, Governors, Gyroscope motion and forces. Power transmission, belts, coupling; gearing between parallel shafts, epicycle gearing. Friction clutches; Cone and plate tubes. Friction in machines (bearing, clutches, etc), Free and forced vibration. Critical speeds, whiling of shaft, vibration isolation, transmissibility.

MTE309   Laboratory Practical II   (1 Units)
Based on the theoretical course content of Thermodynamics III, Based on the theoretical course content of Theory of Machine I and Mechatronics System Design. Virtual Laboratory Experiments: transfer in the basic disciplines of Mechatronics like: Pneumatic/Electroc-Pneumatics, Hydraulic/Electro-Hydraulics, Electric/Electronics. Sensors, AC-motors, Open/Close loop Technology, Process Automation and Fieldbus Technology.

MTE311   Mechatronics System Design - I   (2 Units)
Overview of Mechanical Engineering Design compared to Mechatronics System Design. Modelling and Simulation of Physical Systems: Operator Notation and Transfer Functions, Block Diagrams, Manipulation and Simulation, Block Diagram Modelling – Direct Method, Block Diagram Modelling – Analogy Method, Electrical Systems, Mechanical Translational Systems, Mechanical Rotational Systems, Electrical-Mechanical Coupling, Fluid Systems;
Introduction to Rigid body Kinematics and Dynamics. Practical hands-on proficiency in the use of engineering packages for analysis, design, Modelling and Simulation such as SCILAB, MATLAB, SIMUL8, MAPLE, CAELINUX, etc.

Second Semester – 300 Level

ABE302   Engineering Statistics   (3 Units)
Probability and Statistics: Probability space, theorems. Conditional probability and independence. random variables, discrete and continuous distributions, mean and variance. Bernoulli, Binomial, Poisson, hyper-geometric, exponential, normal distributions and their characteristics. Examples of experimental measurement and reliability. Elementary sampling

theory for normal population. Central limit theorem. Statistical inference (point and interval estimation and hypothesis testing) on means, proportions and variances. Power and operating characteristics of tests. Chi-squares test of goodness of fit. Simple linear regressions. Elements statistics: Distribution and experiments: Law of large number; Numerical iteration procedures, Use of Statistical packages such as SAS. SAS programming in solving engineering problems.

EEE302   Control Engineering - I   (2 Units)
Introduction: Basic concepts, definition, examples of control systems. Open-loop and closed-loop control systems. Review of Laplace and inverse Laplace transforms. System modelling: Signal flow graph, block diagram. Transfer function. Block diagram reduction using signal flow graph and block diagram reduction techniques. Mechanical, electrical and electro-mechanical systems. First and second order models, higher order models. Definitions of transient response parameters. Analysis of second-order system as prototype. Feedback, Time response analysis, concept of stability. Routh-Hurwitz stability criterion. Classification of systems based on steady-state characteristics, steady-state error coefficient. Definition of Root locus, Properties of root locus, sketching of root locus plots. Effect of open-loop zeros and poles. Root locus design concepts. Frequency response analysis and design: Bode diagram, Polar plot, Nichols plot. Nyquist stability criterion: non-mathematical description of Nyquist criterion, interpretation of stability. Relative stability - Gain and phase margins. Closed-loop frequency response analysis - M and N contours, Nichols chart. Compensation techniques: lag, lead and lag-lead compensation, PD, PI and PID controllers. Cascade compensation based on root-locus method. Introduction to Feedback compensation. Computer-aided design and analysis of control system.

EEE304   Electrical & Electronic Engineering-III   (2 Units)
Analogue Electronic Circuit 3 Credits Review of single-stage transistor amplifiers using BJTS and EETs Equivalent circuit and calculation of current gain, voltage gain, power gain, in put and output impedance. Operational Amplifiers: Parameters and applications. Feedback, Broadband and narrowed band amplifies. Power amplifiers. Voltage and current stabilizing circuit. Voltage amplifiers, multi storage amplifier. Using BJTs and FETs. Digital Electronics Circuit: Number Systems and Codes. Logic Gate Simplification of Logic expressions using Boolean Algebra. Simplification of Logic expressions using Karnaugh Method. Design combinational circuit. Flip-Flops. Application of Flip-Flops in the design of counters, registers and timers. Switching and Waves shipping circuit. Generation of non sinusoidal signal (multi vibrators). Introduction to ADC and DAC. Design of Logic Gates (Diode, DTL, TrL, ECL etc); Physical Electronics: Free electron motion in static electric and magnetic fields, electronic structure of matter, conductivity in crystalline solids. Theory of energy hands in conductors, insulators and semi-conductors: electrons in metals and electron emissions; carriers and transport phenomena in semi-conductors, characteristics of some electron and resistors,

diodes, transistors, photo cell and light emitting diode. Elementary discrete devices fabrication techniques and IC technology.

EEE324 Digital Electronic Circuit   - II   (2 Units)

Number Systems and Codes. Logic Gate Simplification of Logic expressions using Boolean Algebra. Simplification of logic expressions using Karnaugh method. Design combination circuit. Flip – Flops in the design of counters, registers and timers. Switching and waves shipping circuit. General of non sinusoidal signal (multi vibrators). Introduction to ADC and DAC. Designed of Logic Gates (Diode, DTL, TTL, ECL e.t.c)

EEE346   Electromechanical Devices & Machines - II   (2 Units)

Magnetic circuits and magnetic materials, Transformers, Electromechanical-energy-conversion principles; Rotating machines; Synchronous machines; Induction machines; DC machines; Variable Reluctance machines and Stepping motors; Introduction to Power electronics; speed and torque control.

ENG300   Student Work Experience -II (SIWES – II)   (0 Units)

Introduction to practices and skills through supervised hands-on workshop exercises in each engineering departments: Mechanical Engineering (Fabrication, welding, Machining, Foundry, Automotive operations, etc), Chemical Engineering (bar and liquid soap, creams, paints, etc), Civil Engineering, Computer Engineering (soldering and de-soldering, building of different circuits, etc), Petroleum Engineering, Electrical Electronics (surface and conduit wiring, etc), Information and Communication Technology (Satellite Dish installation). Working in the construction site if available during the period. Introduction to Networking Operation Center (Satellite Broad casting), Bakery Operation (Bread Production), Water Table, sachet and Juice Production, Printing Technology, Fire-fighting Exercise and other available related general engineering practice on campus. These exercises include familiarisation with basic tools, troubleshooting. Safety precautions in handling devices in each workshop

MEE308   Fluid Mechanics - II   (2 Units)

Ideal viscous and compressible fluids under internal and external flow conditions. Inviscid Flow, boundary layer, vorticity and rotation of fluid particles. Flow through pipes and ducts. High and low Reynolds number flows. Two dimensional potential flows, Flow machines; cavitation. Thermodynamic and dynamic principles applied to fluid behaviour; stagnation conditions, speed of sound, Mach number and classification of flow, isentropic, Rayleigh, Fanno , Prandtl-Meyer, and shock. Stream function and velocity potential. Vortex and

circulation, Viscous flow; boundry layers, separation and turbulent flow. External flows, Lift and drag, thin air foil theory, Finite wing theory and airfoil design.

MEE310   Workshop Technology - III   (2 Units)
Workshops settings, types of equipment, machines and materials: Bench fitting and measurement, metal removal processes: sawing, turning, milling, drilling, grinding, etc. Fabrication processes and welding methods, sheet metal work. Foundry Practice: Pattern making Casting, Furnace Operation and Metallurgy Practice. Automotive engineering practice. Hands-on practical approach for all the students on all engineering workshop equipment. Safety procedures in workshops.

MME302   Engineering Metallurgy   (2 Units)
Introduction to metallurgy. Steelmaking processes. Brief description of each process and their technology. Raw materials requirement and steelmaking practices. Type of fuels and fluxes used in each process routes. The physical chemistry of iron making in each process and their respective controls. Thermodynamics and kinetics of steelmaking viz refining of hot metal steelmaking processes. Secondary steel making processes and manufacture of alloy steel principles. Hardening of metals. Deformation and annealing of metals. Corrosion and oxidation phenomena. Alloy steels. Stainless, creep and heat resisting steels. Cast irons. Metallurgical aspect of metal joining. Electrical and magnetic alloys. Copper and its alloys. Polymers. Aluminium. Magnesium and light alloy. Titanium, tungsten and hard metals.

MTE306   Computer Aided Design-II   (1 Unit)
Using CAD/CAM System: Introduction, 3D Modelling and Viewing, Modelling Aids and Tools, Engineering Drawings, CAD/CAM programming. Geometric Modelling: Curve, Surfaces, NURBS, Solids, Features. Computer Graphics: Graphics Display, Transformations, Visualization, Computer Animation. Product Design and Development: Mass Properties, Assembly Modelling, Finite Element Method, Product Data Exchange, Collaboration Design. Engineering Tolerances, Process Planning, Part Programming, Product Life Cycle management.

MTE308   Signals & Systems   (2 Units)
System Modelling. Analog signals. Convolution and correlation. Fourier and Laplace Transforms.
Random Processes. Sampled signals and systems. Discrete Fourier transforms. Z transforms, Analog and Digital filters. Control strategies; Open-loop, feed forward and feedback control systems. Stability, performance and sensitivity analyses. Lag and Lead compensation. Frequency domain design. PID controllers. Elements of nonlinear control.

MTE310   Physical Electronics   (3 Units)

Free electron motioning static & magnetic fields, electronic structure of matter, conductivity in crystalline solids. Theory of energy hands in conductors, insulators and semiconductors; Atomic bonding in semiconductors. Types of semiconductors. Electrons and hole in intrinsic semiconductors. Femi-energy acceptor impurities. Majority and minority carriers. Charge densities in a semiconductor electrical properties of Ge and si. Formation of depletion layer. electrons in metals and electron emissions; carriers and transport phenomena in semi – conductors, characteristics of some electron and resistors, diodes, transistors, photo cell and light emitting diode. Junction or barrier voltage. Energy band diagram of a p-n junction. Forward biased p-n junction. Forward V-1 characteristics. Reversed biased p-n junction Reversed V-l characteristics. Reversed biased breakdown. Construction and types of P-N Junction diode. Elementary discrete devices fabrication techniques and IC technology.

MTE312   Mechatronics System Design - II   (2 Units)
Part I: Sensors, Transducers & Actuating Devices. System Control-Logic Method, Signals, Systems and Control; Signal Conditioning and Real Time Interfacing. Use of simulation packages such as SCILAB, MATLAB, SIMULINK. Rigid body Kinematics and Dynamics.
Part II: Mechatronics System Design Project: The overall objective of this course is to get students started with simple mechatronics engineering research and development projects. It aims at developing students' research skills, engineering and technology skills as well as entrepreneurial skills.

Course Description-400 Level

First Semester – 400 Level

ENG401   Engineering Report Writing &Communication   (2 Units)

Business letters – Types and characteristics. Concluding the report writing – Summary, abstract, table of contents, proof reading and spell checking, appearance, the title page.The common computer packages used for technical drawing in technical report writing. Multimedia and visual presentation in a technical meeting. Concepts; Global standards of terminologies in Engineering; Communication alphabets and patterns, etc.

MEE401   Theory of Machines - II   (2 Units)

Vehicular mechanism: brake and clutch systems. Velocity and acceleration diagrams of mechanisms, tongue diagrams; fluctuations of energy and speed. Introduction to analytical methods and computation in analysis of mechanism. Static and inertia force analysis in machine. Static and Dynamic equivalent systems. Kinetics and balancing of rotating and reciprocating masses and the balancing of their out-of-balance forces. Flywheel, Governors, Gyroscope motion and forces. Power transmission, belts, coupling; gearing between parallel shafts, epicycle gearing. Friction clutches; Cone and plate tubes. Friction in machines (bearing, clutches, etc), Free and forced vibration. Critical speeds, whiling of shaft, vibration isolation, transmissibility

MEE403   Automotive Engineering & Workshop   (2Units)

Introduction to Automotive Engineering, Automotive shop safety, measuring systems and measuring tools, shop hand tools, shop equipment and power tools how engine works: fundamentals of engine operations, electricity and electronic engine control, piston-engine operations, engine types and classifications, engine construction, valve and trains, engine measurements and performance. Fuel supply system, faulty diagnostics methods, hand-on-practical demonstration. Mechanics of vehicles, vehicle components and design, engine friction and lubrication system, traction, gear system: manual and automatic, cooling system, chassis and suspension, transmission system, steering and front axle, braking systems, tyre, automotive electrical systems. Air-conditioning, maintenance and troubleshooting of automobiles

MEE405   Thermodynamics - III   (2 Units)

Refrigeration and Air-Conditioning Engineering: Refrigeration cycles, types of refrigeration system, refrigeration equipment, refrigerants and their selections and selections and applications, psychometrics of air processes, adiabatic mixing of air streams, humidification and dehumidification, comfort conditions, ventilation, air analysis, air contaminants, decay equations, air cleaning devices, air distribution systems. Refrigeration cycles; Ideal Gas mixture; Psychrometrics.

MEE407   **Mechanical Engineering Design-I**   **(2 Units)**

Introduction to Mechatronics Engineering Designs, factor of safety, Use of Codes, Charts, Table, Standard and Empirical Data in Mechatronics Designs. Presentation of Design Portfolio. Review on Load and Stress Analysis, Analysis and design of individual machine components: Shaft and associated parts, Bearings and Lubrication, Flexible machine elements.

MEE411   **Fluid Mechanics-III**   **(2 Units)**

Review of flow through conduits and fittings (pipes, orifices, nozzles, diffusers, valves, bends, junctions). Analysis and design of pipe network, pipes in series, parallel and network. Fluid power machinery and components, performance characteristics and selection criteria for pump, compressor, fans, motors, accumulators, valves, actuators. Fluid power circuits and control, (hydraulic, pneumatic)—open centre, float centre, closed centre, meter-in, meter-out, etc. Design of fluid power systems, load inertia, overrunning, resistive, compressibility. Power system fluids, survey of hydraulic fluids and their properties, the ideal hydraulic fluids and seals

MEE421   **Measurement and Instrumentation**   **(2 Units)**

Errors in measurements, classification and functional analysis, performance of instruments systems, calibration. Control system components, amplifiers, sensing devices, pumps and controllers, error detectors and output elements, instrumentation methods; measurements and recording of dimensions, time, weight, frequency, temperature, pressure, etc. transducers, bridge and potentiometer methods. Sychros, Hall effects, photovoltaic and moving iron transducers. Instrument transformers, Pulse transformers, energy meters and metering, information storage techniques, electronic instrumentation, digital technique, analog/digital signal processing.

Survey of modern instrumentation components. Nonlinear computing elements; Basic principles of measurement of mass, linear and angular displacement, velocity, acceleration, force, torque. power, flow, pressure, temperature, strain and stress. Instrument selection, errors, and calibration. Theory and practice of high precision. Mechanical measurements under strict control conditions.Super micro-metry, comparator profilometry, collimators application in machine installations, etc. Tolerances and Fits: Clearance, transition and interference fits. Elements of instrument systems. Dynamic Performance. Primary sensors. Signal processing analog and digital recording. Reliability Engineering: Modern control for assuring quality, productivity and lower cost, statistical engineering techniques for process control and product acceptance are emphasized, recognized methods are also presented for defects reductions, product liability prevention, inspection improvement, traceable calibration and tender/customer relations.

MTE401   Computer Hardware Engineering   (2 Units)

Digital logic. Data representation. Digital components and signals. Combinational and sequential logic design and realization. Microprocessor system design and programming. Simple and complex programmable logic devices. Hardware description languages and introduction to VHDL. CPU design and field programmable gate arrays (FPGAs)

MTE403   Introduction to Autotronics   (2 Units)

This course provides an introduction to electrical and electronic principles, measurement, microprocessor systems and control so as to provide an integrated understanding of electronics and controls within the motor vehicle after automotive engineering is introduced. Review of Units used in electrical systems: voltage, current, power, resistance.   Ohm's Law, simple circuits, series and parallel connections, series-parallel circuits, power sources, primary and secondary cells, PSU's. Capacitance, including properties. Capacitors in series and parallel. Principles of electromagnetics and devices. Introduction to induced EMF, Faraday's Laws and Inductance.

Semiconductors, simple explanation of PN Junction and Transistor. Sinusoidal quantities, average, peak, rms, period and frequency. Principles of digital systems, number systems, standard logic gates, Boolean algebra, counters. Principle of a standard microprocessor system, memory, interfacing to external devices, CPU. Concepts of inputs and outputs. Concepts of programmes. Serial and Parallel communications.

Introduction to digital control and computer interfacing. PLC's and sequential control. Open and Closed loop systems, principles and comparisons. Feedback amplifiers.

Typical transducers for position, velocity, force temperature, pressure, moisture and fluid flow. Typical actuators, motors (DC motors, servomotors and stepper motors), relays, solenoids, displays

Introduction to automotive engineering. Fundamentals of engine operations, electricity and electronic engine controls, piston-engine operations, engine types and classifications, engine construction, valves and trains, Engine measurement and performance. Fuel supply systems. Fault diagnosis methods, Hand-on practical demonstration. Mechanics of vehicles, vehicle components and design, Engine friction and lubrication systems, traction, gear system: manual and automatic, cooling systems, chassis and suspension, transmission systems, steering and front axle, braking systems, tyres, automotive electrical systems

MTE405   Control Engineering - II   (2 Units)

Introduction; Concepts of feedback control. Mathematical model of physical systems. Block diagrams. Reduction techniques. Block diagram algebra. Signal flow graphs. Mason's rule. Analysis and design in S-plane. Steady state and transient response to step and ramp input. Use of P+ I, P + D lag, lead and tacho compensators for improvement of overall response. Negative velocity and positive acceleration feedback. Error rate damping. Stability analysis; Roulth's stability criterion. Frequency response methods using polar, Bode and Nichol's methods. Nyqyist compensation. Design of system with lead, lag, lead-lag compensators in

frequency domain. System identification from experimental data. Analog computing; basic computing element. Solutions of linear ODE. Simulation of simple transfer functions. D.C Bias design. Analysis and design of single stage and multiple stage amplifiers at low and high frequencies. Dealington pair, Cascoe amplifiers. Bootstrapping. Negative feedback concepts and feedback amplifiers

MTE407   Sensors & Actuators   (2 Units)

Electrical Actuators: Review of Electrical Motors and their types, Motor Equations, Drivers, and Control of DC Motors, Induction Motors, Synchronous Motors, and Stepper Motors. Hydraulic Actuators: Pumps and its Different Types, Hydraulic Motors and Its Different Types, Valves and Its Different Types, Power Supplies, Cylinders, Accumulators, Intensifiers, Lifts, Couplings, Torque Converters. Hydraulic Circuit Design and Analysis. Pneumatic Actuators: Compressors, Fluid Conditioners, Pneumatic Cylinders, Valves and Plugs, Basic Pneumatic Circuit Design & Analysis, Accumulator system Analysis; Motion Transducers: Potentiometer, Variable Inductance Transducers, Permanent Magnet Transducers, Variable Capacitance Transducers, Piezoelectric Transducers, and Proximity Transducers; Effort Sensors: Strain Gages, Torque Sensors, Tactile Sensors.

MTE409   Introduction to Robotics   (2 Units)

Automation and Robotics. Robot Classification. Robot Specifications. Direct Kinematics: Mathematical background. D-H representation. The Arm equation. Examples; Inverse Kinematics: The inverse kinematics problem and its solution. Tool configuration. Examples of various robots.
Introduction to Manipulator Dynamics: Lagrange's Equation, Lagrange-Euler Dynamic Model. Use of Sensors and Vision System in Robotic System

MTE411   Digital Systems & PLCs   (2 Units)

Digital representation of information and binary arithmetic. Position number system, binary coding of alpha numeric characters in the computer, simple error detecting and correcting codes. (parity bits, Hamming codes). Arithmetic in various radio systems. binary arithmetic in combination logic. Boolean algebra, switching function, tr…uth tables, Karnaugh maps etc; Properties of switching functions; canonical forms, N and Nar designs; "don't cares" minimization of multiple output switching functions; introductory minimization of multiple output switching functions; simple combinational circuit design; encoders, decoders, multiplexer, serial and parallel half and full adders, etc. Hazards in combinational circuit and other design problems. Notion of feedback state and delay in logic circuit; basic difference synchronous sequential circuits; illustration of the use of state transition equations, diagrams, tables etc in sequential logic by their use in defining the operation of synchronized or clocked flip flops (such as r.s, JKT etc flip flops). Edge triggered and master flip-flops.

MTE413　　　Numerical Methods　　　　　　　　　　　　　　　　　　　　(2 Units)

Polynomials and their zeros -methods of bisection, Newton, Bairstow, synthetic division and Lehmer; Direct methods for the solution of linear equations; Iterative process, its application to the solution of simultaneous linear equations; convergence; interpolation and differentiation method in Numerical integration -Newton Coates formulae and finite difference methods; Finite difference. Interpolation. Numerical differentiation and integration. Numerical solution of ordinary differential equations, Trapezoidal, Simpson, Runge Kutta methods. Newton Raphson method for roots of equations. System of simultaneous linear equations. Linear simultaneous equations, Gaussian elimination, Gauss-Seidel iterative method, Jacobi Method, evaluation of determinant and inverse matrix. Eigen system analysis: system stability, eigenvalue sensitivity, stability of Gauss-Seidel solution, amplitude and time scaling for model studies. The eigen system problem Solution of ordinary differential equations -methods of Taylor, Euler, Predictor -Corrector and Runge-Kutta. Use of numerical analysis software packages to solve simple engineering problems. Use of appropriate software packages (e.g MATLAB) should be encouraged.

MTE415　　　Laboratory Practical-III　　　　　　　　　　　　　　　　　(1 Unit)
CAD/CAM/CNC Experiments: Planning and design of Mechatronic part   systems; CNC programming for Turn and Mill; Production of Mechatronics part systems

MTE417　　　Laboratory Practical-IV　　　　　　　　　　　　　　　　　(1 Unit)
Electrical Machine Laboratory: A laboratory work on electrical machines designed to illustrate topics covered in Electromechanical Devices and Machines. Telecommunication Laboratory: A laboratory work on telecommunication designed to illustrate topics covered in Communication Principles as well as topics such as passive filters, turned circuits and active analogue filters. Digital Electronic Laboratory: A laboratory work on digital electronics designed to illustrate topics covered in Electronic circuits. Electronic Circuit Laboratory: A laboratory work on electronic circuits designed to illustrate topics covered in Electronic Circuits.

Second Semester – 400 Level

ENG400 SIWES – III: Student Industrial Work Experience Scheme　　　　(6 Units)
During the SIWES each student will undergo practical on the job training in an engineering industry approved for its relevance to the student's major for a minimum of 28 weeks starting immediately after the first semester examinations at 400 level. A programme of training will be drawn by the College and the Industry for each student, and a prescribed log book with daily recording of the student activities is to be kept by each student and appropriately signed. At the end of the programme, a written report is to be submitted to the college and each student to present a seminar on his/her industrial experience. Each student must pass a prescribed certification examination during the industrial training.

Course Description-500 Level

First Semester – 500 Level

MEE501 Thermodynamics IV: Thermal Power and Propulsive Systems   **(2 Units)**

Thermodynamic properties of gases and vapors relating to power generating devices, work-energy relations, combustion and heat exchangers. Performance analyses and design concepts of gas turbines, internal combustion engines, steam power plants and heat exchanger equipment from theoretical and applied viewpoints.

MEE503   Fluid Mechanics - IV   **(2 Units)**

Classification of fluid machines, theory of roto-dynamics machines, one dimensional theorem, isolated and cascade considerations, departure from Euler's theory and losses. Compressible flow through roto-dynamics machines. Performance characteristics, losses and efficiencies. Centrifugal pumps, and fans, axial flow pumps and fans. Water turbines. The Pelton wheel, Francis turbine. Axial flow turbines. The fluid coupling. The torque converter. Positive displacement machines. Reciprocating pumps. Rotary gear, vane and piston pumps. Hydraulic motors. Pipe machine system: pump and pipe system, parallel and series pump operation, cavitation in pumps and turbines, pump selections.

MEE505   Mechanical Engineering Design II   **(2 Units)**

Analysis and design of individual machine components: Gear Design, springs, Brakes, Clutches Couplings and Flywheels, Fasteners and Power Screws. Component Assemblies and Machine Systems.

MEE507   Engineering Management   **(2 Units)**

Organizational structure, formal and informal, definition of the term organization, development of organization from one-man business. Scientific organization. Why engineering management. Engineering to Engineering management. Assuming management responsibilities: -management knowledge requirement. The engineering manager job: -engineering management process, the management functions, engineering project manager, hierarchy structure and flow of information.

Hierarchy (scalar principle), scalar chain, gang plan, unity of command business organization, logic of organizing, the classical organizer, the behavioural organization, bureaucratic organization, centralization and decentralization. Network analysis, CPN, PERT, forecasting, controlling, budgeting, nature decision making, employer attitude to managerial leadership. Production, stages in production, factory location and design, factory layout and site selection, production method, mass production, unit, small and large batches. Personnel management, safety consideration, training and apprenticeship and recruitment, trade unions and their functions, joint consultations, and collective bargaining, setting variable cost control, tendering and estimating, estimated costs for operational control, basic account, balance sheet development, marketing, market research-prediction by time series analysis, limitation of statistical analysis, questionnaires, advertising and sales promotions,

export and import operations. Work study method. Research, characteristics of research design. What is a variable in research, operationalising variables and types of variables? Financial management.

MEE517   Renewable Energy Systems   (2 Units)

Energy and Society. Sources of Energy. Energy demand and supply. Conventional and unconventional (renewable) energy. Energy conversion systems and devices for oil, gas, coal, heat, wood, nuclear, solar, wind, biomass, tidal, etc. Energy conservation. Energy Auditing. Nature and availability of wind energy; wind turbines, classification, construction and control; performance evaluation methods; power, efficiency, reliability and cost; load matching; nature and availability of solar radiation; radiation estimations and measuring instruments; materials for solar energy utilisation, radiative properties and thermal transport properties; introduction to non-concentrating collectors, design techniques and performance estimation; solar component and solar system operational characteristics; practical applications of solar energy, special solar devices for developing countries; and desalination, photovoltaics and solar water pumping.

MTE501   Process Automation   (2 Units)

PLC programming higher functions; PLC-programming analogue in/outputs; 2-step controller; Basics in closed loop control; Closed loop temperature control; Closed loop pressure control; Closed loop flow control; Closed loop level control.

MTE505   Control Engineering - III   (2 Units)

Types of systems nonlinearities, small perturbation methods, describing functions, phase plane analysis. Principles of sampled systems. Application of Z transforms. System performance and stability. State space analysis of controlled systems. On line computer control. Derivation of digital control algorithms. Microprocessor applications. Introduction to adaptive control; Hill climbing and model reference, adaptive systems. Lyapunov analysis. Stability in non-linear systems. System identification and testing methods. Application of statistical correlation techniques. State space description of linear systems, concepts of controllability and observability; state feedback, modal control observers, realisation of systems having specified transfer function, applications to circuit synthesis and signal processing. Analysis and design of integrated operational amplifiers and advanced circuits such as wideband amplifiers, instrumentation amplifiers, multiplier circuits, voltage-controlled oscillators, and phase locked loops, Design techniques for advanced analogue circuits containing transistors and operational amplifiers. Simulation of circuit using appropriate packages e.g PSPICE, Electronic workbench, Visio technical etc should be encouraged.

MTE507   Laboratory - V   (1 Unit)

Partial Automation:- Factory Automation; Factory Automation study fields: PLC programming level 1 – 3; Industrial communication – Fieldbus; DC/AC motor; SCADA - Touch panel; Assembly/disassembly or Mechatronics part systems

MTE509   CAD/CAM and Engineering IV   (2 Units)

Introduction to CAD/CAM, Area of its application and importance. How CAD/CAM works. Extensive introduction to CAD/CAM packages i.e. AutoCAD, Autodesk-Inventor. Hand-on practical approach is used especially for especially for advance CAD application

MTE511   Microcomputers & Microprocessor Systems   (2 Units)

Hardwired logic contrasted with program logic. Microcomputer applications. Elements of microcomputer architecture; bus, microprocessor, memory, input-output, peripherals. Single chip and multichip micro computers. Overview of available microcomputer systems. Internal architecture; 3-bus concept, microprocessor operation. Microprocessor instruction set; instruction format, addressing modes; instructions execution. Comparison of available microprocessors. Machine language, assembly language and high level language programming. Synthesis of combinational logic circuits with ROMS and PLAs. Review of classical approach to sequential circuit design. The algorithmic state machine chart (ASM) method of representing sequential problems. Realization of sequential circuits using MSI and LSI. Register transfer languages

MTE513   Power Electronics and Devices   (2 Units)

Switching characteristics of diodes, transistors, thyristors etc. analysis of diode circuit with reactive loads, analysis of circuits using transistors as switches, power control circuits, ACDC converters, characteristics of switching transformers, power semiconductor device protection, examples of power electronic circuits, solar devices. Characteristics of semiconductor switches. Power conversion from AC to DC, DC to DC, DC to AC, AC to AC. Applications of SCR and other thyristor devices: motor control, control of drives, heating and lighting. Mechanical relays, solid state relays and stepping motors

MTE515   Mobile Robotics   (2 Unit)

Artificial intelligence programming techniques, basic problem-solving techniques, knowledge acquisition and representation; artificial intelligent language (LISP and PROLOG). Computer interface, machine learning, natural language understanding, knowledge-based and expert systems, computer vision, robotics, relationship AI to software engineering and database methodology. Societal impact of AI and robotics. Machine vision and pattern recognition. Applications of identification trees, neural nets, genetics algorithms and other learning paradigms.

MTE521   Reliability Engineering   (2 Units)

Introduction to Reliability, maintainability, availability, Elementary reliability theory. Application to power systems and electronic components. Test characteristics of electrical and electronic components. Types of fault. Designing for higher reliability. Packaging, Mounting, Ventilation. Protection from humidity, dust.

MTE517 Lean Production Management and Industrial Logistics   (2 Units)

Material and information flows within a company, providing practical experience for all employees involved in lean production projects, inventory minimisation as an important basis for increased productivity, the principle of pull production control, advantages compared to conventional production control methods, types and function of different pull production control methods, application of methods, Kanban – the classic pull principle, introduction to Value Stream Mapping (VSM). Lean manufacturing, flow production, throughput time and inventories while increasing flexibility, analysis of workplaces with the Standard Operation Sheet, adjusting the cycle times of individual workplaces, flow and takt time production, avoidance of material transport with linear and U layouts, Structure and development of open-plan production, Line Back system, integration of logistic processes with kanban, flexible employee systems: relay and caravan systems, multimachine operation. Quality control.

ENG501   Law & Management   (2 Units)

Definitions and functions of law; basic structure of Nigerian Law; law of engineering; principles of law involving contracts and contract documents, patents, and inventions, copyrights, trademarks, property; industrial labour law; legislation on wages, trade unions and industrial accidents; land acquisition, environmental laws, legal aspects of professional engineering; responsibilities and liabilities

Second Semester – 500 Level

MEE504   Heat Transfer - I   (2 Units)

Conduction: Fourier's Law, thermal conductivity, heat transfer through composite walls, multi-layer cylinders and spheres; insulation thickness, rectangular and triangular fuis, transient heat conduction, heat conduction in two dimensional plate, convection, convection mechanism, use of dimensional analysis, relation between film and overall heat transfer coefficients, forced convection over plates, rods and through tubes, free convection from vertical planes and cylinders, radiation; radiation properties, shape factors, geometric factors, radiation between non-black bodies, combined conduction, convection and radiation, types

of heat exchangers and their applications; log means temperature difference, overall transfer coefficient, Solar radiation, introduction to mass transfer.

MEE510   Air Conditioning & Refrigeration   (2 Units)

Tools and Test Equipment; Gauge manifold assembly; Electronic leak detector; Multi meter Refrigerants and Refrigerant Oils; Characteristics of refrigerants; Section 608 of the Clean Air Act; Regulatory requirements; Compressors; Evaporators; Types of evaporators; Operation in a refrigeration or A/C system; Metering Devices; Effects of capillary tube length and size; Thermostatic expansion valves; Condensers; Types of condensers; In a refrigeration or A/C system. Piping and Accessories; Tubing, liquid receivers, sight glass; Heat Pump Theory and Components; Compressor, evaporator, condenser; Hands-On Lab Exercises; Installing and removing a manifold gauge set, recovering refrigerant evacuating (pulling a vacuum); Charging a system by weight and by superheat; Working with service valves and Schrader cores; Troubleshooting

MTE502   Automation & Robotics   (2 Units)

Introduction to automation: Economics of Automation, Flow Lines, Mathematical Models, Storage Buffers, Partial Automation, Balancing, Group Technology and Flexible Manufacturing.

Programmable Logic Controllers; Introduction to PLCs, Advantages of PLCs, Ladder Logic Diagrams, Switching Logic. Components of PLC, PLC Operating Cycle, Additional Capabilities of a PLC, Latches, Design Cases (Deadman Switches, Conveyor, Accept/Reject Sorting), Addressing.

PLC connection, PLC operation, Numbering, Event based logic, sequential logic design, Advanced ladder logic functions. PLC Programming, Structured text programming, Instruction list programming, Function block programming ,Continuous control, PLC data communication, Human Machine Interfaces (HMI), Selecting a PLC. CNC Machines; General information, Operation, Control panel descriptions, Tool function, Practical application of tool wear offset, feed function, spindle function, programming of CNC in absolute and incremental systems, program creation, preparatory functions, CNC Programming, Computer assisted part programming, Automatically programmed tools (APT Programming System), CAD/CAM approach to part programming, CAD/CAM application (turning problem, surface milling, machining of curved surfaces).

MTE504   MEMS and VLSI   (2 Units)

Basic micro electromechanical devices a brief review of the physics involved. Fabrication technology of microelectromechanical devices. IC fabrication technology (CMOS). Silicon crystal growth, epitaxy. Ion implantation, etching, chemical vapour deposition and

photolithography. Silicon bulk and surface micromachining technology for micro systems or MEMS. Very Large System Integration (VLSI).

MTE506 Engineering Vibrations (2 Units)

Mechanical systems with one and several degrees of freedom, free, forced, and damped vibrations. Vibration problem solution by nodal analysis. Continuous systems, including exact and finite-element methods. Approximate methods of solution; Computer solutions: Vibration Isolation and absorption. Machine balancing; Vibration of machinery; Free and forced vibration of first and second degree systems, natural frequency response of linear Mechatronics systems, with and without damping. Lumped and distributed mass systems. Torsional vibrations. Transverse vibrations of beams. Resonance. Applications include isolation, stability, and balancing. Use of computational methods for simulation system response and the use of modal analysis for understanding the vibratory response of complex systems.

MTE508 Laboratory - VI (1 Unit)

Full Automation Study fields: Material/signal flow in a networked system; Installation and commissioning of a Mechatronics system; Programming and communication in a Mechatronics system; Maintenance and Trouble Shooting in a Mechatronics system

MTE512 Microcomputers and Embedded Systems (2 Units)

Microprocessor organization and interfacing: Memory interfacing. Hardware-software design of microprocessor systems. Introduction to Embedded Microcomputer Systems. Architectures of programmable digital signal processor. Programming for real-time performance. Design and implementation of data scrambler and interfaces to telecommunications.

MTE514 Digital System Modelling (2 Units)

The Concepts of sampling, quantization and aliasing. Discrete time signals and systems, discrete convolution, Z transforms, Z plane poles and zeros. Discrete Fourier transforms. Fast Fourier Transform. Concept of digital filtering, types of digital filters and properties. Digital transfer functions. One dimensional recursive and non recursive filters. Spectral transforms and their application in synthesis of high-pass and band-pass filters. Computer techniques in filter synthesis. Realization of filters in hardware and software. Basic image processing concepts.

MTE510 Communications Systems (2 Units)

Microwave frequencies and uses; microwave transmission in transmission lines and wave guides, microwave circuits; impedance transformation and matching, microwave circuits; passive microwave devices, resonant and filter circuits, active microwave devices; Klystron and magnetron tubes and semiconductor devices for microwave generation. Antennae: definitions of elementary parameters related to radiation patterns; dipole and operture

antennae and the related design parameters; introduction to antennae arrays. Radio wave propagation: propagation in the ionosphere, troposphere and in stratified media; principles of scatter propagation; applications in general broadcast, television and satellite communication systems. Radar systems nature of radar and radar equations; composition of a radar system; application of different types of radars.

MTE516   Micro-Fabrication   (2 Units)

Crystal growth, thermal oxidation, photolithography, etching, diffusion, iron implantation, film deposition, metallization, layout, process integration, IC manufacturing, MEMS, CAD tools for microfabrication (e.g. SUPREM, PROLITH etc.). Future trends and challenges

MTE518   Machine Vision   (2 Units)

Advanced techniques and algorithms used in real-time computer vision and image processing design.

MTE520   Machine Learning   (2 Units)

Review of basic Statistical and Probability context: what is Data, Categories of Data: qualitative data and quantitative data, what is Statistics, basic terminologies in Statistics, sampling techniques, types of statistics: descriptive statistics: and inferential statistics. Descriptive statistics: measure of spread, measure of centre, information gain and entropy Confusion Metrix with practical application case using Python programming language. What is Probability, probability distributions, types of probability: marginal probability, joint probability and conditional probability with practical application case using Python programming language. Inferential statistics: point estimation, confidence interval, margin of error and hypothesis testing.
Introduction to Machine Learning: what is machine learning, types and application. Supervise learning based on regression and classification type of problem, linear regression algorithm, logistic regression algorithm, random forest algorithm, decision tree algorithm, Support Vector Machine algorithm, KNN algorithm illustration with practical application case using Python programming language. Unsupervised learning based on association and clustering type of problem: K-means, C-means algorithm illustration with practical application case using Python programming language. Reinforcement learning based reward problem: Q-learning and SARSA algorithm illustration with practical application case using Python programming language.

MTE599   Project   (6 Units)

Each student is required to undertake a project that gives productivity value to the academic knowledge gained in his\her field of study. The project shall involve problem solving using engineering theories and techniques, and the implementation of the project design. The student is expected to design a possible solution to the problem, taking into account various aspects such as professionalism, economy, costing, and engineering viability. At the end of the first semester, each student shall present a seminar on his/her project.

The project work is to be completed in this second phase. Each student is to submit a proper written report (banded 3 hardcopies, and a CD-ROM of electronic copy). The project is presented and defended at a seminar. Students may choose to work on individual design projects or team design projects. These projects consist of largely industry-sponsored projects as well as research projects proposed by academics. Students are supervised by the academic supervisor, the industrial mentor (in the case of industry sponsored projects), and supported by resources in the department. Students are responsible for organization, scheduling, budgeting, implementing, and time management, design outcome including prototypes, and reporting.

This course lasts for one academic session. Each student must undertake a project under the supervision of a lecturer, submit a comprehensive project report and present a seminar at the end of the year. A project status report is to be presented at the end of the first semester. Each student must attend Engineering Seminars.

Academic Staff Personal Data

S/N	NAME	DESIGNATION	STAFF NUMBER	COREN REG. NUMBER	ACADEMIC/ PROFESSION QUALIFICATIONS
1	Dr. Engr. Matthew Oluwole **Arowolo**	Senior Lecturer/ Ag. HoD	SS. 1397	R. 35,791	B.Eng., M.Eng., Ph.D., MNSE, R.Engr.
2	Prof. Engr. Samuel Babatope **Adejuyigbe**	Professor	SS. 1016	R. 8,956	HND, PGD, M.Eng., Ph.D., MNSE, R.Engr.
3	Prof. Engr. Christian Okechukwu **Osueke**	Professor (Adjunct)	SS. 1425	R.15, 047	B.Eng, M.Eng, Ph.D., MNSE, R.Engr.
4	Prof. Engr. O. **Akinsanmi**	Professor (Associate)	SS. 1100	R. 14,063	B.Sc.., M.Sc., Ph.D, R.Engr. .
5	Prof. Engr. Bukola Olalekan **Bolaji**	Professor (Associate)	SS. 1086	R. 9,356	B.Sc.., M.Sc., Ph.D, R.Engr. .
6	Prof. **Olaniyan**	Professor (Associate)	SS1047	R 15,930	B.Sc.., M.Sc., Ph.D, R.Engr.
7	Dr. Engr. Adefemi Adeyemi **Adekunle**	Reader	SS. 1258	R. 22,686	B.Tech., M.Eng., Ph.D., R. Engr.

8	Dr. Engr. Ademola Ezra **Adeleke**	Reader (Associate)	SS. 1204	R. 16,061	B. Eng., M.Eng., Ph.D, R. Engr.
9	Dr. Engr. Ismail Adeyemi **ADEYEMO**	Reader (Adjunct)	SS. 1698	R.15,128	B.Tech, M.Sc. Ph.D., MNSE, R.Engr.
10	Dr. Engr. Daniel Chukunebikpe **Uguru-Okorie**	Senior Lecturer	SS. 1532	R. 24,873	B.Eng, M.Sc. Ph.D MNSE, R. Engr
11	Dr. Engr. Abiodun **Akeju**	Senior Lecturer	SS. 1692	R.9,118	B. Eng., M.Eng., Ph.D, R. Engr.
12	Dr. Engr. O.A **Oyelaran**	Senior Lecturer (Associate)	SS. 1308	R. 22,031	B. Eng., M.Eng., Ph.D, R. Engr. .
13	Dr.Engr. Olatayo Moses **Olaniyan**	Senior Lecturer (Associate)	SS. 1202	R. 20,267	B. Eng., M.Eng., Ph.D, R. Engr.
14	Dr. Engr. I.A. **Adeyanju**	Senior Lecturer (Associate)	SS. 1210	R. 24,986	B. Eng., M.Eng., Ph.D, R. Engr.
15	Dr. F. T. **Fayose**	Senior Lecturer (Associate)	SS. 0389	R. 9,694	B. Eng., M.Eng., Ph.D, R. Engr.
16	Dr. Engr. O.O **Ajibola**	Senior Lecturer (Associate)	SS. 0416	R. 15,741	B. Eng., M.Eng., Ph.D, R. Engr.
17	Dr. Engr. E. O. **Omofunmi**	Senior Lecturer (Associate)	SS. 1350	R. 5,966	B. Eng., M.Eng., Ph.D, R. Engr.
18	Dr. Engr. A. A. **Satimehin**	Senior Lecturer (Associate)	SS. 0037	R. 12187	B. Eng., M.Eng., Ph.D, R. Engr.
19	Dr. Engr. B.J. **Olorunfemi**	Senior Lecturer (Associate)	SS. 1188	R. 26,582	B. Eng., M.Eng., Ph.D, R. Engr.
20	Dr. Engr. O.A. **Aderoba**	Lecturer I	SS. 1686	R. 36,652	B. Eng., M.Eng., Ph.D, R. Engr.
21	Dr. Engr. **Adetayo**	Lecturer I (Associate)	SS.0965	R.24,416	B.Sc.., M.Sc., Ph.D, R.Engr.
22	Dr. Engr. Adedayo Aladejobi **Sobowale**	Lecturer I (Associate)	SS. 1436	R. 29,337	B.Sc.., M.Sc., Ph.D, R.Engr.
23	Dr. Engr. A.F. **Owa**	Lecturer I (Associate)	SS. 1037	R. 20,807	B.Sc.., M.Sc., Ph.D, R.Engr.
24	Dr. Engr. A.S. **Oluwole**	Lecturer I (Associate)	SS. 0367	R.17,814	B. Eng., M. Sc., MNSE, R.Engr.

25	Dr. Engr. **Adefarati**	Lecturer I (Associate)	SS.0371	R.24,957	B. Eng., M. Sc., MNSE, R.Engr.
26	Engr. Adetoye Ayokunle **Aribisala**	Lecturer I	SS. 0861	R 18,989	B. Eng., M.Eng., MNSE, R. Engr.
27	Engr. Nnamdi Stephen **Okomba**	Lecturer I (Associate)	SS. 0954	R. 32,173	B. Eng., M. Eng., MNSE, R.Engr. .
28	Engr. (Mrs.) Bolaji Abigail **Omodunbi**	Lecturer I (Associate)	SS. 1218	R. 37,248	B. Tech., M. Sc., MNSE, R.Engr. .
29	Engr. O. A. **Ilesanmi**	Lecturer I (Associate)	SS. 0370	R. 25,971	B. Eng. M. Sc., MNSE, R.Engr.
30	Engr. O.O. **Martins**	Lecturer II	SS. 1349	R. 32,813	B. Tech., M.Eng., MNSE, R. Engr.
31	Engr. Abiodun Michael **Adebimpe**	Lecturer II	SS. 0459	R. 22,675	HND, PGD, M.Eng, MNSE, R.Engr.
32	Engr. O.D. **Adigun**	Lecturer II (Associate)	SS. 0262	R. 24,424	B. Eng., M. Sc., MNSE, R.Engr.
33	Engr. S.G. **Borisade**	Lecturer II (Associate)	SS. 0785	R. 29,571	B. Tech., M. Sc., MNSE, R.Engr. .

Technical Staff Personal Data

S/N	Name of Staff (Staff No)	Rank	Qualification	COREN Reg. Num.	No of Lab Manned	Name of Lab/Workshop
1	Engr. James O. **Abioye**	Senior Technologist	HND, PGD	R 42,887	2	- System Design Lab - Modelling and Simulation Laboratory
2	Mr. T.O. **Ayeye**	Senior Technologist	HND, PGD	R3,678ET	1	- Mechatronics Workshop

S/N	Name of Staff		Qualification				Areas
3	Mr. Y.O. **Ogunbgenle** (SS0572)	Senior Technologist	HND, PGD	R 1,980ET	1		- Modelling and Simulation
4	Mrs. O.M. **Olaosebikan** (SS0216)	Technologist I	HND, PGD	R3,658ET	2		- Mechatronics Workshop - Autotronics
5	Mr. Tolulope Opeyemi **Olukokun** (SS1696)	Technologist I	HND, PGD, MSc	-	2		- Basic Mechatronics Lab - Mechatronics Workshop
6	Mr. Adegboyega Babatunde **Otenaike** (SS. 0627)	Technologist I	HND, BSc.	-	1		- Autotronics - Robotics and Automation
7	Mr. John Olubunmi **Payne** (JS0119)	Head Laboratory Assistant	B.Sc. (Ed)	-	1		- Autotronics

Administrative Non-Teaching Staff

S/N	Name of Staff (fulltime)	Administrative office/ title	Prof Qual	Qualification
1	Mr. O.K. **Ejike** (SS.0657)	Admin Officer I	ANUPA	B.Sc. (Sociology and Anthropology)
2	Mrs. F.E. **Adeosun** (SS0100)	Senior Executive Officer	-	MSc. (Public and International Relations)
3	Mr. Gbenga Damilola **Ogunti** (JS.0320)	Clerical Officer	-	NCE (Political Science)

Academic Staff Profile
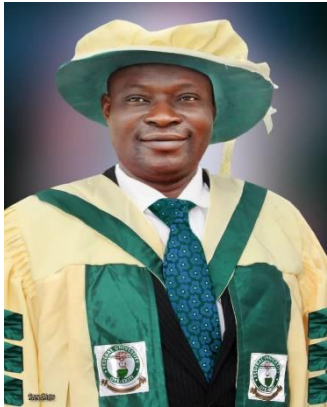
Engr. Dr. Arowolo Matthew Oluwole, MNSE, HFEM
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Engr. Dr. Arowolo's Career Profile

Engr. Dr. Arowolo M. Oluwole graduated with B.Eng in Mechanical Engineering from University of Ado – Ekiti, now Ekiti State University (EKSU) Nigeria and Master of Engineering (M.Eng) in Mechanical Engineering (Industrial/Production Option) from the Federal University of Technology, Minna, Niger State (FUT Minna) Nigeria in 2000. He received his PhD in Industrial Engineering from Universiti Teknologi Malaysia (UTM) in 2015. Engr. Dr. M.O Arowolo before joining the University is a practicing Engineer with industrial experience as Maintenance Engineer at Henley Industries Ltd Plot No C – 21/6 Anloma Road, Agbara Industrial Estate, Agbara, Ogun State (April 1996 - 1998) and a pioneer Head of Department of Mechatronics Engineering Osun State College of Technology, Esa – Oke. He is a registered Engineer with the Council for Regulation of Engineering in Nigeria (COREN) and Corporate Member of the Nigeria Society of Engineers (MNSE). He has contributed to development of engineering in terms of training and capacity building, academic curriculum development and staff development. He has attended many International Conferences and served creditably well in many University committees. His research areas include Mechatronics System Designs, Automation, Robotics, and Simulation. He is currently a Senior Lecturer and Head of Department in the Department of Mechatronics Engineering, Federal University Oye, Ekiti, Ekiti State, Nigeria.

Selected Publications

1. **Oluwole Arowolo** and Adefemi Adekunle (2019). "Simulation of a PLC-based Car Parking System" FUOYE Journal of Engineering and Technology, Volume 4, Issue 2, September 2019 ISSN: 2579-0625 (Online), 2579-0617 (Paper), pp 149 – 151.

2. **M.O Arowolo**, J.M. Rohani and M.R. Abdul Rani: Development of Road Safety Sustainability Model for Malaysia Road. Applied Mechanics and Materials Vol.606 (2014) pp 235-239.

3. **Arowolo Matthew Oluwole**, Mat Rebi bin Abdul Rani and Jafri Mohd Rohani Developing A Conceptual Road Safety Framework to Construct Road Safety Regression Outcome. ARPN Journal of Engineering & Applied Sciences, Vol.9,NO 4, April,2014. www.scientific.net/AMM.606.235

4. **Arowolo Matthew Oluwole**, Mat Rebi bin Abdul Rani and Jafri Mohd Rohani Integrating Road Safety Indicators into Performance Road Safety Index. ARPN Journal of Engineering & Applied Sciences, Vol.8,NO 9, September,2013.

5. **Arowolo Matthew Oluwole**, Jafri Mohd Rohani, Mat Rebi bin Abdul Rani, Aini Zuhra Abdul Kadir, Adeyemi Ademola James Driver Factors and Commercial Bus Traffic   Accident. Asian Journal of Engineering and Technology (ISSN: 2321 - 2462) Volume 02 – Issue 03, June 2014.

6. Arowolo Matthew Oluwole, Mat Rebi bin Abdul Rani and Jafri Mohd Rohani Commercial Bus Accident Analysis through Accident Database. Journal of Transport System Engineering 2 : 1 (2015), 07-14.

7. A.Z Abdul Kadir, J.M Rohani, **M.O Arowolo** (2014). Road Safety Outcome Model among Commercia Bus. ScienceDirect, Procedia Manufacturing. www.elsevier.com/locate/procedia

8. Arowolo Matthew Oluwole, Mat Rebi bin Abdul Rani and Jafri Mohd Rohani Development of Sustainability Model on Road Safety Performance. Australian Journal of Basic and Applied Sciences, 8(7), May 2014, Page 74 – 80.

9. **Arowolo Matthew Oluwole** and Akintaro Adekunle Omoniyi: Multivariable Traffic Accident Model among Commercial Buses. International Journal of Engineering and Technical Research (IJETR) ISSN: 2321-0869, Volume-2, Issue-3, March 2014.

10. A.O Oke, **Arowolo M.O**, Oyebamiji B.A & A.O Oloyede: Using the Delphi Method to Evaluate Opinions of Public Transport Agencies on Mini - Commercial Bus Safety – First Iteration. International Journal of Innovative Research and Knowledge, ISSN-2213-1356, Volume-2 Issue-5, May-2017.

Conference paper

1. Martins, O. O, Adekunle, A. A, Adejuyigbe, S. B, **Arowolo, M. O**, Adeyemi, H. O (2019): Modeling of Rocker-Bogie Suspension System for a Unit Load Dispatch Mobile Robot System in an Office Environment. 1st International Conference On Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

2. Bayode. J. Olorunfemi, Samuel. B. Adejuyigbe, Adefemi. A. Adekunle, **Matthew. O. Arowolo** and Sunday. E Kayode (2019). Development of Computer-Aided Management For Monitoring Grains Stored In Metal Silos In Nigeria. 1st International Conference On Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

3. A. A. Adekunle, **M.O. Arowolo** and Ya'u Yusuf T/Wada (2019). Development of an Automated Biomass Briquetting Machine. 1st International Conference On Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

4. **Arowolo M.Oluwole**; Adekunle A. Adefemi; Sam B.Adejuyigbe; Oluwaseun O Martins; Abiodun M. Adebimpe; Adegboyega B.Otenaike; Abiodun E. Akeju (2019). Validation of Automated Car Parking Problems and Traffic Management Measures. 1st International Conference On Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

5. **M.O Arowolo**, A.Z Abdul Kadir and J.M Rohani. Road Safety Outcome Model among Commercial Bus. 2nd International Materials, Industrial, and Manufacturing Engineering Conference, MIMEC2015, 4-6 February 2015, Bali Indonesia (International Conference)

Prof. Samuel Babatope ADEJUYIGBE,

Professor and Former HOD of Mechanical and Mechatronics Engineering
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Prof. Adejuyigbe Career Profile

Adejuyigbe who was born at Efon - Alaye, Ekiti State of Nigeria was formerly the **Head** of Mechanical Engineering Department, Federal University of Technology, Akure, Nigeria and also the former **Administrator (Director)**, Directorate of Works and Services, and the former **Dean**, College of Engineering, Federal University of Agriculture, Abeokuta, Nigeria. He was also the former **Vice Chairman,** Committee of Deans of Engineering and Technology of Nigerian Universities (CODET). He is presently the **Head** of Mechatronics Engineering Department, Federal University, Oye-Ekiti

An enthusiastic holder of Doctorate Degree (PhD) in Production Engineering, Registered with Council for Regulation of Engineering in Nigeria (COREN), Member Nigerian Society of Engineers (MNSE) and Member, Ghana Institute of Engineers (MGhIE), Member, International Association of Engineers (MIAENG) nd an adaptable, ambitious and determined **Professor**, a man nurtured by God who started from the grassroots (Craftsman) and passed through all the facets of Technical Education in Nigeria and City and Guilds, of London with years of experience gained from the background of Industrial Fitter Machinists', Technologists, Manufacturing **Registered Engineer**, Computer Aided Engineering **Expert**, He possess the ability to work well under pressure and meeting tight deadlines. Enjoying seeing task through from the beginning to the end.

His research interests are in the areas of Computer Aided Engineering (CAD/CADD/CAM/CAPP/CIM), Manufacturing Engineering; Ergonomics and Human Factor Engineering; Materials Processing and Foundry Engineering; Machine Tools; Production/Operations Management; Knowledge Based Expert System; Artificial Intelligence; Human Resources Management and Organizational Behaviour; and Entrepreneurship.

He has about 31 years' experience as a **Lecturer and Administrator** in the Polytechnic and the University. He is a born leader, an assiduous worker, a motivator, an innovator and an academic achiever. He has contributed to infrastructural development and maintenance, academic curriculum development, staff development and capacity building programmes. As an erudite scholar and prolific writer, he has a great wealth of research experience which culminated into over 160 academic publications in International journals, peer reviewed conference proceedings, books and technical reports etc. He has trained a lot of students at both undergraduate and postgraduate levels and to his credit; he has successfully supervised 12 Ph.D, 59 Masters, 32 PGD, 53 Bachelors, and 19 HND.

He has an excellent personality with stable emotion and physics. He has also served creditably well in many University committees and as a Member of University Senate in Nigeria and abroad. He is also an External Examiners to many Universities and Polytechnics in Nigeria. He creditably served as a reviewer to many journals and books in Nigeria, Ghana and International.

Selected Publications

1. **ADEJUYIGBE, S. B.** (1996) - The Planning of Continuity of Technological Education in Nigeria: A Critical Path Analysis Approach. A Journal of the Institute of Education, Delta State University, Abraka, Research in Education, Volume 2 No. 2, Sept. 1996, pp 22-36.
2. **ADEJUYIGBE, S. B.** (1999) An EOQ Model for Raw Material Demand in a Jobbing Shop. Nigeria Society of Engineers Technical Transaction Journal, Lagos. October – December 1999, Vol. 34(4) pp 55 – 63.
3. **ADEJUYIGBE, S.B.,** MOGAJI, P. B. and ADEROBA, A.A. (2003)- A Generalized Computer- Aided Cost Estimation for Sand Casting Product. Association for Advancement of Modelling and

Simulation Techniques in Enterprises (ASME) Journal 16 Av. Grange Blanche, 69160 Tassin La Demi- Lunce, France. Modelling D. Vol. 24 n° 2 pp 30- 41. No 02 398(29). - **Foreign Publication**

4. **ADEJUYIGBE, S.B**. and BOLAJI, B.O. (2005) Design, Fabrication and Performance Evaluation of Bean Dehuller. Journal of the University of Science and Technology, (JUST) Kwame University of Science and Technology, Kumasi, Ghana June, 2005, Vol. 25 No 1 pp 125-132.- **Foreign Publication**

5. OYELAMI A.T. and **ADEJUYIGBE, S.B.** (2006) The Design of a Radiation- Recuperative Heat Exchanger for a 200kg Capacity Rotary Furnace. Au Journal of Technology, Assumption University (ABAC), Hun Mak Bangkok, Thailand. October, 2006.Vol 10 No 2 pp 93-100. **Foreign Publication.**

6. **ADEJUYIGBE, S.B.** (2006d) The Planning of Continuity of Technological Education in West Africa using The Critical Path Method: Nigeria and Ghana as a Case Studies. Publication in the Book Series: **Advance Materials Research,** Publish by Trans Tech Publications Ltd., Switzerland, London, USA, Vols. 18-19 (2007) pp 389-396. - **Foreign Publication.**

7. BOLAJI, B.O., **ADEJUYIGBE, S.B.,**AND AYODEJI, S.P. (2008) Performance Evaluation of a Locally Developed Cassava Chipping Machine. South Africa Journal of Industrial Engineering, University of Pretoria, Pretoria, South Africa, Vol. 19 No 1 pp 169-178- **Foreign Publication**

8. **ADEJUYIGBE, S.B.** (2008a) Ownership and Leadership in Manufacturing. Au Journal of Technology, Assumption University (ABAC), Hun Mak Bangkok, Thailand. 11(4) pp 256-260. - **Foreign Publication**

9. AYODEJI, S.P. AND **ADEJUYIGBE, S.B.** (2008) Anthropometry Survey of Nigeria Paraplegics. Journal of the University of Science and Technology, (JUST) Kwame University of Science and Technology, Kumasi, Ghana December,, 2008, Vol. 28 No 3 pp70 – 89 - **Foreign Publication**

10. **ADEJUYIGBE, S. B. (2010)** Manufacturing and Computer Aided Engineering: A Panacea for Wealth Creation. 27th Inaugural Lecture of the Federal University of Agriculture, Abeokuta, Ogun State of Nigeria on 13th January, 2010. ISBN: 978-49425-1-5 – 140 pages.

11. OGBEIDE, S. O., **ADEJUYIGBE, S. B.** KAREEM B. (2010) Application of Expert System for Raw Material Determination in Cement Industries. Journal of Emerging Trends in Engineering and Applied Sciences (JETEAS), London 1 (1): 30-35 © Scholarlink Research Institute Journals, 2010 jeteas.scholarlinkresearch.org – **Foreign Publication**

12. ADEKUNLE, A. A. and **ADEJUYIGBE, S. B. (**2012) Computer Aided Design and Drafting (CADD) Modelling for Gas Welding Process. Journal of American Sciences, New York. *J Am Sci*2012; 8(7): 87-93 ISSN: 1545-1003 http://www.jofamericanscience.org. – **Foreign Publication**

13. **ADEJUYIGBE, S.B.** MOGAJI, P.B. and ODUFALE, O.A.(2012) Development of Computer-Aided Design Software for Jigs and Fixtures for Drilling Flanges, Au Journal of Technology, Assumption University (ABAC), Hun Mak Bangkok, Thailand.. 15(3): 187-192 Jan. 2012- **Foreign Publication**

14. MUSA, I.A., ISMAILA, S.O. **ADEJUYIGBE, S.B.,** AKINYEMI, O.D.AND ABOLARIN M.S. (2012) Comparison of Biomechanical and Anthropometric Data of Nigeria Tertiary Institution Students with Some Selected Countries. Management Science Letters, Growing Science, Vol. 2 Pages 1885 – 18904 www.growingscience.co/msi.vol**Foreign Publication**

15. SAMUEL OSEKAFORE ATTOYE, **SAMUEL BABATOPE ADEJUYIGBE** AND BULIAMINU KAREEM (2012) Development of an Auxiliary Machining Module for the Machine Tools Industry. Journal of Mechanics Engineering and Automation. Vol. 2 Number 5, May, 2012 (Serial No 11) pp. 279-288. www.davidpublishing.com   ISSN 2159-5275(Print), USA. ISSN 2159-5283 (Online) **Foreign Publication**

16. A.A. ADEKUNLE AND **S. B. ADEJUYIGBE** (2012) **"**Computer Aided Design Software Development for Robotic Welding of Flat and Cylindrical Materials" Scottish Journal of Arts, Social Sciences and Scientific Studies (SJASS) ISSN 2047-1278– **Foreign Publication.**

17. AZODO, A. P. AND **ADEJUYIGBE, S. B. (**2013) – Examination and Noise Pollution from Generators on the Residents of Obantoko, Ogun State, Nigeria. – Asian Journal of Engineering Science and Technology, Iqra University. ajest@iqra.edu.pk Vol. 3, Issue 1 pp.31 - 41 – **Foreign Publication**

18. H. O. ADEYEMI, **S. B. ADEJUYIGBE,** S. O. ISMAILA, AND A.F. ADEKOYA (2013) Low Back Pain Assessment for Construction Workers. Journal of Engineering, Design and Technology – Emerald Publishing Company. UK pinnacle.haupt@gmail.compinnacle.haupt@gmail.com - **Foreign Publication**

19. M. A. WAHEED, A. O. ONI, **S. B. ADEJUYIGBE**, B. A. ADEWUMI,, D. A. FADARE (2013) Performance Enhancement of Vapor Recompression Heat Pump. Applied Energy 114 (2014) 69 – 79 ELSEVIER www.elsevier.com/locate/apenergy

20. LASEINDE, O.T. AND **ADEJUYIGBE, S. B.** (2014) Design of Plastic Spur Gears Using Virtual Reality. International Journal of Computer Aided Engineering and Technology (IJCAET). Intercedence Publishers.Vol.6, No. 1, pp. 48- 61. **Foreign Publication**

Dr. Engr. ADEYEMO, Ismail Adeyemi, MNSE,

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Phone: +2348039242060**,** +2348081483174

Dr. Engr. ADEYEMO, Ismail Adeyemi Career Profile

Dr. Engr. ADEYEMO, Ismail Adeyemi, graduated with B.Tech. (Hons) Degree in Electronic and Electrical Engineering from Ladoke Akintola University of Technology, Ogbomoso in 1998 and M.Sc. Degree in Electronic and Electrical Engineering (Electronic\Communication Engineering option) from the University of Lagos (UNILAG), Akoka, Lagos, Nigeria in 2002. He holds a PhD in Electronic Engineering (Power Electronics Engineering) from Ladoke Akintola University of Technology, Ogbomoso. He is a registered Engineer with the Council for Regulation of Engineering in Nigeria (COREN) and Corporate Member of The Nigeria Society of Engineers (MNSE). He has contributed to development of engineering in terms of training and capacity building. He has attended many International Conferences and served creditably well in many University committees. His research areas include Smart Antenna Arrays & Digital Signal Processing, Advanced Antenna Theory and Design, RF and Microwave Engineering, Antenna Design at THz/Millimeter Wave Frequencies and Advanced Digital Communication Systems. He is currently a Lecturer in the Department of Engineering Electrical & Electronics, Federal University Oye, Ekiti, Ekiti State, Nigeria.

Selected Publications

1. Yusuff, A. A., Okelola, M. O., **Adeyemo, I. A**., (2005) "A Robust Face Recognition Algorithm using a Template Approach", LAUTECH Journal of Engineering and Technology, 3(1): 82-86, Nigeria.

2. Yusuff, A. A., Okelola, M. O., **Adeyemo, I. A**., (2005) "Human Face Recognition Using A Hybrid Learning RBF Neural Network with Pseudo Zernike Moment Invariant", LAUTECH Journal of Engineering and Technology, 3(2): 16-21, Nigeria.

3. Aborisade, D. O., **Adeyemo, I. A**, and Oyeleye, C. A, (2013) "Harmonic Optimization in Multilevel Inverter Using Real Coded Genetic Algorithm", International Journal of Electrical Engineering Research & Applications (IJEERA), 1(4): 20-26, India, Available at http://www.ijeera.org.

4. **Adeyemo, I. A**., Aborisade, D. O., Ojo, J. A., (2013) ''Selective Harmonic Elimination in Multilevel Inverter Using Real Coded Genetic Algorithm Initialized Newton Raphson Method", International Journal of Engineering Research & Technology, ISSN: 2278-0181, 2(9): 3107-3113, India, Available at http://www.ijert.org, Index Copernicus Value – 1.76.

5. Gafari A. Adepoju, Ismail A. Adeyemo, and Oluwadolapo S. Oni, (2014) " Application of Fuzzy Logic to the Speed Control of DC Motor", International Journal of Engineering Trends and Technology, ISSN: 2231-5381, 15(5): 215-219, India, Available at http://www.ijettjournal.org, Index Copernicus Value – 1.795.

6. Okediran, O. O., Oyeleye, C. A., **Adeyemo, I. A**. (2015) "A Performance Evaluation of Selected Heuristics for the Travelling Salesman Problem", International Journal of Advanced Research in Computer Science and Software Engineering, ISSN: 2277 128X, 5(7): 113-117, India, Available at htttp://www.ijarcsse.com Index Copernicus Value – 2.5.

7. **Adeyemo, I. A**., Fakolujo, O. A. Adepoju, G. A. (2015) "Ant Colony Optimisation Approach to Selective Harmonic Elimination in Multilevel Inverter", IMPACT: International Journal of

Research in Engineering and Technology, ISSN(Online): 2321-8843; ISSN (Print): 2347-4599, 3(9): 31-42, USA, Available at http://www.impactjournal.us Index Copernicus Value – 1.9586.

8. **Adeyemo, I. A**., Fakolujo, O. A., Aborisade, D. O. (2015) "Real Coded Genetic Algorithm Approach to Harmonic Reduction in Multilevel Inverters for Drives", International Journal of Scientific and Engineering Research, SSN: 2229-5518, 6(9): 450-457, USA, Available at http://www.ijser.org (ISI Value – 3.2, Index Copernicus Value – 6.17.

9. **Adeyemo, I. A**., Fakolujo, O. A. Adepoju, G. A. (2015) "Ant Colony Optimisation Approach to THD Analysis in Multilevel Inverter with Different Levels", International Journal of Innovative Research in Science, Engineering & Technology, ISSN (Online): 2319-8753; ISSN (Print): 2347-6710, 4(9): 9071-9082, India, Available at http://www.ijirset.com, Index Copernicus Value – 5.442.

10. **Adeyemo, I. A**., Ojo, J. A., Adegbola, O. A. (2015) "Performance Evaluation of Three Evolutionary Algorithms for Selective Harmonic Elimination in Voltage Source Multilevel Inverter", Best: International Journal of Management, Information Technology and Engineering, ISSN (Online): 2348-0513, 3(10): 25-41, India, Available at http://www.bestjournals.in, Index Copernicus Value – 3.0.

11. **Adeyemo, I. A**., Abolade, R. O., Adegbola, O. A. (2015) "Comparative Analysis of Deterministic and Probabilistic Approaches to Selective Harmonic Elimination in Multilevel Inverter" The International Journal of Engineering and Science, ISSN (Online): 2319-1813; ISSN (Print): 2319-18054(10): 11-18, India, Available at http://www.theijes.com.

12. **Adeyemo, I. A**., Okediran, O. O., Oyeleye, C. A. (2015), "Particle Swarm Optimization Approach to Harmonic Reduction in Voltage Source Multilevel Inverter", International Journal of Soft Computing and Engineering, ISSN: 2231-2307, 5(5): 1-5, India. Available at http://www.ijsce.org, Index Copernicus Value – 1.275.

13. Ojo J. A, Akinlabi J. A, **Adeyemo I.A**. (2016), "Unpaved-Road Extraction From Satellite Images", European Journal of Computer Science and Information Technology, 4(4): 20-27. Available at http://www.eajournals.org

14. Oladosu, J. B., Olawoye, A. A., Oyeleye, C. A., Okediran, O. O., **Adeyemo, I. A**. (2016), "Impact of Passive Cell (PC) and Active Distributive Network Cell (ADNC) on Power System Oscillation", Science Focus, 21(2): 73-80.

15. Ojo J. A, Omilude, L.T., **Adeyemo I.A**. (2017), "Fatigue Detection in Drivers using Eye-Blink and Yawninig Analysis", International Journal of Computer Trends and Technology, ISSN: 2347-8578, 50(2): 87-90, Available at http://www.ijcstjounal.org

Conference paper

1. **Adeyemo, I. A**., Ojo, J. A., Babajide, D. O. (2018), "Artificial Intelligence Approach to Real-Time Selective Harmonic Elimination in Voltage Source Multilevel Inverter", International Journal of Soft Computing and Engineering, 8(4): 1-5, India, Available at http://www.ijsce.org, Index Copernicus Value – 1.275.

2. Adegbola, O. A., **Adeyemo, I. A**., Semire, F. A., Popoola, S. I., Atayero, A.A. (2018), "Principal Component Analysis-Based Feature Dimensionality Reduction scheme for Content-based

Image Retrieval System", International Journal of Mechanical Engineering and Technology, India, Available at http://www.iaeme.com

3. **Adeyemo, I. A**., Adegbola, O. A., Babajide, D. O. (2018), "Real-Time Harmonic Optimization in Multilevel Inverter using Artificial Neural Network (ANN)", International Journal of Electrical and Electronic Engineering, USA, Available at http://www.iaset.us

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Engr. Professor Osueke's Career Profile

Christian Okechukwu OSUEKE is a Professor of Design, Automation and Energy and a doctorate degree (Ph.D) holder in Mechanical Engineering, a registered engineer with Council for Regulation of Engineering in Nigeria (COREN), a member of Nigerian Society of Engineers (MNSE), a member of Nigerian Institute of Mechanical Engineers (MNiMechE) and a passionate, result oriented leader. He has over 25 years of experience as a Mechanical and Production Engineer, 21 years of experience as a Lecturer and 17 years of experience as an Administrator. He has risen to become Dean, College of Engineering, Landmark University, previously occupying the offices of the Dean of Student Affairs and Head, Mechanical Engineering Department in the same University for a period of 1 and 5 years respectively. He delivered the 5th inaugural lecture of Landmark University titled 'Divine Secrets the Booster of Innovative Design and Automation'. Professor Osueke is also an impact – oriented researcher with 69 journal articles and 3 published textbooks making a total of 72 publications. He is also on the NUC team for accreditation and verification visitation and has visited 6 universities. He is an exceptional leader who always takes initiative, shows enthusiasm and delivers beyond expectation for any work he is responsible for. He is a Christian with integrity as one of his core values.

Selected Publications

1. Uguru-Okorie Daniel, Olawale Olamide, Osueke C.O, Olayanju Adeniyi, Oyekunle David O. (2019) Promoting Eco-Friendly Corrosion Inhibitor Using Bitter Kola Leaves in Carbon Mild Steel Using HCl Acidic Media. *International Journal of Civil Engineering and Technology (IJCIET)* 10(2): 222 -230. **[Scopus-indexed]**

2. Ikpotokin Igbinosa, Uguru-Okorie D.C., Osueke C. O., Dare A. A. & Petinrin M. O. (2019). Numerical Investigation of Shell-and-Tube Heat Exchanger with Parabolic Segmental Baffle Cut. *International Journal of Mechanical Engineering and Technology (IJMET)* 10 (1): 1221-1234. **[Scopus-indexed]**

3. Osueke C. O., Olayanju T. M. A., Ezugwu C. A., Onokwai A. O., Ikpotokin I., Uguru-Okorie D. C**.** and Nnaji F.C. (2018). Comparative Calorific Evaluation of Biomass Fuel and Fossil Fuel. *International Journal of Civil Engineering and Technology (IJCIET)* 9(13): 1576 -1590. **[Scopus-indexed]**

4. Uguru-Okorie D. C, Ikpotokin Igbinosa, Osueke C. O and Fadare D.A (2018) Experimental Comparison of Staggered and In-Line Tube-Bank Thermal Performance. *International Journal of Mechanical Engineering and Technology (IJMET)* 9 (13):1061- 1070. **[Scopus-indexed]**

5. Ikpotokin Igbinosa, Uguru-Okorie D.C., Osueke C. O., Dare A. A. & Petinrin M. O. (2019). Numerical Investigation of Shell-and-Tube Heat Exchanger with Parabolic Segmental Baffle

Cut. *International Journal of Mechanical Engineering and Technology (IJMET)* 10 (1): 1221-1234. **[Scopus-indexed]**

6. Osueke C. O., Olayanju T. M. A., Ezugwu C. A., Onokwai A. O., Ikpotokin I, Uguru-Okorie D. C**.** and Nnaji F.C. (2018). Comparative Calorific Evaluation of Biomass Fuel and Fossil Fuel. *International Journal of Civil Engineering and Technology (IJCIET)* 9(13): 1576 -1590. **[Scopus-indexed]**

7. Uguru-Okorie D. C, Ikpotokin Igbinosa, Osueke C. O and Fadare D.A (2018) Experimental Comparison of Staggered and In-Line Tube-Bank Thermal Performance. *International Journal of Mechanical Engineering and Technology (IJMET)* 9 (13):1061- 1070. **[Scopus-indexed]**

8. Ezugwu, C. A., Osueke, C. O., Onokwai, A. O., Olayanju, T. M. A., **Uguru-Okorie, D. C**., Ikpotokin, I. and Ibikunle, R. (2018) Modeling Of Regenerative Chatter of a Milling Process To Delineate Stable Cutting Region From Unstable Region. *International Journal of Mechanical Engineering and Technology (IJMET)* 9 (11): 748-757. **[Scopus-indexed]**

9. Osueke, C.O., Ofondu, I.O. (2011). Design for Uncertainties in Deep Drawing Processes using the Probabilistic Approach with an Optimum Blank Holder Force (B.H.F) Profile. International Journal of Advanced Engineering Science and Technologies (IJAEST), 8(2), 145-151.

10. Osueke, C.O., Ofondu, I.O. (2011). Fuel Adulteration in Nigeria and its Consequences. International Journal of Engineering and Technology (IJET-IJENS), 11(4), 34-37.

11. Osueke, C.O., Uzendu, P., Nwabueze, I.O. (2011). Study of Stress-Strain and Anisotropic Behaviour of Sheet Metal for Deep Drawing Processes. International Journal of Advanced Engineering Science and Technologies (IJAEST), 9(2), 280-288.

12. Osueke, C.O. & Ofondu, I.O. (2011). Study of the Adverse Effect of Aircraft Noise in Nigeria & Discovered Solutions. International Journal of Scientific & Engineering Research (IJSER), 2(9), 1-4.

13. Osueke, C.O., Onyekachi, E.M., Nwabueze, I.O. (2011). Combating Problems with Solar Power: A Cost Effective Improvement on the Conversion Efficiency of Solar Panels. International Journal of Scientific & Engineering Research (IJSER), 2(10), 1-9.

14. Osueke, C.O., Onyekachi, E.M. (2011). Car Incoporated Designs for Crash Worthiness. International Journal of Advanced Engineering Science and Technologies (IJAEST), 10(2), 234-238.

15. Osueke, C.O., Ezeh, C.T. (2011). Assessment of Nigeria Power Sub-sector and Electricity Generation Projections. International Journal of Scientific & Engineering Research (IJSER), 2(11), 1-7.

16. Osueke, C.O. (2011). Application of Frictional Modeling in Simulation and Optimization Modeling of a Cereal Thresher. International Journal of Scientific & Engineering Research (IJSER), 2(11), 1-14.

17. Osueke, C.O., Obiora, E.M. (2011). Design of a Solar Power System for Optimum Output. International Journal of Advanced Engineering Science and Technologies (IJAEST), 11(1), 232-237.

18. Osueke, C.O., Ezugwu, C.A.K. (2011). Study of Nigeria Energy Resources and its Consumption. International Journal of Scientific & Engineering Research (IJSER), 2(12), 1-8.

19. Osueke, C.O. (2011). Frictional Modeling of a Cereal Thresher, American Journal of Engineering and Applied Sciences. American Journal of Engineering and Applied Sciences 4(3), 405- 412.

20. Osueke, C.O., Uguru-Okorie, D.C. (2012). The Role of Tyre in Car Crash, Its Cause, and Prevention. International Journal of Emerging Technology and Advance Engineering, 2(12), 54 – 57.

21. Gana, A.J., Osueke O. C. (2012). Integrated Water Resources and Waste Management. World Journal of Applied Science and Technology, 4(2), 301 – 309.

22. Osueke, C.O., Uguru-Okorie, D.C., Abanihi, V.K. (2013). Electricity Stability in Nigeria through Increased Hydropower Generation. Journal of Emerging Technology and Advance Engineering, 3(1), 9 – 13.

23. Osueke, C.O., Uzendu, P., Ogbonna, I.D. (2013). Study and Evaluation of Solar Energy Variation. International Journal of Emerging of Technology and Advance Engineering, 3(6), 501 – 505.

24. Gana, A.J., Osueke C.O. (2013). Women in Science and Technology: Female Student's Attitude towards Science and Engineering Courses (A Case Study of Female Student Enrolment in Nigeria Higher Institutions. International Journal of Advancement in Development Studies, 8(2), 1 – 5.

Conferences Papers

1. Okafor E.C. & Osueke C.O. (2006) Effect of Drying Surfaces and Loading Densities on the drying rates of fresh okro pods, Paper presented at the fourth annual conference of the Agricultural Society of Nigeria at the National Root Crops Research Institute, Umudike (October 16 - 20, 2006).

2. Osueke, C.O. (2009) Design and Construction of Solar Crop Dryer. Paper presented at the 22nd Annual/international Conference of the Nigeria Institute of Mechanical Engineers at Oshogbo, Osun State, (21st – 23rd October, 2009).

3. Osueke, C.O. (2009) Improving Rice Brand Shell-life through Heat Treatment process. Paper presented at the 22nd Annual/International Conference of the Nigeria Institute of Mechanical Engineers at Oshogbo, Osun State, (21st -23rd October, 2009).

4. Gana A.J and Osueke O.C. (2012) Integrated water resources and waste management (Nigeria perspective): water sanitation, flood and stem water management. Paper presented at the 1st World Conference on Applied Science and Technology held at University of Uyo, Akwa Ibom State. (2012)
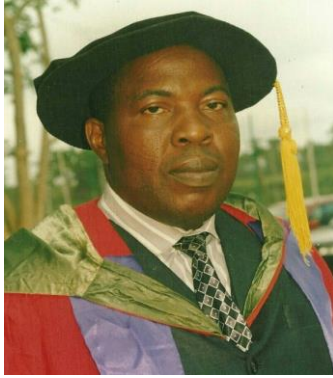
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Engr. Professor Bukola's Career Profile

Professor Bukola Olalekan BOLAJI was formerly the Head of Mechanical Engineering Department, Federal University of Agriculture, Abeokuta and currently the Head of Department, Mechanical Engineering, Federal University Oye-Ekiti. He has a professional and academic experience of over 20 years; he obtained his Bachelor of Engineering (B.Eng.), Master of Engineering (M.Eng.) and Doctor of Philosophy (Ph.D.) degrees in Mechanical Engineering at the Federal University of Technology, Akure, Nigeria in 1994, 1998 and 2009, respectively. His research interests are in the areas of refrigeration and air-conditioning, solar thermal and solar power systems. His deep interest in the study of Environment-Friendly Refrigeration System won him a Post-Doctoral research fellowship at the Tshwane University of Technology, Pretoria, South Africa in 2011. In August 2013, he was given award of Academic Excellent by the same University as the Best Post-Doctoral Fellow of the Year 2012. He has supervised over 30 undergraduate and post graduate students. As a chartered Engineer, he has consulted in a variety of industries in Nigeria on refrigeration, air-conditioning and solar power systems for over seventeen years. As an erudite scholar, he has a great wealth of research experience which culminated into over 70 academic publications in international journals, peer reviewed conference proceedings, books etc. He is a member of several professional bodies including: The Nigerian Society of Engineers (NSE), Nigerian Institution of Engineering Management (NIEM) and Environment Behaviour Association of Nigeria (EBAN). He is also a member of Southern African Association for Energy Efficiency (SAEE).

Selected Publications

1. C.O. Adegoke and B.O. Bolaji(1999): Exergetic Analysis of Thermosyphon Solar Water Heating System. Nigerian Journal of Renewable Energy. 7 (1&2); 50-54.
2. Bolaji, B.O. (2005). Estimation of Solar Irradiance on Shaded Surface. Journal of the Ghana Institution of Engineers, Ghana, Vol. 3, No. 2, pp. 81-84.
3. B.O.Bolaji (2010). Experimental Analysis of Reciprocating Compressor Performance with Eco-Friendly Refrigerants. Journal of Power and Energy. Institution of Mechanical Engineers, UK, Vol. 224, No. 6, pp. 781-786.
4. B.O.Bolaji (2011). Performance Investigation of Ozone-Friendly R404A and R507 Refrigerants as Alternatives to R22 in a Window Air-Conditioner. Energy and Buildings. Elsevier, Atlanta, GA, USA, Vol. 43, No. 11, pp. 3139-3143.
5. B.O. Bolaji (2012). Performance of a R22 Split-Air-Conditioner when Retrofitted with Ozone Friendly Refrigerants (R410A and R417A), Journal of Energy in Southern African. University of Cape Town, Vol. 23, No. 3, pp. 16-22.
6. Bolaji, B.O. and Huan, Z. (2013). Thermodynamic Analysis of Performance of Vapour Compression Refrigeration System Working with R290 and R600a Mixtures. Scientia Iranica, Transaction B: Mechanical Engineering. Sharif University of Technology, Iran, Vol. 20, No. 6, pp. 1720-1728.

7. B.O. Bolaji, S.B. Adejuyigbe, J.R. Olonila (2014): Performance Simulation of Vapour Compression Refrigeration Systems Using Ozone-Friendly Hydro-Fluorocarbon Refrigerants. Annals of Faculty of Engineering Hunedoara-Int. Journal of Engineering, 12 (3); 177-182.
8. B.O. Bolaji, O.D. Komolafe, F.O. Ajayi and E. Akinnibosun (2015): Performance Assessment of Eco-Friendly Hydro-Fluorocarbon and Hydrocarbon Refrigerant Mixtures as R22 Alternatives in Refrigeration Systems. Middle-East Journal of Scientific Research. 23(8); 1677-1684.

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Prof (Engr). Olaitan Akinsanmi is currently a Professor in the Department of Electrical and Electronics Engineering, Federal University, Oye-Ekiti, Nigeria. He holds a Bachelor of Engineering (BEng, 1997) degree from the University of Ado-Ekiti, Master of Science (MSc, 2005) degree and Doctor of Philosophy (PhD, 2012) degree from Ahmadu Bello University, Zaria, Nigeria. He is a registered Engineer with the Council for The Regulation of Engineering in Nigeria (COREN), Professional Member, Institute of Electrical and Electronics Engineers (IEEE), and Corporate Member of The Nigerian Society of Engineers (NSE), Associate Member among others. Dr. Akinsanmi is a recipient of Award of *The Pillar of Nation Builder in the Academics* from The Nigerian Strategic Institute for Natural Resources and Human Development in 2013. He has acquired over seventeen year of research and development with different organizations and over 15 years of effective teaching and administrative experience at the University level. He is a specialist in Computational Electromagnetics, Neural Network Soft Computing in Artificial Intelligence and Reliability of Engineering systems and has several published journals at both national and international levels.

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Engr. Dr. Adekunle's Career Profile

Adekunle who was born at Ede in Osun State of Nigeria was formerly working with Reynold Construction Company, during the Construction of Ogbomoso/Ilorin Express way before joining Ladoke Akintola University of Technology Ogbomoso, Oyo State in the Department of Mechanical Engineering as an academic staff, and later proceeded to the Department of Mechatronics, Federal University, Oye Ekiti, Ekiti State, Nigeria as a Senior Lecturer. He had his B.Tech degree in Mechanical Engineering at the Department of Mechanical Engineering at Ladoke Akintola University of Technology, (LAUTECH) Ogbomoso Oyo State, in 1999, and there after proceeded to the Federal University of Technology, Akure (FUTA) in Ondo State for his M. Eng. in Mechanical Engineering with a Ph,D grade of 3.73 which made him to pursue his academic career at the Federal University of Agriculture Abeokuta (FUNAAB) in Ogun State. He graduated from the Mechanical Engineering department of FUNAAB with a 73.3% aggregate in Ph.D Mechanical Engineering (Production Option)in the area of Artificial intelligence and Mechatronics. An enthusiastic holder of Doctorate Degree (PhD) in Production Engineering, Registered with Council for Regulation of Engineering in Nigeria (COREN), Member Nigerian Society of Engineers (MNSE), Corporate Member (MIEEE) Robotics and Automation Society, Corporate Member of South Asia Institute of Science and Engineering, (MSAISE), Corporate Member of American Association for Science and Technology (MAASCIT), Corporate Member of International Association of Engineers (MIAENG). He possesses the ability to work well under pressure and meeting tight deadlines. He has attended many International Conferences both locally and internationally. He has Chaired many Sessions in an International Conferences and has been reviewing for many international journals. His research interests are in the areas of Computer Aided Engineering (CAD/CADD/CAM/CAPP/CIM), Automation, Robotics, Artificial Intelligence, Manufacturing Engineering; Machine Tools; Production/Operations Management; and Knowledge Based Expert System. Adekunle has about 15 years' experience as a Lecturer and Administrator in the University. He is an assiduous worker, a motivator, an innovator and an academic achiever. He has contributed to infrastructural development and maintenance, academic curriculum development, staff development and capacity building programmes. As an erudite scholar and prolific writer, he has a great wealth of research experience which culminated into over 160 academic publications in International journals, peer reviewed conference e proceedings, and technical reports etc. He has supervised 6 Masters Students, 8 PGD students and over 30 undergraduate students to his credit. He has an excellent personality with stable emotion and physics. He has also served creditably well in many University committees
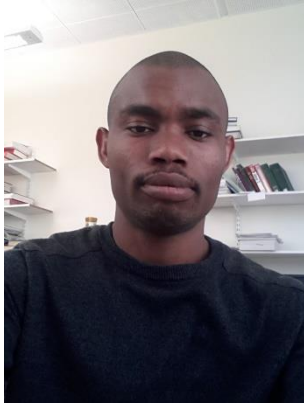
Selected Publications

(1)   **Adefemi Adekunle**, Peter Pelumi Ikubanni and O. O. Martins, Development of Computer Aided Design Software for Piston Movement, International Journal of Mechanical Engineering and Technology, 9(10), 2018, pp. 559–567. http://www.iaeme.com/IJMET/issues.asp?JType=IJMET&VType=9&IType=10 **[Scopus-indexed]**

(2)   **O. O. Martins**, B. J. Olorunfemi, H. O. Adeyemi, A. A. Aribisala and A. A. Adekunle "Review of recent developments in the use of nanofluids as coolants in metal cutting operations" FUW Trends in Science & Technology Journal, www.ftstjournal.com e- ISSN: 24085162; p-ISSN: 20485170; October, 2018: Vol. 3 No. 2B pp. 740 – 748

(3)   O.J. Alamu, **A.A. Adekunle** and G.A Odewole **(2003)** "Effect of Fluid Density on Optimum Design of pipes for Engineering Applications" Nigerian Journal of Engineering Management. 4(3): 58-62.

(3)   Alamu, O. J., and **Adekunle, A**. and Idowu, O. **(2004)** "Development of Empirical Relationship between Optimum Pipe Diameter and Fluid Viscosity for Streamline   Flows" Science Focus (8): 34-41

(4)   C.C. Enweremadu, M.A. Waheed, **A.A. Adekunle** and A.A. Adeala **(2008)** "The Energy potential of Brewer's spent grain for Brewries in Nigeria" Journal of Engineering and Applied Sciences. 3(2):175-177.

(5)   **A.A. Adekunle** and S. B. Adejuyigbe, **(2012)** "Construction of Plastic Water Filter" International Journal of Scientific and Engineering Research (IJSER Volume 3, Issue 3, March 2012 Edition) (ISSN 2229-5518)

(6)   **A.A. Adekunle** and S. B. Adejuyigbe. **(2012**) **"**Computer Aided Design Software development for Welding hollow cylinder." *J Am Sci* 2012;8(7):82-86]. (ISSN: 1545-1003). http://www.jofamericanscience.org

(7)   **A.A. Adekunle**, S. B. Adejuyigbe. and L.O. Mudashiru **(2013)** "Improvement on Development of CAD Software for Shaft under various loading Conditions" Advanced Material Research Vol. 628 pp 343-349. http://www.scientific.net

(8)   **Adekunle Adefemi Adeyemi** and Adekunle Olubukola R. **(2014)** "Development of CAD Software for Jig and Fixture for drilling flanges" Journal of Emerging Technology in Mechanical Science and Engineering. Vol.5 pp159-167. ISSN: 0976-2558

(9)   **Adekunle Adefemi Adeyemi1,** Adejuyigbe Sam B, and Faluyi Olufemi **(2014) "**Material Selection for Computer Aided Design Software for Crankshaft Design" International Journal of Scientific and Research Publications, (IJSRP) Volume 4, Issue 8, August 2014 1 ISSN 2250-3153

(10)   **A.A. Adekunle**, S. B. Adejuyigbe, and B. J. Olorunfemi **(2015) "**Development of CAD Software for Mechanical Chains Design" Journal of Emerging Trends in Engineering and Applied Sciences (JETEAS) 6(7): 260- 266 © Scholarlink Research Institute Journals, 2015 (ISSN: 2141-7016)

(11)   Olorunfemi B.J, Adejuyigbe S.B. and **Adekunle A.A. (2015) "**Development of Computer Aided Management for Grain Reception at Grain Storage Silos in Nigeria" International Journal of Engineering and Applied Sciences (IJEAS) ISSN: 2394-3661, Volume-2, Issue-7, July 2015

Conference paper

1. Martins, O. O, **Adekunle, A. A**, Adejuyigbe, S. B, Arowolo, M. O, Adeyemi, H. O (2019): Modeling of Rocker-Bogie Suspension System for a Unit Load Dispatch Mobile Robot System in an Office Environment. 1st International Conference on Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

2. Bayode. J. Olorunfemi, Samuel. B. Adejuyigbe, **Adefemi. A. Adekunle**, Matthew. O. Arowolo and Sunday. E Kayode (2019). Development of Computer-Aided Management For Monitoring Grains Stored In Metal Silos In Nigeria. 1st International Conference on Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

3. **A. A. Adekunle**, M.O. Arowolo and Ya'u Yusuf T/Wada (2019). Development of an Automated Biomass Briquetting Machine. 1st International Conference on Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

4. Arowolo M.Oluwole; **Adekunle A. Adefemi**; Sam B.Adejuyigbe; Oluwaseun O Martins; Abiodun M. Adebimpe; Adegboyega B.Otenaike; Abiodun E. Akeju (2019). Validation of

Automated Car Parking Problems and Traffic Management Measures. 1st International Conference on Mechatronics Federal University Oye – Ekiti. 7th – 9th October, 2019.

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Engr. Dr. D. C. Uguru-Okorie's Profile

Engr. Dr. D. C. Uguru-Okorie received a B.Eng. degree in Mechanical Engineering from the Federal University of Technology, Owerri, Nigeria and MSc. and PhD degrees in Mechanical Engineering (Thermo-Fluids Option) from the University of Ibadan, Nigeria. During his MSc. programme, he was awarded the Nigeria Sao Tome and Principe Joint Development Authority, postgraduate scholarship and during his PhD programme, he was awarded the Petroleum Technology Development Fund (PTDF) PhD scholarship with which he travelled to the University of Leeds, United Kingdom, as a visiting PhD research student. He is a COREN registered engineer, a corporate member of the Nigerian Society of Engineers (NSE) and a member of the Society of Automotive Engineers (SAE). Before joining the department, he has served as the Head of the Department of Mechanical Engineering, Landmark University, Omu Aran, Kwara state, Nigeria. His research interests are in the areas of fuels and combustion in internal combustion engines, heat transfer and the development of renewable energy systems.

Selected Publications

1. Udoye N.E., Dare A. A., Fayomi O. S. I., **Uguru-Okorie D. C.** (2019) Evaluation of Shrinking Direction of Movement Using Monte Carlo Simulation in A Rectangular Slab. *Procedia Manufacturing* 35: 1370 – 1374. **[Scopus-indexed]**

2. Efemwenkiekie U. K., Oyedepo S. O., Idiku U. D., **Uguru-Okorie D. C**. and Kuhe A. (2019) Comparative Analysis of a Four Stroke Spark Ignition Engine Performance Using Local Ethanol and Gasoline Blends. *Procedia Manufacturing* 35: 1079 – 1086. **[Scopus-indexed]**

3. **Uguru-Okorie D.C.,** Ikpotokin Igbinosa, David A. Fadare (2019) A Comparative Study of Flow and Heat Transfer Characteristics of Staggered and In-Line Cross-Flow Tube-Type Heat Exchangers, Part II: The Finite Element Analysis. *International Journal of Mechanical Engineering and Technology (IJMET)* 10 (2): 169 -186. **[Scopus-indexed]**

4. **Uguru-Okorie Daniel**, Olawale Olamide, Osueke C.O, Olayanju Adeniyi, Oyekunle David O. (2019) Promoting Eco-Friendly Corrosion Inhibitor Using Bitter Kola Leaves in Carbon Mild Steel Using HCl Acidic Media. *International Journal of Civil Engineering and Technology (IJCIET)* 10(2): 222 -230. **[Scopus-indexed]**

5. Ikpotokin Igbinosa, **Uguru-Okorie D.C**., Osueke C. O., Dare A. A. & Petinrin M. O. (2019). Numerical Investigation of Shell-and-Tube Heat Exchanger with Parabolic Segmental Baffle Cut. *International Journal of Mechanical Engineering and Technology (IJMET)* 10 (1): 1221-1234. **[Scopus-indexed]**

6. Osueke C. O., Olayanju T. M. A., Ezugwu C. A., Onokwai A. O., Ikpotokin I., **Uguru-Okorie D. C.** and Nnaji F.C. (2018). Comparative Calorific Evaluation of Biomass Fuel and Fossil Fuel. *International Journal of Civil Engineering and Technology (IJCIET)* 9(13): 1576 -1590. **[Scopus-indexed]**

7. **Uguru-Okorie D. C**, Ikpotokin Igbinosa, Osueke C. O and Fadare D.A (2018) Experimental Comparison of Staggered and In-Line Tube-Bank Thermal Performance. *International Journal of Mechanical Engineering and Technology (IJMET)* 9 (13):1061- 1070. **[Scopus-indexed]**

8. Olawale O, Ogunsemi, B.T, Ogundipe, S.J, Abayomi, S.T, **Uguru-Okorie D**., Okunnola, A.A, Oni, S.O, Kolawole, O.D and Ikpotokin I. (2018) Optimization Of Katemfe Seed Extract as a Corrosion Inhibitor for Mild-Steel in 0.5M HCl. *International Journal of Civil Engineering and Technology (IJCIET)*, 9 (13): 1394 - 1402. **[Scopus-indexed]**

9. **Uguru-Okorie D. C**., Ikpotokin I., Ajiboye M. O. and Ojediran M. E. (2018) FTIR Investigation of the Effect of Storage on Ogogoro-Gasoline Blend's Stability, *IOP Conf. Ser.: Mater. Sci. Eng.* 413: 012073. doi:10.1088/1757-899X/413/1/012073. **[Scopus-indexed]**

10. Ezugwu, C. A., Osueke, C. O., Onokwai, A. O., Olayanju, T. M. A., **Uguru-Okorie, D. C**., Ikpotokin, I. and Ibikunle, R. (2018) Modeling Of Regenerative Chatter of a Milling Process To Delineate Stable Cutting Region From Unstable Region. *International Journal of Mechanical Engineering and Technology (IJMET)* 9 (11): 748-757. **[Scopus-indexed]**

11. P.P. Ikubanni, O.O. Agboola, A.A. Adediran, A.A. Adeleke,B.T. Ogunsemi, T.S. Olabamiji, **D.C. Uguru-Okorie**,C.O. Osueke (2018) Experimental Data on Mechanical Properties Evaluation of Medium Carbon Steel Quenched in Different Waste Media, *Data in Brief* 20: 1224-1228. https://doi.org/10.1016/j.dib.2018.08.185. **[Scopus-indexed], [Web of Science (ESCI)]**

12. **Uguru-Okorie D. C**., Dare A. A. and Burluka A. A. (2016) Effect of Supercharging on Cycle-to-Cycle Variation in a Two-Stroke Spark Ignition Engine, *SAE Technical Paper* 2016-01-0688. **[Scopus-indexed]**

Conferences and Workshops Attended

1. Workshop on the Implementation of Outcome Based Education (OBE) Process in Accreditation of Engineering Programmes in Nigerian Universities held at Council Chambers, COREN Headquarters, Abuja. On Thursday 22nd to Friday, 23rd August, 2019.

2. 28th Engineering Assembly with the theme: Strategic Alliance Amongst Engineering Professionals for Enhanced Opportunities. Held at the International Conference Centre (ICC), Abuja from Monday, 19th to Wednesday, 21st August, 2019.

3. A workshop on Leadership Program for Research and Development. Facilitated by the African Women in Agricultural Research and Development (AWARD) at Covenant University, Ota, Ogun State, 3rd September to 5th September, 2018.

4. 27th Engineering Assembly with the theme: The Nigerian Built Industry: Building a Sustainable Structure with Allied Professionals. Held at the International Conference Centre (ICC), Abuja from Monday, 6th to Wednesday, 8th August, 2018.

5. 2nd International Conference on Engineering for a Sustainable World (ICESW 2018), held at Covenant University, Ota, Ogun State, Nigeria, July 9 -13, 2018.

6. Institute of Physics Combustion Physics Group, "Current research in combustion, A forum for Research Students and Early Career Researchers," held on the 24 September, 2013 at Loughborough University, UK, 2013.

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Dr. Ademola Ezra ADELEKE obtained his B.Sc. (Hons) and M.Sc. degree in Mechanical Engineering from the University of Ibadan, Nigeria in 2000 and 2005 respectively. He completed his Ph.D degree in Mechanical Engineering (Renewable Energy/Materials) at the Federal University of Agriculture, Abeokuta, Ogun State, Nigeria in 2012. His research interests are in areas of Thermodynamics of Materials, Renewable energy with major focus on biofuel. He has published a number of articles in reputable national and offshore journals. He is a member of notable professional organizations including Council for the Regulation of Engineering in Nigeria (COREN) and Nigerian Society of Engineers (NSE).

Selected Publications

1. A.E. Adeleke, P.O. Aiyedun, O.J. Alamu, O.U. Dairo and S.O.A. Olawale (2013). Development of software for the design of distillation column of a bioethanol-water system using McCabe-Thiele method. Annals of Science, Engineering and Technology, 3(1):23-32
2. A.E. Adeleke and S. O. A. Olawale (2013). Computer Analysis of Flow in the Pipe Network. Transnational Journal of Science and Technology, 3(2):45-71.
3. A.E. Adeleke, P. O. Aiyedun, M. A.Waheed, L.O. Sanni, S. O. A. Olawale and O.U. Dairo (2013). A New Simulation Model for Design of Distillation Column in a Bio-ethanol/Water System: Effect of Reflux Ratio. British Journal of Applied Science & Technology,3(2):508-517.
4. A.E. Adeleke, P.O. Aiyedun, O.J. Alamu, O.U. Dairo and S.O.A. Olawale (2013). Effect of mole fraction of the most volatile component in the bottom on the design of distillation column of a bioethanol-water system: A simulation study. Annals of Science, Engineering and Technology, 3(1):33-41.
5. O.U. Dairo, R.B. Iyerimah, A.O. Sobayo, A.A. Aderinlewo, O.J. Adeosun and E.A. Adeleke (2014). Optimization of Inclusion Level of Castor Oil Bean Cake in Broiler Feed Using Response Surface Methodology. British Journal of Poultry Sciences 3 (2): 42-48.
6. A.E. Adeleke, P. O. Aiyedun, and O.U. Dairo (2014). Investigation of behaviour of thermodynamic properties of cassava based ethanol-water system during azeotropic distillation process. The International Journal of Engineering and Science (IJES), 3(4):65-70.
7. Olatona G.I. and Adeleke A. E. (2015). Estimation of Solar Radiation over Ibadan from Routine Meteorological Parameters. The International Journal of Engineering and Science (IJES), 4(3): 44-51.
8. Olatona G.I. and Adeleke A. E. (2015).Comparative Study of Solar Radiation Models for Ibadan (7.23oN, 3.52oE), South West Nigeria. Pacific Journal of Science and Technology, 16(1):33-37.

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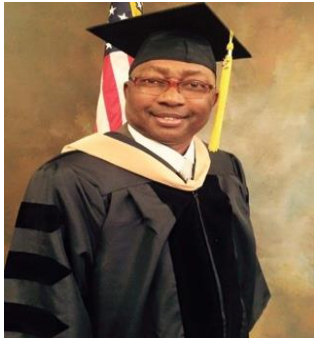
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Engr. Dr. Akeju's Career Profile

Engr. Dr. Abiodun Akeju is a Lecturer in the Department of Mechatronics Engineering, Federal University, Oye, Ekiti State. A Mechanical Engineering academics and professional with hands-on experience in requirements-driven approach to designing machine components based on mathematical and engineering principles. He is a member of Nigerian Society of Engineers, Member, American Society of Mechanical Engineers, Member Society of Automotive Engineers International, as well as a COREN registered Engineer.

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Engr. Dr. Sobowale's Career Profile

Dr. (Engr.) Sobowale, Aladejobi Adedayo is currently a Lecturer I at the Department of Computer Engineering, Federal University, Oye-Ekiti, Nigeria. He obtained a Bachelor degree (B.Sc.) in Computer Engineering (2001) from Obafemi Awolowo University, Ile – Ife. 1995 – 2001 and his Masters (M.Sc) degree in Software Engineering (2011) University of Ilorin, Ilorin.2009 –2011 and Doctorate (PhD) degree in Computer Science and Engineering (2016) from Ladoke Akintola University, Ogbomoso.Oyo State, Nigeria

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Engr. Aribisala Adetoye is presently a Lecturer I in the Department of Mechatronics Engineering, Federal University, Oye-Ekiti. He received his B.Eng. degree in Mechanical Engineering from Federal University of Technology, Akure and MSc degree in Information Technology from National Open University of Nigeria, Lagos and M-Eng. from the University of Ibadan. He is currently a PhD student (Machine Learning in Maintenance) at the Department of Production Engineering, Federal University of Pernambuco, Recife, Brazil Before joining the university, he worked as a Principal Engineer in National Iron Ore mining Company, Itakpe where he combined his skills of Industrial/production engineering with computer aided and database design in order to optimize the production of Iron Ore Concentrates. He also worked as a Senior Engineer in Planning unit of Federal University, OyeEkiti where he was involved with planning and designing of Mechanical works in the Institution's infrastructure. Engr. Adetoye's current research interest is in the area of Industrial Automation and Systems Engineering. He has published a paper titled: Design of an Employee Management system (A Case Study of National Iron Ore Mining Company, Itakpe)

Selected Publications

1. **A.A. Aribisala**, O.D. Komolafe, O.M. Sanusi, O.O. Martins (2018) "Anthropometric Evaluation of a University Lecture Hall's Seat" Journal of Natural Sciences, Engineering and Technology, Volume 17(1&2) pp. 28-35

2. O. O. Martins, B. J. Olorunfemi, H. O. Adeyemi, **A. A. Aribisala** and A. A. Adekunle "Review of recent developments in the use of nanofluids as coolants in metal cutting operations" FUW Trends in Science & Technology Journal, www.ftstjournal.com e- ISSN: 24085162; p-ISSN: 20485170; October, 2018: Vol. 3 No. 2B pp. 740 – 748

3. **Aribisala A.A.**, Martins O.O.,Otenaike A., Ajayi J., (2018) "Design and Implementation of a Sequential Display for a University in Nigeria" *FUOYE* Journal of Engineering and Technology, Volume 3, Issue 2, September, 2018 ISSN: 2579-0625 (Online), 2579-0617 (Paper)

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Engr. Nnamdi Stephen OKOMBA is a lecturer I and researcher with the Department of Computer Engineering with interest in Embedded Systems, Digital Signal Processing, Software Engineering and Telecommunication system, information Technology, Electromagnetic Fields and Waves, Radio wave Propagation, Antenna and Microwave Engineering. His previous research works includes Multipoint temperature sensors for oil and gas industries, and Microcontroller based stepper motor control with experiments for tertiary institution.

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Engr. Omodunbi's Career Profile
Engr, Mrs Bolaji OMODUNBI is a lecturer I and researcher with the Department of Computer Engineering. She graduated with a B.Tech degree in Computer Engineering from Ladoke Akintola University of Technology, Ogbomoso, Nigeria. Also she obtained M.Sc in Communication Engineering from University of Birmingham, UK. Presently, She is on her Ph.D research work at Ladoke Akintola University of Technology, Ogbomoso. She has published in reputable journals and her research areas include Wireless Networks, Sensors Technology, Information Security, Data Communication and E-health.

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Engr. Martins Career Profile

Engr. Oluwaseun Opeyemi Martins, graduated with B.tech in Mechanical Engineering from Ladoke Akintola University of Technology, Ogbomosho (LAUTECH) Nigeria in 2008 and Master of Engineering (M.Eng) in Mechanical Engineering (Computer Aided Engineering Option) from the Federal University of Agriculture, Abeokuta (FUNAAB) Nigeria in 2013. He is currently a PhD student (Mobile Robotics and Machine Learning) at the Department of Mechatronics Engineering, Federal University Oye-Ekiti. Engr. O.O. Martins before joining the University is a practicing Engineer with industrial experience in different capacities with various engineering firms such as Production Engineer at the Ogun State Water Corporation, Assistant Maintenance Officer at Lafarge Cement Wapco Nigeria, Ewekoro Plant and Project Engineer (Mechanical Building Services) at SOAD Engineering Consult. He is a registered Engineer with the Council for Regulation of Engineering in Nigeria (COREN) and Corporate Member of The Nigeria Society of Engineers (MNSE). He has contributed to development of engineering in terms of training and capacity building, academic curriculum development and staff development. He has attended many International Conferences and served creditably well in many University committees. His research areas include CAD/CAM/CAE, Mechatronics System Designs, Automation, Robotics, and Simulation. He is currently a Lecturer in the Department of Mechatronics Engineering, Federal University Oye, Ekiti, Ekiti State, Nigeria.

Selected Publications

1. **Martins, Oluwaseun O**., Aribisala, Adetoye A., Adeyemi, Hezekiah O., Adekunle, A. A., Oyelaran, Olatunde A. **"Dual Mode Mobile Surveillance Robot"** FUDMA Journal of Sciences (FJS) Vol. 3 No. 4, December, 2019, pp 153 – 162.

2. **Martins, O. O**, Adekunle, A. A, Adejuyigbe, S. B., Arowolo, M. O., and Adeyemi, H. O (2019) "Prototype Line Following Automatic Guided Vehicle (AGV) For Unit Load Dispatch in An Office Environment" FUDMA Journal of Sciences (FJS) Vol. 3 No. 3, September, 2019, pp 415 – 423.

3. Arowolo, Matthew Oluwole; Adekunle Adefemi A; **Martins Oluwaseun** and Abiodun Adebimpe, A Prototype PLC Built Automatic Vehicle Washing System Using VFD. International Journal of Mechanical Engineering and Technology 10(10), 2019, pp. 206-216. http://www.iaeme.com/IJMET/issues.asp?JType=IJMET&VType=10&IType=10 **[Scopus-indexed]**

4. A.A. Aribisala, O.D. Komolafe, O.M. Sanusi, **O.O. Martins** (2018) "Anthropometric Evaluation of a University Lecture Hall's Seat" Journal of Natural Sciences, Engineering and Technology, Volume 17(1&2) pp. 28-35

5. Adefemi Adekunle, Peter Pelumi Ikubanni and **O. O. Martins**, Development of Computer Aided Design Software for Piston Movement, International Journal of Mechanical Engineering and Technology, 9(10), 2018, pp. 559–567. http://www.iaeme.com/IJMET/issues.asp?JType=IJMET&VType=9&IType=10 **[Scopus-indexed]**

6. **O. O. Martins**, B. J. Olorunfemi, H. O. Adeyemi, A. A. Aribisala and A. A. Adekunle "Review of recent developments in the use of nanofluids as coolants in metal cutting operations" FUW Trends in Science & Technology Journal, www.ftstjournal.com e- ISSN: 24085162; p-ISSN: 20485170; October, 2018: Vol. 3 No. 2B pp. 740 – 748

7. A. A. Adekunle, **O. O. Martins** and A. K. Babarinde "Computer Aided Design And Analysis of Plain Carbon Steel Spur Gear Under Different Force Application" FUW Trends

in Science & Technology Journal, www.ftstjournal.com e- ISSN: 24085162; p-ISSN: 20485170; October, 2018: Vol. 3 No. 2 pp. 579 – 584

8. Aribisala A.A., **Martins O.O.**,Otenaike A., Ajayi J., (2018) "Design and Implementation of a Sequential Display for a University in Nigeria" *FUOYE* Journal of Engineering and Technology, Volume 3, Issue 2, September, 2018 ISSN: 2579-0625 (Online), 2579-0617 (Paper)

9. **Martins O.O.**, Bolaji B.O., Adeyemi O.H., Sanusi O.M. (2018) "The Design and Construction of a Motorized Citrus Juice Extractor". *FUOYE Journal of Engineering and Technology, Volume 3, Issue 2, September, 2018 ISSN: 2579- 0625 (Online), 2579-0617 (Paper)*

10. Hezekiah O. Adeyemi, **Oluwaseun O. Martins**, Olanike O. Ade-Ikuesan, Olawale O. Olaluwoye "Machinery Maintenance Viewpoint: One Approach to an Improved Rural Road Traffic Safety in Southwest Nigeria" International Journal of Engineering Technology and Sciences (IJETS) ISSN: 2289-697x (Print); ISSN: 2462-1269 (Online) Vol.5 (1) June 2018 © Universiti Malaysia Pahang DOI: http://dx.doi.org/10.15282/ijets.5.1.2018.6.1092

11. Olawale Monsur Sanusi, Muhammad Dauda1, Malachy Sumaila, Abdulkarim Salawu Ahmed, Mohammed Tijani Isa, Olatunde Ajani Oyelaran and **Oluwaseun Opeyemi Martins** "Compositions Optimization of Antang Corundum For Developing Advanced Ceramic" Aceh International Journal of Science and Technology ISSN: p-2088-9860; e-2503-2348, 7(1): 32-43 April 2018 Journal homepage: http://jurnal.unsyiah.ac.id/aijst

12. H. O. Adeyemi, O. A. Olatunji, **O. O. Martins**, O. O. Akinyemi, O. O. Adama and K. O. Alao "Job Safety Assessment of Woodwork Industry In The Southwestern Nigeria". Arid Zone Journal of Engineering, Technology and Environment, December, 2017; Vol. 13(6):817-830 Copyright © Faculty of Engineering, University of Maiduguri, Maiduguri, Nigeria. Print ISSN: 1596-2490, Electronic ISSN: 2545-5818, www.azojete.com.ng

13. Adeyemi H. Oluwole, **Oluwaseun O. Martins**, Samuel B. Adejuyigbe, Adeyemi A. Adekunle. (2017). Rate of Ergonomics Hazard Control Measures Incorporation into Small-Scale Industries in Southwest Nigeria. Safety Engineering Vol. 7 No. 1. Faculty of Occupational Safety, University of NIS, Serbia. http://www. znrfak. ni.ac. rs/S E-Jo urna l/09-Jo urna ls. html.

14. **O.O. Martins**, A.A. Aribisala and A.A. Adekunle, "Production Planning and Control in Small Scale Industry; A Computer Aided Engineering Approach". International Journal of Scientific Research Engineering & Technology (IJSRET), ISSN 2278 – 0882 737 Volume 6, Issue 7, July 2017. www.ijsret.org.

15. S. P. Ayodeji, T. J. Owoyemi, **O.O. Martins** and A.A Adekunle "Dynamic Simulation of a 4 Degree of Freedom (4DOF) Robotic Arm for Small and Medium Scale Industry Packaging". Pacific Journal of Science and Technology. Volume 17. Number 2. November 2016 (fall) pages 5-13 http://www.aka ma iuniversity. us/PJS T. htm.

16. **O.O. Martins**, S.B. Adejuyigbe, M.A. Waheed, B.O. Bolaji, and J.K. Adewumi "Impact of the Adoption of Computer Aided Process Planning (CAPP) Software Package for Small Scale Bottled Water Industry in Nigeria". Pacific Journal of Science and Technology. Volume 14. Number 2. November 2013 (fall) pages 255-262. http://www.aka ma university. us/PJST. htm

Conference paper

1. **Martins, O. O**, Adekunle, A. A, Adejuyigbe, S. B, Arowolo, M. O, Adeyemi, H. O "Modeling of Rocker-Bogie Suspension System for a Unit Load Dispatch Mobile Robot System in an Office Environment" 1st International Mechatronics Conference, 7th-9th October, 2019

2. Resource person at a 4-Day Training and Capacity Building on CAD/CAM (Computer Aided Design/Computer Aided Manufacturing) for equipment and machinery for TOPFUN Ventures in Collaboration with The Raw Material Research and Development Council (RMRDC), Abuja 21st – 25th January, 2019. Papers presented: Using CAD/CAM

System Pp 46 - 57, Application of 2D and 3D Transformation Operations Pp 104 – 108 and CAD/CAM Programming Pp 109 - 121

3. **O.O. Martins**, S.B. Adejuyigbe, M.A. Waheed, and J.K. Adewumi "Computerization of Production Process and Control of Small-Scale Bottled Water Industry in Nigeria". Presented at a three-day conference of The **Nigerian Society of Engineers (NSE)** National Engineering Conference Exhibition and Annual General Meeting "Harmony 2012". Theme; Strategy for Promotion of Sustainable Technology – Based and Production Driven Economy in Nigeria 4th – 6th December, 2012. Ilorin, Kwara State, Nigeria.

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Engr. Adebimpe Career Profile

Engr. Adebimpe Abiodun Michael graduated with HND in Electrical and Electronic Engineering from the Federal Polytechnic, Ado-Ekiti, Nigeria in 2002, Postgraduate Diploma from the Federal University of Technology, Akure (FUTA) in 2008 and Master of Engineering (M.Eng) in Electrical and Electronic Engineering from the Ekiti State University, Ado-Ekiti (EKSU) in 2017. Engr. A. M. Adebimpe had worked with Bummy Technology Nig. LTD, Ikeja, Lagos and Ekiti State Ministry of Works and Transportation before joining the University. He is a registered Engineer with The Council for the Regulation of Engineering in Nigeria (COREN) and Corporate Member of The Nigerian Society of Engineers (MNSE). He has served creditably well in the Physical Planning Unit and many University committees. His research areas include Mechatronics System Designs, Automation, Engineering Modelling and Simulation. He is currently a Lecturer in the Department of Mechatronics Engineering, Federal University Oye, Ekiti, Ekiti State, Nigeria.

Publications

1. **Adebimpe A. M.** and Olulope P. K. (2018) "Improvement of Power Delivery Efficiency of 11kv Power Line using Power Capacitor Placement" International Journal of Advanced Engineering, Management and Science, IJAEMS, Vol 4, Issue 4, April, 2018 pp 309 - 318.

2. Olulope P. K. and **Adebimpe A. M.** "Fault and Power Loss Analysis on 11kV Feeder Lines and Cost Implication on Ado-Ekiti Power Distribution Network" International Journal of Scientific & Technology Research, Vol 6, Issue 9, September, 2017 pp 336 - 341.

Conference paper

1. Arowolo, M. O, Adekunle, A. A, Adejuyigbe, S. B, Martins, **O. O**, **Adebimpe, A. M**, Otenaike, A. B and Akeju, A. E "Validation of Automated Car Parking Problems and Traffic Management Measures" 1st International Mechatronics Conference, 7th-9th October, 2019

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Dr. Engr. Ayodele Sunday OLUWOLE, graduated with B.Eng. in Engineering Electrical & Electronics from University of Ado-Ekiti. Now Ekiti – State University Nigeria in 2003 and Master of Engineering (M.Eng.) in Engineering Electrical & Electronics (Communication) from the Federal University of Technology, Akure (FUTA) Nigeria in 2010. He holds a PhD in Electronic Engineering [Smart Antenna Arrays] from the University of KwaZulu-Natal, South Africa. He is a registered Engineer with the Council for Regulation of Engineering in Nigeria (COREN) and Corporate Member of The Nigeria Society of Engineers (MNSE). He has contributed to development of engineering in terms of training and capacity building. He has attended many International Conferences and served creditably well in many University committees. His research areas include Smart Antenna Arrays & Digital Signal Processing, Advanced Antenna Theory and Design, RF and Microwave Engineering, Antenna Design at THz/Millimeter Wave Frequencies and Advanced Digital Communication Systems. He is currently a Lecturer in the Department of Engineering Electrical & Electronics, Federal University Oye, Ekiti, Ekiti State, Nigeria.

Selected Publications

1. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Features and Future of Smart Antennas for Wireless Communications: A Technical Review," Journal of Engineering Science and Technology Review, vol. 11, no. 4, pp. 8-24, Nov. 2018.
2. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Analysis and synthetic model of adaptive beamforming for smart antenna systems in wireless communication," Journal of Communications, vol. 13, no. 8, pp. 436 – 442, August 2018.
3. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Determination of directivity and gain for improved performance of smart antenna," International Journal on Communications Antenna and Propagation, vol. 7, no. 4, pp. 298 – 305, Aug. 2017.
4. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Smart antenna for wireless communication systems using spatial signal processing," Journal of Communications, vol. 12, no. 6, pp. 328 – 339, June 2017.
5. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Design of Smart Antenna by Circular Pin-Fed Linearly Polarized Patch Antenna," International Journal of Wireless and Microwave Technologies (IJWMT), vol. 6, no. 3, pp. 40 – 49, May 2016.
6. **Ayodele S. Oluwole** & Viranjay M. Srivastava, "Smart Antenna at 300 MHz for wireless communication," IEEE African Journal of Computing & ICTs. vol. 8, no. 3, issue 2, pp. 193 – 201, October 2015.
7. **Ayodele S. Oluwole**, et al., ''Power supply quality improvement with extended range domestic voltage regulators,'' International Journal of Scientific & Technology Research, vol. 3, no. 5, pp. 309 – 315, May 2014
8. **Ayodele S. Oluwole**, et al., "Design of automatic gate control using infrared remote with password protected features," International Journal for Research and Development in Technology, vol. 2, no. 5, pp. 6 – 12, Nov. 2014.
9. T. Adefarati, **Ayodele S. Oluwole**, and M. A. Sanusi, "Computational solution to economic operation of power plants," International Journal of Electrical and Electronic Engineering, vol. 3, no. 6, pp. 139 – 148, 2013.

10. T. Adefarati, **Ayodele S. Oluwole**, and M. A. Sanusi, "Economic & industrial application of power factor improvement," International Journal of Engineering Research & Technology (IJERT), vol. 2, no. 11, pp. 1945 – 1955, Nov. 2013.

11. T. Adefarati, A. K. Babarinde, **Ayodele S. Oluwole**, and K. Olusuyi, "Reliability evaluation of Ayede 330/132 Kv substation," International Journal of Engineering and Innovative Technology, vol. 4, no. 4, Oct. 2014.

12. K. Olusuyi, **Ayodele S. Oluwole**, T. Adefarati, and A. K. Babarinde. "A fault analysis of 11kV distribution system [A case study of Ado-Ekiti electrical power distributiondistrict]," American Journal of Electrical Power and Energy Systems [EPES], vol. 3, no. 2, pp. 27 – 36, 2014.

13. K. Olusuyi, T. Adefarati, **Ayodele S. Oluwole**, and A. K. Babarinde, "Electrical fault analysis 33 Kv distribution network (a case study of Ekiti State 33 Kv distribution network)," American Journal of Engineering Research, vol. 3, no. 3, pp. 280 – 286, 2014.

14. A.K. Babarinde, T. Adefarati, **Ayodele S. Oluwole**, G. K. Ijemaru, and K. Olusuyi, "Effects of electrical parameters variation on the dynamic behaviour of two – phase induction motor," International Journal of Engineering Science Invention, vol. 3, no. 6, pp. 15 – 25, June 2014.

Conference paper

1. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Designing of smart antenna for improved directivity and gain at terahertz frequency range," Progress in Electromagnetic Research Symposium (PIERS), China, pp. 473, August 2016.

2. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Analysis of smart antenna with improved signal quality and spatial processing," Progress in Electromagnetic Research Symposium (PIERS), China, pp. 474, August 2016.

3. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Performance analysis of smart antenna bandwidth at terahertz frequency range," Progress in Electromagnetic Research Symposium (PIERS), China, pp. 475 – 476, August 2016.

4. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Design of smart antenna using waveguide – fed pyramidal horn antenna for wireless communication," 12th IEEE India International Conference (INDICON 2015), New Delhi, India, Dec. 2015.

5. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Design of smart antenna using planar phased – array antenna for wireless communication systems," 2015 IEEE International Conference on Trends in Automation, Communication and Computing Technologies (ITACT 2015). Bangalore, India, Dec. 2015.

6. **Ayodele S. Oluwole** and Viranjay M. Srivastava, "Modeling of RF security system using smart antenna," 2015 IEEE International Conference on Cyberspace (CYBER – ABUJA 2015), Abuja, Nigeria, Nov. 2015, pp. 118 – 122

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Selected Publications

Journal name	Tittle of the paper	Date published
IET-RPG publications (Scopus indexed, Impact factor = 9.8, Citation = 177 and IET)	T. Adefarati, and R. C. Bansal, "Integration of renewable generators into the distribution system: a review, IET-RPG, vol. 10, pp. 875-884, 2016.	April 2016
Applied Energy (ISI indexed, Impact factor = 9.8, Citation = 177 and Elsevier)	T. Adefarati, and R. C. Bansal, "Reliability assessment of distribution power system with the integration of renewable distributed generation", Applied Energy, vol. 185, pp. 158-171, 2017.	January 2017
Applied Energy (ISI indexed, Impact factor = 9.8, Citation = 177 and Elsevier)	T. Adefarati, and R. C. Bansal, "Reliability and economic assessment of a power system with the integration of renewable energy resources", Applied Energy, vol. 206, pp. 158-171, 2017.	November 2017
International Journal of Green Energy (Scopus indexed, Impact factor = 1.45 and Taylor and Francis)	T. Adefarati, and G. Obikoya, 'Techno-economic evaluation of a grid-connected microgrid system', International Journal of Green Energy, Accepted, 2019	September, 2019
Applied Energy (ISI indexed, Impact factor = 9.8 and Elsevier)	T. Adefarati, and R. C. Bansal, "Reliability, economic and environmental analysis of a microgrid system in the presence of renewable energy resources", Applied Energy, vol. 236, pp. 1089-1114, 2019.	February 2019
International Journal of Engineering Research in Africa (Scopus indexed, Impact factor = 0.45 and JERA)	T. Adefarati, and G. Obikoya, "Evaluation of Wind Resources Potential and Economic Analysis of Wind Power Generation in South Africa", International Journal of Engineering Research in Africa (JERA), vol. 44, pp. 150-181, 2019.	June, 2019

International Journal of Engineering and Innovative Technology (IJEIT)	T Adefarati, A Babarinde, A Oluwole, K Olusuyi, "Reliability evaluation of Ayede 330/132 KV substation", (IJEIT), vol. 4, 86-91, 2014.	2014
American Journal of Electrical Power and Energy Systems	K Olusuyi, A Oluwole, T Adefarati, A Babarinde, "A fault analysis of 11kV distribution system (A case study of Ado Ekiti 11 kV distribution district), American Journal of Electrical Power and Energy Systems, vol. 3, pp. 27-36, 2014	2014
IOSR- Journal of Electrical and Electronics Engineering	T. Adefarati, C. S. Esobinenwu and A. O. Ibe, "Computational algorithms for solution of economic load dispatch in an interconnected power system", IOSR-JEEE, vol. 9, 2014.	2014
American Journal of Engineering Research (AJER)	K Olusuyi, A Oluwole, T Adefarati, A Babarinde, "Electrical fault analysis of 33kV distribution network (a case study of 33 kV distribution network)", AJER, vol. 9, pp. 280-286, 2014.	2014
International Journal of Scientific & Technology Research	A Oluwole, T Adefarati, K Olusuyi and A. Babarinde, "Power Supply Quality Improvement With An Extended Range Domestic Voltage Regulators", International Journal of Scientific & Technology Research, vol. 2, pp. 6-12, 2014.	2014
International Journal of Engineering Research in Africa (Scopus indexed, Impact factor = 0.45 and JERA)	T. Adefarati and G.D Obikoya Assessment of renewable energy technologies in a standalone microgrid system, International Journal of Engineering Research in Africa (JERA), vol. 46, pp. 215-225, 2020.	January, 2020

Books and Chapters

Publisher	Name of Book and Chapter Title	Date published
Springer (Scopus indexed)	**Name of a Book:** Handbook of distributed generation: electric power technologies, economics and environmental impacts. **Chapter Title:** Non-renewable distributed generation technologies: a review	2017
Springer (Scopus indexed)	**Name of a Book:** Handbook of distributed generation: electric power technologies, economics and environmental impacts. **Chapter Title:** Distributed renewable energy technologies	2017
CRC Press (Taylor and Francis Group)	**Name of a Book:** Power System Protection in Smart Grid Environment **Chapter Title:** An Overview of Smart Grid in Protection Perspective	2019

CRC Press (Taylor and Francis Group)	**Name of a Book:** Power System Protection in Smart Grid Environment **Chapter Title:** Generator Protection	2019
CRC Press (Taylor and Francis Group)	**Name of a Book:** Power System Protection in Smart Grid Environment **Chapter Title:** Reliability aspects of Power System Protection	2019
CRC Press (Taylor and Francis Group)	**Name of a Book:** Power System Protection in Smart Grid Environment **Chapter Title:** Power Quality and Equipment Protection	2019
Academic Press (Elsevier)	**Name of a Book:** Pathways to a smartgrid power system **Chapter Title:** Energizing Renewable Energy Systems and Distribution Generation	2019

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Selected Publications

- **Aderoba, O. A. and Ogedengbe, T. I (2015):** Plant Layout under Discounted Sequential Machinery Investment using Dynamic Programming Approach , *IOSR Journal of Mechanical and Civil ,Volume 12, Issue 5 (Sep. - Oct. 2015), PP 48-57,*www.iosrjournals.org/iosr-jmce/papers/vol12-issue5/Version-5/I012554857.pdf
- **Ayodeji S. P., Ajamu T. A., Akinnuli B. O. and Aderoba O. A. (2017):** Development and performance evaluation of an effective dryer for *poundo* yam flour processing plant, Cogent Engineering, https://www.cogentoa.com/article/10.1080/23311916.2017.1293481

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Selected journal Publications

1. **Oyelaran O. A.** and Makoyo M.(2008): 'Assessment of "Chikila" Coal for use as Metallurgical Coke' Journal of Raw Material Council, JORMAR 5(1&2):61 – 65,Published by Raw Material Development council, Abuja, Nigeria
2. **Oyelaran, O.A.,**Bolaji, B.O., Waheed, M. A. and Adekunle, M. F. (2014) Studies into the Effects of Binding Ratios on some Densification Characteristics of Groundnut Shell Briquettes. Iranica Journal of Energy & Environment 5 (2): 167-172
3. **Oyelaran, O. A.** (2014) Physic-Chemical Characterization of "Namu"Clay for Industrial Use, KKU Engineering Journal, 41(3):283-290.
4. **Oyelaran, O. A.** and Tudunwada, Y.Y. (2014) Characterization of Garko and Kura Rice Husks, American Journal of Engineering Research.3 (11):240-244.
5. **Oyelaran, O.A.,** Ocheri C., Tudunwada, Y.Y. (2014) Investment Analysis for the Establishment of Spheroidal Graphite Iron Plant in Nigeria, International Journal of Scientific & Technology Research. 3(12):184 – 186.
6. **Oyelaran, O. A.** and Bolaji, B. O., Waheed, M. A. and Adekunle, M. F. (2015) Characterization of Briquettes produced from Groundnut Shell and Waste Paper Admixture,Iranica Journal of Energy & Environment. 6 (1): 34-38.
7. **Oyelaran, O. A.,** Bolaji, B. O., Waheed, M. A. and Adekunle, M. F. (2015)erformance Evaluation of the Effect of Binder on Groundnut Shell Briquette," KMUTNB Int J ApplSciTechnol, Vol.8, No.1, pp. 11-19.
8. **Oyelaran, O. A.,**Tudunwada Y. Y. (2015) Determination of the Bio-Energy Potential of Melon Shell and Corn Cob Briquette, Iranian Journal of Energy & Environment. 6(3): 167 – 172.

9. **Oyelaran, O. A.** (2015) Effect of Storage on some Properties of Groundnut Shell Biomass Briquettes, Journal of Renewable Energy and Environment. 2(1): 32 – 40.
10. **Oyelaran, O. A.,**Twada, Y.Y. Sanusi, O. M. (2016) Energy Audit of an Industry: A Case Study of Fabrication Company*Aceh Int. J. Sci. Technol., 5(2): 45-53*

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Some of his publications are:

1.   **Olorunfemi, B. J.,**Adejuyigbe S. B., and Adekunle A.A.(2015): "Development of Computer Aided Management for Grain Reception at Grain Storage Silos in Nigeria". International Journal of Engineering and Applied Sciences (IJEAS) ISSN: 2394-3661, Volume-2, Issue-7, July 2015.

2.   A. A. Adekunle, S. B. Adejuyigbe, and **B. J. Olorunfemi** (2015) "Development of CAD Software for Mechanical Chains Design". Journal of Emerging Trends in Engineering and Applied Sciences (JETEAS) 6(7): 260- 266.

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Summary of Profile

Prof. Engr. OLANIYAN, Adesoji Matthew graduated with B.Eng, M.Eng and PhD in Agricultural Engineering from University of Ilorin, Nigeria in 1991, 1998 and 2006 respectively. Since 1998, he has been working on techniques, processes and equipment for processing agricultural and bioresources products to food, fibre and industrial raw materials. Dr. Olaniyan's principal area of research is Bioresources Processing and Food Process Engineering, where he has carried out a number of projects and published a number of papers in local and international journals. He joined the service of the University of Ilorin in 1998 as an Assistant Lecturer in the Department of Agricultural and Biosystems Engineering and rose to the position of a Senior Lecturer in 2009. Currently, he is an Associate Professor at the Department of Agricultural and Bioresources Engineering, Federal University Oye-Ekiti, Nigeria. Dr. Olaniyan has bagged several awards including the Award for the Best Paper (2007) in the Journal of Food Science and Technology, Mysore, India; Chinese Government Sponsorship (2008) for International Training Programme in Protected Agriculture at International Exchange Centre, Yangling, China; Netherlands Fellowship Programme (2009) for International Training programme in Milk Processing at Practical Training Centre, Onkerk, the Netherlands; and Postdoctoral Fellowship (2011) of the Academy of Sciences of Developing Countries.

Publications:

1. **Olaniyan, A.M.** and Alabi, A.A (2014). Conceptual Design of Column Dryer for Paddy Rice including Fabrication and Testing of Prototype. International Journal of Basic and Applied Sciences, 2 (3): 11-20. Published by Insan Akademika Publications, Indonesia.
2. **Olaniyan, A.M.** and Obajemihi, O.I (2014). Design, Development and Test of a Small Scale Mango Juice Extractor. Journal of Agricultural Science and Technology B, 4: 1-7. Published by David Publishing Company, USA.
3. **Olaniyan, A.M.** and Oje, K. (2013). Process Conditions Governing Mechanical Expression of Shea Butter from Crushed Shea Kernel under a Uni-axial Compression. International Journal of Engineering Research in Africa (JERA), 10: 37-48.
4. **Olaniyan, A.M.** and Omoleyomi, B.D. (2013). Characteristics of Okra under Different Process Pretreatments and Different Drying Conditions. Journal of Food Processing and Technology, 4 (6): 1-6.
5. **Olaniyan, A.M.** and Odewole, M.M. (2013). Design and Development of a Livestock Feed Mixer with a Spring-Controlled Packaging Unit. International Journal of Engineering Research in Africa (JERA), 9: 43-55.
6. **Olaniyan, A.M.** and Yusuf, K.A. (2012). Mechanical Oil Expression from Groundnut (*Arachid hypogaea L*) Kernels using a Spring-Controlled Hydraulic Press. Journal ofAgricultural Research and Development (JARD), 11 (2): 235-247.

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Engr. Dr. Adesola Adebanjo Satimehin hails from Iju-Odo in Okitipupa LGA of Ondo State. He possesses the degrees of B.Sc. (1980) and M.Sc. (1985) in Agricultural Engineering from the University of Ibadan, and the degree PhD (2008) in Agricultural Processing and Storage Engineering from the University of Nigeria, Nsukka. His research **areas of interest include** Modeling heat and mass transfer during food drying operations; Food-Moisture Sorption and Food stability; Engineering properties of food and agricultural materials; Food and agricultural materials handling, processing and storage systems design; Food drying and food dryers design; Food wastes processing and conversion. Dr. Adesola Satimehin began his academic career in 1986 as an Assistant Lecturer at the Federal University of Agriculture, Makurdi and rose to the rank of Senior Lecturer in the Department of Agricultural and Environmental Engineering. He was on Sabbatical Appointment at the Federal University, Oye-Ekiti from March 2012 to May 2013. During this period, he served as the pioneer Head of the Department of Agricultural and Bioresources Engineering. He has again been offered a Tenure Appointment as Senior Lecturer with the University. Dr. Satimehin is a Fellow of the Nigerian Institution of Agricultural Engineers (NIAE) and is registered to practise engineering in Nigeria by the Council for Regulation of Engineering in Nigeria (COREN). As an expert in agro-processing, Dr. Satimehin Is a National Consultant/Expert to United Nations Development Organisation (UNIDO) for whom in 2011, he designed a pilot linear rice processing plant at Obagaji in Agatu Local Government Area of Benue State. The rice processing plant has installed capacity of one metric tonne per hour of world-class de-stoned white rice. Dr. Satimehin was a member of a team of experts that carried out "A Study of the Proposed Adani/Omor Staple Crop Processing Zone" for the Agriculture Transformation Agenda of Nigeria. Dr. Satimehin has successfully supervised and is still supervising many M.Eng. Dissertations and PhD Thesis. He has authored (and co-authored) numerous scholarly articles in national and international journals. He has also presented scientific papers at international conferences such as the 4th European Drying Symposium Conference held in Paris from 2nd – 4th October 2013.

Publications:

1. **Satimehin A. A.** 2013. A mathematical model for deep bed drying of gelatinized white yam (*Dioscorea rotundata*, Poir). Proceedings of Oral presentation at the 4th European Drying Conference held in FCBA Institut Technologique, 10 Avenue de Saint-Mandé, 75012 Paris from 2nd – 4th October 2013.
2. **Satimehin A. A.,** and T. K. Philip. 2012. Physical properties of acha as affected by moisture content. Agricultural Engineering International: CIGR Journal, 14(4): 231－237 (USA). http://www.cigrjournal.org/index.php/Ejounral/article/viewFile/2188/1686.

3. Alakali, J. S., S. V. Irtwange and **A. A. Satimehin** (2009). Moisture Adsorption Characteristics of Ginger Slices. *Revista Ciência e Technologia de Alimentos* Vol. 29, No. 1. Jan/Mar 2009, Campinas, BRAZIL.

4. Alakali, J. S. and **A. A. Satimehin** (2009). Moisture Adsorption Characteristics of Ginger (*Zingiber Officinale*) Powders, Agricultural Engineering International: the CIGR Ejournal, Vol. XI. July, 2009. (USA).

5. Obetta, S. E., O. J. Ijabo and **A. A. Satimehin** (2007). Performance evaluation of a subterranean storage for cocoyam (*Colocasia esculenta*). *Agricultural Engineering International: the CIGR Ejournal*. Manuscript FP 07 017. Vol. IX. November, 2007. (USA).

6. Alakali, J. S. and **A. A. Satimehin.** (2007). Moisture adsorption characteristics of bambara groundnut (*Vigna subterranea*) Powders. *Agricultural Engineering International: the CIGR Ejournal*. Manuscript FP 07 005. Vol. IX. November, 2007. (USA).

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Publications:

(1) Ebietomiye,T.O., **O.E. Omofunmi** and A.A. Zelibe.2006. Utilization of Water Hyacinth (Echhorniacrassipes) a fish aggregating device by Riverine Fisher Folk in Ondo State, Nigeria. Journal of Food, Agriculture and Environment (JFAE) Finland. Vol 4, No. 4

(2) Atojunere E.E, **O.E. Omofunmi** and E.B. Lucas, 2010.Canoe building and utilization- case study of Ilaje, South West, Nigeria. Global Journal Engineering and Technology (GJET) India. Vol 4, No.3

(3) **Omofunmi O.E.**, J.K. Adewumi, W.O. Elegbeleye and A.F. Adisa, 2016.Evaluation of the impact of wastewater generated from catfish ponds on the quality of soil in Lagos, Nigeria. Journal of Agricultural and Environment .VOL. 16.No. 1. FUNAAB JOURNAL

(4) **Omofunmi O.E.**, J.KAdewumi, W.O.Elegbeleye and A.F.Adisa, 2016. Development of a paddle-Wheel Aerator for small and medium fish farmers in Nigeria. Journal of Mechanical and Civil Engineering.Vol.13 issue 1. http://www.iosrjournals.org/iosrjme/pages/13(1)Version-4.html

(5) **Omofunmi O.E.**, J.K. Adewumi, W.O. Elegbeleye and A.F. Adisa, 2016. The impact of discharging of catfish effluents on the quality of water in Lagos, Nigeria. Journal of Environmental Science, Toxicology and Food Technology. http://www.iosrjournals.org/iosr-jestft/pages/10(2) Version- 2html

(6) **Omofunmi O.E.**, J.K. Adewumi, W.O. Elegbeleye and A.F.Adisa, 2016 . The impact of catfish farming on water quality of stream in Lagos State, Nigeria. Annual Research and Review in Biology. Vol. 9, Issue 5 http://www.sciencedomain.org/issue/1521

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Dr. FAYOSE, Folasayo Titiola is an Agricultural Engineer with special interest in Food and Agricultural Processing Machinery, Design, Installation and New Products Development and Characterization. Nigeria. She holds B.Eng. (Hons), M.Eng, and Ph.D. in Agricultural Engineering. Dr. Fayose has bagged several awards including the Post Doctoral Fellowship of the African Women in Agricultural Research and Development (AWARD) and has published widely. Her current research focuses on Optimization and Product Development of Food and Feed Extrusion using Cassava and other locally sourced Ingredients. Dr Fayose is a 2011 Fellow of the African Women in Agricultural Research and Development (AWARD), a professional development program sponsored by the United States Agency for International Development (USAID) and Bill and Melinda Gates Foundation. Also, she recently completed a Post Doc Research Fellowship Programme of the Tshwane University of Technology, Pretoria, South Africa. She was a recipient of the 2013 KIC Travel grant of the Nation Research Foundation (NRF) South Africa. She is a Registered Engineer. She has served in various capacities in public service and at tertiary institutions. Currently she is a Lecturer at the Federal University, Oye-Ekiti, Nigeria.

Publications:

1. **Folasayo T. Fayose** and Zhongjie Huan (2016). Heat Pump Drying of Fruits and Vegetables: Principles and Potentials for Sub-Saharan Africa. International Journal of Food Science, Volume 2016, Article ID 9673029, pp 1-8, Hindawi Publishing Corporation, http://dx.doi.org/10.1155/2016/9673029
2. **Folasayo Fayose** and Zhongjie Huan (2014). Specific Mechanical Energy Requirement of a Locally Developed Extruder for the Processing of Selected Starchy Crops, Food Science and Technology Research, Vol. 20 (4): 793-798.
3. **Folasayo T. Fayose** and Zhongjie Huan (2014). Pasting Characteristics of Cassava at Different Extrusion Conditions, Agricultural Engineering Today, Vol. 38, No.1, pg 6.
4. **Fayose, F.T. (2013)**, "Expansion Characteristics of Selected Starchy Crops during Extrusion", West Indies Journal of Engineering, Vol.35, No.2, January, pp.58-64.
5. **Fayose F.T. (2012)** Characterizing the Product Moisture Loss of Selected Starchy Crops during Extrusion. International Journal of Engineering Technology, Volume 2 No. 9, September, 2012.pp 809-815.
6. **Fayose F.T. (2011).** Product Temperature Response of a Locally Developed Extruder to Different Extrusion Conditions. Bulletin of Pure and Applied Sciences. India, Vol.30b (No.1-2) 2011:Pg.41-50
7. **Fayose, F.T. (2009).** Exploiting the Possibility of Cassava Blend Extrudates for Fish Feed Production. ASABE Technical Library Paper No 095602, 2009.

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Publications:

1. Alabadan, B. A, Ajayi, E. S, **Ilesanmi, O. A** and M. Nlemogu, M. (2014). Comparative Analysis of Two Optimization Models for Prediction of Compressive Strength of Lateritic Block. *International Journal of Scientific & Engineering Research*, Vol. 5(11): 743 – 749.
2. **Ilesanmi, O. A.,** Oguntunde, P. G., Olufayo, A. A. (2014). Evaluation of Four Eto Models for IITA Stations in Ibadan, Onne and Kano, Nigeria. *IISTE: Journal of Environment and Earth Science.* Vol. 4, No.5.
3. **Ilesanmi, O. A.,** Oguntunde, P. G. and Olufayo, A. A. (2012). Re-examination of the BMN Model for Estimating Evapotranspiration. International Journal of Agriculture and Forestry 2012, 2(6) pp268-272.

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Dr. (Engr.) O.O. Ajibola graduated from the Federal University of Technology, Akure (FUTA) with Bachelor of Engineering (B.Eng), Master of Engineering (M.Eng) and Doctor of Philosophy (PhD) degrees in Metallurgical and Materials Engineering in 1995, 2008 and 2015. He is currently a Postdoctoral Research Fellow in the Department of Chemical Engineering, Faculty of Engineering and the Built Environments at the University of Johannesburg, South Africa. He is a member of Nigeria Society of Engineers and a COREN registered engineer. He has worked in various capacities for more 13 years as a Lecturer in the Department of Mineral Resources Engineering at Federal Polytechnic, Ado Ekiti. He had over 30 relevant academic publications in learned journals and conference proceedings. He joined the Federal University Oye-Ekiti in January, 2013 as a Lecturer II in the Department of Materials and Metallurgical Engineering. His research interests include Mineral Processing and Extractive Metallurgy, Cement and Refractory, Surface engineering, Corrosion and High Temperature Tribological. He had peer reviewed many publications in related fields in many famous academic journals.

1. **AjibolaO.O**,Oloruntoba D. T., Adewuyi B.O, (2015) "Design and performance evaluation of wear test jig for aluminium alloy substrate in hydraulic fluid". African Corrosion Journal, Vol. 1 No. 1 April 2015. pp 46-51, www.africorr.org.za

2. **AjibolaO.O**,,Oloruntoba D. T, Adewuyi B.O, (2015) "Effects of moulding sand permeability and pouring temperatures on properties of cast 6061 Aluminium alloy". International Journal of Metals, Volume 2015, Article ID 632021, 13 pages. http://dx.doi.org/10.1155/2015/632021

3. **Ajibola O.O.**, Oloruntoba D.T., (2015) "Wear and corrosion of cast Al alloy piston with and without brake oil". Indian Journal of Materials Science, Volume 2015, Article ID 763618, 10 pages. http://dx.doi.org/10.1155/2015/763618

4. **Ajibola O.O.**, Oloruntoba D.T, (2015) "Effect of MgFeSi inoculant on properties of Cast 6061 Al Alloy for brake master piston application". Indian Journal of Materials Science, Volume 2015, Article ID 756219. 10 pages.http://dx.doi.org/10.1155/2015/756219

5. **AjibolaO.O**,,Oloruntoba D. T., Adewuyi B.O, (2015) "Effect of processing parameters on the protective quality of Electroless-Ni on cast aluminium alloy" Journal of Metallurgy, Volume 2015, Article ID 386347, 13 pages. http://dx.doi.org/10.1155/2015/386347
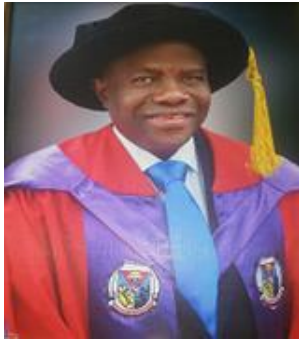
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Dr. Engr. Adebayo. F. Owa, was the best graduating student in Department of Metallurgical and Materials Engineering, Federal University of Technology, where he obtained his Bachelor of Engineering (B. Eng.), in 1995; with second class upper division. He also holds a master's degree in Mechanical Engineering (Production Option) in 2008 and a Doctorate degree (Ph.D) in Metallurgical and Materials Engineering; in 2017, from the same institution.

He belongs to professional and scientific societies such as council for the regulation of Engineering practice in Nigeria (COREN), member of International Association of Engineers and Professional member of Material Society of Nigeria.

He has worked in various capacities for 9½ years as a lecturer in the Department of Mechanical Engineering Technology, at Rufus Giwa Polytechnic, Owo, Ondo state. He had over 8 relevant academic publications in learned journals and 2 conference proceedings. He joined the Federal University Oye – Ekiti in January, 2014 as a lecturer II in the Department of Materials and Metallurgical Engineering. His area of interests includes; but not limited to synthesis of Bio-materials and Nano materials from renewable resources. Some of his publications include:

1. Onyemaobi, O. O., Owa, A. F. and Anyakwo, C. N. (1996): The Effect of Sn^{2+}, Hg^{2+} and S^{-2} ions on Corrosion of steel in Sulphite Solutions, Journal of Science and Engineering Technology, Vol. 3 number 2, pp480-489.
2. Ojo, P.O., Fapetu, O.F,Owa, A.F., Adegoke, J.O. and Tanimola, B.A. (2009): Technical Education in Nigeria policies and Implementation, African Journal of Education Research and Administration, Volume 2, Number 2, pp 60-63
3. Owa, A.F and Adesida, F (2010): Determination of moulding properties of Erusuclay for casting operations, International Journal of Engineering Science, Vol.2, Number 2, pp 80-84
4. Owa, A.F. (2005); Materials Science (Students' aids to Fundamental concepts)
5. Owa A.F. (2006); Students` Activities manual on Polymer Science (A preliminary approach)

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Coupled with his work experience as Trainee Engineer at a Ceramic company in Suleja, Niger State, Nigeria, in 2006, Engr. O. D. Adigun received his B.Eng. degree in 2007 from the Federal University of Technology, Akure, and his Masters degree in Materials Science and Engineering in the University of Sheffield, United Kingdom, in 2016. As a lover of research, commitment and hard work, Engr. O. D. Adigun have accomplished a number of research studies, attended international and national conferences as well as workshops and served the University in various capacities since 2011.

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Summary of Profile

Engr. Dr **O.A. Adetayo** graduated from Federal University of Technology Akure with a Bachelor of Engineering (B.Eng.) in Civil Engineering in 2003, he obtained both his Master degree in Civil Engineering from the University of Ibadan in 2007, and Doctor of Philosophy (Ph.D.), University of Ibadan, 2016. He is a member of Nigeria Society of Engineers (MNSE) and a registered member of the Council for the Regulation of Engineering in Nigeria (COREN). He has worked in the construction and telecommunication industries including Huawei Technologies Ltd (2005 – 2008). He is a practicing Engineer, lecturer and a researcher in Environmental, Structural and Materials Engineering. He joined the service of the Federal University, Oye Ekiti in 2013 as Lecturer II. The following are part of his research interests:

1)   Development of new models of fire performance of structural materials use for construction.
2)   Assessment of quality of drinking water in urban and rural areas.
3)   Development of Innovative Building Materials and Construction Systems.
4)   Design and Construction of Environmentally Friendly Facilities

Teaching Areas; Structural and Materials Engineering.

Selected Publications

1.   O.A. Adetayo, O. O. Amu, and A.O. Ilori (2019). "Cement Stabilized Structural Foundation Lateritic Soil with Bone Ash Powder as Additive" Arid Zone Journal of Engineering, Technology and Environment, Faculty of Engineering, University of Maiduguri, Maiduguri, Nigeria. Volume 15(2): pp. 479-487.

2.   **O.A. Adetayo** and B.I.O. Dahunsi (2019). "Comparisons of Experimental Charring Rate of Some Selected Constructional Wood Species from South Western Nigeria with Selected Charring Models." Arid Zone Journal of Engineering, Technology and Environment, Faculty of Engineering, University of Maiduguri, Maiduguri, Nigeria. Volume 15(1): pp. 25-39.

3.   E. S. Nnochiri and **O.A. Adetayo** (2019). "Geotechnical Properties of Lateritic Soil Stabilized with Corn Cob Ash." ACTA Technica Corviniensis – Bulletin of Engineering, Faculty Engineering Hunedoara, University Politehnica Timisoara. Tome XII. Fascicule 1, pp. 73 - 76.

4.   **O.A. Adetayo** and Jubril. O. (2019). "Effect of Ripe and Unripe Plantain Peel Ash on Concrete Workability and Compressive Strength." Federal University Oye Ekiti (FUOYE) Journal of Engineering and Technology. Volume 4, Issue 1, pp. 145 -148.

5.   **O.A. Adetayo** and O.A. Bucknor (2018). "Comparative Study on the Effect of Grinded Rice Husk and Rice Husk Ash on Compressive Strength of Concrete." ACTA Technica Corviniensis – Bulletin of Engineering, Faculty Engineering Hunedoara, University Politehnica Timisoara. Tome XI. Fascicule 4, pp. 73 - 76.

6.   **O.A. Adetayo** and B.I.O. Dahunsi (2018). "Charring Rate Characteristics of some Selected Southern Nigeria Structural Wood Species Based on their Fire Resistance" ACTA Technica Corviniensis – Bulletin of Engineering, Faculty Engineering Hunedoara, University Politehnica Timisoara. Tome XI. Fascicule 3, pp. 91 - 96.

7.   B.I.O. Dahunsi and **O.A. Adetayo** (2018). "Development of charring rate models for some selected structural timbers specie of Southwestern Nigeria." Federal University Oye Ekiti (FUOYE) Journal of Engineering and Technology. Volume 3, Issue 1, pp. 17 - 21.

8.   **O.A. Adetayo** and B.I.O. Dahunsi (2017). "Variations of Density and Compressive Strength Before and After Charring of some selected structural timbers species of Southwestern Nigeria." Federal University Oye Ekiti (FUOYE) Journal of Engineering and Technology. Volume 2, Issue 2, pp. 43 – 46.

RESUME

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Place of Birth:	Ado-Ekiti
Sex:	Male
Local Government:	Ijero
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Next of Kin	Borisade motolani; 08068717207
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Marital Status:	Married
Number of Children:	Three (3)

INSTITUTIONS ATTENDED WITH DATE

Christ Nursery and Primary School, Ado-Ekiti	1989-1995
Ekiti State Government College, Usi-Ekiti	1995-2000
Agbede Comprehensive College, Ise-Ekiti	2003-2003
Federal University of Technology, Akure	2003-2008
Mercy Computer Training School, Ado-Ekiti	2007-2008
Federal University of Technology, Akure	2015-2018

ACADEMIC QUALIFICATIONS

Primary Six Leaving Certificate
Senior Secondary School Certificate
B. Eng. Metallurgical and Materials Engineering
Certificate Course in Computer Appreciation
M.Eng. Metallurgical and Materials Engineering.

WORKING EXPERIENCE WITH DATE

 Federal University Oye, Ekiti State
 Materials and Metallurgical Engineering Department

Position: LECTURER II   2012 - Date
EXPERIENCE

- ➢ Teaching and Research
- ➢ Teaching student how to write laboratory report
- ➢ Supervise student during examination
- ➢ Marking and scoring student script
- ➢ Prepare laboratory manuals for student
- ➢ Attending Departmental Meeting

National Metallurgical Development Center, (NMDC)
20 Rang Pam Street, Jos.
Plateau State

Position: **Engineer 1** 2011
EXPERIENCE
Responsibilities
- ➢ Carrying out the instructions /orders from the Managing Director
- ➢ Supervision and controlling work of all the staffs under my control.
- ➢ Carrying out metallurgical experiment such as: Microscopeview Sample Mounting, Grinding, Polishing and Etching.
- ➢ Preparing metallurgical samples for metallurgical testing.
- ➢ Supervising the IT student

Continental Shipyard Apapa Dockyard, Lagos.

Position: **Assistant Engineer** 2007
Responsibilities
- ➢ Casting of Ship Parts.
- ➢ Welding and Fabrication of metals.
- ➢ Painting and Coating of Ship part.
- ➢ Carrying out Sand Blasting operation on Ship parts.
- ➢ Carrying out Test on all the welding parts of ship.

PROFESSIONAL QUALIFICATIONS WITH DATE
The Council for the Regulation of Engineering in Nigeria (R.29571) 2015
The Nigeria Society of Engineer (NSC 31598) 2014
National Association of Technologist in Engineering (C-5879) 2014
International Association of Engineers (IAENG) 2014

PUBLICATIONS:
(1) Seun Samuel Owoeye,Oji Babatunde, Babajide Oluwagbenge Fatile,**Sunday Gbenga Borisade** (2018).
Creep and thermal behavior of quarry dust-silicon carbide hybrid particles reinforced ZA-27 alloy composites using stir casting technique.
The International Journal of Advanced Manufacturing Technology.https://doi.org/10.1007/s00170-018-2243-z

(2) Kolawole, F.O., Abdulwahab, M., Kolawole, S.K.,Madueke,C.I, **Borisade, S.G.** (2015).
"Fabrication and Characterization of OLED Solar Devices "**Proceedings** of the Nigerian Association for Energy Economics/International Association for Energy Economics Conference, 8th Annual Conference, University of Ibandan, Oyo State.

(3) JIMOH, B.O AJIBOLA, O.O. **BORISADE, S.G :**(2015)
Suitability of Selected Sand Mine In Akure, Nigeria for Use as Foundry Sands in Aluminum Alloy Casting. International Journal of Engineering and Technology Volume 5 No. 8, August, 2015

(4) Ajibola, O.O Boluwade,E.A. **Borisade,S.G :**(2015)
Geometallurgical Evaluation of Itapa Ekiti Feldspathic-Biotite Ore Deposit for Effective Processing and Extraction. International Journal of Mining Engineering and Mineral Processing 2015, 4(1): 1-7 DOI: 10.5923/j.mining.20150401.01

Extra – Curricular Activities
Reading, Researching and playing Football

REFEREES

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